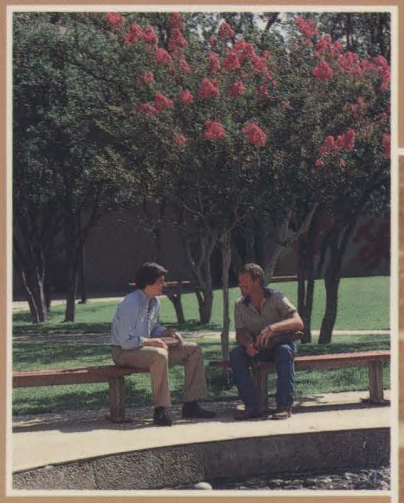
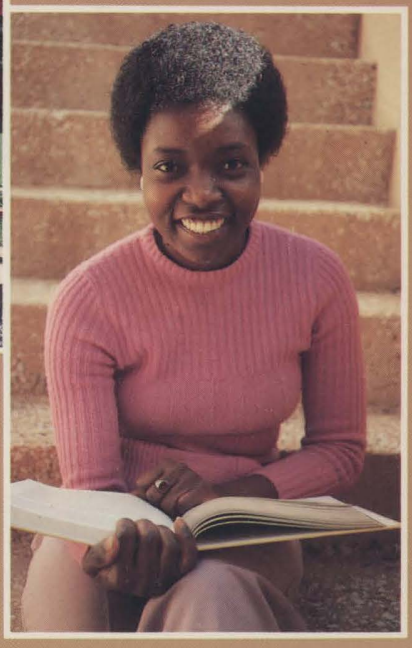
1984

The University of Texas Permian Basin Catalog 1984-85

The University of Texas of the Permian Basin

UT Permian Basin





1984-85 Catalog

1984-85
CATALOG

THE UNIVERSITY OF TEXAS OF THE PERMIAN BASIN®
ODESSA, TEXAS 79762

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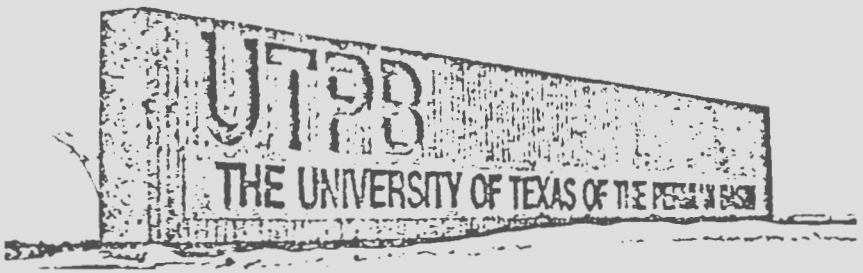

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UNIVERSITY CALENDAR 1984-85

FALL SEMESTER 1984

August 29-30	Registration
September 3	Holiday–Labor Day, no classes
September 4	Classes begin 8 a.m.
September 17	Last day of late registration
	Last day to add classes
	Last day to apply for December graduation
November 9	Last day to drop classes or withdraw from the University without a pass/fail indicator (QP/QF or WP/WF)
November 15	Last day to submit final copy of master's thesis/research report to master's committee
	Last day to add SPI courses
November 22	Holiday begins at 8 a.m.
November 22-23	Holiday–Thanksgiving, no classes/All offices closed
November 26	Classes resume 8 a.m.
	Last day to take oral exams (graduate students)
December 14	Last day of classes
	Last day to drop classes or withdraw from University
December 17-20	Final examinations
December 20	Semester ends

SPRING SEMESTER 1985

January 10-11	Registration
January 14	Classes begin, 8 a.m.
January 25	Last day of late registration
	Last day to add classes
	Last day to apply for May graduation
March 11-15	Spring recess; classes dismissed
March 18	Classes resume, 8 a.m.
March 29	Last day to drop classes or withdraw from University without a pass/fail indicator (QP/QF or WP/WF)
April 4	Last day to submit final copy of master's thesis/research report to master's committee
	Last day to add SPI courses
April 5	Good Friday, classes dismissed all day
April 8	Classes resume 8 a.m.
April 15	Last day for oral exams (graduate students)
May 3	Last day of classes
	Last day to drop classes or withdraw from University
May 6-9	Final examinations
May 9	Semester ends
May 11	Commencement; 2 p.m.

SUMMER SESSION 1985

A detailed calendar for each term will be published in the summer class schedule.

Primary Calendar Dates

May 24	Registration–all summer terms
May 27	Memorial Day Holiday, no classes All University offices closed
May 28	Classes begin, 8 a.m. for 12-week term and first 6-week term.
May 31	Last day to late register or add classes for first 6-week term
June 6	Last day to late register or add classes for 12-week term Last day to apply for summer graduation
June 14	Registration, 9-week term
June 17	Classes begin, 8 a.m., 9-week term Last day to add SPI courses, first 6-week term
June 24	Last day of late registration, 9-week term
July 1	Last day of classes, first 6-week term Last day to drop classes in first 6-week term
July 2-3	Final exams, first 6-week term Classes dismissed for 9-week and 12 week-terms
July 4	Independence Day Holiday, classes dismissed All University offices closed
July 5	Classes resume 8 a.m. for 9-week and 12-week terms Registration, second 6-week term
July 11	Last day to register and add classes, second 6-week term
July 22	Last day to add SPI courses, 12-week term
July 29	Last day to add SPI courses, second 6-week term and 9-week term
August 14	Last day of classes, 12-week, 9-week and second 6-week terms
August 15-16	Final exams, 12-week, 9-week and second 6-week terms.

THE UNIVERSITY

As an upper-level and graduate educational institution of The University of Texas System, The University of Texas of the Permian Basin is state-supported and provides 42 degree programs through three academic colleges: Arts and Education, Business Administration, and Science and Engineering. While established to serve the higher educational needs of the Permian Basin, it also assumes its share of responsibility for service throughout the state and the nation.

The mission of The University of Texas of the Permian Basin is to assist enrolling students to realize their fullest potential, both personally and professionally. The educational experience at UT Permian Basin should help students develop powers of judgment and to mature both emotionally and intellectually. This experience should further prepare students to earn a satisfactory livelihood and to make a worthwhile contribution to the nation's and individual's social and economic life.

Although career preparation is important, UT Permian Basin provides opportunities for students to gain practical understanding in other areas essential for a meaningful life. These include an understanding of representative government and the attendant responsibilities of citizens within it; the ability to communicate ideas clearly, both orally and in writing; a greater appreciation of aesthetics; an understanding of the role of science and technology in society; and development of skills in lifetime sports.

Finally, through both formal instruction and informal atmosphere, UT Permian Basin seeks to cultivate each student's ability to live in harmony with others, to live in a multicultural society, to recognize and respect honest differences of opinion, and to seek a better life for the community of man.

Authorized by the Texas Legislature in 1969 and designated as an upper-level university for junior, senior and graduate students, UT Permian Basin began classes in September, 1973.

The University of Texas of the Permian Basin is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools as a level III - Bachelor's and Master's Degrees, general postsecondary institution.

The innovative concept at UT Permian Basin is as obvious in its campus as in its educational programs. Emphasis is on flexibility and efficiency in the buildings of the 'Mesa Design' campus. Most structures are built approximately 22 feet above ground, using the caprock shelf under the site as a natural foundation.

Situated on a 600-acre site on the eastern side of Odessa, the campus is essentially square in shape and surrounded by wide paved streets, making it easily accessible from all directions. The core campus is compact and provides for convenient parking, virtually one space per student, faculty and staff.

The upper-level university has gained a reputation for outstanding teaching where professors give special attention to students and their education. The result has been quality, innovation and excellence in education.

ACADEMIC POLICIES

The University of Texas of the Permian Basin provides students maximum flexibility in their academic programs. While students generally encounter a less formalized structure than at most universities, there is greater responsibility for managing their time, energy and resources. Demonstrated competence is emphasized so students receive an enriched and more effective education.

THE ACADEMIC COMPONENTS

The academic programs of the university are organized into three colleges. Degree programs offered within each are:

The College of Arts and Education offers the Bachelor of Arts degree in anthropology, art, criminal justice, history, humanities, literature, mass communications (print journalism and radio/TV), music, physical education, political science, psychology, sociology, speech, and Spanish. This college also offers Master of Arts degree programs in behavioral science, history, literature, physical education and in education, including options in administration, counseling, reading, early childhood education, elementary education, secondary education, special education and supervision.

The College of Business Administration offers the Bachelor of Arts degree in economics, and the Bachelor of Business Administration degree in accountancy and information systems, finance, land management, management, and marketing. This college also offers the Master of Business Administration degree in management and cooperates with the College of Arts and Education in offering the behavioral science master's program.

The College of Science and Engineering offers the Bachelor of Science degree in chemistry, computer science, earth sciences, control engineering, geology, life science, and mathematics. This college also offers the Master of Science degree in control engineering, life science, and geology.

The Centers for Learning Resources function to provide the tools and services to the faculty, staff and students that facilitate learning and research. The Centers operate through three individual conponents library services, instructional media services and computer services. These components are described as follows:

1. *Library Services.* The library services component contains a rapidly expanding collection of more than 500,000 volumes of books, microfilm and periodicals. The library subscribes to approximately 1,000 periodicals and newspapers and maintains a collection of video tapes, audio cassettes, motion pictures, records, simulations, kits and even complete self-paced courses. The library services component acts as the distribution center for all learning materials and maintains listening and viewing carrels as well as television receivers for video tapes and many other learning innovations.

   In addition, the library has a special collections room which contains 10,000 items relating to the history of the Permian Basin, a sizeable collection of materials by and about J. Frank Dobie, manuscripts of major Texas writers and a Texana collection which supports in-depth research in Texas history and culture.

2. *Instructional Media Services.* To enhance teaching and learning, instructional media services provides a wide array of teaching technology, such as audio and video recording services, video cassette distribution, production of audio tapes and television films, film loops, and graphic art work.

3. *Computer Services.* Computer services serves the university community through a remote job entry computer that is on line to the University of Texas Regional Computer Center in Dallas. The computer is available for use by faculty, staff and students to support coursework, research and records management. The computer services' staff is available to assist the user in solving data processing problems.

ADMISSIONS

There are five types of applications available upon request at the admissions office:

1. Regular undergraduate–seeking the first or second bachelor's degree.

2. Regular graduate–seeking a master's degree.

3. Nondegree–seeking one or a series of courses only and wanting credit and grade.

4. ENCORE–seeking one or a series of courses only and not desiring credit (similar to audit).

5. International student–seeking bachelor's or master's degree, not a U.S. citizen or permanent resident, and seeking F-1 visa status.

The requirements for admission are as follows:

1. A student seeking regular admission to pursue a degree program must have completed at least 54 semester credit hours at a community college, senior college or university. The institution must be fully accredited by the state and a regional accrediting association. This previous coursework is normally elected at the freshman and sophomore level to complete the basic core of courses recommended by the Coordinating Board of Texas Colleges and Universities.

2. The student having less than 54 semester hours of work will be admitted on an individual basis through a special admissions process utilizing an institutional committee. These students will be enrolled simultaneously at an area community college if they wish to elect the upper-level courses as part of their degree program.

   These transcripts should be sent from the registrar of each college attended directly to the UT Permian Basin admissions office. Student-carried copies cannot be accepted.

3. A non-degree student with less than 54 semester hours of previous work who wishes to take upper-level courses may be admitted by the institutional committee. An individual with special needs that warrant consideration by the committee may be granted admission for limited enrollment.

   All special admissions will be reviewed each semester before permitting continued enrollment.

4. A student seeking regular admission must have a 2.00 GPA (or "C" average) for all courses previously taken at other colleges and universities. Grades of "F" carry no transferrable credit to the university.

5. The student must be in good standing at the institutions previously attended and qualify for readmission to those institutions.

6. Each student must submit the completed admission form, and request an official transcript from each institution previously attended. These transcripts should be sent from the registrar of each college attended directly to the UT Permian Basin admissions office. Student-carried copies cannot be accepted.

   All transcripts and supporting information submitted to determine the student's eligibility to UT Permian Basin become a permanent part of the student's file and will not be returned to the student. Students wishing copies of transcripts submitted must request them from the originating institution. It is not possible for the university to dispatch official transcripts for another institution.

To obtain an admission form or additional information, write to:

Dean of Admissions
The University of Texas
of the Permian Basin
Odessa, Texas 79762

While there is no specific deadline for application for admission to the fall semester, applicants are encouraged to submit applications and transcripts two months prior to the beginning of the semester they plan to attend. The application file should be completed at least one week prior to the scheduled registration date.

International Student Admissions. International students must apply at least 3 months prior to the semester they plan to enroll to allow documents to arrive in time. All correspondence and supportive documents for admission purposes should be sent by airmail, *not* surface mail, from points outside the United States. International students must have all admissions documents submitted and approved at least 8 weeks prior to the beginning of the semester in which they plan to enroll.

In addition to the general requirements, the following regulations apply to international students:

1. Certified copies of transcripts (mark sheets) from universities previously attended in the home country must be submitted. An official English translation of the transcripts must be included if the academic transcripts are in a foreign language. Moreover, where university-level studies are to be considered for possible undergraduate transfer credit, a syllabus, catalog or similar bulletin must be submitted which describes the courses in sufficient detail for proper evaluation.

2. Signed statements guaranteeing the student's ability to pay expenses while at UT Permian Basin must be accompanied by documentation supporting the statement in form of a letter from a bank or other reliable institution or from the sponsor's employer. (Photostatic copies of support statements furnished to meet another university's requirements are not acceptable.)

3. Test of English as a Foreign Language (TOEFL) must be submitted before admission will be granted. Minimum score for admission consideration is 550. Information concerning the TOEFL may be obtained by writing to:

TOEFL, Box 899, Princeton, N.J. 08540. The following applicants are exempt from the TOEFL requirement:

a. Native speakers of English (usually citizens of Australia, New Zealand, the British Isles and Canada.)

b. Students who have earned bachelor's degrees or higher at accredited U.S. colleges or universities.

4. Students transferring from U.S. schools and who have satisfactorily completed 6 semester hours of freshman composition and 6 semester hours of literature may, in some cases, be exempt from submitting a TOEFL score. (To prevent unnecessary delays in being admitted, the TOEFL score should be submitted by all international students.)

5. It is compulsory for international students on F-1 visas to carry medical and hospitalization insurance. Insurance for dependents is optional.

6. Students on F-1 visas do not normally have employment privileges. Government regulations require international students to certify that they have finances deemed sufficient by the university to pursue a full course of study without employment.

7. Holders of F-1 (student) visas must enroll for a full load of study. For undergraduate students or "undergraduate to qualify" for graduate studies, the load is 12 semester hours. Graduate students are required to enroll in a minimum of 9 semester hours.

8. Students wishing admittance to graduate programs must comply with all of the above requirements in addition to the graduate student requirements.

9. Students transferring from a U.S. college/university must have the former foreign-student adviser (or his/her equivalent) complete Form FS2-73. These forms are available from the admissions office.

REGISTRATION

Students are encouraged to visit with faculty advisors during the fall and spring semesters for degree and class schedule planning. However, students will not be able to register prior to the scheduled dates of registration. Advisors in all disciplines are available during the days scheduled for registration. Late registration begins on the first day of class and ends with the 10th day of classes (4th day of summer session classes). Students may not register for conventionally taught, partially self-paced or contract study courses after those dates. Students must be officially enrolled at UT Permian Basin in the semester in which they graduate. Students may not register as Encore students for contract study, self-paced courses, thesis, research or practicum.

International students must meet additional requirements dependent upon the type of visa they hold and other factors. Therefore, international students should contact the office of the registrar for further information.

Audit/Encore. Persons who do not desire to pursue a degree or course credit may enroll in one or more regular courses at the university without declaring a major and a degree goal. These students may enroll as Encore students which allows them to attend the classes and participate in the discussion, studio and laboratory work. *There*

is no requirement to complete work outside the classroom or sit for exams. Upon completion of the course, the student will receive a grade of NG (no grade). *Credit earned in this program does not count toward a degree* and does not carry the university's sanction as transfer credit. The student must notify the registrar by the last day of registration of his intent to enroll as an Encore student.

Regular students enrolled in the university also wanting to select one or more courses in this program may do so but they should understand that the course will not transfer nor count toward a degree. The degree and credit regulations stated above also apply to students matriculated in a degree program.

Students applying for this program must meet all the admissions requirements of the regular students. They must be in good standing with the previous college attended, furnish official transcripts (not hand carried) from the previous college attended. To enroll in graduate (600-level) courses, students must have earned a bachelors degree or higher from an accredited institution.

Applicants should obtain a special application form and information from the admissions office.

Continuous registration. (Self-paced coursework). A substantial number of courses is offered on a self-paced instruction basis. Students may enroll in the university and register for these courses at any time up to four weeks prior to the last day of classes during the regular semester. During the summer an equivalent date will be determined for the summer term. Please refer to the summer calendar in the class schedule for this information.

Registration for self-paced instruction courses alone does not involve a late registration fee. Students must finish the self-paced course within the given semester or reregister for the same course the following semester. At the end of each semester, a grade is assigned. If work for a self-paced course has not been completed but satisfactory progress is underway, the student usually is assigned a grade of 'Z'. The student must reregister for the course when offered in a subsequent semester to earn a letter grade and credit in the course. The initial 'Z' grade will remain on the record.

Summer school registration. Students enrolling for the first time at UT Permian Basin, as summer school students, must furnish a letter of good standing, followed by a transcript showing college-level work completed. These requirements must be met whether or not students plan to continue their enrollment at UT Permian Basin the next semester.

Summer transient student or nondegree student. Students in good standing at another college or university may be considered for regular or special admission during the summer or for one of the long sessions. Only the transcript from the last institution will be required prior to enrolling at UT Permian Basin. A student will not be admissible if he is ineligible to return immediately to his former institution(s).

A student granted admission as a summer transient or as a nondegree student may enroll in subsequent terms to pursue a degree from UT Permian Basin. Official transcripts must be ordered from all other universities previously attended and from which no transcripts have been requested for UT Permian Basin.

Readmission for former students. A former student must notify the admissions office of his intentions to return to UT Permian Basin. Notification of attendance at another institution(s) since his last enrollment at UT Permian Basin also must be made, and transcripts from those institutions must be submitted.

A student who is not eligible to return immediately to his former institution is not eligible to enroll at UT Permian Basin. Normally a student who is dismissed for disciplinary reasons from another institution will not be admitted.

Concurrent enrollment. Students who wish to enroll concurrently at UTPB should apply for special admission if they have not completed necessary lower-division courses. UT Permian Basin normally limits concurrent enrollment to community colleges. Students desiring credit for concurrent enrollment at another four-year or upper-level institution must have the prior express permission in writing from the appropriate dean before enrollment.

When a student registers at more than one *public institution* of higher education at the same time, his tuition charges shall be determined in the following manner:

Section 54.062 of Senate Bill No. 250, March 1977, (Texas Education Code), provides that if the minimum tuition charge at the first institution is the same as or greater than the minimum tuition charge at the second institution, then no minimum charge is to be assessed by the second institution but rather, only the per-hour charge for the courses involved will be assessed by the second institution.

The same section however, requires that the student shall first register at the institution with the lower minimum tuition charge and that the second institution shall assess only the difference between the tuition charge at the first institution and those of the second institution, except that in no case shall the student pay the second institution less than the hourly rate for the courses involved.

TRANSFER OF CREDIT

Undergraduate. As an upper-level university, UT Permian Basin offers only junior and senior-level courses for the bachelor's degree. Students must have completed prerequisites usually offered at the freshman and sophomore level before enrollment in most courses at UT Permian Basin. Students must complete lower-level requirements before the bachelor's degree can be granted. Coursework shown on transcripts from other academic institutions is subjected to two separate evaluations:

1. *Admission.* Coursework is evaluated to determine the transferrable credit for admission purposes. This evaluation is performed by the admissions officers during the admission procedure.

2. *Applicability toward degree requirements.* Coursework is evaluated to determine whether the student's lower-level courses provide the necessary preparation for upper-level courses at UT Permian Basin and to determine the applicability of previous upper-level coursework towards degree requirements at UT Permian Basin. This evaluation is performed by a faculty advisor in the student's chosen field of study.

It should be noted that at least 120 hours of applicable college credits are required for the bachelor's degree; however, the requirements specific to a major area of concentration may result in a degree plan that exceeds that number. In short, the undergraduate degree-seeking student should approach a career at UT Permian Basin not in terms of what has been done elsewhere but in terms of what remains to be done at UT Permian Basin.

General Regulations

1. The college or university from which the credit is to be transferred must be accredited by a regional accrediting agency acknowledged by the State of Texas.

2. Courses transfer to The University of Texas of the Permian Basin on the same level and with the corresponding number of credit hours earned at another institution. Grades are never lowered in transfer. Credit for courses in which

grades of 'D' have been earned will be accepted for admission only and will not be accepted as satisfying degree requirements.

3. When a course has been repeated for credit, the most recent grade and credit hours will be used to determine the acceptance of the course.

4. The following are *not normally accepted* by the university toward *admission* or *degree* requirements:

   A. Orientation, remedial English, remedial reading courses, remedial mathematics courses, sectarian courses in religious teachings (however courses in the philosophy of religion or the Bible as a literary work will be accepted).

   B. General Education Development Tests on high school or college level.

5. Vocational and technology courses will be applied toward the admission requirements but acceptance for degree purposes will be determined on an individual course basis by the faculty advisor and/or dean.

6. Except for physical education majors, a maximum of 4 credit hours will be accepted in physical activity courses toward admission requirements and degree requirements. A maximum of four upper-level credits in ROTC can be accepted in lieu of physical education.

Junior College Transfer Regulations. Junior College degree programs do not always apply towards a degree program at UT Permian Basin. For a smooth transfer from a junior college to UT Permian Basin, the student should seek advice on course elections from a UT Permian Basin faculty member in his/her prospective field of study, prior to or upon entry into the junior college. This advice may help avoid unnecessary courses and ensure that all of the proper courses prerequisite to the UT Permian Basin degree program are taken.

Courses will transfer from junior colleges under the following conditions:

1. Courses taken at a junior college cannot transfer as upper- division (junior and senior) credits.

2. While there is no limit to the number of credits transferable from a junior college, a student must earn a minimum of 54 semester hours of upper-level work at UT Permian Basin toward a bachelor's degree.

3. The approved *'Core Curricula'* courses will transfer as described by the Coordinating Board rules and regulations.

Upper Level Transfer Regulations. Students who have completed 60 semester credit hours are usually admitted with junior standing. A student may be admitted with senior standing if 90 transferable credit hours have been completed and a minimum of 24 of those credits are in upper-level courses. Students with upper-level credit should note:

1. Normally, only courses with a grade of 'C' or better will apply toward a degree.

2. A minimum of 30 semester credit hours must be completed at UT Permian Basin in order to earn a bachelor's degree.

Correspondence and extension credit. The University of Texas of the Permian Basin does not offer correspondence courses. A student may apply toward a bachelor's degree correspondence or extension credit (classroom) appropriate to the curriculum and entered onto a transcript of a regionally and state accredited college or university, subject to the following limitations:

The maximum transferable credit is:

Fifteen semester hours of correspondence credit, thirty semester hours of extension credit or thirty semester hours of correspondence and extension credit combined.

Only six semester hours in the major may be correspondence credit.

Credit By Examination (Advanced Placement). The university does not offer CLEP (College Level Examination Program) exams nor does it enter CLEP credit onto the UT Permian Basin transcripts. Up to 28 semester hours of lower-division credit will be honored for admission purposes. This credit must first be entered onto the transcript of a regionally and state accredited college or university.

The faculty advisor and/or dean of the college will determine the applicability and the transferability of this credit for degree purposes.

Evaluation Of Transfer Credit. Transfer credit is evaluated by the admissions officer at the time the student is admitted to the university. Credit is further evaluated by the faculty advisor for degree purposes and a degree plan is developed.

Prospective students often have questions about transfer of courses. Students are invited and encouraged to seek advice about courses and degree programs from the dean of his/her college and/or a faculty member in their prospective discipline.

TUITION

Resident (in-state). . . . . $4 per semester credit hour
(minimum of $50 per semester)

Nonresident (out-of-state) Student . . . . . $40 per semester credit hour

Foreign Student (international). . . . . $40 per semester credit hour

Exceptions

1. Nonresident or foreign students who are recipients of a competitive scholarship in the amount of $200 or more awarded for the academic year or the summer term by UT Permian Basin may pay the in-state tuition rate.

2. Nonresident students who hold appointments as graduate teaching assistants or graduate research assistants may pay the in-state tuition rate, provided they are employed half time or more in positions which relate to their degree programs.

3. Resident or nonresident students registered for thesis credit only, in those instances where such credit is the final credit-hour requirement for a degree in progress, shall pay a sum proportionately less than herein prescribed but not less than $50.

Texas Residency for Tuition. To establish residency, a student must reside and be gainfully employed in the state 12 months preceding registration in an educational institution. Students claiming residency by virtue of marriage or parental dependency must provide sufficient documentation to support the residency claim of the spouse or parent. Residency cannot be established while enrolled in a college or university. The registrar determines all residency classifications. To appeal the decision

of the registrar in residency matters, students may present their case to the vice president for business affairs. If students wish to appeal his decision, they may address the president of the university whose decision is final.

In addition to the tuition given above, there are certain fees assessed as follows:

Refund of Tuition and Fees for Students Withdrawing from the University or Reducing Courseload

Upon completing a withdrawal form or a course drop form and submitting it to the registrar, the student's percent of tuition refund will be determined. The rate is based upon the date the form is received by the registrar. In the case of a withdrawal from the university, all required signatures must be obtained before submitting the withdrawal form to the registrar. The rate of refund is as follows:

a. Prior to first class day from which a $15 matriculation fee shall be assessed	100%
b. during the first 5 class days	80%
c. during second 5 class days	70%
d. during third 5 class days	50%
e. during fourth 5 class days	25%
f. after fourth 5 class days	NONE

All policies regarding the payment or refunding of tuition, fees, and charges are approved by the Board of Regents of The University of Texas System and comply with applicable state statutes. If a person desires clarification of any matter relating to payment or refund of such charges, or believes special circumstances warrant exceptions to the published policy, the Registrar, LAB 191, should be contacted.

FEES AND DEPOSITS

Students are not entitled to enter a class or laboratory until their fees and deposits have been paid. Payment may be made by personal check for the exact amount due, provided the bank transit number is encoded thereon in compliance with revised Federal Reserve Bank regulations. Checks for larger amounts, the difference to be paid in cash to the student, cannot be accepted. In paying fees by check, students should exercise care. A bad check, whether given by mistake or otherwise, unless the admitted error of the bank concerned, is likely to delay actual payment and thus result in a penalty for late registration. (All fees are subject to change by the legislature or Board of Regents without notice.) Fees may be paid and books purchased by charging on VISA and Mastercard accounts.

General property deposit. Every student must make a general property deposit of $10 to protect the university from losses, such as property loss, damages, breakage or violation of rules in any university library or laboratory, or failure to return keys furnished by the university. This deposit, less outstanding charges, will be returned on request at the end of student's career at UT Permian Basin. Any general property deposit remaining without a call for refund for four years from the date of last attendance at UT Permian Basin shall be forfeited.

Student services fee. The student services fee is compulsory for all students. The amount charged is $5 per semester credit hour for 1-11 credits. Students registered for 12 credits or more are charged $60. Students who register for the summer session are charged on the same basis as students registered during the regular academic year. The fee provides funding for extra-curricular activities and events designed to augment Student Life at UT Permian Basin and reservation privileges to the Gymnasium-Pool Complex. It is significant for students to identify the difference between 'full-time' - those students who have paid the maximum fee, and 'part-time' - those students who have paid less than the $60 maximum. Full-time students receive an additional advantage of admissions to the community theatres of Odessa and Midland at a cost of less than the student price of a ticket. Part-time students desiring the same privileges of additional benefits may pay the full student services fee. Students registered *in absentia* are not eligible to particpate in the student services and programs unless the regular fees are paid. The student handbook publishes the available programs, activities, and services that the fee provides. This handbook is available at registration or from the Office of Student Life.

Refund of the student services fee to students withdrawing is made on the same basis as refund of the registration and tuition fees.

General fees. An assessment for a general fee is made on the basis of $4 per semester credit hour to all students registered for resident credit. Refund of general fees to students withdrawing is made on the same basis as refund of the registration and tuition fees.

Parking permit fees. Students will register their cars in a single payment for the entire school year or the balance of the school year in which they register, whichever is applicable (school year is Sept. 1 through Aug. 31). The following fees will be charged: Passenger vehicles and trucks: $7.50 per year; $5 Jan. 1 through Aug. 31; $3 June 1 through Aug. 31. Two-wheel vehicles (motorcycles, motorscooters, motorbikes): $4 per year; $2 Jan. 1 through Aug. 31; $1 June 1 through Aug. 31. The replacement fee is $2. Temporary (monthly) permits may be issued for $1 or any portion of a month in excess of 14 calendar days.

Laboratory fees. For each laboratory course a fee is charged in an amount to cover, in general, the cost of laboratory materials and supplies used by a student; however, such charge per student shall be not less than $2 nor more than $8 for each laboratory course in any one semester or summer term. The course schedule will indicate the amount of the laboratory fee for each course.

Supplementary fees for selected courses. Students taking selected courses (e.g., studio art, courses requiring field trips, lifetime sports, physical education or applied music) are required to pay supplementary fees each semester.

Supplementary fees, in the case of students withdrawing or dropping a course, are refunded according to the schedule provided for refunding of registration and tuition fees. *Exception:* A student who officially drops a course with a supplementary fee and at the same time officially adds another such course will receive a refund of the full supplementary fee paid on the course dropped and will pay the corresponding fee required for the course added.

Special charge for late registration. Any student who, with proper permission, registers after the scheduled registration in that semester, will be required to pay a special charge of $5 to defray the costs of the extra services required to effect his late registration.

Bad checks. A service charge of $10 will be assessed the maker of the check for each returned check to offset the cost of processing such checks.

Graduation fee. A graduation fee of $8 is charged to graduating students at the beginning of the semester they plan to graduate. Students should notify the registrar as soon as they know they will not be graduating in the semester for which they applied. The graduation fee is a non-refundable fee. If the student cancels his graduation application after the 12th class day of the semester (or equivalent date during shorter terms) the fee must be paid again the subsequent term when reapplying for graduation. If the student fails to meet the degree requirements in the term for which he/she plans to graduate, the fee must be paid again upon reapplication in a subsequent semester.

In Absentia fee. The fee for *in absentia* registration is $25.00. The fee is assessed to those students who need to register in the University for the purpose of having a degree conferred, but for no courses. No refund is made for the cancellation of an *in absentia* registration. For more information regarding the *in absentia* fee, see undergraduate and graduate degree requirements.

Transcript service charge. There is a transcript charge of $1 for each university transcript ordered and given routine processing. A transcript service charge of $2 is levied for special handling or over-the-counter transcript service.

Student identification card replacement fee. All students who must obtain a replacement student identification card will be charged $3 service fee. This is not a purchase fee. The student I.D. card remains the property of UT Permian Basin and return may be required upon the student's withdrawal from the university, when it has been put to fraudulent use, or at other times determined as appropriate by administrative officers of the university.

ACADEMIC REGULATIONS

The dean of admissions determines a student's eligibility for admissions to UT Permian Basin. The dean's office of the discipline in which a student expects to study evaluates all previous coursework. A determination is made as to which of these courses apply toward the degree to be earned and the student is advised accordingly. Any questions about courses and degrees should be addressed to the dean's office.

After admission to UT Permian Basin, the student is assigned a faculty adviser who will assist in curriculum planning, as well as other matters related to the degree to be earned. The advising coordinator and the registrar's office have forms available to effect a change of major if students desire to do so. The dean of the college of the new major, as well as the faculty adviser in the new major, must endorse this form. This normally occurs at the time of registration.

Students are encouraged to visit their faculty advisers and instructors whenever the need arises. Instructors have posted office hours, and students may make appointments if they wish. The student is responsible for insuring that each course to be applied toward a degree program has the prior approval of either the faculty adviser or the dean of his/her college.

Dropping and adding courses (not to be confused with *withdrawing* from *all* courses). In courses taught on a conventional basis, a student may drop the course any time up to the last day of classes before the scheduled final examination period. A course may be dropped without permission during the first 10 class days (4 class days in summer). Students must obtain the signature of the instructor whose course they

are dropping if they drop the course between the 10th class day (4th class day in summer) and the last day to drop classes as given on the academic calendar. No credit will be awarded if the course is dropped.

Once a student has registered and paid tuition and fees for a course section, he/she is considered enrolled in that class until the class is officially dropped by the student at the registrar's office. This is considered cancellation of a contract and must be a written request signed by the student. Neither faculty, relatives nor friends may drop or add courses for a student. Add/drop forms must be completed at the registrar's office prior to the end of the last class day. Failure to drop a class, even if you do not attend, may result in failing grades on your academic record. To determine the last day to drop with or without pass-fail indicators, see the University Calendar. For refund dates, see "Refund Policy."

Courses taught on a conventional basis may not be added after the 10th day of classes. Students enrolling late in the course should not expect special make-up assistance from the instructor. Partially self-paced courses are administered on the same basis as regular courses. The registration, drop-add, withdrawal, course completion and grading are administered as all other regular classes.

In the case of courses taught on a self-paced instruction (SPI) basis, students are encouraged to enroll during the semester registration time. However, courses taught in SPI basis maybe added up to four weeks prior to the end of the fall or spring semesters. An equivalent date will be established for the summer term (refer to the summer class schedule). After the late registration period, these courses may be added only with the permission of the instructor and the dean of the college in which the course is taught. Students not completing an SPI course by the end of the semester must reregister and pay all applicable fees to continue the course in the next semester in which it is offered. Students may drop an SPI course at any time up to the last day of classes prior to the scheduled final examination week by completing proper forms. All regulations regarding grading and dropping or withdrawing from regular courses also apply to SPI courses.

Withdrawing from the university (from all courses in which registered). Students desiring to drop every course in which they are enrolled are considered 'withdrawals'. Students should secure a withdrawal petition from the registrar's office, complete it and obtain the signatures from the following people/offices: faculty adviser, dean, library, and the financial aids office. In cases of illness, students may have someone notify the dean who will arrange for the withdrawals. The withdrawal transaction becomes effective the date that the fully signed form is received at the registrar's office.

A withdrawal form must be completed at the Registrar's Office prior to the final exam period. Failure to do so, even if you attend no classes, may result in failing grades on your academic record. Withdrawals become effective the date the completed and signed form is received from the student by the Registrar's Office. To determine the last day to withdraw with or without pass-fail indicators, see the University Calendar. For refund dates, see "Refund Policy."

Credit by examination. A portion of the lower-division requirements may be completed through the College Level Examination Program (CLEP) offered by the Educational Testing Service of Princeton, N.J. CLEP exams may be taken at several junior colleges, senior colleges and universities in the state, but not at UT Permian Basin. Students wishing to complete a portion of the lower-division requirements through CLEP must enroll in a college that offers them and sit for them there. If credits for CLEP examinations appear on the transcript of the college where students were enrolled, UT Permian Basin will accept credits earned through CLEP on the same basis as any other credits transferred from another institution.

UT Permian Basin does not award college credit for study through the United States Armed Forces Institute, noncredit military studies and nonaccredited institutions;

however, if an accredited college or university has awarded credit for such study, UT Permian Basin will accept those credits on the same basis as coursework completed at that institution.

In some courses offered on a self-paced instruction basis, students may earn credit by examination by registering for a course and sitting immediately for as many of the quizzes in the course as they can pass. If the course is mastered, students may test through all quizzes and the final examination at their own pace.

Second bachelor's degrees. An individual who already holds a bachelor's degree must complete a minimum of 30 additional credits to receive a second bachelor's degree and, in the process, meet all requirements for the second degree. One desiring to complete two bachelor's degrees concurrently must complete all requirements of each degree program including a minimum of 30 credits more than required in one of the degree programs. In some instances, a student lacking lower-level courses which UT Permian Basin does not offer, will be required to complete these deficiencies at one of the area community colleges, in addition to the 30 or more which must be completed at UT Permian Basin.

Double majors. Students electing to major in 2 fields must meet the specified requirements for each major, and no one course can be counted in the semester hours credit in more than one major. In certain cases this may require completion of additional coursework. In addition, each major college must certify that the student has satisfied all major, as well as college requirements. Only one major will be shown on the diploma and only one diploma will be issued.

Correspondence credit. Up to 15 semester credits of correspondence study normally will be accepted from accredited colleges or universities if appropriate to the curriculum. Only by petition to the office of the dean of a college and on written approval of such a petition by the dean may additional credits be considered for evaluation and acceptance.

Class schedules. Classes taught on a conventional basis usually meet 1 to 3 times per week. Courses taught on a self-paced basis may or may not meet regularly except for a few meetings at the beginning of the term; however, some professors meet regularly with students who desire to meet as a group.

Class attendance. It is assumed that by the time students enroll at the university they are able to organize their time according to the demands of their studies. Class attendance is not required in most cases, but students are encouraged to attend classes regularly. In some courses, class participation and class activity constitute a part of the student's grade. It is the reponsibility of the student to determine whether class attendance is required in each course and to see that all of the course requirements are met. In this regard, veterans and international students are encouraged to check with the registrar's office for specific regulations governing their class attendance.

Waiving requirement for disabled students. To help ensure the quality of the degree which the disabled student receives, the university shall neither waive nor substitute degree requirements unless, after all feasible methods have been explored, it is clear that no means of the student fulfilling the requirements are available.

Course Numbering System

300-399	Junior courses, ordinarily not eligible for graduate credit. (see 'Undergraduate Courses for Graduate Credit')

400-499 Senior courses, under certain conditions may be taken by post- baccalaureate and graduate students for graduate credit. (see 'Undergaduate Courses for Graduate Credit')

600-699 Graduate courses, open only to graduate students or to students holding a baccalaureate degree, to include UT Permian Basin seniors within 10 hours of completing a baccalaureate program who have applied for and received admission to a graduate program.

Standard numbers. At the university, several numbers are standard among all disciplines or in certain categories of disciplines.

389 Selected Topics *1-3*
Undergraduate courses which will be offered only once or will be offered infrequently or which are being developed before a regular listing in the catalog. Offered in all disciplines.

391 Contract Study *1-3*
Students who are pursuing independent study or research as described in the Contract Study format. Offered in all disciplines.

398 Senior Seminar *1-3*
Seminar in the discipline or related disciplines.

489 Selected Topics *1-3*
Same as 389 but acceptable for graduate credit. (see 'Undergraduate courses for Graduate Credit')

491 Contract Study *1-3*
Advanced independent study or research. Study eligible for graduate credit in disciplines in which the master's degree is not offered.

492 Practicum (College of Arts and Education) *1-3*

492 Experiential Learning (College of Business Administration) *1-3*

492 Authentic Involvement (College of Science and Engineering) *1-3*
The number under which students register in meeting the experiential learning requirement set forth in this catalog. Available in all disciplines in which a bachelor's degree is offered.

498 Senior Seminar *1-3*
Seminar in the discipline or related disciplines.

Before registering, the student must have the approval of the responsible instructor and an approved written contract for courses 391, 392, 491, and 492. In some cases, prior approval is required for other courses and will be so indicated in the schedule of classes.

Course Load. Each semester credit hour at UT Permian Basin represents a commitment on an average of three hours of "out of class" preparation and one hour of class attendance (or its equivalent) per week. Thus, for example, enrolling in a three-hour class commits the student to a total of twelve hours of work per week. Students who are employed or who have family responsibilities are especially encouraged to bear this commitment in mind and to seek guidance from their advisers in determining a suitable academic schedule.

For undergraduate students without substantial family or work responsibilities, the normal course load during the regular semester is 15 semester credits for students in the Colleges of Arts and Education and in Business Administration, and up to 19 semester credits for students in the College of Science and Engineering. Students making satisfactory academic progress may take 18 credits in the Colleges of Arts and Education and in Business Administration, and 21 credits in the College of Science and Engineering without permission of the dean; more than these require permission of the dean of the college in which they are enrolled. Only in rare cases will students be permitted to enroll for more than 21 credits in a semester and then only upon written approval of their dean.

During the summer session, undergraduates may enroll for 7 credits in a 6-week period. As a rule, in short courses of lesser duration, one may register for one credit per week of instruction.

The foregoing apply for conventionally taught courses. In courses offered on a self-paced instruction basis, additional credits may be taken, particularly when courses are involved for which a portion of the work has already been completed at the same time of registration. This is subject to approval by the student's faculty adviser and the college dean's office.

All international students must enroll as full-time students during the fall and spring semesters (12 hours minimum for undergraduates and 9 hours minimum for graduates). The student is not required to enroll in any courses during the summer terms. The international student may not drop or withdraw from courses at any time which would result in less than a full-time course load in the fall and spring semesters.

Satisfactory scholastic progress. Students are considered to be making satisfactory scholastic progress when they are carrying an approved schedule of classes, are not on probation, are not failing a course, and have a grade point average (GPA) of at least 2.0 or C (3.0 or B for graduate study) in both the current semester and in overall average to date.

GRADING

Grades at UT Permian Basin distinguish among levels of student achievement. They represent, in abbreviated form, the instructor's judgment of the student's academic progress. In addition, they provide a basis for certifying completion of all degree requirements. They may serve as predictors of future performance in graduate and professional study.

The grades approved for use at UT Permian Basin are as follows:

A	= Superior achievement	I	= Incomplete
B	= High achievement	Q	= Dropped
C	= Average achievement	QP	= Drop passing
D	= Minimal achievement	QF	= Drop failing
F	= Failure to achieve minimally	W	= Withdrawal from University
+	= High grade	WP	= Withdrawal from University passing
-	= Low grade	WF	= Withdrawal from University failing
S	= Satisfactory	Z	= Acceptable progress (SPI) thesis
U	= Unsatisfactory	NG	= No grade (audit)

Only grades of A, B, C, D, U, QF, WF and F are included in computing grade point average (GPA): A=4; B=3; C=2; D=1; F=0. Pluses and minuses are awarded at the instructor's option but are not computed in GPA. Also, the grades of I, Q, QP, W WP, S, Z and NG are not computed in GPA.

A grade of I or Z is reported when students have not met all requirements of a course by the end of the semester, but the instructor considers the allowance of additional time to complete course requirements justified. When reporting an I grade, the instructor must complete an 'Incomplete Report' specifying: (1) the deficiency or the additional work to be done, (2) the length of time allowed to complete the work (no later than the last class day of the subsequent semester, summer excluded), and (3) the instructor may also indicate the grade that would have been earned at the time the I grade is submitted if he considers such to be appropriate for the particular course. If the I grade is not removed, the I becomes a permanent I unless the instructor has indicated a grade that had been earned at the end of the course in which case the I grade automatically is converted to that grade. Students who register for a class and then fail to attend any class meetings or take any test and who neither withdraw nor formally drop the course, at the discretion of the instructor, may be assigned the grade of F.

In thesis and master's research project courses, the grade of Z is reported for acceptable work in progress. Students must re-enroll each semester until the thesis or report is accepted. Students may be excepted from re-enrollment only by special petition to the dean with the approval of the student's graduate program committee. Students may register during the summer session if faculty supervision is available, but are not required to do so.

Any course dropped after the **12th day** of the student's enrollment in the course requires the instructor's signature on the drop form. A grade of Q will be assigned for the final grade in courses dropped after the 12th class day (4th class day in summer).

Beginning with the 11th week of classes, or its equivalent, (the date will be specified each term) the student will be permitted to drop or withdraw from classes but a performance indicator will be assigned as part of the grade. These are:

QP= Dropped passing	WP = Withdrawal passing
QF= Dropped failing	WF = Withdrawal failing

The QP and WP do not enter into GPA calculation. The QF and WF will enter into GPA calculations as failing grades. Not the grade, but the effect of the grade can be removed by repeating the course. This applies to F, QF, WF, or any other low grade. The QF or WF remains permanently on the record, however. Under this policy, only the most recent grade will count on the GPA, not the highest of two or more grades in the same course.

In self-paced instruction courses in which students make satisfactory progress, but do not complete all requirements by the end of the semester in which first registered, the instructor may report a Z grade. Students desiring to complete the course must reregister in the subsequent semester when the course is next offered and complete all remaining requirements for the course during the semester. The grade of F may be awarded for unsatisfactory progress in self-paced courses.

While the Z grade carries no penalty, a high number may reflect poor schedule management. Z grades remain part of the permanent student record. Students should avoid carrying more hours than they can expect to complete in a semester. Overloads (more than 18 hours full time and 9 hours part time) will be permitted only in exceptional cases. Loads of more than 15 full-time and 6 part-time hours usually are not advisable.

The grades of S and U are final grades used for student teaching, thesis research, master's projects, some seminars, courses for demonstration of proficiency in writing and conversation, certain nondegree courses, and in a limited number of other courses which, upon petition, may be approved by the dean of the college; otherwise, normal grading procedures apply.

Grade reports. The student grade report is a cumulative record of all course-work taken at UT Permian Basin. It is a duplicate copy of the official transcript. Grade reports are mailed, or grades may be picked up at the registrar's office approximately two weeks after the close of the fall and spring semesters and the second summer term. All first summer-term grades will be held for dispatch at the end of the second summer term.

Repeat policy. All courses taken at UT Permian Basin, whether passed or failed, remain a permanent part of the student's record. If a course is repeated, the last grade earned (not necessarily the highest grade) will be the grade used to compute the cumulative grade point average (GPA) for all purposes. In determining that the student has completed the minimum 120 semester credits (123 semester credits for BBA candidates) for graduation purposes, the course repeated to earn a change in grade may count only once.

Academic progress, probation and dismissal. Students with 12 or more hours of credit and a cumulative GPA of less than 2.0 and/or the equivalent of one semester of full-time enrollment with a resulting semester GPA below 2.0 (C), will be placed on academic probation. The dean's office will notify the registrar and the student of any probationary action (including the lifting of probation). In cases of extenuating circumstances, students may appeal their probation to the dean of the college.

Students on academic probation will have 2 semesters or 12 credits (whichever occurs last) to raise their GPA to 2.0. A full summer session will be treated as a regular semester. Failure to raise the GPA to 2.0 after 2 semesters on academic probation normally will result in dismissal from the university. In cases of extenuating circumstances, students may appeal their dismissal to the dean of the college.

The first academic dismissal is for one semester not including summer sessions. A second academic dismissal is for 12 months. A third academic dismissal is for 36 months. To be readmitted after a dismissal, students must address a letter to the dean of their college presenting evidence that they are likely to succeed in an academic program. Readmission must be approved by the dean of the college. Students readmitted after dismissal will be on academic probation for the initial semester.

The grades S, Z, I, Q, W, QP, WP and NG will not be included in the determination of probation (GPA), but students should avoid accumulating grades of I, Z, Q or W, as they become a permanent part of the grade report.

Student academic appeal procedures. The intent of the faculty and administration at UT Permian Basin is to ensure that every student receives fair treatment in the academic process. Experience has shown, however, that in spite of all attempts to ensure fair treatment, students may on occasion suffer unfair treatment through error.

When students believe they have received an incorrect grade or have received unfair treatment by a faculty member, they should first discuss the matter with the faculty member concerned. If the problem does not involve a single faculty member, students should first discuss it with the chairman of the subject area. If students do not believe that they have received satisfaction after discussion with a faculty member or the chairman and wish to pursue the matter further, they should direct a letter to the dean of the college. The letter should state the problem, why they conclude they have not received fair treatment, any evidence which would substantiate this claim and other related facts.

The dean of the college may reach a judgment without further consultation, or a special committee may be appointed by the dean to investigate the issue. This committee will be of such size and constituency as the nature of the problem suggests. The dean will inform students in writing of any decision. If students are not satisfied with decisions given by the dean, they may then appeal to the president's office, following

the same procedure as in the appeal to the dean. After an analysis of the problem and the evidence related thereto, which may or may not involve the appointment of an investigating committee, the students and the dean of the college involved will be informed of any decision. The president's office shall constitute the final step in the student academic appeal process.

DEGREE REQUIREMENTS

Minimum university requirements for the baccalaureate degree are specified by the college and range from a minimum of 120 to 140 semester credits. At least 54 semester credits (57 in the College of Business Administration) must be at the junior and senior level to fulfill the requirements of the degree program. The student must have a C average (GPA 2.00) or better and no F grades in any credits required for the degree. Any D grades in any credits presented for the degree must be offset with an appropriate number of B or A credits. There may be differences between the acceptance of credit for admission purposes and the applicability of credit for degree purposes. All students in degree programs must consult with their adviser or dean of the College to determine the course applicability toward their degree.

A student must make a grade of 'C' or better in all courses in the major. Courses in which a 'D' was made must be repeated and at least a 'C' obtained.

A minimum of 30 credits must be completed at UT Permian Basin of which at least 6 of the minimum must be advanced credits in the student's major field. Of the last 30 credits earned toward a degree, at least 24 must be completed at UT Permian Basin. See "Credit for courses taken elsewhere".

Students may obtain a degree according to the requirements of the catalog in force at the time of his/her admission to the university, or of a later catalog in force during any period of his/her enrollment, within a six year limit. If a student drops out for one or more semesters and returns to UT Permian Basin as a former student, he/she may choose to use the catalog in force at the time of re-entering the university, thereby beginning a new six year time limit. This regulation applies to degree requirements, but not to operating regulations, procedures, and fees.

In absentia registration. A candidate for a degree who has completed all the courses and other requirements for graduation and who must register in the University for the purpose of having a degree conferred, must register *in absentia*. This is the only purpose for which a student may register *in absentia*. After registration for credit during a semester or summer session, a student wishing to change to *in absentia* status must have the request approved by the student's academic dean and processed through the add/drop procedure. All fees, less the *in absentia* fee will be refunded if the change is made during the first 12 class days. After the 12th class day, no refunds will be made and no additional charge will be assessed for the *in absentia* fee. The University ID card and original paid fee receipt must be returned before a refund can be issued. No refund is made for the cancellation of an *in absentia* registration.

If the student requests a change from *in absentia* status to regular registration for courses, the *in absentia* fees paid will apply toward the tuition due. If an *in absentia* student withdraws from the university, the fees paid will be refunded on the same percentage basis prorated over the same first weeks of the semester as regular tuition and fees.

Government and history. Texas law requires that all students who receive a bachelor's degree from UT Permian Basin must earn 6 semester credits in American government, including federal and Texas constitutions, and 6 semester credits of American history (3 semester credits in the history of Texas may be substituted for 3 of the American history credits). These normally should be completed at the lower division; however, these requirements may be completed at UT Permian Basin. Transfer stu-

dents from non-Texas colleges and universities who seek a degree from the University of Texas of the Permian Basin must complete one state government course including an emphasis on that of Texas.

Graduate record examination. All candidates for a bachelor's degree anticipating graduate study should complete the Graduate Record Examination. Student graduating with the BBA from The College of Business Administration should complete the GMAT (Graduate Management Admissions Test). The GMAT is required for admission to a graduate program in management, although the GRE will be accepted in special cases.

Writing and conversation. Every student pursuing a bachelor's degree should be able to write the English language and to hold a conversation with another person in English. These two competencies are crucial to success in almost every profession and to a satisfying personal life. COMM 301 and 306 are designed for students needing or desiring improvement in written and oral skills.

Lifetime sports. Every student is encouraged to enroll in lifetime sports. A maximum of 2 credits may be applied as electives toward requirements for a bachelor's degree.

GLOSSARY

For purposes of computer processing, each discipline or area of study is assigned a letter abbreviation for identification consisting of either three or four letters, which is to be used in registration and elsewhere when the data is to be processed through the computer. The abbreviations are:

Accounting	ACCT
Anthropology	ANTH
Art	ART
Behavioral Science	BVSC
Chemistry	CHEM
Communications	COMM
Computer Science	CPSC
Criminal Justice	CJUS
Decision Science	DSCI
Earth Sciences	ERSC
Economics	ECON
Education	EDUC
Engineering	ENGR
Finance	FIN
Geology	GEOL
History	HIST
Life Science	LFSC
Literature	LIT
Management	MNGT
Marketing	MRKT
Mass Communications	MCOM
Mathematics	MATH
Music	MUS
Natural Science	NTSC
Philosophy	PHIL
Physical Education	PHED
Physics	PHYS

Summary of University Requirements for Bachelor's Degree.

1. Complete the total number of semester credit hours established for the chosen degree program. The minimum number is 120 semester credits. (123 credits in the College of Management).

2. All transfer credits, usually completed at the freshman and sophomore level, must have been earned at a regionally accredited college or university.

3. Complete 6 credits in American government (including Texas constitution) and 6 credits in American history.

4. Demonstrate proficiency in writing the English language in their coursework.

5. Demonstrate proficiency in conversation in English in their coursework.

6. Maintain at least a C average in all courses applicable toward degree.

7. Obtain a grade of C or better in all courses in the major field of study.

8. Be advised that those students intending to apply for a graduate program, may need to take the Graduate Record Examination or the Graduate Management Admission Text.

9. Complete at least 24 credits in major (more in most curricula), at least 18 of which must be upper level; at least 6 credits in major must be taken at UT Permian Basin.

10. Complete a minor of at least 18 credits, 12 of which must be upper level, in one field or closely related fields (distributed minor). Candidates for elementary and all-level teaching certificates, the B.S. in Control Engineering, the B.B.A. in Management and in Accounting, and a second bachelor's degree are not required to complete a minor.

11. Complete and file an application for graduation during registration of the semester graduation is planned. Pay fee(s). Initiate a degree check with faculty adviser or in the dean's office. Students must be officially enrolled at UT Permian Basin the semester they graduate.

12. To help ensure the quality of the degree which the disabled student receives, the university shall neither waive nor substitute degree requirements unless, after all feasible methods have been explored, it is clear that no means of the student fulfilling the requirements are available.

13. The student must be registered in the University during the semester or term he/she expects to earn the degree. (see *in absentia registration*)

GRADUATION WITH HONORS

Recipients of the Baccalaurate degree are eligible for Graduation with Honors if they qualify under the following criteria:

1. They are in the top ten percent of the graduating class in their college (summer, fall and spring) for that academic year.

2. They have completed the minimum number of semester credit hours at UT Permian Basin as specified in the catalog under which they plan to graduate.

3. They have attained a cumulative grade point average of at least 3.50 for all courses completed at UT Permian Basin.

TEACHING EMPHASIZED

Effective teaching is emphasized at UT Permian Basin, which combines the best of traditional or conventional teaching methods with recent educational innovations and technologies.

Certain innovative teaching approaches enable students to spend more time with instructors in conversational settings than is possible in many other universities.

Self-paced instruction (SPI). Self-paced instruction is designed to permit students to complete courses as rapidly as they are capable, or to take more time if needed to master them. SPI usually requires no formal class meetings, although in many courses the instructor meets once a week in a group with those students desiring to attend. Most student-instructor contact in SPI is on an individual basis. Students enrolled in an SPI course are expected to interact with the professor either individually or in a group situation, at least once each week or as often as a given course requires.

Self-paced courses are offered in many fields or degree programs. Students in SPI courses are provided with a course outline including instructions for study, activities to complete, sources of information and other necessary instructions. Students may visit the instructor as often as needed to discuss and clarify questions. When students believe they have learned a unit (sometimes called a module or minicourse), they take a test. If students pass at the prescribed level, they proceed to the next unit or module. If students do not pass (and the course requirements allow it), that unit is restudied and they take a second test, and soon, until the unit is passed. Each unit or module is passed before going on to the next, so that when all units and tests are successfully completed, the students should have *mastered* the course material.

Since students may not need to attend classes in SPI courses, they may begin such courses at any time *up to four weeks prior to the end of the semester.* Established deadlines for adding or dropping courses refer to courses taught only on a conventional basis and not to courses taught on an SPI basis. SPI courses may not be dropped during final examination week. Although students have the option of continuing an SPI course into a succeeding semester, they are encouraged to complete it during the same semester for which they register. Students not completing the course may receive marks of Z (satisfactory work in progress) and must reregister during a subsequent semester and pay tuition for the course if completion is desired.

Contract study. Several types of independent study are available at UT Permian Basin. These are referred to as contract study since, before students can register for the course, plans for the study (showing the objectives, procedures to be used, means of evaluation, and other plans) must be written and approved by the appropriate instructor, and a copy filed with the dean of the college.

Contract study includes what other institutions may call independent study, readings, special problems, library research and certain other learning activities. Contract studies are not intended to substitute, by content, for courses listed in the catalog. Enrollment in these courses must be completed only during the registration period or only through the 10th class day.

Experiential learning. Unless they have had appropriate work experience, candidates for the bachelor's degree are encouraged to complete a planned program of experiential learning. Experiential learning, referred to in the College of Science and Engineering as authentic involvement and in the College of Arts and Education as "practicum," is also known elsewhere as internship, externship, field experience, cooperative education or other names. Student teaching is another example. Experiential learning normally occurs during the senior year, usually in the final semester, and provides students an opportunity to apply their academic learning in a work situation under the supervision of a faculty member and the direction of a preceptor in the work situation. Experiential learning requires a preplanned and written program of the experiences for student and a procedure for evaluating these experiences. Typically, students enroll in experiential learning for 2-3 credits, requiring 1-2 half-days of work per week for one semester or the equivalent.

INTERDISCIPLINARY STUDIES

Courses that do not form a part of any discipline but may be elected by students in any major include:

COMM 301 **Communication Workshop** 1
Adapted to individual needs and provides an opportunity to become fluent both orally and in writing in the English language. Credit not applicable to degree requirements. (Compulsory attendance may be expected of international students unless they demonstrate a satisfactory level of proficiency through examination.)

COMM 306 **Processes in Communication** 3
English language structure and how to manage controlled and effective discourse using the student's field of study as vehicles of expression.

COMM 342 **Scientific Writing** 3
Principles and techniques of library research data reporting and scientific report writing. Preparation of papers in students' scientific fields.

UNIV 362 **Theories of Creativity** 3
Interdisciplinary course examining the creative processes and approaches; their functions in society and expression in the arts.

Environmental sciences minor. The environmental sciences minor is an interdisciplinary program for non-science majors who desire to know more about their environment.

A. A minimum of 18 semester credit hours, 12 of which must be upper-level.

B. Contemporary Natural Science I, II and/or III (NTSC 301, 302, 303), 6-9 semester credit hours (2 or 3 courses).

C. At least 6 semester credit hours of environmental sciences. The minor will be arranged in consultation with the dean of the College of Science and Engineering or his designee, from whom more information may be obtained.

HEALTH SCIENCES

Professional schools in health sciences seek well-trained, versatile students who, in addition to displaying leadership, social maturity and human-relations skills, possess the physical, emotional and intellectual stamina required for a successful career in medicine, dentistry, osteopathy and others. Toward that end, undergraduate students should concentrate their studies in a primary area of interest, realizing that usually the professional school admissions committee is more interested in the quality and scope of the work than in the major field chosen.

Absolute requirements for professional schools are deliberately kept minimal, permitting students wider flexibility in choosing academic programs that best fit their individual interests. These requirements normally include at least one year of English, two years of chemistry and one year each of physics, mathematics and biology.

Concepts and vocabulary common to the sciences that are basic to the study of medicine, are essential. In addition, a thorough understanding of the fundamentals of chemistry, physics, biology and mathematics is mandatory as many advances in medicine are based on developments from these disciplines.

Specific requirements may vary slightly among professional schools, making it prudent for students to identify early in their academic career the specific requirements established by the professional schools of their choice. Because of the extremely competitive nature of professional school admissions, students are strongly advised to pursue an undergraduate degree program that will permit several career alternatives.

Information on the requirements of specific schools, factors involved in the school admission process, finances, the admissions examination and other matters of interest to preprofessional students may be obtained from the Health Services Advisory Committee of the university. Interested students should contact the dean of the College of Science and Engineering.

CLASS HOURS AND EXTENSION CLASSES

The class day begins at 8 a.m. and ends at 9:45 p.m. Unlike some universities in which courses offered after 5 p.m. are provided through an extension division, UT Permian Basin offers courses in the late afternoon and evening as part of the regular offerings. Students enrolling in these courses register in the same manner as students who are taking only daytime courses. Full-time students may have both day and evening classes.

FINANCIAL AID & CAREER SERVICE

FINANCIAL AID

To maximize the family's efforts to help students with college expenses, UT Permian Basin has available a variety of scholarships, grants-in-aid, loans, federal work/study programs and other forms of institutional, private, state and federal assistance to students.

Assistance to students is awarded on the basis of merit and/or financial need. Merit requirements vary greatly due to the wide range of student assistance programs. Merit may include academic achievement or potential, competitive exam results, place of residence, ethnic background, affiliation with certain patriotic, civic or fraternal organizations. Students also may qualify for a scholarship by entering into an agreement to accept employment in a field related to the scholarship or grant. Financial need is established through the American College Testing Programs financial analysis service and/or as specified by legislation in the case of public funds or by the donor in the case of private funds.

Students qualifying for financial assistance will be awarded an "assistance package" composed of one or a combination of loan, grant, work and/or scholarship aid. Students receive one-half of the total amount awarded at the beginning of each semester or summer term.

Once students receive financial aid through the university, they are not eligible to receive additional loans, grants or scholarships from other sources without consulting with the financial aid office.

Students are eligible to renew their awards each year provided application is made, current need is re-established and funds are available. Completion of required forms is necessary with each initial or renewal year of application.

The following amounts are reasonable expenses students should expect during the 9-month school year:

	Resident	Commuter	Self-Supporting	Married
Texas resident	$5,440	$3,150	$5,440	$7,285
Non resident	$_____	$_____	$6,664	$8,509

Of these amounts, and as a standard, the American College Testing Program expects UT Permian Basin students to contribute at least the following amounts from savings or other income:

Junior $400
Senior $500
Graduates $600

Student applicants accept responsibility for adhering to all university requirements regarding student aid upon signing their application for and acceptance of aid.

Satisfactory Academic Progress Requirements

The Educational Amendments of 1976 required that institutions limit federal aid to those students who, according to the institutional standards, are making satisfactory academic progress.

UT Permian Basin students placed on academic probation in accordance with the Academic Progress, Probation and Dismissal policy stated elsewhere in this catalog,

will not be eligible to receive financial assistance. Students denied financial assistance under these circumstances will become eligible for assistance when the probationary status is lifted.

Each financial aid applicant is provided with a detailed policy during the application process.

STUDENT LOAN PROGRAMS

Guaranteed Student Loan Program. Undergraduate applicants may borrow up to $2,500 each academic year. However, aggregate amounts must not exceed $12,500 for total undergraduate schooling. Graduate and professional students may borrow up to $5,000 per year. Aggregate amounts cannot exceed $25,000 for graduate and professional students including loans made to borrowers before (s)he became a graduate or professional student. In most cases, the interest is paid by the federal government at a maximum rate of nine per cent per annum, with the student assuming the payment of interest and principal upon graduation when the student ceases to attend the university. The loan *must* be repaid. Payments begin six months after the borrower graduates or leaves school. Borrowers may be allowed up to 10 years to repay the loan. Applicants should begin looking for a lender as soon as they are accepted for admission by UT Permian Basin.

Hinson-Hazelwood Student Loan Program. To be eligible for assistance under this program, a student must be a legal Texas resident, be in financial need and be accepted for enrollment at UT Permian Basin.

Short-term loans. The accounting office can make limited loans to students for tuition and fees. In general, the maximum amount of such loans will not exceed $200 and must be repaid within the first two months of the semester. If there are extenuating circumstances, extensions may be granted to the end of the semester in which they are awarded. No interest or other fees are charged against the principal except in cases of late payment. Applications must be negotiated at least one week prior to registration.

Other loan funds. The office of financial aid has information on several private loans funds for which UT Permian Basin students may qualify if they do not qualify for the state or federal loans described.

UNIVERSITY GRANT PROGRAMS

Pell Grants. This is a federally supported program. Applicants must be pre-baccalaureate students, U.S. citizens and be enrolled for a minimum of 6 credits. Grants may range from $200 up to $1,800 depending upon available funding. Pell Grant applicants must submit a separate application in addition to the UT Permian Basin financial aid application. Applicants should expect notification of eligibility from the Pell Grants office within 5 weeks.

Supplemental Educational Opportunity Grant. This is a federally supported program. Applicants are eligible for SEOG awards which range from $200 to $2,000 a year and $5,000 for a five-year period of study. Awards are available to undergraduate students attending UT Permian Basin at least on a half-time basis.

Texas Public Education State Student Incentive Grant Program. This is a federal/state supported program. The TPEG-SSIG applicant must be a pre-baccalaureate student, U.S. citizen, a national or permanent resident and otherwise eligible to pay Texas resident tuition, be enrolled for a minimum of 6 credits, and

exhibit need of not less than $200 for the academic year. Applicants must file the Family Financial Statement with the American College Testing Program for determining financial need. No grant in this program will exceed $2,000 on behalf of any student during one fiscal year.

Texas Public Educational Grant. Grant assistance under this program is offered to both graduate and undergraduate students who enroll full time and establish a need through ACT (the American College Testing Program for determining financial need).

SCHOLARSHIPS

Institutional Scholarships. In addition to loans and grants, there are available scholarship funds under the auspices of the institution or from private sources. In most cases, scholarships are based on academic merit and financial need, with a number of new scholarships available based solely on academic merit.

Students desiring to take advantage of these opportunities should contact the financial aid office for further information. In general, the application and award procedure for scholarship is as follows:

a. Complete an application for general scholarship aid obtained from the financial aid office. This requirement must be met each year students desire to receive scholarship aid.

b. List the scholarship or scholarships in which the individual may be interested. The office of financial aid can provide a list and details of all scholarship programs upon request.

c. Along with the completed application, students should submit at least two letters of recommendation. In those cases where the scholarship is based upon financial need, students must submit an ACT Family Financial Statement or other financial data as per guidelines of the specific scholarship. The ACT forms are available from the financial aid office.

d. Upon receipt of the above information, the financial aid office will forward the information to the university's scholarship committee for review. The committee will notify the office of financial aid as to scholarship recipients.

e. The office of financial aid then notifies each student of the specific scholarship and the amount of money he/she will receive. Applicants for scholarships not receiving this type of aid will be notified accordingly.

Scholarships usually are awarded on a 9-month basis for a school year or per specification of a particular scholarship. Half of the award will be made each semester during the academic year. Check and deferment authorizations may be obtained from the financial aid office prior to the payment of fees during the registration process.

Students who receive scholarships that are nationally admininstered (i.e., National Merit, National Scholarship for Black Students) must initiate and maintain direct contact with the administering agency because the financial aid office normally is not involved.

Available Scholarships

Accounting Faculty Award – Based on academic achievement. Recipient selected by Faculty of Accountancy. $200/year. Awarded Annually.

Alumni Association Scholarship – A one-time award made to an entering junior majoring in the discipline that corresponds with that of the outstanding alumnus of the year. $250/semester. Awarded Annually.

Carroll DeHay Memorial Scholarship – Based on academic achievement. Recipient selected by the Faculty of Accountancy. Amount varies. Awarded annually.

Garland Jordan Accounting Scholarship – Based on academic achievement. Recipient selected by Faculty of Accountancy. $2000/year. Awarded annually.

American Petroleum Institute – Full-time petroleum related majors who are Permian Basin residents with 3.0 minimum G.P.A. Amount and number varies.

Jesse H. and Mary Gibbs Jones Undergraduate – Texas and New Mexico Junior Colleges transfers who live outside a 50-mile radius of Odessa. 3.0 minimum G.P.A. preferred, others will be considered. $500/year. Approximately 25 per year.

Jesse H. and Mary Gibbs Jones Graduate Assistantship – Applicants must be recommended by a UT Permian Basin faculty member who will supervise the graduate program of study. 3.0 minimum G.P.A. accepted. $600/year. Approximately eight each year.

W.D. Noel Class A – Available to children of El Paso Products Company employees. $525/year. Number awarded varies.

W.D. Noel Class B – Available to Ector County residents. $300/year. Number varies.

Nojem Libson – Available to any minority male or female student with preference given to Ector High and Odessa College graduates. $250-300/semester. Approximately four each year.

150 + – Available to any Junior College graduate whose permanent home address is 150 miles or more from Odessa. $240/year. Approximately 10 each year.

AAUW-Midland Chapter – For any student enrolled in a minimum courseload of 6 hours. $300-400/semester. One each year.

AAUW Odessa Chapter – For an Ector County resident who has a financial need. Must be working toward a degree. $100/semester. One each year.

MASC – For Mexican-American students from the Permian Basin area. $150/semester. Approximately three each year.

A.J. SCHILL – For students concentrating in special education who have a financial need. $250/semester. One each year.

Literature – For students who show promise in the field of literature. $200/year. One or two each year.

UTPB Merit Award – Applicants must rank in the top 20% of graduating class at a participating community college. Highest G.P.A. will be considered in lieu of class rank when applicable. $250/semester. Approximately 15-25 per year.

Permian Honor – For honor students transferring from the participating Junior Colleges. Awardees should maintain a 3.00 minimum G.P.A. $150/semester. Approximately 20 per year.

Dick Clark – Available to any deserving student in the College of Management. $250-500/year. One or two per year.

Potts & Sibley Foundation – Applicants must qualify as a member of the Midland-Odessa Symphony Orchestra; be a string major. $500/year. Number varies.

State Scholarship for Ethnic Recruitment – For Texas residents who are undergraduate minority students with a minimum GPA of of 2.75 at the last school

attended. Available only to transfer students. Need based, one-time awards. $500-1000/ year. Awarded annually.

Phillips Petroleum–Available to any full-time student pursuing careers in engineering with petroleum-industry orientations, earth science in the professional and technical geology options; must include course in geophysics. Minimum acceptable G.P.A. of 3.0. $200-500/year. Four to 10 each year.

GAMA–Supplemental awards for UTPB Merit, Permian Honor and Presidential awardees. Amount and number varies.

William A. King Art Scholarship–Awarded to an art student who submits the best finished piece of art selected by a designated committee. $100/year. One each year.

DPMA Scholarship–Available to full-time Texas residents majoring in Computer Science who are maintaining a minimum GPA of 2.50. $250/semester. Awarded annually.

State Society of CPA's Local Chapter–Based on academic achievement. Recipient is selected by the Faculty of Accountancy. $1200/year.

American Bank and Trust–For management students interested in banking and willing to work in the bank 20 hours per week. $500/year. Up to two per year.

Uptown Business and Professional Women's Club–Available to a Midland County resident with financial need. Recipient must maintain a GPA of 3.0 and enroll in a minimum of 6 semester hours. Amount varies. Awarded annually.

Permian Basin Claims Association–For worthy students in the College of Management. Amount varies. One per year.

Mrs. Paul Moss Journalism–For students with outstanding abilities in mass communication. Amount and number varies.

Presidential Scholarship–Awarded to junior college transfers in the top one per cent of their graduating class. $1,000 each year for two years.
Several one-time awards become available throughout the year.

OTHER FINANCIAL AID

College work/study program. Undergraduate and graduate students with exhibited financial need are eligible for assistance under this program. Both full-time and part-time students may participate. Under this program, students may earn up to one-half their educational expenses while attending UT Permian Basin. The average award for an academic year is about $1200. Usually jobs are available with public and private nonprofit organizations. The maximum number of hours a student may work normally does not exceed an average of 19 per week. During vacation periods and summer periods, students may work up to 40 hours per week with prior approval of the appropriate dean's office or budget head under which they are assigned. Every effort is made to place students in jobs under this program according to their skills and qualifications. The pay rate is the minimum wage required by law but may vary upward with the type of job and qualifications.

Fee waivers. Students who meet the state requirements for fee waivers under the Hazelwood Act for veterans, blind and deaf students, children of war prisoners, and

children of disabled firemen and peace officers should contact the office of financial aid for detailed requirements and consideration under this program.

Institutional part-time work. There are positions available through the unversity for students whose financial resources are such that they do not qualify for the college work/study program. For information regarding part-time employment with the university, students should contact the personnel office.

Off-campus employment. The career services office operates a centralized referral agency for students desiring to obtain employment off campus. This office maintains a listing of available jobs and employers as a service to both the student and the employer.

Veterans Education Benefits. The university participates in all aspects of the Veterans Administration programs available to returning veterans enrolling as students. A veterans adviser under the auspices of the Veterans Administration Program is available for individual consultation and assistance on the UT Permian Basin campus. The adviser is located in the registrar's office.

Texas Rehabilitation Assistance for Students. The Texas Rehabilitation Commission (TRC) offers assistance for tuition and nonrefundable fees to students having certain disabling conditions provided their vocational objectives have been approved by a TRC counselor. Examples of such conditions are orthopedic deformities, emotional disorders, diabetes, epilepsy, heart conditions, and the like. Other services are also available to assist handicapped students in becoming employable. Application for such service should be made to:

Texas Rehabilitation Commission
701 E. 7th
Odessa, Texas 79761

The University of Texas of the Permian Basin does not discriminate on the basis of handicap in the recruitment and admission of students, the recruitment and employment of faculty and staff, and the operation of any of its programs and activities, as specified by federal laws and regulations. The designated coordinator for university compliance with Section 504 of the Rehabilitation Act of 1973 is the Director of Personnel.

However, to help ensure the quality of the degree which the disabled student receives, the university shall neither waive nor substitute degree requirements, unless, after all feasible methods have been explored, it is clear that no means of the student fulfilling the requirements are available.

CAREER SERVICES

The UT Permian Basin career services office provides a liaison between students seeking positions and their respective career fields. Students contacting the office for assistance will develop a file containing details of their education, background, work experience, faculty recommendations and other pertinent information. These credentials are provided to prospective employers but only upon the student's request.

Career services are available to seniors, graduate students and alumni.

The office has information available on local, regional and national career opportunities and in many cases will have recruiters on campus for personal interviews.

Students desiring to utilize this service should register with the career services office during the fall semester of the year they expect to graduate.

STUDENT LIFE

Student services is concerned with programs and activities which complement learning experience and which provide diverse opportunities for students to grow academically, professionally and personally. To this end, the student services office seeks student ideas and help in planning and staging campus events.

Student government. Participation in student government and related student committees are ways through which students can assist in planning and promoting their choice of activities. The Student Senate is recognized by the student services office, the administration and the Board of Regents of the UT System as the elected governing body for students at UT Permian Basin. The senate recommends allocations of student services fees, helps to develop the student activities calendar and programs, and makes recommendations to the administration on policies that affect the student body.

Clubs and organizations. Individual student clubs and organizations are encouraged to develop their own programs and activities and are assisted financially by the student services office, which earmarks a percentage of the student activities fees to each recognized organization. This allows students to pursue specialized interests and have the opportunity to interact with classmates and professors in an atmosphere different from the classroom.

Publication. A student publication, 'The Sandstorm,' is a literary magazine-yearbook under the auspices of the student services office.

Activities. A current student ID is the passkey to campus events, as well as a variety of off-campus activities.

Many cultural opportunities and other activities are available to UT Permian Basin students. Art exhibits, dramatic productions, lectures, concerts, intramural games, and dances highlight the types of events planned each semester.

In addition, the ID entitles students to use the gymnasium-pool complex with its basketball, tennis, volleyball, badminton and handball courts, a fully equipped exercise room with Universal Gym, dance bars, floor mats and treadmill. Outdoor facilities include more tennis courts, handball courts and Olympic size swimming pool. Gymnasium memberships also are available for spouse and children at a minimal fee.

Other ID benefits include check cashing on campus, library privileges and reduced admission at several off-campus spots.

Intramural sports. A variety of intramural sports programs are available at UT Permian Basin. All organizations or individuals who wish to participate on either an individual or team basis may obtain information regarding the various sports by contacting the coordinator of campus recreation in the gymnasium. Many of these programs are designed to supplement the lifetime sports program of the university.

Conduct. The university considers all students to be adult; therefore, their behavior is subject to all expectations of The University of Texas Regents and UT Permian Basin rules and regulations as well as local, state and federal laws. The university reserves the right to restrict the enrollment of any student for disciplinary or academic reasons. Further information regarding the university's rules of conduct and

due process procedures is provided in materials published by the student services office.

Health insurance. Although personal health is the responsibility of each individual student, all students entering the university are encouraged to carry health and accident insurance. The university makes available at minimal cost a voluntary health and accident insurance program for students. Further information may be obtained by contacting the student services office. All international students must have health insurance, and are encouraged to seek counsel as to what constitutes adequate insurance to meet their individual needs.

Because of excellent community medical resources, the university does not provide on-campus medical services.

Housing. The university has a number of three-bedroom mobile home units available for single or married student rental. Efficiency units are also available for single or double occupancy. Each unit is fully furnished and has central heating and air conditioning. Rental rates are reasonable and vary according to accommodations desired. The units are located on south campus and are within walking distance of the university. While generally available on a first-come, first-serve basis, preference is given to students outside a normal commuting distance. Additional information and housing applications are available through the student housing office.

To assists students in locating off-campus housing, the university keeps a listing of householders in the community who have accommodations available for rent. Individuals who desire further information should contact the student housing office.

Students should be aware that the university does not inspect or recommend any off-campus rental facilities nor does it in any way become a party to a contractual arrangement between a householder and a student.

Privacy rights. The university complies with the privacy rights of students as set forth in Section 438 of the General Education Provisions Act (Title IV of Pub. L. 90-247, as amended) as added to by Part 99 to Title 45 of the Code of Federal Regulations. Students are informed annually of their privacy rights the first time they register for classes at the university during the normal academic year.

AUXILIARY SERVICES

Bookstore. Textbooks and academic supplies may be purchased on campus at the university bookstore. Costs of such items will depend on the courses selected.

The university bookstore will purchase from students used textbooks which are in good condition provided that such textbooks continue in use by the various departments. Buy back periods are only during final week for fall and spring semesters, and the last day of finals for summer sessions. Cards, gifts and sundry items also are available for purchase.

Food service. The university operates a small snack bar food service off the main lounge on the ground floor of the classroom building. Normally, the service is available whenever classes are in session during the day and evening. The service is not available on weekends nor during vacation periods.

Psychological services. Psychological services are available to students free of charge through the Center for Behavioral Analysis. Students who are interested in acquiring better study skills may use the services of the center by calling 915-367-2145.

ARTS AND EDUCATION

The College of Arts and Education offers degree programs leading to the Bachelor of Arts degree in anthropology, art, criminal justice, history, humanities, literature, mass communications (journalism and radio-television), music, physical education, political science, psychology, sociology, speech and Spanish. Teacher education programs are offered in most of the arts and sciences teaching fields at the undergraduate level but not as separate majors. Undergraduate students preparing to qualify for teacher certification at any level are required to complete an academic major.

The Master of Arts degree is offered in behavioral science, history, literature, physical education and education with options in administration, counseling, early childhood education, elementary education, reading, secondary education, special education and supervision.

The programs leading to the Bachelor of Arts degree are sufficiently flexible to permit students to plan concentrations in keeping with their educational needs, interests and career plans. Within the context of each major, the student may plan a program that will provide a broad, liberal education or may prepare for immediate entry into a career or graduate study.

DEGREE REQUIREMENTS

In addition to general university requirements for the Bachelor of Arts degree listed in the policy section of this catalog, students must complete the college degree requirements for their respective disciplines.

The Bachelor of Arts degree in the College of Arts and Education requires a minimum of 120 semester credits; however some programs may require more than 120. Generally, a minimum of 30 semester credits of coursework is required in each major, of which at least 18 credits must be completed at the upper level. No single course may be counted in more than one major.

Some degree programs may require more than 30 credits for a major. A minor consisting of a minimum of 18 semester credits is required except as noted below. For the BA degree in humanities, a minor is not required. Students preparing for elementary teaching certification are not required to complete a minor. While only 18 credits may be required for a minor, students seeking secondary teaching certification must complete a minimum of 24 credits in each of two teaching fields, one of which will serve as the minor.

Lower Division or Community College Preparation

The Core Curricula for Public Junior Colleges in Texas established by the Coordinating Board, Texas College and University System, will be accepted in its entirety and applied toward appropriate degrees; however it is not necessary that the student complete this exact list of courses.

For example, except for majors in Spanish, the study of a foreign language is not required for the Bachelor of Arts degree, although it is recommended for most majors. Because of special interest or career plans, some students would be well advised to complete four semesters of one foreign language prior to enrolling at UT Permian Basin.

Following is a list of required and recommended courses for students who plan to transfer to the university and to pursue the Bachelor of Arts degree in the College of Arts and Education.

	(Semester Credits)	
Subject	**Required**	**Recommended**
English Composition	6	6
Literature[2]	6	6
Government, American[1,2]	6	6
History, American[1,2]	6	6
Mathematics	3	6
Biological Science[2]	3	6
Physical Science[2]	3	6
Fine Arts	-	3
Foreign Language	-	6
Psychology	-	3
Sociology or Anthropology	-	3
Speech	-	3
Philosophy	-	3
Economics	-	3

[1]Required by state statute
[2]May be taken at either the lower level or at UT Permian Basin

If some lower-level requirements have not been completed upon transfer to UT Permian Basin, then the student may complete those courses at an area community college. Occasionally, upper-level courses may be substituted by electing them at UT Permian Basin.

A course in philosophy may be substituted for one literature course. Students studying art, or music and planning teacher preparation options may, in some cases, make course substitutions for the requirements in mathematics and natural sciences.

PROGRAMS OF STUDY

Anthropology

The Bachelor of Arts degree program in anthropology is intended to provide a broad preparation in social and cultural anthropology. A major in anthropology serves students with at least three orientations. The first orientation includes students who are pursuing liberal arts education but desiring more than an elementary understanding of anthropology. The second includes students wanting to enter careers in primary or secondary education, law, government service, business, management, law enforcement, medicine, social services or other fields in which an understanding of social behavior and organization is advantageous. The third includes students planning to pursue graduate studies in preparation for becoming professionals in any of the subfields of anthropology. Most students majoring in anthropology minor in sociology, psychology, education, life science or related disciplines.

A major in anthropology consists of 30 semester credits, 18 of which must be upper level. Students anticipating graduate studies in anthropology usually take more than the required minimum number of semester credits. The major of anthropology consists of the following:

One course from each of the following groups:
Social and Cultural Anthropology: ANTH 301, 311
Physical Anthropology: ANTH 315
Archaeology: ANTH 401, 416, 417, 418

Two courses from each of the following groups:
Area Studies: ANTH 361, 385, 386, 447, 485
Topical Studies: ANTH 333, 427, 429, 437, 449, 457

The minor in anthropology consists of 18 semester credits, of which 12 must be upper level, with a minimum of one course from each group above.

SAMPLE DEGREE PLAN ANTHROPOLOGY*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ANTH 301, or 311	3	ANTH 333	3	ANTH 386	3	ANTH 427	3
ANTH 315	3	ANTH 361 or 385	3	ANTH 437	3	ANTH 447 or 485	3
Courses in Minor	6	ANTH 401	3	Courses in Minor	6	ANTH 457	3
Electives	3	Courses in Minor	6	Elective	3	Elective	6
	15		15		15		15

*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

COURSES IN ANTHROPOLOGY

ANTH 301 Cultural Anthropology (3) Interrelationship of environment, society, thought and action expressed within our own and different cultures.

ANTH 311 Social Anthropology (3) Human social structure and its interrelationship with economic, political and religious organization.

ANTH 315 Physical Anthropology (3) Human physical variability through time and in the present as related to the mechanisms of evolution, environmental factors and population genetics.

ANTH 333 Myth, Symbol and Religion (3) How man identifies himself through symbol systems expressed in ritual practices and religious beliefs and the impact of religion upon society.

ANTH 344 Language and Culture (3) Language and its correlations with other aspects of culture. Nature and definition of language, cultural focus and semantic field and world view.

ANTH 361 Indians of the Southwest (3) Pueblo, Apache, Hopi and Navaho Indians. Social structure, economic organization and history, and the Indian relationships to non-Indian ethnic groups.

ANTH 375 Introductory Linguistics (3) Significant sounds and meaningful units in the structure of languages to facilitate learning and teaching second languages and understanding the structure of speech.

ANTH 385 Indians of North America (3) Development and variety of native cultures north of Mexico. Different culture areas focusing on representative tribes and issues.

ANTH 386 Peoples of Mexico (1-4) Mayan, Zapotecan, Aztecan and Mestizo civilizations south of Texas. Cultural history, social organization, symbolic systems and child-rearing. A field trip is optional for one credit.

ANTH 401 Archaeological Analytic Methods (3) Recording and cataloging of artifacts, their preservation and care, museum display, and statistical sampling in the field. Prerequisite to any archaeological field course.

ANTH 416 Archaeology of Meso-America (3) Evolution of Mexican and Mayan civilizations from the early hunters through the Post-Classic Period. Reconstruction of prehistoric civilizations from archaeologic evidence.

ANTH 417 Archaeology of the Southwest (3) Development and characteristics of prehistoric Indian societies, particularly the Mogollon, Hohokam, Anasazi and Casa Grande areas, and their relation to other historic societies.

ANTH 418 Archaeology of North America (3) Growth of cultures in America north of the Rio Grande River and their relationship to historically known societies.

ANTH 427 Historical Trends in Anthropology (3) Classical, theoretical contributions in anthropology including major trends of thought in the development of anthropology.

ANTH 437 Urban Anthropology (3) Spatial structure, symbolic structure and social processes within cities of the world. Effects of these upon minority cultures in Midland and Odessa.

ANTH 447 South American Civilizations (3) Contemporary Quechuas and Aymaras, tribes of the Amazon Basin, and African derived cultures of the Caribbean, the Guianas and Brazil. Impact of westernization on these civilizations.

ANTH 449 Culture and Personality (3) Past and existing theories and methods in the comparative study of personality and socio-cultural environments in the context of current research.

ANTH 457 Applied Anthropology (3) Problems and hypotheses in social and cultural change. Change within the minority, or third world cultures, and within the dominant-industrial cultures.

ANTH 485 Peoples and Cultures of Africa (3) Peoples and cultures of Africa south of the Sahara. Prehistory, culture area and linguistic classifications of selected cultures and contemporary society.

Art

The visual arts program at UT Permian Basin affords instruction in contemporary modes of expression as well as those of the past. Within the mainstream of modern art, there are infinite possibilities for individual expression and students are encouraged to seek out those that are most congenial to themselves. A student need not have studied art prior to entering a UT Permian Basin program but may be expected to make up certain lower-level deficiencies by taking courses at a community college. In accordance with the university's broadly based humanities program, nonart majors are encouraged to enroll for courses as well.

There are three basic programs in art, the first of which is a major comparable in design to those of other disciplines within the College of Arts and Education. The second is a teacher certification program in art, and the third stresses a more comprehensive training of 49 hours that can lead to careers in college teaching or commercial art. The art major requirement is 36 credits, 24 of which must be taken at UT Permian Basin. For those who successfully complete a 49-credit program, 30 of which are required at UT Permian Basin, a senior exhibition in the university gallery is offered. Students in this comprehesive training program can select from the two-dimensional, three-dimensional or commercial art tracks.

ART 402, Concepts in Modern Art, and ART 403, ART since 1945, are required of all art majors.

For full entry into the program, a student is required to have completed courses in two-dimensional and three-dimensional design. Those who have not met that requirement will be expected to do so at the community college level. It is also strongly recommended that entering students complete a survey course in western world art history as well as drawing and painting. Portfolio review will be the final factor, but in no program will more than 24 credits of lower-level work be accepted toward the art major.

A minor in art normally consists of 18 hours, 12 of which must be taken at UT Permian Basin. Students are expected to have completed a course in two-dimensional design. (A drawing course may be substituted for this requirement.) At the upper-level, Art 402, Concepts of Modern Art, and a drawing course are recommended.

SAMPLE DEGREE PLAN ART*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ART 402 (Required)	3	ART 411	3	ART 412	3	ART elective	3
ART 310	3	ART 322	3	ART 420	3	Electives	12
ART 335	3	ART 331	3	ART 440	3		
Courses in Minor	6	Courses in Minor	6	Courses in Minor	6		
	15		15		15		15

*Degree plans vary depending upon a student's goal and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

COURSES IN ART

Art History

ART 301 History of Art in the Western World (3) From art of the ancients to modern times. Fall semester only. (Will not count for upper-level credit except for nonart majors).

ART 302 Art Appreciation (3) Primarily for nonart majors. Through slides and studio work, an opportunity to learn about art by seeing and making it. Spring semester only.

ART 402 Concepts in Modern Art (3) In-depth study of the underlying ideas on which today's art is based.

ART 403 Art Since 1945 (3) From abstract expressionism to systems art and photo-realism.

Drawing

‡**ART 310 Drawing I (3)** Open to nonart majors. Different approaches to drawing fundamentals of composition, use of different mediums. Fall semester only.

‡**ART 311 Drawing II (6)** Open to non-art majors. Different approaches to drawing, fundamentals of composition, use of different mediums. Spring semester only.

‡**ART 410 Figure Composition I (3)** Prerequisite: ART 310. Use the figure as a departure for developing images. Fall semester only.

‡**ART 411 Figure Composition II (3)** Prerequisite: ART 310. Using the figure as a departure for developing images. Spring semester only.

‡**ART 412 Advanced Drawing I (3)** Prerequisite: ART 310 or ART 410. Problems and development of individual expressions. Fall semester only.

‡**ART 413 Advanced Drawing II (3)** Prerequisite: ART 310 or 410. Problems and development of individual expressions. Spring semester only.

Painting

‡**ART 321 Painting Techniques Water (3)** Water soluble media including transparent watercolor, gouache, acrylics, mixed media, and egg tempera.

‡**ART 322 Painting Techniques in Various Mediums (3)** Preparation of ground and support for a painting, color and paint handling (including glazes), the chemistry of paint and the encaustic medium.

‡**ART 420 Painting Techniques I (3)** Prerequisite: ART 321 or ART 322. Development of personal imagery.

‡**ART 421 Painting Techniques II (3)** Prerequisite: ART 321 or ART 322. Advanced problems. Fall semester only.

‡**ART 422 Painting Techniques III (3)** Prerequisite: ART 320 or ART 322. Advanced problems. Spring semester only.

Sculpture

ART 331 Principles of Sculpture (3) Interaction between materials and form. Processes including direct and indirect building of form, wood carving, stone carving and welding.

‡**ART 430 Metal Sculpture (3)** Welding, brazing, foundry skills to develop individual expression.

‡**ART 431 Human Figure Modeling (3)** Modeling the figure in clay. Alternative sculptural formats are acceptable.

‡**ART 432 Advanced Sculpture (3)** Development of individual expression.

Ceramics

‡**ART 335 Ceramics Handbuilding I (3)** Basic techniques in handbuilding use of coil and slab methods. Fall semester only.

‡**ART 435 Ceramics Handbuilding II (3)** Techniques in handbuilding use of coil and slab methods. Spring semester only.

‡**ART 336 Ceramics Wheelthrowing I (3)** Basic wheelthrowing techniques. Fall semester only.

‡**ART 436 Ceramics Wheelthrowing II (3)** Wheelingthrowing techniques. Spring semester only.

‡**ART 437 Clay and Glazes (3)** Composition of glazes and preparation of clay with emphasis on inventiveness and creativity. Handbuilding or wheelthrowing may be substituted.

‡**ART 438 Ceramic Form (3)** Emphasis on individual expression in either handbuilding or wheelthrowing.

Printmaking

‡**ART 340 Relief (3)** Processes including woodcut, wood engraving and color printing.

‡**ART 341 Silkscreen (3)** Processes including preparation of the silk screen, cut-paper frisket, glue and tusche, film stencil and special problems.

‡**ART 440 Intaglio (3)** Plate preparation, grounds and mordants, use of the press and printing processes including drypoint, etching, aquatint, color printing and collagraph.

‡**ART 441 Lithography (3)** Processes including crayon and pencil, tusche, gum masks and impression, color printing and special problems.

‡**ART 442 Advanced Problems in Printmaking I (3)** Prerequisite: at least one previous printmaking course. Advanced problems in printmaking. Fall semester only.

‡**ART 443 Advanced Problems in Printmaking II (3)** Prerequisite: at least one previous printmaking course. Advanced problems in printmaking. Spring semester only.

Photography and Crafts

ART 305 Stained Glass (3) Basic skills in stained glass and leaded glass. Emphasis on design and construction of two dimensional panels.

ART 326 Photography (3) Shooting, processing and printing technically good photographs of interest and visual value suitable for publications. Same as MCOM 326.

ART 405 Advanced Stained Glass (3) Prerequisite ART 305. Work under the "Tiffany" technique of glasscraft. Construction of two and three dimensional work.

‡**ART 450 Advanced Photography I (3)** Prerequisite: ART 326 or equivalent. A continuation of technical development with considerable attention to aesthetics. Attention also given to expanding vision and to developing new techniques. Fall semester only.

‡**ART 451 Advanced Photography II (3)** Prerequisite: ART 326 or equivalent. A continuation of technical development with considerable attention to aesthetics. Attention also given to expanding vision and to development of new techniques.

‡**ART 452 Art Metal Jewelry (3)** Basic metal jewelry processes with emphasis on design.

‡**ART 453 Problems in Art Metal (3)** Metal jewelry processes with emphasis on design.

‡**ART 454 Weaving Fibre (3)** Designs covering modern tapestry and woven art forms, developing techniques including plain weave, rya, soumak, wrapping and single and double woven warps.

‡**ART 455 Advanced Problems in Weaving (3)** Prerequisite: at least one previous course in weaving. Advanced problems in weaving.

Art Education

ART 370 Elementary Art Education (3) Characteristics and stages of creative development in child art; the procedures and methodology for stimulating, selecting and motivating elementary art experiences.

ART 371 Secondary Art Education (3) Procedures and methodology for selecting, stimulating and motivating secondary art instruction. Spring semester only.

ART 470 Philosophy of Art Education (3) A study of the literature and recent theories in the field of art education.

Applied Arts

ART 380 Elements of Commercial Design (3) A course dealing with the fundamentals of commercial design including layouts, pasteups, mechanics and typography.

ART 381 Typography (3) Study of type styles, lettering processes, mechanics, tools, language and printing processes used by printers and commercial artists as applied to the printed form of advertising.

ART 382 Illustration (3) Drawing as applied to commercial art; emphasis on materials and techniques best suited for visual presentation of a product, service or idea.

ART 385 Elements of Interior Design (3) Interior-design problems involving perspective rendering familiarity with architectural styles and forms, periods of furniture and designing living and working spaces.

ART 487 Advanced Advertising Art (3) Prerequisites: Art 380, Art 381 and Art 382. Implementation of typography, layout and design and illustration as applied to a full advertising campaign. Investigation of commercial art as applied to television.

ART 488 Commercial Design and Internship (3) Prerequisites: Art 380, 381, 382 and 487. Problems in commercial design involving ad campaigns, television graphics, and explicit design problems followed by applied learning with various agencies and media in the community.

Culminating Experiences

ART 399 Senior Exhibition (1) An exhibition selected and hung by the student consisting of his best work at the university. Restricted to those taking a concentrated major in art (49 hours).

‡Art courses marked with a ‡ may be taken for up to 6 hours of credit with permission of the instructor.

Behavioral Science.

A program of study in Behavioral Science is only offered at the Graduate level. (See Graduate Studies)

Criminal Justice

Students enrolled in criminal justice will obtain a Bachelor of Arts degree based upon a strong foundation in criminal justice and related studies. This interdisciplinary study is designed to enable students to work in a field which is increasingly linked to health care, social services and other human systems.

The criminal justice program at UT Permian Basin is committed to the personal, analytical and professional development of its students as law enforcement officers, correctional personnel and human resources personnel. The program is generally concerned with development of students possess a sensitivity to the human and social condition, and particularly with the criminal justice system, coupled with an understanding and ability to constructively participate in the improvement of both.

The program concentrates on a comprehensive examination of major processes involved in the administration of criminal law; the criminalization of conduct, law enforcement, prosecution, defense, adjudication and corrections.

In a broader context, the program is concerned with the study of the nature and causes of crime, more effective organization and management of criminal justice resources, development of planning and research methods to aid in creation of new approaches and the development of techniques to engender improvement and change where needed within institutions and agencies.

While all criminal justice majors take 18 credits of core courses, they may choose to concentrate in law enforcement or corrections, with emphasis in one of 2 areas of professional development; behavioral or multidisciplinary.

The *behavioral* area contains courses in anthropology, social psychology, social stratification and similar courses. Students completing this area of concentration will be prepared for entry into a Master of Arts in behavioral science program.

The *multidisciplinary* area is tailored by the student and advisor to meet the student's individual needs from courses offered in behavioral areas of concentration. Students completing a multidisciplinary study will not have completed prerequisites for entry into a UT Permian Basin master's program, but will have gained significant educational exposures into means of interacting with people and organizations.

The criminal justice program is designed for students who have completed basic entry skills and vocational training in law enforcement, for persons already in a criminal justice related area or individuals having an interest in completing a bachelor's degree in this professional field.

COURSES IN CRIMINAL JUSTICE

CJUS 300 Introduction to Criminal Justice (3) Survey of the problems of law enforcement and the criminal justice system in the United States. Topics examined include the system's history, its constitutional limitations, its philosophical background and the process used to achieve its goals.

CJUS 305 Police in America (3) Ambivalent roles of law enforcement-order maintenance, protection of constitutional rights, enforcement, noncriminal services, and social services. Role conflict. Development of police as a subculture.

CJUS 315 Criminal Investigation (3) Scientific crime detection methodology including crime scene search, identification and lie detection.

CJUS 350 Criminal Justice Administration (3) Administrative problems and their solutions in correctional and law enforcement programs.

CJUS 392 Criminal Justice Practicum (3) Agencies in criminal justice system as resources for internships or projects. May be repeated with instructor's approval.

CJUS 409 Criminal Justice Research Methods (3) Elements of scientific perspective. Conceptual frameworks, access to and collection of data, research design, analytic techniques, and reporting of findings.

CJUS 410 Criminal Law (3) Legislature and criminalization of conduct. Limits of criminal sanctions. Evolution of substantive criminal law with emphasis on Texas. Judiciary and policy formulation. Administration of criminal law.

CJUS 420 Corrections in America (3) Overview of social, cultural, behavioral, political, psychological, sociological and economic causative factors of crime. Appraisal of correctional methods involved in prisons, probation, parole, work-release, half-way houses, community-based corrections and other settings.

CJUS 421 Probation and Parole (3) History, philosophy and development of adult and juvenile probation and parole in the United States.

CJUS 422 Legal Foundations of Corrections (3) Historical analysis of constitutional law, appellate and Supreme Court decisions and their impact upon correctional institutions.

Education

The teacher education programs leading to certification by the Texas Education Agency are offered in the following fields:

a. Early childhood education (for teaching kindergarten and nursery school)

b. Elementary education

c. Secondary education

d. Special education

(1) Mentally retarded

(2) Language/learning disabilities

(3) Physically handicapped

(4) Emotionally disturbed

The teacher education program includes preparation for teaching in the following subject areas:
Elementary (grades K-8) Anthropology, art, bilingual education, biology, chemistry, economics, English, earth sciences, government, physical education, history, mathematics, music, physics, psychology, sociology, Spanish and speech.
Secondary (grades 7-12) Anthropology, art, biology, business, chemistry, computer science, drama, earth science, English, economics, government, physical education, history, journalism, life/earth middle school science, mathematics, music (vocal, instrumental), physical science, physics, psychology, sociology, Spanish and speech. Secondary Composite Fields-English language arts, science, or social science.
All level (grades 1-12) Art, music and physical education.
Students enrolled in teacher education will receive the bachelor's degree in one of the arts and sciences fields, while at the same time completing all of the requirements of the Texas Education Agency for certification to teach. Elementary education students complete a normal major in their chosen discipline; however, they are not required to complete a minor. Most students preparing for secondary teacher certification must complete two 24-semester credit teaching fields.

See the section of Graduate Study for the master's degree program in education and for certification programs in reading and educational administration.

UT Permian Basin students will be as fully prepared for teaching as students who take a bachelor's degree in education at other universities, but their degrees will be awarded in a field of teaching interest. Thus, one preparing to teach mathematics in high school would receive the BS in mathematics, plus complete all teacher education courses and requirements. This can be done within the minimum of 120 semester credits required for a bachelor's degree.

During their first semester, students wishing to prepare for teaching make application for admission to teacher education by preparing an official certification plan and performing satisfactorily on the Pre-Professional Skills Test of the Texas Education Agency. These documents must be submitted to the secretary of the Teacher Education Office. The date of admission will be determined by the Teacher Education Council. State Board of Education rules require an individual to be clear of a felony or misdemeanor conviction for a crime which directly relates to the duties and responsibilities of the teaching profession in order to receive a certificate. Those preparing for teaching at the elementary and/or kindergarten levels take courses in education during both their junior and senior years, since 30 semester credits of such study are required for certification to teach at the elementary level, plus another 9 credits to teach kindergarten. Students preparing to teach at the secondary level take 18 credits in education.

In all teacher education programs, one full semester during the senior year will be "blocked" for teacher education; this includes some coursework plus one-half semester of full-time student teaching in a public school. To qualify for student teaching, UT Permian Basin students must have an overall grade point average (GPA) of 2.50 and a GPA of 2.75 for coursework in their teaching fields, as well as their education coursework, completed at UT Permian Basin. Students not meeting these requirements may be admitted to student teaching on a conditional basis with approval of both major advisers (academic and education) and the Teacher Education Council.

UT Permian Basin prepares teachers under a performance-based teacher education plan. This approach is designed to assure that when students finish a teacher education program they are fully qualified to perform as teachers in the classroom. This means they have not only passed their courses, but they have also demonstrated knowledge of the subject matter they will teach and have competence to perform effectively in all teaching situations.

Certification Study. Individuals holding a bachelor's degree and desiring to become certified to teach may enroll in the teacher education program as nondegree special students and limit their study only to required courses. Texas Education Agency requires college credit or examination credit in Texas and Federal government (3-6 semester hours); and United States history (6 semester hours), prior to certification.

SAMPLE DEGREE PLAN–ELEMENTARY PROVISIONAL CERTIFICATE*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
EDUC 311	3	EDUC 326	3	EDUC 321	3	EDUC 322	3
Major	3	EDUC 344	3	EDUC 323	3	EDUC 325	3
Major	3	EDUC 390	3	Major	3	EDUC 324	3
MUS 321 or 325	3	ART 370	3	Major	3	EDUC 373 374	6
Major or Elective	3	Major	3	PHED Methods	3		
	15		15		15		15

ENDORSEMENTS

Kindergarten: EDUC 411, 412, 413, 372

Special Education 9 to 15 additional credits from EDUC 451, 452, 455, 456, 457, 458. Schedule to be designed by EDUC adviser.

SAMPLE DEGREE PLAN–SECONDARY PROVISIONAL CERTIFICATE*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
Major field	6	Major Field	3	Major field	6	Elective	3
Second teaching field	6	EDUC 344	3	EDUC 331; 332	6	EDUC 375/376	6
Elective or Major	3	Second teaching field	6	Elective/major field	3	Electives or Major	6
		EDUC 390	3				
	15		15		15		15

*All-level art, physical education and music require approximately the same number of semester credits; however the education courses and their sequence must be designed to fit each student's teaching field.

COURSES IN EDUCATION

Courses in Elementary Education

EDUC 311 Human Growth and Development: Child (3) Emphasis upon understanding the psychology of human adjustment and the behavior patterns of children and youth.

EDUC 321 Teaching Strategies for the Elementary School (3) Learning principles and their application in schools; selecting objectives and defining them operationally; designing plans, adapting to prekindergarten and elementary children; selecting strategies and materials to implement plans. This course includes field experience at a public school.

EDUC 322 Teaching Language Arts in the Elementary School (3) Developing skills of effective oral and written communication for prekindergarten and elementary teachers. Techniques developed and implementation of methods and materials in a teaching center.

EDUC 323 Teaching Social Studies in the Elementary School (3) Social studies materials and methods for those seeking certification in prekindergarten and elementary levels.

EDUC 324 Teaching Science and Mathematics in the Elementary School (3) Mathematics and science skills needed to teach new as well as traditional activities in prekindergarten and elementary levels.

EDUC 325 Teaching Reading in the Elementary School (3) Basic methods, trends, recent materials and issues in teaching reading.

EDUC 326 Children's Literature (3) Literature intended for children. History and criticism of books for children, illustration of these books and recent trends in the use of literature.

EDUC 361 Children's Literature for the Bilingual Classroom (3) Identification, selection and utilization of library material, both in English and Spanish, from preschool through the upper elementary age.

EDUC 461 Educational Psychology of the Bilingual Child (3) Methods, materials, language organization and developmental principles affecting the bilingual child and his learning environment.

EDUC 462 Teaching the Bilingual Child (3) Bilingual programs and orientation to various methods used in establishing bilingual programs.

EDUC 493 Culture and Learning: The Mexican-American (3) Traditional concepts of education and their effects on the Mexican-American child due to interpretation and application. Definition of culture, influence of social institutions and the acculturation process.

Courses in Educational Foundations

EDUC 344 Introduction to Educational Psychology (3) Emphasizes psychological principles directly applied to teaching. Factors underlying the teaching-learning process including theory, programming, discipline and problems of evaluation.

EDUC 390 Foundations of Education (3) Selected valuational, epistemological and historical considerations related to education as a process of human development, as a social-political institution and as a profession.

EDUC 433 Theories of Learning (3) Emphasis upon the major theories of learning, empirical evidence underlying them and their relevance to education.

EDUC 460 Application of Behavioral Modification (3) Application of behavioral-modification principles to instruction in school, home and business. Same as PSYC 460.

EDUC 470 Introduction to Counseling and Guidance (3) Theoretical, experiential and applied overview of counseling and guidance services in the schools and community. Emphasizes functions of counselors in different settings.

EDUC 481 Educational Measurement for the Classroom & Teacher (3) Principles of individual differences, evaluation and measurement; test construction and cultural problems in testing.

EDUC 492 Culture and Learning (3) Interrelationship of culture and learning. Emphasis is upon environmental influences on socialization, cognition and achievement.

Courses in Secondary Education

EDUC 312 Human Growth and Development: Adolescent (3) A survey of developmental aspects of physical, social, emotional and cognitive growth. Emphasis is on the adjustment and behavior patterns of adolescents.

EDUC 331 Teaching Strategies for the Secondary School (3) Learning principles, pupil grouping patterns and their implications in school; selecting objectives and defining them operationally, designing plans and implementation through field experience and classroom simulation.

EDUC 332 The Theory and Practice of Teaching (3) Field-based course in the discipline in which the student is majoring. Emphasis upon the content, methods and materials characteristic of the discipline.

Courses in Student Teaching

EDUC 372 Student Teaching: Kindergarten (3)

EDUC 373, 374 Student Teaching: Elementary I, II (3, 6)

EDUC 375, 376 Student Teaching: Secondary I, II (3, 6)

EDUC 377, 378 Student Teaching: All Level I, II (3, 3)

EDUC 379 Student Teaching: Special Education (3)

Courses in Early Childhood Education

EDUC 411 Early Childhood Education: Development and Learning (3) Literature of early childhood education with emphasis upon environmental factors affecting cognitive growth, socialization and achievement.

EDUC 412 Early Childhood Education: Curriculum and Teaching (3) Review and development of curriculum, materials and methods used in the nursery school and kindergarten, focusing on the goals and purposes of programs.

EDUC 413 Language Development in Young Children (3) Nature of language and the acquisition of language by the young child. Includes environmental influences and contingent effects on socialization, cognition and achievement.

EDUC 414 Cognitive Development in Young Children (3) Major theoretical constructs and research findings relevant to the cognitive development of young children. Includes analysis of determinants of differences in cognitive functioning. Same as PSYC 442.

EDUC 415 Social and Emotional Development of the Child (3) Major theories and research relevant to social and emotional development of children. Focuses on innate and environmental influences affecting development in families, schools and societies. Same as PSYC 443.

Courses in Special Education

EDUC 451 Education of Exceptional Children (3) Exceptional children and their educational problems. Curriculum development and adaptation of selected methods and materials basic to teaching these exceptional children.

EDUC 452 Theory and Methods of Language/Learning Disabilities (3) Theories and methodologies used in the teaching and evaluating of students with language/learning disabilities. Prerequisite: EDUC 451 or consent of instructor.

EDUC 455 Education of Exceptional Children in the Regular Classroom (3) Identification and etiology of prevalent handicaps found in classes; curriculum development adaptation; selected methods and materials for teaching these handicapped children.

EDUC 456 Theory and Methods in Education of the Mentally Retarded (3) Theory and methods and basic curriculum for the educable mentally retarded in primary and intermediate levels. Curriculum content, specific materials and methods of instruction.

EDUC 457 Observation/Participation in Special Education (1-3) Directed experiences in observation and participation in special education classrooms.

EDUC 458 Materials and Methods for the Exceptional Child (3) Instructional materials and the selection, analysis and use of materials for individualized instruction of the exceptional child.

Courses in Curriculum and Instruction

EDUC 416 Teaching English as a Second Language (3) An introduction to theoretical and practical aspects of teaching English as a second language (written and oral) to non-English speaking children.

EDUC 425 Teaching Reading in the Content Areas (3) Skills and knowledge needed to evaluate and increase reading in specific content areas at all grade levels.

EDUC 427 Innovations and strategies in the Social Studies (3) Recent trends in social studies education, including professional issues, teaching strategies and new curriculum materials.

EDUC 428 Linguistics and Grammar for the English as a Second Language Teacher (3) A survey of the structures of English as well as general issues in language such as: language variation, non-verbal communication and uses of language.

EDUC 429 Language Development and Acquisition (3) Theories of psycholinguistics and sociolinguistics applied to the acquisition of one or more languages in early childhood and school learning.

EDUC 430 New Strategies in Elementary Science Instruction (3) Student to design, teach and refine sequences of instruction for children in elementary sciences, including use of materials from new elementary science programs.

EDUC 436 Advanced Problems in English as a Second Language (3) A comparative and contrastive analysis of the interrelationships of language culture learning in the classroom setting.

EDUC 464 Mathematics for Preschool and Primary Child (3) Development of strategies and materials for teaching mathematics based on growth, development and learning behavior of the young child. (Prerequisites: EDUC 311 and 344 or equivalent)

EDUC 465 Science for the Preschool and Primary Child (3) Features the development of strategies and materials for teaching science activities that are based on growth, development and learning behavior of the young child.

History

The study of history represents man's attempt to understand the past, not only what happened but why it happened. It has been said that those who ignore history are doomed to repeat the mistakes of the past. Thus, the study of history leads to an understanding of man's present behavior, customs and traditions, and also provides a basis for understanding future developments.

History is an ideal major for students preferring a broad liberal arts education. It also provides good preparation for a number of careers including government, industry, writing and other fields. History is a basic major for those preparing to teach history or social studies at all levels.

The history program provides preparation typical of baccalaureate degree programs in history elsewhere, while at the same time allowing flexibility so students may build emphasis in an area or areas of history of special interest. Students may enrich their exeriences through regularly offered and organized travel studies in the United States and other nations.

Students needing to satisfy Texas state statute requirements may do so by successfully completing any two United States or American history courses marked with a †.

Students who have completed two courses in American history before enrolling at UT Permian Basin may include them in the 30 hours of credit in history required for majors. While there are no specifically required history courses for majors, students must include 6 credit hours in non-United States history fields such as Latin American or European history. It is desirable that these courses be upper level and completed during the first year of residence. Students majoring in history also must complete one course of a seminar format, preferably during their second year. Other courses are selected by students and their advisers in the context of background or preparation interests, needs and professional plans.

The overall curriculum result should provide well-rounded coverage at the upper level in American history from colonial to modern times, in world history, and in topic areas of special interest to the individual.

COURSES IN HISTORY

HIST 314 Modern Latin America (3) Political, social, cultural and economic development of South America and Caribbean from Independence to the present.

HIST 326 Europe Since 1815 (3) Major social, economic, political and intellectual developments in Western Europe from the French Revolution to the present.

HIST 331 Tudor-Stuart England (3) Political, religious, economic and social development of England between 1485 and 1714.

HIST 332 Great Britain Since 1714 (3) Political, economic, and social development of Great Britian and its empire from 1714 to the present.

HIST 334 Modern Russia (3) Russia since the time of Peter the Great with special emphasis on the Bolshevik Revolution and the emergence of the Soviet Union.

†**HIST 351 Modern Texas (3)** Political, social, economic and historical development of modern Texas. Includes field work in state and local history.

†**HIST 353 Southwestern United States (3)** Development of analytical and writing skills through use of primary source materials relating to regional history. Training and practice in oral history techniques.

†**HIST 371 American Minorities (3)** Experiences and contributions of the minorities in the development of American political and cultural traditions and institutions.

HIST 411 Modern Mexico (3) Political, social, cultural and economic development of Mexico from Independence to the present.

HIST 413 Colonial Latin American (3) Political, social, cultural, and economic development of Latin America from the Conquest to Independence.

HIST 436 Nazi Germany (3) Seminar for reading, research, and discussion of the rise and fall of Hitler's Third Reich.

HIST 437 Studies Through World Travel (*title may vary*) (3) Intensive classroom preparation followed by guided travel to countries and sites of outstanding historical importance.

HIST 439 Studies in World History (*title may vary*) (3) Reading, research, and discussion on selected topics in world history.

†**HIST 441 Colonial America (3)** Founding and development of the North American colonies to 1776 with special emphasis on the interaction among the European, native American, and black peoples.

†**HIST 443 America 1776-1848 (3)** Founding and and development of the new American nation through the age of Jackson.

†**HIST 445 America 1848-1898 (3)** Sectionalism, Civil War, Reconstruction and the Gilded Age.

†**HIST 447 Twentieth Century America to 1941 (3)** Political, economic and social domestic affairs contributing to the twentieth century development of industrial urban America through the New Deal.

†**HIST 448 Twentieth Century America since 1941 (3)** Political, economic and social affairs contributing to the twentieth century development of industrial, urban America since World War II.

†**HIST 455 Western Frontier (3)** The expansion of population to the Mississippi River; the Old Norhtwest.

†**HIST 456 Trans-Mississippi West (3)** Social, economic, and political, development during the nineteenth and twentieth centuries.

†**HIST 461 American Foreign Relations to 1920 (3)** Foreign policy and relations involved in the development of America from the Revolution through World War I.

†**HIST 462 American Foreign Relations Since 1920 (3)** Foreign policy and relations involved in the development of America in the period after 1920 to the present.

HIST 463 U.S.-Latin American Relations to 1920 (3) Historical literature covering major developments and problems in relations between the United States and Latin American nations to 1920.

HIST 464 U.S.-Latin American Relations Since 1920 (3) Historical literature covering major developments and problems in relations between United States and Latin American nations, since 1920.

†**HIST 468 Business in Modern America (3)** Modern practice and theory; the role of entrepreneur; government regulation since the Civil War.

†**HIST 473 Urban America (3)** The processes of urbanization in the United States from its origins to the present.

HIST 474 Historic Preservation (3) Examination of the methods, goals, and contributions of the preservation and and restoration of the built environment in material culture and public history.

†**HIST 475 Women in Early America (3)** Changing nature of the family and the role of women in America from the seventeenth to the mid-nineteenth century.

†**HIST 476 Women in Modern America (3)** Changing nature of the role of women in America from the late nineteenth century to the present.

†**HIST 477 Studies Through American Travel** (title may vary) Intensive classroom preparation followed by guided travel to sites of outstanding historical importance in the United States.

†**HIST 479 Studies in American History (3)** Reading, research and discussion on selected topics in history.

‡These courses meet the State of Texas requirements for History.

Humanities

The Bachelor of Arts degree program in humanities is multidisciplinary and is designed for the student desiring a liberal arts education but not wishing to specialize. The program focuses primarily on humanistic studies as they have been traditionally conceived.

The humanities concentration is considered a wise choice for a student who is non-vocationally oriented or who are planning postgraduate study in law, theology, the liberal arts and certain other fields.

The BA in humanities requires 120 semester credits, including 54 credits in two to four of the following fields: art, foreign language, history, literature, music, philosophy, theatre.

At least two-thirds of courses in the humanities concentration must be taken at the upper level. With the prior approval of the advisor, the student's program may include a course or courses in a field other than those listed above. The advisor's approval will be based on his determination that the course or courses contain significant humanities content. The specific program must be devised by the student in consultation with the advisor to meet the broad requirements outlined above. It must, in addition, demonstrate intellectual coherence and reflect the student's thoughtful consideration of his educational background and professional and intellectual goals. No minor is required in the humanities concentration.

Literature

The goal of the literature program is to enable the student to develop the professional skills of the literary critic, scholar and teacher, namely, to read intelligently and imaginatively and to write and converse about literature knowledgeably and articulately.

The student who selects literature as a major is urged to complete the following courses:

LIT 301 & 302, American Literature
LIT 321 & 322, British Literature
LIT 351, Short Fiction
LIT 471, The Teaching of Writing (LIT 371, The English Language, is recommended for non-certification students)
A course in poetry, forms and themes.

Completion of these courses, in combination with the 12 semester hours of freshman and sophomore English normally taken elsewhere, satisfies the minimum requirements for all students planning elementary teacher certification or secondary teacher certification with English as a second teaching field.

Students planning teacher certification with English as a first teaching field and those not planning teacher certification are asked to complete the above courses and, in addition, any two of the following:

LIT 401 or 402, American Poetry
LIT 411 or 412, American Fiction
LIT 431 or 432, British Fiction
LIT 469, Studies in a Major Author (especially Shakespeare)
CRWT xxx, an appropriate course in creative writing.

A literature minor includes a minimum of 18 semester hours consisting of sophomore (but not freshman) English courses completed elsewhere and the following. LIT 351 or 371, 301, 302, and 322. Substitutions are authorized when necessary, but the minor must include a minimum of 12 semester hours of upper-level credit.

SAMPLE DEGREE PLAN LITERATURE WITH CERTIFICATION*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
LIT 301	3	LIT 302	3	LIT 411	3	LIT or Elective	3
LIT 321	3	LIT 322	3	LIT 402	3	Course in Minor	3
LIT 351	3	LIT 471	3	Elective	3	PED Studies	3
Course in Minor	3	Course in Minor	3	Course in Minor	3	Student Teaching	6
PED Studies	3	PED Studies	6	PED Studies	3		
	15		18		15		15

*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

COURSES IN LITERATURE

LIT 301 American Literature to 1865 (3) Chronological examination of writers, works and movements (fiction, non-fiction, poetry) from beginning to 1865.

LIT 302 American Literature Since 1865 (3) Chronological examination of writers, works and movements (fiction, non-fiction, poetry) from 1865 to the present.

LIT 321 British Literature To 1800 (3) Chronological survey of major works in British literature from Beowulf to to the literature of the Augustans (about 1800).

LIT 322 British Literature Since 1800 (3) Chronological survey of major works of British literature from the Romantics (about 1800) to the Modern Period.

LIT 341 History of World Literature (3) Reading and critical discussion of masterpieces of world literature in translation.

LIT 351 Short Fiction (3) Reading and critical analysis of British, European and American short fiction with emphasis on generic study and textural explication.

LIT 371 The English Language (3) Survey of topics in modern linguistics as they pertain to English. Includes phonetics, phonology, morphology, theories of grammar, language origin and and diversity, and the history of the English lanuage.

LIT 401 19th Century American Poetry (3) Development and influence of an indigenous American poetry. Analysis of the theories and practice of major poets. Course divides at 1900.

LIT 402 20th Century American Poetry (3) Development and influence of an indigenous American poetry. Analysis of the theories and practice of major poets, 1900 to the present.

LIT 405 American Drama (3) Historical development of American drama; types of dramatic literature and masterpieces in American drama.

LIT 411 19th Century American Fiction (3) Masterpieces in American prose fiction, beginning to late 19th century.

LIT 412 20th Century American Fiction (3) Masterpieces in American prose fiction, late 19th century to the present.

LIT 421 British Poetry To 1800 (3) Poetry as a literary genre through major works of British poetry from the Middle Ages to 1800.

LIT 422 British Poetry Since 1800 (3) poetry as a literary genre through major works of British poetry from 1800 to the present.

LIT 425 British Drama To 1800 (3) Drama as a literary genre through major works of British drama from the Middle Ages to 1800.

LIT 426 British Drama Since 1800 (3) Drama as a literary genre through major works of British drama from 1800 to the present.

LIT 431 The Eighteenth Century British Novel (3) The origin and development of the British novel from Defoe to Austen. Prerequisite: LIT 351 or consent of instructor.

LIT 432 The Nineteenth-Century British Novel (3) The development of the British novel in the nineteenth and and early twentieth centuries. Prerequisite: LIT 351 or consent of instructor.

LIT 433 The Twentieth-Century British Novel (3) The development of the British novel in the twentieth century. Prerequisite: LIT 351 or consent of instructor.

LIT 441 Comparative Poetry (3) Reading and critical discussion of major works of world poetry in translation from classical through Renaissance to present. Primary emphasis on poetry of Western Europe.

LIT 445 Comparative Drama To 1800 (3) Reading and critical discussion of masterpieces in drama, classical to 1800. Emphasis on major periods, national developments, dramatic types and techniques.

LIT 446 Comparative Drama Since 1800 (3) Reading and critical discussion of masterpieces in drama, 1800 to present. Emphasis on major periods, national developments, dramatic types and techniques.

LIT 450 The Bible as Literature (3) Selected books of both and New Testaments, studied to develop an understanding of their variety and literary value. Some attention will be given to historical and geographical contexts.

LIT 451 Comparative Fiction To 1800 (3) Novella and novel from their origins to 1800. Authors include major writers from Europe, Asia and Latin America. Works read in translation.

LIT 452 Comparative Fiction Since 1800 (3) Novella and novel from 1800 to the present. Authors include major writers from Europe, Asia and Latin America. Works read in translation.

LIT 459 Studies in Literature (1-3) Specific periods, themes, authors or literary types. Contents vary according to the interest, needs and capabilities of the instructor and students.

LIT 461 Literary Criticism (3) A study of the history and methods of literary criticism, from Plato to the present, as these are relevant to current history and practice.

LIT 469 Studies in a Major Author (1-3) Works of a major author in American, British or world literature.

LIT 471 The Teaching of Writing (3) Study of current theories and methods of teaching writing. Primarily intended for students seeking secondary certification.

Mass Communications

The Bachelor of Arts degree in mass communications is designed to acquaint students with the wide range of career opportunities in mass communications, to provide basic understanding of concepts and principles common to all aspects of mass communications and finally to provide specialized preparation in at least one field. This preparation is oriented toward preparing the individual primarily to work in either electronic (radio/TV) or print journalism.

Prior to enrolling at the university, students should have had some introductory coursework in journalism, radio/television or mass communications. Prior experience in one of these fields is useful also; however, such experience is not a prerequisite to study.

The Bachelor of Arts degree program in mass communications prepares students for careers in newspaper and magazine writing and editing, radio and television reporting and production and management, as well as public relations, advertising and specialized communications professions.

The BA in mass communications requires 24 credits in the major field, 18 credits of which must be upper level, plus a minor in a supporting field of at least 18 credits of which 12 must be at the upper level. Majors in mass communications are encouraged to minor in subject fields that will better qualify them to work in the mass communications industry. Minors in government, management and history are among the more commonly chosen fields, while students planning to become specialized writers may choose to minor in technical or scientific fields.

Students wishing to prepare for teaching in the public schools should complete requirements described in the section under education and are encouraged to take MCOM 429. Students desiring to prepare for careers in advertising should include a substantial percentage of their preparation in the College of Business Administration.

SAMPLE DEGREE PLAN MASS COMMUNICATIONS*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
MCOM 303	3	MCOM 307	3	MCOM 315	3	MCOM 429	3
MCOM 305	3	MCOM 318	3	MCOM 405	3	MCOM 392	3
MCOM 313	3	MCOM 326	3	MCOM 471	3	Courses in Minor	6
Course in Minor	3	Course in Minor	3	Courses in Minor	6	Elective	3
Elective	3	Elective	3				
	15		15		15		15

*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

COURSES IN MASS COMMUNICATIONS

MCOM 303 Reporting (3) History of the press, libel, journalistic ethics, copy editing, writing news and feature stories. Required of all MCOM majors.

MCOM 305 Communication Law (3) Legal aspects of rights and responsibilities of press, radio and television. Libel, privilege, copyright, access to information. Court reporting.

MCOM 307 Mass Communication Laboratory (1-3) Print journalism laboratory editing, reporting, photojournalism, writing headlines and making up pages.

MCOM 313 Advanced Reporting (3) All phases of journalistic writing governmental agencies, schools, courthouses, public affairs, sports, fine arts, interviews with prominent personalities and speeches.

MCOM 315 Public Affairs Reporting (3) Writing news concerning agencies that deal with local, state and federal government.

MCOM 318 Editing and Makeup (3) Copyreading and headline writing; principles of typography and makeup, with laboratory practice.

MCOM 326 Photography (3) Shooting, processing and printing technically good photographs of interest and visual value suitable for publications. Same as ART 326.

MCOM 341 Radio/Television Announcing (3) Writing, editing and announcing press association and local news copy for radio and television news broadcasts. Laboratory practice in preparing news programs.

MCOM 342 Radio/Television Production (3) Radio and television programming patterns, regulations pertaining to broadcasting and broadcasters' responsibilities.

MCOM 344 Television Production II (3) Planning, staging and presenting television programs.

MCOM 345 Television Direction (3) Directing television programs. Prerequisite: MCOM 342.

MCOM 405 Magazine Article Writing (3) Writing a magazine article and attempting to sell it to one of the available markets.

MCOM 410 Advanced Broadcasting Techniques (3) Broadcast production including documentaries in sound and short broadcast reports. Taping, editing, mixing, writing broadcast scripts, special effects and interviewing.

MCOM 429 School Publications (3) Preparing a school journalism sequence. Producing school newspapers and yearbooks.

MCOM 471 Mass Media and Society (3) Principles of behavior modification applied to the media radio, television, newspaper, magazines, books, etc.

Music

The Faculty of Music offers a wide range of courses oriented toward the major and non-major.

Non-majors are welcome in applied instruction, the beginning and intermediate theory classes, and any elective courses listed. Particpation in the University Singers and the Permian Consort is also encouraged, although auditions for these two groups are required.

Students wishing to major in music have the option of pursuing a liberal arts degree with or without teacher certification. Basic requirements for both degrees are the same, with additional music and education courses required for certification. Entering music students should have completed two semesters of of music theory, at least one semester of music literature/ appreciation, and applied instruction on their major instrument(s).

Music majors must complete at least 36 credits in music of which 24 must be at the upper level. Besides general requirements for graduation, the music major must also fulfill these minimum requirements:

1. 6 credits in applied instructon
2. 2 credits in ensemble performance
3. 10 credits in music history and conducting
4. 6 credits in either choral or instrumental courses

Music students desiring teacher certification have three paths from which to choose- elementary, secondary, or all- level certification. Individual requirements vary; however, a typical program might include the addition of these courses to those listed above:

1. MUS 360 Music in the Elementary school
2. MUS 462, 464 Choral or Instrumental Music in the Secondary schools
3. MUS 466, 468 Piano or Vocal Pedagogy
4. MUS 324 Orchestration

Majors are further urged to take a Practicum in their senior year as preparation for a recital, research project or composition.

A student may minor in music by completing 18 credits of approved courses, of which no more than 6 credits can be in applied instruction. The range of courses open to the music minor offers maximum flexibility in designing a minor that fits the student's needs.

In addition to the courses listed in this catalog, a broad range of history, theory and skills courses are offered by the faculty on a contract or self-paced basis.

SAMPLE DEGREE PLAN MUSIC WITH CERTIFICATION*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
MUS 301	2	MUS 301	2	MUS 324 or 325	2/3	MUS 401	2
MUS 321	3	MUS 343	3	MUS 360	3	EDUC 377	3
MUS 323	2	MUS 421	2	MUS 401	2	EDUC 378	3
MUS 342	3	Ensemble**	1	MUS 462 or 464	3	Electives	6
Ensemble**	1	EDUC 332	3	EDUC 321	3		
EDUC 344	3	EDUC 390	3	Elective	3		
Elective	3	Elective	3				
	17		17		17/16		14

COURSES IN MUSIC

MUS 301 Applied Music I (2) Applied instruction in voice, piano, organ, harpsichord, guitar, strings, winds, brass and percussion. Private lessons on your major instrument. Open to majors and non-majors. Fee required.

MUS 303 Ensemble: University Singers (1) Vocal repertoire with emphasis on serious literature for the chamber choir. Annual madrigal dinners and tours highlight the group's activities. Open to majors and non-majors by audition.

MUS 305 Ensemble: Permian Consort (1) Instrumental repertoire of the Renaissance, Baroque, and Classical periods. Emphasis on period instrumentation and historical performance practices. Tour in the spring semester. Open to majors and non-majors by audition.

MUS 307 Ensemble: Chorale (1) Oratorio chorus performing major pieces with the Midland Odessa Symphony. Open to majors and non-majors by audition.

MUS 309 Ensemble: Symphony (1) Major orchestral repertoire with emphasis on 19th and 20th centuries. Open to majors and non-majors by audition.

MUS 321 Comprehensive Musicianship (3) Bibliography and musical tools for the music major. Class emcompasses notational and bibliographic skills along with basic computer exposure. Required for entering music students.

MUS 322 Fundamentals of Music Theory (3) Mechanics of music notation, harmony, melody, and rhythmic structure. Emphasis on the relation of music to the elementary classroom. Fulfills music requirements for elementary degree certification. Open to non-majors, only.

MUS 323 Conducting (2) Beginnng course in conducting including baton technique, score reading, cues, and metric patterns. Open to majors and non-majors.

MUS 324 Orchestration (3) Beginning instruction in instrumental types including range, timbre, and blend. Emphasis on scoring for traditional groupings such as string orchestra, brass quintet, others. Open to majors and non majors with permission of instructor.

MUS 325 Choral Arranging (2) Techniques of composing, editing, and arranging choral music for a variety of ensembles. Special emphasis on public school problems in performance. Open to majors and and non-majors with permission from instructor.

MUS 326 Vocal Diction (2) Study of diction and grammar problems associated with English, Italian, French, and German texts (languages offered on rotating basis). Open to majors and non- majors wth permission of instructor. May be repeated with permission of instructor.

MUS 327 Intermediate Theory (3) Intermediate-level theory course covering diatonic and chromatic harmony, some analysis. Oriented toward the major with theory deficiencies or the non-major who has completed MUS 322 and wishes further instruction.

MUS 328 Advanced Ear Training (1) Computer study and private lessons to develop competency in aural skills and dictation. Open to majors and non-majors.

Mus 340 Music Appreciation (3) A single semester course introducing the non-major to listening techniques for musical styles ranging from popular to classical. Non-majors only.

MUS 342 History of Music I (3) A topics-oriented course surveying major historical changes in western music from the ancient Greeks to the death of Bach. Pre-requisite: MUS 340 or equivalent. Required for majors.

MUS 343 History of Music II(3) A topics oriented course surveying major historical changes in western art music from the classical period to the present. Pre-requisite: MUS 340 or equivalent. Required for majors.

MUS 360 Music in Elementary School (3) Methods and materials of teaching singing, rhythmic concepts, listening, percussion and melody instruments to children. Practicum in elementary music teaching. Majors only.

MUS 401 Applied Music II (2) Applied instruction in voice, piano, organ, harpsichord, guitar, strings, winds, brass, and percussion. Private lessons on your major instrument. Open to majors and non-majors. Fee required.

MUS 403 Ensemble: University Singers (1) Vocal repertoire with emphasis on serious literature for the chamber choir. Annual madrigal dinners and tours highlight the groups' activities. Open to majors and non-majors by audition.

MUS 405 Ensemble: Permian Consort (1) Instrumental repertoire of the Renaissance, Baroque, and Classical periods. Emphasis on period instrumentation and historical performance practices. Tour in the spring semester. Open to majors and non-majors by audition.

MUS 407 Ensemble: Chorale (1) Oratorio chorus performing major pieces with the Midland/Odessa Symphony. Open to majors and non-majors by audition.

MUS 409 Ensemble: Symphony (1) Major orchestral repertoire with emphasis on 19th and 20th centuries. Open to majors and non-majors by audition.

MUS 421 Computer Application in Music (3) Beginning instruction in compositional and theoretical usages of computer software. Hands on experience with computer. Knowledge of BASIC useful though not required. Open to majors and non-majors with consent of instructor.

MUS 423 Advanced Conducting (2) Advanced study in the the solution of conducting problems and score reading. Rehearsal techniques and organizational skills necessary for developing a successful instrumental or choral program are stressed. Pre-requisite MUS 323 or consent of instructor.

MUS 424 Advanced Orchestration (3) Advanced exercises in scoring for orchestral textures and full ensembles. Pre-requisite: MUS 324 or consent of instructor.

MUS 440 Performance Practice (3) Performing techniques used prior to 1800. A combined lecture/lab course. Some performance skills required. Open to majors and non-majors with consent of instructor.

MUS 441 History of Musical Instruments (3) Survey of change in instrument design and construction from Biblical times to the present. A combined lecture/lab course. A musical instrument will be constructed during the course of the class. Open to majors and non-majors.

MUS 442 Musical Theater (3) Historical development of the Broadway musical along with introduction to the techniques involved in selecting, casting, and producing a musical. Open to majors and non-majors.

MUS 443 Choral Literature (3) An advanced survey of choral literature focusing on repertoire suitable for church and public school music.

MUS 444 Keyboard literature (3) Surveys major styles and trends in keyboard repertoire from the 15th century to the present. Some keyboard skills required. Open to majors and non-majors with consent of instructor.

MUS 462 Choral Music in the Secondary School (3) Techniques and materials for teaching choral music in grades 7 through 12. Emphasis on organization and administration of secondary music departments. Majors only.

MUS 464 Instrumental Music in the Secondary Schools (3) Instrumental instruction, organization of the public school music department, rehearsal techniques, and related problems. Open to majors only.

MUS 466 Piano Pedagogy (3) Techniques of piano instruction ranging from masters of the past to the most current trends. Some keyboard skills required. Open to majors and non-majors with consent of instructor.

MUS 468 Vocal Pedagogy (3) Techniques and strategies involved in successful studio voice instruction. Activities include repertoire survey and laboratory situations. Majors only. Required for majors in voice.

Philosophy

The study of philosophy is concerned with man's values and relationships with other individuals within institutions as well as in the speculative domain. It is also concerned with such matters as ethics, political and legal philosophy, aesthetics, standards of excellence in various pursuits and institutions, metaphysics, philosophy of religion, history and science and linguistics.

The university does not offer a major in philosophy but does offer courses which students may find of interest as a part of their general education or in the acquisition

COURSES IN PHILOSOPHY

PHIL 311 Logic (3) Principles of reasoning and the systematic application of human intelligence in problem-solving. Symbolic logic, rule and laws of logical thought.

PHIL 321 Ethics (3) Major traditions in ethics in the western world from Greeks through present. Problems in contemporary ethics and with emphasis on modern solutions.

PHIL 331 Philosophy of Religion (3) Major world religions as components of belief systems which have affected human history and social development.

PHIL 341 Existentialism (3) Contemporary existential thought, emphasizing isolation of the individual in a hostile universe, mankind's freedom of choice and responsibility for the consequences of human acts.

PHIL 351 Philosophy of Science (3) Philosophical basis for modern science, including the role, uses and limitations of the scientific method, nature of scientific laws and science as a belief system.

PHIL 361 Theory of Knowledge (3) Epistemology, including investigations into the origin, nature and development of explanations of human knowledge.

Physical Education

The basic physical education program emphasizes the study of human movement including those factors which affect and are affected by movement. Studies focus on the physiological, kinesiological, psycological, sociological and performance factors. To graduate from UT Permian Basin with a Bachelor of Arts degree in physical education, a student must demonstrate knowledge of the following:

a. Physiological factors (PHED 350)

b. Kinesiological factors (PHED 340)

c. Psychological and sociological factors (PHED 420, 430, or 440)

d. Performance factors (PHED 309-see Skill Competency Handbook)

In addition, all physical education majors must demonstrate the ability to measure human performance (PHED 400). These competencies/courses form the core of the physical education major.

Beyond the basic degree requirements, students are encouraged to design, with the aid of a faculty advisor, a degree program to satisfy their personal career objectives. A major in physical education is appropriate for students interested in elementary and/or secondary school teaching and coaching, physical therapy, corrective therapy, athletic training, youth leadership, administration of adult fitness programs, graduate study, and the study of medicine and allied health professions.

The major in physical education requires a minimum of 36 nonactivity semester credit hours, at least 18 of which must be at the upper level. The minor in physical educaton requires a minimum of 18 nonactivity semester credit hours, at least 12 of which must be at the upper level. Physical education majors must have an 18 hour minor. However, for a student majoring in physical education and seeking secondary or all-level physical education teacher certification, the minor field of study must include 24 semester credit hours at least 12 of which must be at the upper level. In either case, the minor selected should complement degree and career objectives. Changes in the Texas teacher certification requirements effective in the fall, 1978, only physical education courses may be applied to teacher certification in physical education.

It is recommended, but not required, that students complete the following courses or their equivalents before entering UT Permian Basin:

1. Foundations of Physical Education (applicable toward major)

2. First Aid (applicable toward major)

3. Physical Activity Courses (as many as possible)

4. Anatomy and Physiology

5. Courses in Minor or Second Teaching Field

Upon acceptance into the program, students should decide whether they wish to be certified to teach physical education, and if so, whether they wish all-level (k-12) physical education, secondary (7-12) physical education, or elementary classroom certification. Degree programs appropriate for each of these options differ significantly particularly in terms of required courses.

Students majoring in physical education and also seeking teacher certification are required to demonstrate competencies in the skills and strategies of teaching movement activities to normal and handicapped students (PHED 330, 410, and 480). Two additional courses are required for those seeking all- level physical education or elementary classroom certification: Motor Development (PHED 310) and Physical Education in the Elementary Schools (PHED 320). Athletic Training (PHED 370) is required for all-level and secondary physical education certification. See the education section of the catalog for teacher certification programs.

Students majoring in physical education, but not seeking teacher certification, should design a degree plan which best prepares them for career options outside of public school teaching. This implies gaining a degree of specialization and additional expertise in at least one specific application area. To facilitate this, students must complete Independent Study in Physical Education (PHED 491) and Practicum (PHED 492). With the aid of a faculty member, students will design an independent study project to be followed during a subsequent semester by a work experience. These credits may be applied to the 36 nonactivity semester credits minimally required for a physical education major.

SAMPLE DEGREE PLAN PHYSICAL EDUCATION WITH ALL-LEVEL TEACHING CERTIFICATE*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
PHED 310	3	PHED 330	3	PHED 350	3	EDUC 377 and 378	6
PHED 320	3	PHED 340	3	PHED 370,	3	PHED elective or	
PHED 410	3	PHED 400	3	EDUC 390	3	course in minor	3
PHED 420, 430,		PHED 480	3	EDUC 331, 332	6		
or 440	3	Courses in Minor	6	Course in minor	3		
EDUC 344	3						
Course in minor	3						
	18		18		18		9

*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

COURSES IN PHYSICAL EDUCATION

PHED 309 Skill Competency in Physical Education (1-3) Performance competency in selected combinations of sports as set forth in the Skill Competency Handbook (see PHED adviser).

PHED 310 Motor Development (3) Patterns of motor growth and development of infant, early childhood and later childhood ages.

PHED 311 Exercise, Nutrition and Weight Control (3) Introduction to the basic factors which affect and control the development of total physical fitness, including diet, nutrition and weight control. The student will learn to evaluate and write his/her own lifetime cardiovascular fitness, strength, flexibility, diet, nutrition and weight control programs.

PHED 320 Physical Education in Elementary Schools (3) An introduction to the content and principles of organizing, conducting, and evaluating physical education experiences for the early childhood and elementary school program.

PHED 330 Physical Activity for Handicapping Conditions (3) Physical performance factors of medical and educational handicapping conditions influencing modification and selection of activities for individuals restricted from regular physical education classes.

PHED 340 Kinesiology (3) Integration of skeletal and neuromuscular anatomy and physiology with mechanical principles of human movement to structurally and prescriptively analize movement patterns for performance improvement. Prerequisite: LFSC 350 or equivalent.

PHED 350 Physiology of Exercise (3) Physiological functioning of human body during physical stress to include muscle strength, cardiorespiratory endurance, environmental effects, and conditioning programs. Laboratory equipment used to collect data. Prerequisite: LFSC 350 or equivalent.

PHED 359 Lifetime Sports (1) Skill and knowledge of a lifetime sport. Sections including bowling, golf, tennis, skeet and trap shooting, swimming, handball, racquetball and others.

PHED 360 Coaching of Sports (3) Coaching profession as multidimensional role in education. Interpersonal relationships, societal implications, philosophy, coaching strategies, principles of training, organization, administration, etc.

PHED 369 Research in Coaching Sports (1-3) Literature pertaining to skills, drills and coaching techniques of selected sports.

PHED 370 Athletic Training (3) Prevention and treatment of athletic injuries, including recognition, techniques of taping, therapeutic modalities, rehabilitation of injuries and athletic training room management. Prerequisite: LFSC 350 or equivalent.

PHED 400 Measurement of Physical Performance and Achievement (3) Current trends in measurement and evaluation techniques relating to basic statistics for test interpretation, psychomotor and cognitive testing and the grading of students.

PHED 410 Curricular Innovations in Physical Education (3) Movement experiences for public school children, application of trends in physical education programs, and instructional techniques.

PHED 420 Psychology of Sport and Physical Activity (3) Concepts in psychology as applied to an individual's involvement in sport and physical activity. Emphasis upon group dynamics, motivation and personality theory.

PHED 430 Motor Learning and Performance (3) Variables influencing skill learning and motor performance, including physical, perceptual and cognitive processes, and their relevance to the development of effective instructional techniques.

PHED 440 Role of Sport in American Society (3) An examination from the perspectives of history, philosophy and sociology of the basic issues involving sport in American life.

PHED 480 Design of Learning Environments for Movement (3) Analysis and application of teaching activity that facilitates the learning of human movement skills.

Political Science

The Bachelor of Arts degree program in Political Science is oriented primarily toward the study of American government and politics and secondarily toward comparative government with supporting study in political theory.

A wide variety of career opportunities are open to students majoring in political science, including the United States Foreign Service, specialized work in foreign countries, the federal government, foundations and private organizations, city management and other types of public administration and public service, as well as others less directly related to government. Pre-law students find the study of political science appropriate preparation for law school. A major in political science is suitable for students planning to teach government or social studies.

In addition to lower division requirements of two courses in political science to meet graduation requirements, a major in political science *must* include at least one upper level course in comparative government, one in American government, and one in political theory. A major in political science consists of 30 semester credits, 18 of which must be upper level.

Student seeking to satisfy the state of Texas statuatory requirement in American Government may take either PLSC 313 or 315. The state requirement in Texas government may be met by taking either PLSC 311 or 412. If the requirement in Texas government has been met at another college or university, PLSC 311 may not be elected for credit at UT Permian Basin.

COURSES IN POLITICAL SCIENCE

†PLSC 311 The States and Federalism (3) The study of the constitution and functioning of state and local governments within the changing federal system. Includes the study of the Texas and United States constitutions.

†**PLSC 313 American Parties and Politics (3)** Behavior of political parties, politicians and voters in American politics focusing on the history of the American party system since the mid-19th century.

†**PLSC 315 The Legislative Process (3)** Analysis of the American constitution in terms of the organization and procedure of American legislative bodies; analysis of public and private influences upon public policy formation.

PLSC 321 Comparative Politics (3) A comparative examination of the political systems of selected economically developed nations.

PLSC 323 The Political Heritage of Southeast Asia (3) An examination of the historical development of political institutions, practices and attitudes in the nations of Southeast Asia. Attention will also be given to contemporary problems of economic and political development.

†**PLSC 412 Politics In The American States (3)** An examination of the states as subsystems of the political system of the United States. Topics include federalism socio-economic environments, state political cultures, pressure groups, state political parties and decision-making agencies.

PLSC 413 Political Behavior (3) Contemporary theories of American political behavior. Topics include political socialization, public opinion, leadership recruitment and voting.

PLSC 423 Governments and Politics of Latin America (3) Major institutions and political behaviors which have emerged in selected Latin American countries since independence, particularly during the 20th century.

PLSC 427 International Politics (3) An examination of the major variables affecting the political interaction of national states. Various theories, approaches and modes of analysis will be considered.

PLSC 431 American Political Thought (3) Major trends in American political thought, related to the socioeconomic and political development of the nation.

PLSC 436 Government and Business (3) An exploration of the relationship between government and business in American society. Course includes examination of the regulation and the promotion of business by government.

PLSC 443 American Foreign Policy (3) Origin, conduct and application of American foreign policy in world affairs.

PLSC 447 Public Administration (3) A survey of American public administration and the role of the bureaucracy in the formulation and implementation of public policy.

PLSC 451 Political Theory (3) A topical examination of the enduring issues in western political thought. Consideration will be given to the nature of citizenship, the function of the state, the sources and structure of authority in society, the magnitude of states, and the external relations of states.

PLSC 459 Seminar In American Public Policy (3) Examination of varying topics in public policy of contemporary interest and concern. May be repeated for credit when topics vary.

†These courses meet the State of Texas requirement for six hours in state and federal government.

Pre-Law

Students desiring to complete pre-law preparation and receive a bachelor's degree may do so through one of several options. The most common is the BA program in political science; however, degrees in several other fields also are appropriate. Those interested in entering law school after completion of the Bachelor's Degree should consult with the office of the dean of the College of Arts and Education for referral to an appropriate adviser.

Psychology

Psychology is the science of the behavior of living organisms, especially human beings. The study of psychology is an introduction to the emperical investigation of what we are, as well as an introduction to many of the investigators and thinkers who have developed systems of thought about behavior.

The program in psychology leading to the Bachelor of Arts degree is designed on a broad base to prepare the student who plans to be a practitioner of the sciences, as well as the student who plans to do research.

Psychology is an excellent major for the student whose career goals involve working with people in such fields as teaching, child care, counseling, personnel management, advertising, crime prevention, law, the medical and paramedical fields, recreation, social work, and urban planning. A minimum of 30 credit hours is required for a major in psychology.

Psychology is an appropriate minor for many students majoring in other areas. Psychology readily complements many fields of study. A minimum of 18 credit hours is required for the minor.

Courses in Introductory Statistics (PSYC 301), Principles of Learning (PSYC 303), History and Systems of Psychology (PSYC 402), and Independent Research in Psychology (PSYC 493) are required of all students majoring in psychology. The student who plans to pursue graduate-level studies in psychology is encouraged to take Experimental Psychology (PSYC 304) and the Senior Seminar (PSYC 495). Students should consult with their faculty advisers for specific planning.

SAMPLE DEGREE PLAN PSYCHOLOGY*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
PSCY 301	3	PSYC 402	3	PSYC 451	3	PSYC 404	3
PSYC 303	3	PSYC 304	3	PSYC 471	3	PSYC 493	3
PSYC 321	3	PSYC 322	3	Courses in Minor	3	Courses in Minor	3
Courses in Minor	6	Courses in Minor	6	Electives	6	Electives	6
	15		15		15		15

*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

COURSES IN PSYCHOLOGY

PSYC 301 Introductory Statistics (3) Measures of central tendency, variability, correlation and with emphasis on the application of statistical methods to research in the behavioral sciences and education.

PSYC 303 Principles of Learning (3) Major research results of classical and instrumental conditioning in animals and humans. Verbal learning, concept learning, problem solving and memory in humans will also be reviewed.

PSYC 304 Experimental Psychology (3) Introduction to the planning and execution of psychological research. Prerequisite: PSYC 301.

PSYC 305 Applied Behavior Analysis (3) An introduction to applications of the principles of learning to a variety of infant, child, adolescent and adult behavioral problems. Emphasis is on the specification of treatment operations and assessment of therapeutic change.

PSYC 311 Social Psychology (3) Interrelationships between individuals and their social environment, considering social influences upon motivation, perception, behavior and development and change of attitudes and opinions.

PSYC 321 Abnormal Psychology (3) Variables involved in development, maintenance and treatment of a variety of behavior disorders.

PSYC 322 Theories of Personality (3) A survey of the theoretical views of Freud, Jung, Adler, and various contemporary writers.

PSYC 341 Child Psychology (3) Developmental aspects of physical, mental, social and emotional growth from birth to adolescence.

PSYC 342 Adolescent Psychology (3) Developmental aspects of physical, social, emotional and cognitive growth. Emphasis is on the adjustment and behavior patterns of adolescents.

PSYC 401 Advanced Statistics (3) The application of advanced statistical methods to research in the behavioral sciences and education. Prerequisite: Introductory Statistics. Prerequisite: PSYC 301.

PSYC 402 History and Systems of Psychology (3) Major factors affecting development of psychology as science of behavior, with emphasis upon philosophical roots of major psychological concepts. Prerequisite: 9 credits in psychology.

PSYC 404 Physiological Psychology (3) Neurophysiology and neuroanatomy. Variables that contribute to behavioral effects in the areas of sensation, perception, motivation and learning.

PSYC 405 Drugs and Behavior (3) Pharmacologic basis of psychotropic drugs and their associated abuses. Theories of cause and treatment of abusers.

PSYC 406 Biofeedback: Theory and Practice (3) An introduction to the basic principles and techniques of clinical biofeedback. The specification of treatment operations for headaches, hypertension, muscular rehabilitation, and so on, will be discussed and demonstrated.

PSYC 411 Language and Cognitive Processes (3) Research and theories of language development and maintenance, including concept learning, problem solving, memory and attention.

PSYC 415 Theories of Learning (3) Assumptions, constructs and research evidence of the various theories of learning.

PSYC 433 Personnel Psychology (3) Techniques and methods for selection and classification and maintenance in commercial and industrial environments.

PSYC 435 Industrial Psychology (3) Variables affecting employee performance in the industrial and commercial environments.

PSYC 441 The Exceptional Child (3) Theories and research in fields of biology and psychology concerning exceptional children, emphasizing mentally retarded, emotionally disturbed and mentally gifted.

PSYC 442 Cognitive Development in Young Children (3) Major theoretical constructs and research findings relevant to the cognitive development of young children. Includes analysis of determinants of differences in cognitive functioning. Same as EDUC 414.

PSYC 443 Social and Emotional Development in Children (3) Major theories and research relevant to social and emotional development of children. Focuses on innate and environmental influences affecting development in families, schools and societies. Same as EDUC 415.

PSYC 451 Tests and Measurements (3) Major personality and intelligence tests, emphasis upon their administration, scoring and interpretation. Prerequisite: PSYC 301.

PSYC 460 Applied Behavior Analysis/Classroom (3) Principles of behavior modification and the application of these principles to the school and home. Same as EDUC460.

PSYC 471 Motivation (3) Theories and experimental research concerning drives, needs and preferences as proposed by scientists studying personality, learning and physiology.

PSYC 493 Independent Research in Psychology (3) Study of research under supervision of a member of the faculty. Students wishing to enroll should prepare a short plan for this coursework. Prerequisite: Senior standing and PSYC 304.

PSYC 495 Senior Seminar (3) Small group discussion in selected areas in psychology for seniors majoring in psychology.

Sociology

Sociology is the study of human society, emphasizing the existing variety of cultural forms and the social structure influencing social behavior. Having embarked on the ambitious task of discovering social laws or uniformities of human behavior, sociologists and students alike are constantly challenged by the apparent contradictions and richness of human nature and seek to enhance their understanding by employing and building social theories at several levels of analysis vis-a-vis institutions, organizations and small groups.

Students majoring in sociology will acquire a high quality of liberal arts education preparing them to enter various professions. At UT Permian Basin, practical applications of sociological knowledge are emphasized through an insightful comprehension of fundamental causes and circumstances leading to social conflict and change. Issues of social inequality such as social class, wealth, race, ethnicity, sex, and age are emphasized as important reference points for the sociological enterprise.

Sociology offers the following career fields: primary and secondary social science teaching, social work, public welfare with federal or state agencies, voluntary organizations, private and government foundations, social research, criminal justice, industrial relations and college teaching.

Requirements for a Bachelor of Arts degree are 30 semester credit hours, of which 18 must be at the upper-division level (junior or senior level). Two courses are specifically required for the major: SOC 325 and SOC 427. Students have the option of applying 3 semester credits in anthropology toward the major in sociology. However, duplication of an anthropology course in a student's sociology program by applying the same course to both major and minor requirements is not permitted.

Requirements for a minor in sociology are 18 semester credit hours of which 12 credits must be at the upper level. Students may elect to apply an anthropology course to their minor in sociology.

SAMPLE DEGREE PLAN SOCIOLOGY*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
SOC 301	3	SOC 403	3	SOC 417	3	SOC 431	3
SOC 311	3	SOC 375 or 415	3	SOC 427	3	SOC 444 or 480	3
Elective	9	Courses in Minor	6	Courses in Minor	6	Courses in Minor	6
		Elective	3	Elective	3	Elective	3
	15		15		15		15

*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific planning.

COURSES IN SOCIOLOGY

SOC 301 The Study of Sociology (3) Major social structures and processes in society. Includes norms, roles, social order and disorder, status, power, adaptive processes, groups, organizations and communities.

SOC 311 Social Behavior (3) Interpersonal interactions, including social influence, conformity, prejudice, attitude change, development of social motives, authoritarianism and community change.

SOC 350 Social Deviance (3) Study of societal definitions and reactions to deviant acts in relationship to race, ethnicity, social class and legal institutions: relationship of deviant acts to group solidarity and idealogical beliefs.

SOC 355 Juvenile Delinquency (3) Theories of causation, distribution and frequency of delinquency in modern society. Methods of correctional treatment, and preventive programs.

SOC 375 Social Stratification (3) Differentiated structures of power and social class in industrial societies; income; prestige and political authority, social mobility and major historical changes in stratification systems.

SOC 380 Social Work I-Introduction to Social Work (3) History of social work and its knowledge base and values; professionalization of social work; social service clientele and issues confronting the profession.

SOC 382 Social Work II-Social Welfare as a Social Institution (3) The welfare system and the function of public and private agencies; the social security act; influencing social policy and legislation; issues in social reform; gaps in social welfare.

SOC 390 Marriage and Family (3) Examine historical, functional, institutional and cross-cultural perspectives. Study dating, courtship, mate selection, communication, parenthood, in-laws, divorce and remarriage.

SOC 403 Social Research (3) Problems in conducting sociological research; conceptualizing research, developing a research design, collecting and analyzing data. Prerequisite: at least 2 courses in sociology.

SOC 405 Socialization: Ethnicity and Social Class (3) The process by which the individual learns the social and cultural requirements to function in roles associated with race/ethnic group membership and social class position.

SOC 410 Sociology of Education (3) A study of the role of educational institutions in society, as agents of socialization and as sources for social change. Relations with other social institutions and the community will be discussed.

SOC 415 Sociology of Organization (3) Contemporary empirical studies in organizations: prisons, governmental bodies, unions and hospitals. Prerequisites: SOC 311 strongly recommended.

SOC 417 Industrial Sociology (3) Social organization of work in industrial society. Industrial conflict, impact of technology on work and morale and productivity of workers. Prerequisite: SOC 415 recommended.

SOC 427 Sociological Theory (3) Classical and contemporary theorists: Marx, Weber, Durkheim, Pareto, Homans and Parsons among others. Substantive theories of social organization. Prerequisite: At least 2 courses in sociology.

SOC 431 Criminology (3) Criminal behavior patterns, behavior of police and courts in handling criminal offenders. Social control in confinement and treatment of criminals.

SOC 432 Theories of Criminal Behavior (3) Principal theories used to explain criminality: classical naturalist, positivist, critical, and general eclectic. Research and correctional practice as a reflection of underlying theory.

SOC 444 Racial and Cultural Minorities (3) Emergence of ethnic and racial minorities, comparative ethnic relations, racism and ethnocentrism, future trends in relations between minorities and the dominant society.

SOC 450 Sociology of Mass Communications (3) The relationship of advanced industrial technology and social institutions on the content and effects of mass media forms of communication, communication systems and public responses to mass communications.

SOC 460 Social Gerontology (3) Social influences on aging individuals. Examination of theories of aging and the life cycle; age status; age-sex roles, health, community participation, family relations, work, leisure, retirement, housing, finance.

SOC 461 Social Work with Aging (3) An examination of the social systems and methods for delivering services to the aging population. Skills necessary for intervention work.

SOC 465 Thanatology (3) Central issues concerning death and dying. The role of institutions in socializing persons toward death. Changes in attitudes toward death over the life cycle. Examination of the dying process, funeral, bereavement, living will, euthanasia, and views on life after death.

SOC 475 Population Problems (3) Social sources for population size, composition and distribution: relations of population to social organization and human welfare: recent trends in populations with consequences for policy and programs.

SOC 480 Urban Studies (3) Social and ecological organization of cities. Emphasis on the American city: its settlement patterns, ethnic and racial groups and impact of urbanism on personality.

SOC 493 Independent Research in Sociology* (3) Study or research under supervision of a member of the faculty. Students wishing to enroll should prepare a short plan for this course-work.

Spanish

Because it shares the Hispanic heritage of Texas and lies in close proximity to Latin American countries, UT Permian Basin offers the student of Spanish and the potential professional unique learning and cultural experiences as well as scores of career possibilities and opportunities. Besides offering a living language and a cultural laboratory in which to study and work, the Spanish program provides several specific areas of concentration designed to meet the student's particular academic requirements and career objectives. Some of these areas are interdisciplinary in character, that is, they are tied into academic programs other than Spanish. Thus they afford the potential professional in literature, education, business or science the flexibility to enroll in relevant courses of primary or secondary importance.

Program concentrations in Spanish include:

a. Spanish for elementary school teachers

b. Spanish for secondary school teachers

c. Spanish for majors in literature

d. Spanish as a minor concentration

e. Master of Arts in education with concentration in Spanish

f. Master of Arts in literature with concentration in in Spanish

All but the last course of study lead to the Bachelor of Arts degree in Spanish. A proficiency test will be administered to each student entering the Spanish program to assess their specific academic needs.

The major in Spanish consists of a minimum of 30 credits divided as follows:

a. 6-12 credits of Spanish language or its equivalent at the freshman and sophomore levels.

b. 9 credits of required Spanish language courses at the upper-division level as follows: SPAN 301, 302, 431.

c. *Minimum* of 9 credits of upper-level courses, to be identified by an adviser in the Spanish program, according to specific concentration of student, that is, elementary bilingual education, secondary education with Spanish as the major subject area, or major in Hispanic letters.

The minor in Spanish consists of 18 credits, 12 of which are required at the upper level. Students declaring Spanish as a second teaching field are urged to fulfill all requirements for the major in Spanish at the secondary level.

COURSES IN SPANISH

SPAN 301 Advanced Grammar and Syntax (3) Analysis of more technical and advanced points of Spanish grammar and syntax with comparisons made to English. Prerequisites: Minimum requirements in Spanish language for entry in program and placement test.

SPAN 302 Advanced Composition and Conversation (3) Designed to improve oral and written Spanish. Presentation of topics related to the diverse cultures, peoples, history of Spain and Latin America, especially Mexico. Prerequisite: SPAN 301.

SPAN 311 Review Spanish for Native Speakers (3) Review of grammar, improvement of written-oral communication and reading proficiency for native speakers, stressing their specific language problems. Not counted toward major. Prerequisite: placement test.

SPAN 312 Review Spanish for Nonnative Speakers (3) Similar to SPAN 311 except exclusively directed to the nonnative speaker whose language needs and problems differ from those of native speakers. Not counted toward major. Prerequisite: placement test.

SPAN 321 Hispanic Civilization (3) Currents and characteristics of Spanish culture as expressed through the centuries in literature, art, philosophy and history. Prerequisite: SPAN 302.

SPAN 331 Spanish Conversation (3) Study and practice of oral Spanish, stressing idiomatic expressions and providing students with the opportunity to improve their fluency. Pronunciation, comprehension and building vocabulary are also emphasized.

SPAN 351 Spanish and Spanish-American Literature in Translation (3) Specialized topics in Spanish and Spanish-American literature. Not counted as credit toward the major. No prerequisite.

SPAN 401 Spanish Literature I (3) Spanish Peninsular literature from the early period to the 17th century. Prerequisite: SPAN 421 or instructor's approval.

SPAN 402 Spanish Literature II (3) Spanish Peninsular literature from the 18th century to the present. Prerequisite: SPAN 421 or instructor's approval.

SPAN 411 Spanish-American Literature I (3) Spanish-American literature from the Prehispanic period through Romanticism. Prerequisite: SPAN 421 or instructor's approval.

SPAN 412 Spanish-American Literature II (3) Spanish-American literature from Modernism to the present. Prerequisite: SPAN 421 or instructor's approval.

SPAN 421 Literary Forms and Analysis (3) Principal literary forms in Hispanic letters and methodology for critical literary analysis. Prerequisite: SPAN 302.

SPAN 422 Creative Literary Expression in Spanish (3) Skills used in creative writing. Emphasis on developing style and techniques as related to one specific literary form to be announced each time course offered. Prerequisite: SPAN 302.

SPAN 431 Spanish Phonetics and Phonemics (3) Spanish phonology with emphasis on oral drills; an introduction to elementary applied linguistics. Prerequisite: SPAN 301.

SPAN 437 Hispanic Literature and Culture through Travel (3) Intensive classroom preparation followed by guided travel to countries and sites of cultural and literary importance.

SPAN 441 Hispanic Drama Workshop I: Analysis (3) Analytical study of a work of a Hispanic dramatist, with special emphasis on the study of form and content in a theatrical context. Prerequisite: SPAN 302 or instructor's approval.

SPAN 442 Hispanic Drama Workshop II: Presentation (3) Continuation of SPAN 441 but stress on interpretation for theatrical presentation. Prerequisite: SPAN 441. Recommended electives: THEA 362 and 479.

SPAN 451 Mexican Literature (3) Survey of Mexican literature from Pre-hispanic times to present with emphasis on contemporary literary themes, movements and genres. Prerequisite: SPAN 421 or instructor's approval.

SPAN 452 Mexican-American Literature (3) Mexican-American literature in Spanish and English focusing on native authors, to understand realities and experiences of Mexican-American community. Prerequisite: SPAN 421 or instructor's approval.

SPAN 459 Special Studies in Spanish and Spanish-American Literature (3) Specific periods, themes or literary types. Contents vary according to the interests and needs of the instructors and students. Prerequisite: SPAN 421 or instructor's approval.

SPAN 469 Studies of a Major Author (3) Works of a major author in Peninsular or Spanish-American literature. Prerequisite: SPAN 421 or instructor's approval.

SPAN 470 Intensive Spanish Grammar for Reading (3) This course has been devised for students whose needs are not filled by existing grammar courses: Those whose sole interest is to acquire a reading knowledge of Spanish.

SPAN 471 Spanish for the Professional (3) Specialized vocabulary for health, law, education (nonteaching), social and civil services, business and tourism. Given in professional area as demanded. No major credit. Prerequisite: SPAN 301, 311 or 312.

SPAN 478 Hispanic Children's Literature (3) Study of Hispanic children's literature including not only available texts but the oral tradition. Comparative literature orientation, emphasizing parallels with myth fables, folk literature of other lands.

Speech

Speech as an academic field encompasses the theory and practice of oral and wirtten communication. The field has traditionally been oriented toward preparing students as individual oral communicators in public speaking, group discussion processes and person-to-person communication. However, training in speech communication requires that students be familiar with the theory of communication as it applies to encoding and decoding both oral and written messages. Basic speech communication theory involves the analysis of messages (rhetorical criticism), interpersonal and group communication theory as well as the principles of attitude and behavior change via persuasion.

Although customarily emphasizing oral communication, the study of speech also includes analysis of argumentative strategies and persuasive devices as present in written forms of communication.

At UT Permian Basin, programs in speech and mass communications are associated in the faculty of communication, indicating a close relationship between the approaches of these two fields.

Depending upon the student's interest, studies in speech may be directed into one of several channels. Students may choose to study speech as a humanistic field, emphasizing such courses as oral interpretation and rhetorical criticism. Students selecting this option would probably choose theatre, literature, history and related fields as a minor. Students may approach speech as a social science directing particular attention to communication and persuasion theory. Related minor areas of study would include mass communications, psychology, sociology, management and other fields. Finally, students whose primary interest is teaching should plan a well-rounded program directed to provide competencies in the several areas of traditional speech teaching such as: public speaking, group processes, interpersonal communication, argumentation, debate, oral interpretation and persuasion.

Students interested in speech as an elementary or secondary teaching field will need to consult with the faculty of education to obtain professional courses directed toward teacher certification.

Many students interested in humanities, social science, or education select speech as a secondary field or minor area of study. Other students find that one or two elective courses in speech communication may complement their major field or increase their awareness, confidence and effectiveness as personal communicators.

Students majoring in speech should plan to attain competency in the following areas: (Core courses are in bold print.)

a. *Interpersonal Communication:* communication as it affects the relationships between persons. SPCH 335, 418, 456.

b. *Group Processes:* communication pertaining to decision-making and problem-solving in small task groups. SPCH 315, 335, 418.

c. *Public Speaking:* strategies for constructing messages and analyzing audiences in the oral communication setting. SPCH 310, 345, 346, 460.

d. *Oral Interpretation:* use of oral techniques to communicate literary meaning. SPCH 346, theatre elective.

e. *Argument:* finding and communicating goal reasons. SPCH 340, 456, 460.

f. *Persuasion:* language and its influence on human attitudes and behavior. SPCH 340, 351, 456.

g. *Communication Theory and Criticism:* underlying principles concerning the process by which sources construct messages for given audiences. SPCH 330, 340, 351.

SAMPLE DEGREE PLAN SPEECH*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
SPCH 335	3	SPCH 310	3	SPCH 351	3	SPCH 418	3
SPCH 345	3	SPCH 346	3	SPCH 456	3	SPCH 460	3
SPCH Elective	3	Courses in Minor	3	Course in Minor	3	Course in Minor	3
Courses in Minor	6	Elective	3	Electives	6	Electives	6
	15		15		15		15

*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

COURSES IN SPEECH

SPCH 310 Participation in Speech Activities (1) Involvement-oriented training in theory and practice of communication activities such as debate, oral interpretation, persuasive speaking.

SPCH 315 Parliamentary Procedure and Group Leadership (3) Group management skills by which self-governing bodies transact business. Emphasis on both formal parliamentary mechanisms and general problem-solving techniques.

SPCH 335 Interpersonal Communication Awareness (3) Principles of communication underlying the initiating, maintaining and altering relationships between persons.

SPCH 340 History of American Public Address (3) Communication of ideas and beliefs associated with the great issues in American history and culture. Persuasive campaigns via newspapers, speeches and other documents.

SPCH 345 Improving Public Speaking Skills (3) A practice-oriented course in public speaking. Students prepare, present and analyze reports and speeches.

SPCH 346 Oral Interpretation of Poetry (3) Oral re-creation of literature and its analysis. Principles and practice of group performance in reader's theatre.

SPCH 351 Rhetorical Analysis and Criticism (3) Principles and standards for the analysis and criticism of communication. Critical concepts applied to selected oral and written messages.

SPCH 406 Reader's Theater (3) Group technique practice and study of concepts to transform a literary text into reader's theatre production.

SPCH 408 Thought and Structure: Persuasive Writing (3) Provides skill to analyze, develop and write persuasive argument.

SPCH 418 Dynamics of Small Group Communication (3) Communication in group settings. Observing group interaction and engaging in problem solving on a group basis.

SPCH 456 Theory of Argument and Persuasion (3) Strategies and principles of argumentation as they apply to influencing human attitudes and behavior.

SPCH 460 Theory and Practice of Debate (3) Principles of argument as a basis for testing the merits of issues in subjects of controversy.

Theatre

The university does not offer a major in theatre but does offer courses which students may include in their general education or for a minor.

COURSES IN THEATRE

THEA 361 Shakespearean Production (3) Offered in conjunction with the Summer Shakespeare Festival of the Globe of the Great Southwest; introduces students to all phases of Shakespearean production in one of the most authentic settings extant throughout the world.

THEA 362 Creative Dramatics (3) Improvisational drama, focusing upon learning imaginative techniques for dramatizing an idea, feeling or situation. Drama as ""play" rather than performance.

THEA 405 American Drama (3) Same as LIT 405.

THEA 425, 426 British Drama I, II (3, 3) Same as LIT 425, 426.

THEA 445, 446 Comparative Drama I, II (3, 3) Same as LIT 445, 446.

THEA 453 Acting (3) Problems of building a character through intellectual, emotional and physical techniques. Principles and procedures of direction from selection of the play through its performance.

THEA 457 Advanced Acting (3) Acting styles and techniques from early Greek through modern times.

THEA 479 Performance Workshop (3) Play production activities (acting, stage managing, scenery, properties, lighting, costumes, publicity and box office).

Teacher Education (See Education)

BUSINESS ADMINISTRATION

The goals of the College of Business Administration are to help students prepare to assume leadership responsibility and decision-making roles in business, government and other administrative environments. Because the demands on modern business and government are in constant change, it is important that students possess a flexibility which comes from a broad education.

An integrated approach to the function of business is emphasized since the operation of an enterprise, private or public, cannot be easily segmented and compartmentalized. At the same time, however, strong efforts are made to prepare students to sit for certifying examinations in the areas of accounting, insurance, land management, real estate, transportation and other fields of their choice and to enter a wide range of specialized fields in both profit and nonprofit organizations.

The College of Business Administration offers six undergraduate programs of study: (1) accountancy and information systems, (2) economics, (3) finance, (4) land management, (5) management, and (6) marketing. Within finance the sub-areas of concentration are: (1) financial institutions, (2) portfolio management, (3) insurance, and (4) real estate. The Bachelor of Business Administration degree is offered in accountancy and information systems, finance, land management, management and marketing. The Bachelor Arts degree is offered in economics. A minimum of 123 semester credits is required for the BBA degree, of which at least 57 must be upper level. The BA degree requires 120 credits with at least 57 upper-level credits. Students selecting a management program of study may choose to emphasize decision sciences, personnel or production; those selecting marketing may choose the broader program or the more specialized program in oil and gas marketing management. At the graduate level, a Master of Business Administration degree program is offered. (See the graduate section of this catalog for more information about the MBA.)

College of Business Administration Advisory Council

Authorized by The University of Texas System Board of Regents in 1979 and established in 1980, The College of Business Administration Advisory Council has a membership of outstanding business leaders who provide assistance and guidance to the dean of the college on matter of curriculum, planning, community relations and college development. In addition to the council, outstanding members of the Permian Basin business community serve as guest lecturers and adjunct instructors.

DEGREE REQUIREMENTS

Lower Division or Community College Preparation

The Core Curricula for Public Junior Colleges in Texas established by the Coordinating Board, Texas College and University System, will be accepted in its entirety and applied toward appropriate degrees. However, it is not necessary that students complete this exact list of courses. Any one of the three major fields are acceptable; and, further, the study of a foreign language is not required for programs of study offered by the College of Management.

Lower-level plans of study for business administration should include:

Subject	Semester Hours
Expected	
Accounting	6-8
Business Law	3
College Algebra	3
Computer Programming[2]	3
Economics	6
English Composition or Composition and Rhetoric	6
Political Science, Federal and State[1,2]	6
U.S. History (one may be Texas History)[1,2]	6

[1]Required by state statute.
[2]May be taken at the lower level or at UT Permian Basin.

Recommended Electives	
Calculus	3
Literature	3
Natural Science	3
Psychology	3
Sociology	3
Speech	3

NOTE: Expected courses are those courses normally required for the bachelor's degree that should be completed prior to entrance into UT Permian Basin. Applicants with variant preparation are encouraged to coordinate with the dean of the College of Business Administration. Applicants who hold sufficient hours for entrance but who lack some of these courses may complete most of the above required courses at UT Permian Basin. In certain cases such as economics, it may be necessary to complete these courses concurrently at a community college.

Students who have completed accounting courses other than two courses in principles of accounting at a community college may receive credit for those courses toward the accountancy and information systems major at UT Permian Basin only after satisfactory performance on the final examination which UT Permian Basin students would have taken for the course in question.

UPPER LEVEL REQUIREMENTS

All candidates for BBA degrees must complete a basic business administration core of 27 credits. Students working on the BA degree should consult respective sections on economics. The basic business administration core provides students with a common body of knowledge in business administration. Students' programs include instruction dealing with the following areas:

a. Concepts, processes and institutions in marketing and distribution, production and financing functions of business enterprise,

b. Economic and legal environment of business enterprises along with consideration and financing functions of business enterprise,

c. Concepts and methods of accounting, quantitative methods and information systems,

d. Organization theory, interpersonal relationships, control and motivation systems and communications,

e. Administrative processes under conditions of uncertainty including integrating analysis and policy determination at the overall management level,

f. The business administration core consists of the following courses: ACCT 300, DSCI 301, ECON 300/400 level course, FIN 320, MNGT 310, 340, 366, MRKT 312 and 314.

PROGRAMS OF STUDY

Accountancy and Information Systems

The major in accountancy and information systems combines the well-established field of accounting with the newer but rapidly expanding area of information systems. The program is intended to prepare students for professional careers in public, managerial, governmental or social accounting.

Accounting is a discipline providing quantitative and qualitative information essential to the decision-making process utilized by any type of organization. Information systems courses deal with the techniques of processing, analyzing and utilizing business or other data for decision making, with emphasis on effective application of computers.

Education and Experience for CPA:

Texas CPA (Certified Public Accountant) candidates wishing to qualify to sit for the CPA exam under the education and experience requirements of the Act of 1979 should meet the following minimum requirements:

* High School graduate plus 2 years of study in a college or university (60 semester hours) including at least 20 semester hours in accounting, may sit for all parts of the exam. Six years of qualifying experience under the supervision of a CPA is required before a CPA certificate will be issued.

* Baccalaureate degree holder with at least 30 semester hours in accounting and 20 semester hours in related business subjects may sit for all parts of the exam. Two years of qualifying experience is required before the certificate will be issued.

* Masters, 5-year Professional, LLB, or J.D. degree holders with at least 30 semester hours in accounting and 20 semester hours in related business subjects may sit for all parts of the exam. One year of qualifying experience is required before the certificate will be issued.

Degree Requirements for Accountancy

The 3rd- and 4th-year degree requirements consist essentially of three parts:

Basic Business Administration Core (outlined earlier in this section)	27 credits
Accountancy and Information Systems	36 credits

Opportunities for advanced coursework in accountancy and information systems are provided to meet the objectives and capabilities of the student and the College of Business Administration. Requirements in accountancy and information systems are ACCT 301, 302, 303, 304, 333, 400, 401, 405, 406, 411, and two of ACCT 413, 415 and 416.

SAMPLE DEGREE PLAN ACCOUNTANCY AND INFORMATION SYSTEMS*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ACCT 300	3	ACCT 303	3	ACCT 411	3	ACCT 400	3
ACCT 301	3	ACCT 302	3	ACCT 304	3	ACCT 401	3
ACCT 333	3	ACCT 405	3	ACCT 406	3	ACCT 413, 415	
DSCI 301[1]	3	MGMT 310[2]	3	FIN 320	3	or 416	6
MNGT 310	3	MRKT 300	3	MRKT 314	3	MGNT 366	3
				ECON 300/400	3		
	15		15		18		15

*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

[1]DSCI 301 must be completed during the first semester at UT Permian Basin or before.

[2]MNGT 340 must be completed during the second semester at UT Permian Basin or before.

COURSES IN ACCOUNTING

ACCT 300 Managerial Accounting (3) Accounting in planning and control of business enterprises, emphasis on management, and decision-making uses of accounting information. Prerequisite: accounting principles.

ACCT 301 Intermediate Accounting I (3) Problems and theory of financial statements of conditions and net income and other published financial statements of business organizations. Prerequisite: accounting principles.

ACCT 302 Intermediate Accounting II (3) Fundamental theory and problem-solving related to publication of financial statements. Includes liabilities, paid-in capital, changes in financial position and financial statements. Prerequisite: ACCT 301.

ACCT 303 Cost Accounting Principles (3) Cost analysis of manufacturing, marketing and administrative functions of business organizations primarily for purposes of control and decision-making. Prerequisite: accounting principles.

ACCT 304 Special Problems Accounting (3) Emphasis on special problems in current accounting practice to include not-for-profit organizations. Prerequisite: ACCT 302.

ACCT 310 Accounting Concepts (3) Fundamentals of theoretical and practical concepts in accounting.

ACCT 331 Business Programming (3) Analysis of managerial applications on business oriented computers and building algorithms under varied constraints. Uses of time-sharing and BASIC language development.

ACCT 333 Information System Fundamentals (3) Basic framework for developing and analyzing systems-oriented information flows in profit and nonprofit organizations. Prerequisite: ACCT 331 or CPSC 300 or 301 or 302, or equivalent.

ACCT 400 Advanced Accounting (3) Special accounting problem for partnerships; branches; corporate mergers, acquisitions, liquidations, and reorganizations; interim financial reporting; and multinational business organizations. Prerequisite: ACCT 304.

ACCT 401 Accounting Theory (3) Current accounting problems. Problem analysis varies depending upon issues in accounting. Emphasizes topics under consideration by the FASB, CASB and SEC. Prerequisite: ACCT 304.

ACCT 405 Federal Income Tax (3) Provisions and procedures of federal income tax laws and requirements affecting individuals and business organizations, including management problems of tax planning and compliance. Prerequisite: ACCT 301 or concurrent enrollment.

ACCT 406 Auditing Theory and Practice (3) Auditing standards and supporting philosophy. Techniques available to independent public accountants. Prerequisite: ACCT 302, 333, DSCI 301.

ACCT 410 Oil and Gas Accounting (3) Accounting principles and procedures for the petroleum industry. Includes exploration, leasing, drilling and production problems. Prerequisite: ACCT 304.

ACCT 411 Information Systems Theory and Analysis (3) Introduction to the information systems approach and of appropriate computer applications for varied types of organizations. Prerequisite: ACCT 333 or permission of instructor.

ACCT 413 Cost Analysis and Profit Planning (3) Budgeting and use of standard cost systems and in-depth study of cost and profit analysis. Prerequisite: ACCT 303, MGMT 340.

ACCT 415 Advanced Income Tax (3) Federal Income Tax laws, rules and regulations relating to partnerships, corporations, estates and trusts. Prerequisite: ACCT 405.

ACCT 416 System Audits (3) Auditing of EDP systems and basic approaches to auditing other types of business/organization systems. Prerequisites: ACCT 406.

Business Law

Business law courses are offered in support of other programs in the college and for those students interested in pre-law preparation.

COURSES IN BUSINESS LAW

BLAW 320 Legal Environment of Business (3) Origin and history of law, its place in and effect upon society; Court systems and legal procedures and their effect on businessmen and consumers.

BLAW 321 Legal Aspects of the Management Process (3) Law affecting management decisions regarding creating, regulation and control of business structures. Includes law of agency, principles of personal and real property law. Prerequisites: BLAW 320.

BLAW 332 Oil and Gas Law (3) Legal problems in natural resource areas of oil and gas exploration, development and marketing.

Decision Science

Decision Science courses are offered to service other programs throughout the college, with special emphasis on production management.

COURSES IN DECISION SCIENCE

DSCI 301 Introduction to Statistics (3) Areas of descriptive statistics, statistical inference, regression and correlation analysis. Prerequisite: demonstrative proficiency in algebra (should be taken prior to 400 level courses).

DSCI 405 Intermediate Statistics (3) Specialized hypothesis testing: ANOVA and Chi-Square. Statistical decision theory in its economic context. Prerequisite: DCSI 301.

DSCI 409 Seminar in Decision Science (3) Seminar in quantitative management sciences concentration. Extensions of methodology but principally real-world applications of the decision sciences.

Economics

The economics program is designed to prepare economists or to serve other disciplines such as accounting, finance, land management, management, marketing, engineering, government, education, sociology or history. Economics includes two broad areas: (1) Microeconomics is an area applicable to any study of human endeavor where scarce resources must be allocated among competing uses; it is the study of man's behavior in producing, exchanging and consuming material goods and services. (2) Macroeconomics includes such problems as inflation, unemployment and the rate of economic growth, i.e., the performance of the economy as a whole. Both programs at UT Permian Basin include forecasting so that individuals, firms and governmental bodies may adjust to anticipated economic conditions.

A basic understanding of economics is essential for a well-informed citizenship since most of today's specific problems have important economic aspects.

It is also a vital discipline for, and is of practical value in, business decision-making. An understanding of the overall operation of the economic system puts businesses in a better position to formulate policies.

In spite of its practical benefits, economics is primarily an academic, not a vocational subject. In economics, problems are examined from a social, rather than an individual, point of view.

The undergraduate major in economics prepares students for participation in public affairs, positions in business firms and for government service. It provides a strong foundation for pre-law students and for further graduate study leading to teaching and research positions in universities, governments and private enterprises.

Lower-level requirements have been outlined in the introductory section to the College of Management. Upper-level requirements consist essentially of the following:

Quantitative Techniques	6 credits
Free Electives	15 credits
Minor Field Outside Economics	18 credits
Concentration in Economics	24 credits

Upper-level requirements consist essentially of the following:

Quantitative Techniques	6 credits
Free Electives	24 credits
Minor Field Outside Economics	12 credits
Concentration in Economics	18 credits

SAMPLE DEGREE PLAN– ECONOMICS* (BA)

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ECON 303	3	ECON 423	3	ECON 425	3	ECON 407	3
DSCI 301[1]	3	Minor Elective	3	Minor Elective	3	Minor Elective	3
ECON 322	3	MNGT 340[2]	3	Free Electives	9	Free Electives	9
Free Elective	3	ECON 415	3				
Minor Elective	3	Free Elective	3				
	15		15		15		15

[1]DSCI 301 must be completed during the first semester at UT Permian Basin or before
[2]MNGT 340 must be completed during the second semester at UT Permian Basin or before

COURSES IN ECONOMICS

ECON 303 Microeconomics (3) Underlying assumptions of rational consumer behavior. Expected actions of profit-motivated firms under perfect and imperfect competitive conditions.

ECON 304 Market Structures and Economic Efficiency (3) Effects of various market structures on efficiency growth, employment and innovation and government's role in promoting the achievement of economic goals.

ECON 314 Physical Distribution Management (3) Same as MRKT 314.

ECON 320 Labor-Management Relations (3) Same as MNGT 320.

ECON 322 Commercial Banking (3) Same as FIN 322.

ECON 407 Econometrics (3) Focus is on applied econometrics in estimating and testing simple, multiple and simultaneous equation models, including problems of multicollinearity, autocorrelation and generalized least squares.

ECON 410 Public Finance (3) How government meets its stabilization, distributional and resource allocation functions, through taxation and expenditure policies.

ECON 411 Physical Resource Management (3) Same as MNGT 411.

ECON 415 Government Regulation of Business (3) History, institutions and theory of regulated business activity. Problems of public utility regulation. Cases in regulated industry, with emphasis on the petroleum/natural gas industry.

ECON 423 Macroeconomics (3) Theory of employment, price level and growth rate. Relationship between accepted theories and actual data in recent years. Issues raised by controls.

ECON 425 Managerial Economics I (3) Uses economic analytical tools including demand, forecasting, resource allocation, and cost profitability. Prerequisites: DSCI 301 and MNGT 340.

ECON 435 Regional Economics (3) Rural and urban resources, patterns of industry, regional problems of growth with emphasis on the Southwest region.

Finance

Knowledge acquired from the finance curriculum prepares students for career opportunities in financial management and investments, manufacturing, wholesale and retail firms, commercial banking, investment banking, real estate firms, insurance companies and other enterprises. In addition, this knowledge will assist students in managing their personal, church and other non-profit association affairs.

Finance coursework provides understandings of the financial structure of the U.S. economy, to include monetary theory and practice, investment management principles (especially those used in operating major financial institutions and pension funds), and finance functions in industrial and commercial firms (with emphasis on portfolio management, insurance and real estate).

The 3rd- and 4th-year requirements for the BBA in finance are included in the program outlined below:

SAMPLE DEGREE PLAN–FINANCE*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ACCT 300	3	MNGT 310	3	FIN 333	3	MNGT 366	3
DSCI 301[1]	3	MRKT 314	3	FIN 345	3	FIN Elective	3
ECON 303	3	FIN 423	3	FIN Elective	3	FIN Elective	3
MRKT 300	3	MNGT 340[2]	3	College Elective	3	College Elective	3
FIN 320	3	FIN 322	3	College Elective	3	Free Elective	3
				Free Elective	3		
	15		15		18		15

[1]DSCI 301 must be completed during the first semester at UT Permian Basin or before
[2]MNGT 340 must be completed during the second semester at UT Permian Basin or before
*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

COURSES IN FINANCE

FIN 310 Free Enterprise (3) Business and government interactions with emphasis on legislative and free enterprise attitudes and perceptions.

FIN 320 Financial Management Principles (3) Business organization including corporate securities, financing through securities; expansion and combination including reorganization, receivership and dissolution; working capital and administration of incomes. Prerequisite: ACCT 300, DSCI 301.

FIN 322 Money and Banking (3) How banks, the Federal Reserve and U.S. Treasury interact to determine money supplies. Recent and current attempts to control inflation and unemployment. Same as ECON 322.

FIN 326 Public Finance Theory and Practice (3) Financial management principles and practices of public, nonprofit organizations. Prerequisite FIN 320.

FIN 331 Evaluation and Appraisal of Real Estate (3) The theory and practice of property evaluation, cost estimation, investment earnings and forecasts, principles and technology.

FIN 333 Insurance Principles and Practices (3) Life, casualty and property insurance.

FIN 338 Pension and Profit-Sharing Plans (3) Theory, practice, development, funding and administration of private pension and profit-sharing plans.

FIN 342 Risk Management (3) Treatment of risk and liability through retention, reduction and transfer.

FIN 345 Real Estate (3) Real estate administration, financing, estimations, zoning and other environmental considerations.

FIN 421 Investment Management (3) Securities analysis, portfolio management and capital budgeting decisions using both qualitative and quantitative economic measures.

FIN 423 Macroeconomics: Financial Forecasting (3) Same as ECON 423.

FIN 424 Financial Institutions (3) Funds flow in aggregate financial systems, structure of financial markets, interaction of aggregate financial factors and policies and operations.

Land Management

Key to the past, present and future of economic development in the Permian Basin, the United States and, indeed, much of the entire world is land/resource information. Land managers are those specialists that provide land information to include land-ownership, taxation, assessment, presence of minerals, soil types, rights-of-way, spatial relationships and economic potential. Land managers gather, organize and apply the knowledge generated by planners, explorers, legislators, engineers, insurers, appraisers, lenders, builders, surveyors and effect transactions between buyers and sellers of land that result in the creation of resources.

Successful transactions dealing with land may employ a range of information to include physics, chemistry or geology of an oil field and such labor intensive activities as searching land titles and assessment data. The background of information applied by land managers may include geodetic and earth-resource satellites, aerial photogrammetry and computers to city, county, state and national land and resource records.

In brief, land management, especially throughout the Permian Basin, makes up a significant part of an economy based on mineral exploration and production. Land management requires skills and technical knowledge in the areas of land acquisition to include minerals, royalties, rentals, titles, tax and record maintenance. Individuals who have made land management their career may have acquired their "know-how" through experience, apprenticeship programs or formal education. Most agree that the ideal preparation is a mix of practical experience built upon a formal university program. With this career goal in mind the College of Business Administration offers a Bachelor of Business Administration in Management degree with an emphasis in land management. Although emphasis in a program at UT Permian Basin might be placed on petroleum exploration and acquisitions, the concepts, techniques and know-how have carry-over applications for other mineral development activities and areas. Importantly, the breadth of knowledge and techniques useful to land managers when combined with a need to meet the requirements for a BBA degree make the program highly structured and leave little room for electives. At UT Permian Basin, the program requires 125 semester credit hours.

SAMPLE DEGREE PLAN–LAND MANAGEMENT

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
MNGT 310	3	MRKT 314	3	ERSC 451	3	ERSC 308*	4
MRKT 300	3	FIN 320	3	FIN 345	3	ENGR 424	3
MRKT 407	3	BLAW 321	3	ECON 411	3	MNGT 366	3
DSCI 301[1]	3	ACCT 300	3	REAL ESTATE LAW	3	BLAW 322	3
ERSC 305*	3	MNGT 340[2]	3	ECON 415	3	MNGT SEMINAR	3
	15		15		15		16

*Should be taken in sequence as shown
[1]DSCI 301 must be completed during first semester at UT Permian Basin or before
[2]MNGT 340 must be completed during second semester at UT Permian Basin or before

Management

The chief goals of the management program are to give students understandings of the nature and capabilities of human and physical resources. An appreciation of management principles and practices is essential for students who intend to enter careers as administrators, executives, production managers, management consultants or entreprenuers. Optional programs are available in personnel/industrial relations or production management. Each requires 123 semester credit hours.

Students taking the program of study in management administration receive a broadly based general business education before specializing in an area of professional concentration. Broad preparation assists graduates in preparing to meet the diverse challenges of personal as well as professional life.

Lower-level requirements have been outlined in the introductory section to the College of Business Administration. Upper-level requirements consists essentially of the following:

SAMPLE DEGREE PLAN–MANAGEMENT WITH EMPHASIS IN PERSONNEL/INDUSTRIAL RELATIONS*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ACCT 300	3	MNGT 340[2]	3	MNGT 320	3	MNGT 322	3
DSCI 301[1]	3	MRKT 314	3	MNGT 325	3	MNGT 324	3
MNGT 310	3	FIN 320	3	MNGT 370	3	MNGT 361	3
MRKT 300	3	ECON 300/400	3	College Elective	3	College Elective	3
MNGT 313	3	MNGT 312	3	College Elective	3	MNGT 366	3
		Free Elective	3				
	15		18		15		15

[1]DSCI 301 must be completed during first semester at UT Permian Basin or before
[2]MNGT 340 must be completed during second semester at UT Permian Basin or before

SAMPLE DEGREE PLAN–MANAGEMENT WITH EMPHASIS IN PRODUCTION MANAGEMENT*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ACCT 300	3	MNGT 340[2]	3	MNGT 341	3	MNGT 429	3
DSCI 301[1]	3	MRKT 314	3	MNGT 361	3	College Elective	3
MNGT 310	3	FIN 320	3	MNGT 325	3	College Elective	3
MRKT 300	3	MNGT 411	3	MNGT 322	3	College Elective	3
ECON 300/400	3	DSCI 302	3	College Elective	3	MNGT 366	3
		Free Elective	3				
	15		18		15		15

[1]DSCI 301 must be completed during first semester at UT Permian Basin or before
[2]MNGT 340 must be completed during second semester at UT Permian Basin or before

SAMPLE DEGREE PLAN–MANAGEMENT*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ACCT 300	3	FIN 320	3	MGMT 460	3	MNGT 366	3
DSCI 301[1]	3	MNGT 340[2]	3	Concentration		College Elective	3
MNGT 310	3	College Concentration	3	Electives	6	Concentration	
MRKT 300	3	ECON 300-400	3	Free Electives	6	Electives	6
College Elective	3	College Elective	3			Free Elective	3
		MRKT 314	3				
	15		18		15		15

[1]DSCI 301 must be completed during the first semester at UT Permian Basin of before.
[2]MNGT 340 must be completed during the second semester at UT Permian Basin or before.
*Degree plans emphasing land management, general business, decision science, marketing, economics, or finance vary depending upon a student's interests and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty mentor and college program administrator. Copies of the student's degree plan are placed on file and made available through the college program administrator.

COURSES IN MANAGEMENT

MNGT 310 Management Concepts and Organizational Theory (3) Fundamental concept of management including principles of administration, modern organization theory, goal-setting, leadership and decision-making.

MNGT 311 Business Communications (3) Communication workshop designed to improve student abilities to communicate. Emphasis writing memos, letters, reports, and resumes with force, clarity, and conciseness and effective public speaking.

MNGT 312 Personnel Functions (3) Principles and practice in personnel relations including topics such as recruiting, training, wage and salary administrations and manpower planning.

MNGT 315 Business and Society (3) Explores the role of business in contemporary society with respect to economic, social, political, and technological problems. Case evaluation and discussion designed to develop policies for socially responsible management.

MNGT 320 Industrial Relations and Collective Bargaining (3) Interpretations of collective bargaining agreements, their negotiation and administration and methods for settling disputes.

MNGT 322 Labor-Management Relations (3) Current employment relationships. Compares union-management objectives, functions and structures. Labor history, collective bargaining, industrial conflict and wage problem.

MNGT 324 Labor Legislation (3) Legislation in labor and manpower management. Topics from Taft-Hartley Act, anti-injunction statutes, fair employment practices and government contract law.

MNGT 325 Organizational Interpersonal Dynamics (3) Problem-solving in managerial situations in decision-making and in superior-subordinate relations. Experiential training techniques used to highlight concept, methods and skills.

MNGT 340 Operations Management (3) Mathematical models in manufacturing management. Linear models, financial-decision models, production-planning models, line balancing, production smoothing and forecasting. Prerequisite: DSCI 301.

MNGT 341 Intermediate Operations Research (3) Linear and dynamic programming and an introduction to stochastic processes in operations management. Prerequisite: MNGT 340.

MNGT 361 Introduction to Research (3) Multidisciplinary introduction to research process. Both library and field research, supervised team research project. Prerequisite: basic course in student's area of specialization and DSCI 301 or equivalent.

MNGT 366 Management Strategy/Policy (3) Strategy/policy development and implementation in organizations. Integrates and applies knowledge gained from multiple disciplines. Case evaluation and discussion are stressed. Prerequisite: Completion of basic management core or by permission of instructor.

MNGT 370 Public Policies Toward Business (3) The effects of government action on business decision-making and private enterprise. Anti-trust legislation, the impact on business of the regulatory agencies, public enterprise.

MNGT 411 Physical Resource Management (3) World resources in terms of how they are created and managed for business, social achievement and cultural process.

MNGT 419 Seminar in Personnel Administration and Labor-Management Relations (3) Current problems in personnel administration, labor-management relations and collective bargaining. Topics announced each semester. Prerequisite: senior standing or permission of instructor.

MNGT 429 Seminar in Organization Theory and Management (3) Management and organization theory. Topics announced each semester. Prerequisite: senior standing or permission of instructor.

MNGT 457 Association Management (3) Associations in societal and community development emphasizing management planning, directing and managing volunteer labor found in associations and related activities.

MNGT 460 Problems in Small-Business Management (3) Fundamental concepts, theories and practices of small-business management. Supervised projects with local firms are conducted. Prerequisite: permission of instructor.

Marketing

The BBA in marketing is designed to provide a fundamental knowledge of the nature, structure, institutions and functions of marketing including physical distribution. The program is intended to prepare students for entry into marketing

management careers in either profit or nonprofit organizations. The program requires a minimum of 123 semester hours and includes:

SAMPLE DEGREE PLAN–MARKETING

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
MRKT 300	3	MRKT 312	3	MRKT 314	3	MNGT 366	3
ACCT 300	3	MNGT 340[2]	3	MRKT 414	3	College Elective	3
ECON 300/400	3	FIN 320	3	MRKT 407	3	College Elective	3
DSCI 301[1]	3	MNGT 310	3	MRKT 408	3	MRKT 421	3
College Elective	3	MRKT 315	3	College Elective	3	MRKT 439	3
		Free Elective	3				
	15		18		15		15

[1]DSCI 301 must be completed during the first semester at UT Permian Basin or before
[2]MNGT 340 must be completed during the second semester at UT Permian Basin or before

SAMPLE DEGREE PLAN–MARKETING WITH EMPHASIS IN OIL & GAS MARKETING MANAGEMENT

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ACCT 300	3	MNGT 340[2]	3	MRKT 414	3	MRKT 422	3
DSCI 301[1]	3	MRKT 314	3	MRKT 419	3	MNGT 366	3
MNGT 310	3	FIN 320	3	MRKT 421	3	BLAW 332	3
MRKT 300	3	ACCT 302	3	MRKT 312	3	MRKT 407	3
ACCT 301	3	MNGT 411	3	ECON 300/400	3	ACCT 410	3
				ACCT 304	3		
	15		15		18		15

[1]DSCI 301 must be completed during the first semester at UT Permian Basin or before
[2]MNGT 340 must be completed during the second semester at UT Permian Basin or before

COURSES IN MARKETING

MRKT 300 Principles of Marketing (3) Survey of marketing fundamentals with focus upon product, price, promotion, and distribution within the context of business decision-making. Prerequisite: micro and macroeconomics.

MRKT 312 Marketing Management (3) Emphasis upon strategic furthering, and marketing strategy and tactics within the context of case studies of corporate successes and failures. Prerequisite: MRKT 300.

MRKT 314 Physical Distribution Management (3) Analysis development and management of integrated physical distribution systems. Transportation, warehousing, inventory control, material-handling and industrial location.

MRKT 315 Consumer Behavior (3) Concepts of consumer behavior. Emphasis on psychological, sociological and economic variables and their effects on purchasing behavior. Prerequisite: MRKT 310.

MRKT 316 Marketing Channel Systems (3) Appraisal and diagnosis, organization and planning, action, and control of commodity and product-service distribution systems, marketing analysis and demand stimulation. Prerequisite: MRKT 310.

MRKT 407 Sales Management (3) Planning, organizing, directing, and controlling the sales function as it relates to the marketing mix; also stress is placed upon professional selling techniques.

MRKT 408 Advertising Management (3) Planning, organizing, directing and controlling the advertising function as it relates to the marketing mix; also stress is placed upon the elements of good advertising.

MRKT 414 Marketing Research and Information Systems (3) Behavioral sciences, research methods, social process and structure influences upon marketing activities and their integration as a total system of marketing action. Prerequisites: MRKT 310 and knowledge of basic statistics.

MRKT 418 Business Logistics (3) Logistics/transportati on problem-solving, quantitative, decision models as market planners and system analysts. Inventory, traffic, distribution and warehousing considerations. Prerequisite: MRKT 314.

MRKT 419 Industrial Marketing (3) Structure of industrial manufacturing and service firms, their motives and purchasing behavior and logistical analysis of industrial markets. Prerequisite: MRKT 310.

MRKT 420 International Marketing (3) Enterprise, comparative marketing, transport institutions and systems in selected foreign countries and the United States. Emphasizes ethnic and cultural differences in marketing strategy. Prerequisite: MRKT 310.

MRKT 421 Oil and Gas Marketing (3) Analysis of the physical and organizational structure of oil and gas distribution within both domestic and international channels with emphasis upon both independents and majors. Prerequisite: MRKT 300.

MRKT 422 Energy Marketing Seminar (3) Application of quantitative and behavioral models to demand/supply relationships evolving around the spectrum of energy consumption and the channels of distribution for oil and gas. Prerequisites: MRKT 300, 414 and 421.

MRKT 429 Marketing Policy (3) Capstone course with emphasis upon the application of quantitative and behavioral concepts to case studies in marketing. Prerequisite: 12 hours of marketing.

MRKT 439 Marketing Seminar (3) Emphasis upon marketing theory within the context of evolving social policies and practices, with particular attention to career paths. Prerequisite: 12 hours of marketing.

SCIENCE AND ENGINEERING

The College of Science and Engineering has programs leading to Bachelor of Science degrees in chemistry, computer science, control engineering, earth sciences, geology, life science, and mathematics. Programs leading to Master of Science degrees in control engineering, life science and geology also are available.

The goal of the College is to provide each student with an educational program that best serves his/her interests and abilities. Each curriculum has been carefully designed to ensure that each student develops the necessary professional competency to practice his/her profession, or teach it at the elementary or secondary level. Students work closely with faculty advisers to develop individualized plans of study, which will include the core courses that are necessary, to meet the basic requirements for the professional practice, including entry into graduate school, or teaching of the discipline. These programs are reviewed regularly and are adjusted to keep them current with developments in their respective fields.

To realize its goals, the college makes available a wide variety of learning activities. Among these are individualized and/or self-paced instruction, modular courses, small group instruction, case studies, seminars, experiential activities (including authentic involvement), off-campus field trips, and field-study courses, self-initiated research, integrated laboratory activities, and contract or independent study. Study plans may integrate these varied activities to develop a program that is interesting, builds professional competence, and prepares students for professional practice or graduate study.

DEGREE REQUIREMENTS

In addition to general university requirements for the Bachelor of Science degree specified in the academic policy section of this catalog, students must complete the degree requirements listed under the respective degree programs. All of the programs require a *minimum* of 54 semester credit hours of upper-level (upper division) coursework, and most require more. Likewise, most of the programs require more than the minimum university requirement of 120 semester credit hours.

Students who are seeking secondary teaching certification generally require two discipline fields of at least 24 semester hours of credit each. If the degree is in a College of Science and Engineering discipline, the degree requirements for that discipline must be met.

Prospective students are encouraged to contact UT Permian Basin faculty members in the appropriate disciplines for assistance in planning lower-level programs or for information about the upper-level programs. At least 18 credits in the major and 12 in the minor must be completed at the upper level.

LOWER-LEVEL PREPARATION

The appropriate transfer curricula for public junior colleges in Texas established by the Coordinating Board, Texas College and University System, will be accepted in its entirety and applied toward appropriate degrees. However, most College of Science and Engineering programs require more mathematics and basic sciences than are listed.

Certain courses in some UT Permian Basin degree programs require preparatory courses that are not included in the transfer curricula. For specific requirements, or prerequisites, the applicant should meet with a UT Permian Basin faculty member to discuss the course preparation necessary for transfer into a degree program. Majors in engineering and some sciences ordinarily take 66 to 72 hours of lower-division coursework.

PROGRAMS OF STUDY

Chemistry

Studies in chemistry offer the opportunity to develop problem-solving abilities through a wide variety of courses and seminars and to make individual contributions to the field through laboratory research.

The chemistry program consists of 2 plans A and B. Plan A (professional chemistry plan) follows the guideline of the American Chemical Society for an approved Bachelor of Science degree in chemistry, and is the one recommended for those who wish to practice the profession of chemistry either immediately after graduation or after additional study at the graduate level. It is the only acceptable preparation for admission to most graduate schools for an advanced degree in chemistry. Plan B (teacher education plan) is designed for students who wish to teach chemistry as one major teaching field in secondary schools; who wish to pursue a double major in life science; to prepare for entry in medical, dental, or related professional schools; or who merely wish to obtain a knowledge of chemistry to satisfy their own personal desires. It is *not* recommended for those who wish to practice the profession of chemistry and/or desire to do graduate work in chemistry.

For students taking Plan A, core requirements are: 8 hours general and inorganic chemistry, 8 hours organic chemistry, CHEM 324, 325, 395, 398, 401, 402, and 403.[1]

For Plan B, the core requirements are: 8 hours general and inorganic chemistry, 8 hours organic chemistry, CHEM 324, 325, 350, 351, 395, and 398. In addition to the core requirements, students in Plan A are required to take 9 semester credit hours of advanced coursework approved by their advisers, and those in Plan B must take 6 semester credit hours of advanced coursework approved by their advisers.

Students in either plan (A or B) are required to complete CPSC 330.

A minor in chemistry requires 8 hours general and inorganic chemistry, 8 hours organic chemistry. CHEM 324, 325, 350[1], and sufficient additional hours in chemistry to make a total of 12 hours of upper-division coursework.

Students should complete the courses in the appropriate core curricula for public junior colleges in Texas. Some lower-level requirements may be satisfied by examination (CLEP) or by successful completion of the courses listed under the major field plan recommended for the plan being followed.

Representative degree plans are given below; these plans will vary depending on the student's goals and preparation prior to entering UT Permian Basin.

[1]Where specific UT Permian Basin chemistry course numbers are given, the requirement may be met by equivalent courses taken elsewhere.

SAMPLE DEGREE PLAN CHEMISTRY

Plan A Professional Plan

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
CHEM 324	2	CHEM 314	2	CHEM 440	3	CHEM 395	3
CHEM 325	2	CHEM 402	3	CHEM 409	3	CHEM 398	1
CHEM 401	3	CHEM 403	2	CHEM 395	3	CHEM 472	3
CPSC 337	3	LIT	6	HIST	3	CHEM 474	3
Minor	3	Minor	3	Minor	3	Minor	3
						Electives	2
	13		16		15		15

SAMPLE DEGREE PLAN CHEMISTRY

Plan B Teacher Education Plan

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
CHEM 324	2	CHEM 314	2	CHEM 440	3	CHEM 395	1
CHEM 325	2	CHEM 350	3	CHEM 395	1	CHEM 398	1
CHEM 395	1	CHEM 395	1	2nd Major	3	CHEM 474	3
CPSC 330	3	LIT	3	Electives	9	2nd Major	3
2nd Major	6	2nd Major	6			Electives	6
	14		15		16		14

COURSES IN CHEMISTRY

CHEM 311 Organic Chemistry I (3) Organic functional groups. Emphasizes synthesis and mechanisms. For chemistry, pre-professional and other science majors. Corequisite: CHEM 313.

CHEM 312 Organic Chemistry II (3) Continuation of CHEM 311 including an introduction to naturally occuring and biologically important compounds. Prerequisite: CHEM: 311. Corequisite: CHEM 314.

CHEM 313 Experimental Organic I (3) Techniques of separation, purification, synthesis and an introduction to instrumental identification of organic compounds of general and consumer interest. Corequisite: CHEM 311.

CHEM 314 Experimental Organic II (2) Continuation of CHEM 313; stronger emphasis in organic synthesis, spectral interpretation, (IR, NMR, MS) and instrument usage and qualitative analysis. Prerequisites: CHEM 311, 313. Corequisite: CHEM 312.

CHEM 324 Analytical Chemistry I (2) Analytical techniques and methods (emphasis on instrumentation) common to all areas of chemistry, medicine and the life sciences. Corequisite: CHEM 325.

CHEM 325 Analytical Chemistry Lab I (2) Laboratory experience with instruments and methods presented in CHEM 324. Corequisite: CHEM 324.

CHEM 350 Fundamentals of Physical Chemistry (3) Thermodynamics, solutions, kinetics, nuclear chemistry and macromolecules. Corequisite: CHEM 351.

CHEM 351 Fundamental Experiments in Physical Chemistry (1) Measurements and instrumentation in physical chemistry. Corequisite: CHEM 350.

CHEM 395 Research (1) Laboratory work on some aspect of a chemical research problem. Prerequisite: consultation with chemistry coordinator, and permission of research sponsor. May be repeated for credit.

CHEM 398 Seminar (1) Reports on recent chemistry developments in various areas by students, faculty and others in the chemical community. Prerequisite: permission of chemistry coordinator.

CHEM 400 Mathematical Methods in Chemistry (1) Mathematical methods important in physical chemistry including calculus, differential equations, and vector analysis. Corequisite: CHEM 401. Prerequisite: 1 year of calculus.

CHEM 401 Physical Chemistry I (3) Kinetic molecular theory, molecular thermodynamics and an introduction to molecular energies. Prerequisites: 1 year each of calculus and physics. Corequisites: CHEM 400, 403.

CHEM 402 Physical Chemistry II (3) Kinetics, quantum mechanics, bonding and molecular spectroscopy. Prerequisite: CHEM 401.

CHEM 403 Experiential Physical Chemistry I (2) Thermodynamic, kinetic and spectroscopic measurements. High-vacuum techniques and the use of sophisticated equipment in measuring molecular parameters. Corequisite: CHEM 401.

CHEM 404 Experimental Physical Chemistry II (2) Continuation of CHEM 403. Prerequisite: CHEM 403. Corequisite or prerequisite: CHEM 402.

CHEM 410 Advanced Organic Chemistry (3) Various topics; may include modern organic synthesis, heterocyclic chemistry and reagents for organic synthesis. Prerequisites; CHEM 312, 314.

CHEM 426 Analytical Chemistry II (2) Continuation of CHEM 324; concentration on those more sophisticated instruments used primarily in the field of chemistry. Prerequisites: CHEM 324, 325. Corequisite: CHEM 427.

CHEM 427 Analytical Chemistry Lab II (2) Laboratory experience with instruments and methods presented in CHEM 426. Corequisite: CHEM 426.

CHEM 440 Medicinal Chemistry (3) A brief historical development of medicinal chemistry and pharmacognosy, will be followed by a detailed look at most drug classes. Emphasis will be on relating chemical structure with bioactivity. Commonly used methods of drug design are interspersed. Prerequisite: CHEM 312.

CHEM 451 Biochemistry (3) Biochemistry from molecular viewpoint. Emphasis on structure and functions of biomolecules, energy-yielding and requiring processes. Prerequisites: CHEM 312, 314.

CHEM 452 Biochemistry Laboratory (1) Introduction to biochemical techniques essential for experimentation in this area.

CHEM 460 Molecular Spectroscopy (3) Quantum theory and interpretation of molecular spectra of small molecules. Includes rotational, vibrational, and electronic spectroscopy with an introduction to group theory. Prerequisite: CHEM 402.

CHEM 472 Organic Structure Determination (3) A problem solving course that integrates chemical reaction and spectroscopic (IR,UV-VIS, H1 and C13 NMR, MS) information to identify organic compounds. Prerequisite: CHEM 314.

CHEM 474 Inorganic Chemistry (3) Modern bonding theories at level appropriate to understanding structure and chemical properties. Periodic relationships applied to families of elements. CHEM 401 or 402 is desirable.

CHEM 478 Inorganic Synthesis Laboratory (1) Inorganic synthetic techniques, methods of purification and characterization of metallic and nonmetallic compounds. Vacuum line, inert atmosphere, low temperature preparations, spectral and instrumental methods. Prerequisite: CHEM 313. Corequisite: CHEM 474.

Computer Science

Computer science studies are interdisciplinary, encompassing the fields of computer science, engineering, management, and mathematics. These studies are designed for students interested in gaining a broad knowledge of the computer and its applications, and in developing an ability to design and analyze software and hardware systems for use in scientific or business applications.

Admission to the computer science program presumes students to have the equivalent of an introductory course in computer science and data processing, and familiarity with at least one high-level programming language.

Plans of study will be tailored to satisfy the student's career objectives. Two basic plans, each leading to a Bachelor of Science degree, are available one scientific and one business oriented. Both programs share a common core of courses that should be taken in the junior year. The business plan is oriented toward the design, specification and construction of information processing systems. The scientific plan is oriented toward the inner workings of computer systems, programming languages, and applications of the computer to scientific problems. In addition to a common core, students are required to demonstrate the ability to use both a business and scientific oriented language.

The major program requires a minimum of 24 semester credit hours in computer science courses, not including introductory programming courses. This 24 hours must include the core consisting of CPSC 304, 310, 315 and 320. Other courses to fill out the required 24 hours are to be chosen by the student with his/her adviser to fit his/her career goals. In addition to the computer science courses, there is a supporting mathematics requirement which includes: calculus (through calculus of several variables, for a total of at least nine semester-credit hours) and at least 2 of MATH 301, 310, 315, 330 and MNGT 340. If the calculus sequence has not been completed at the time of admission, the student must take calculus during the first semester and each subsequent semester until the sequence is completed (differential and integral calculus normally are not taught at UT Permian Basin; the student must take them at one of the local community colleges.) Finally, all students are required to have a minor of 18 semester credit hours, 12 of which must be upper level. The choice of minor is up to the student.

Computer science may be used as a minor to satisfy other degree programs. Specific courses will depend upon the student's major and specific interests. It is generally recommended that the core courses be used, enabling the student to later continue with the more advanced courses. The required 12 upper-level hours may not include the introductory programming courses.

Majors electing the business plan will usually minor in accounting or management, while those pursuing the scientific plan normally minor in mathematics, in one of the natural sciences, or in a distributed minor including physics and control engineering courses.

Those choosing the scientific plan must take 8 hours of physics (engineering physics is strongly recommended) and another 6-8 hour laboratory science sequence (chemistry, life science, earth science). Students electing the business plan must take one such science sequence along with principles of accounting (6 hours) and principles of economics (6 hours).

This background, along with the completed calculus sequence, will result in a typical junior year as follows:

SAMPLE DEGREE PLAN COMPUTER SCIENCE

JUNIOR YEAR

First Semester		Second Semester	
CPSC 304	3	CPSC 315	3
CPSC 310	3	CPSC 320	3
MATH 310	3	MATH 301	3
Course in Minor	3	Course in Minor	3
Elective	3	Elective	3
	15		15

The senior year will then reflect the emphasis of the student. Typical programs are as follows:

SENIOR YEAR
Business Option

First Semester		Second Semester	
CPSC 415	3	CPSC 430	3
CPSC elective*	3	CPSC elective*	3
Minor course	3	Minor course	3
Elective	3	Sr. Seminar	3
Elective	3	Elective	3
	15		15

*Recommend CPSC 411, 416, 425, 440, 450, 460, 470, 480.

SENIOR YEAR
Scientific Option

First Semester		Second Semester	
CPSC 480	3	CPSC 420	3
CPSC elective+	3	CPSC elective+	3
Minor course	3	Minor course	3
MATH 330	3	Sr. Seminar	3
Elective	3	Elective	3
	15		15

+Recommend CPSC 340, 350, 425, 430, 450, 460, 470.

Students not employed in the computer science field, or not having significant experience in programming and allied computer activities, should take authentic involvement, CPSC 392, as one of their computer science electives. The activity of this course involves the analysis, design and solution of real-life problems employing the skills and techniques of computer science as applied in business, industry, and scientific research.

COURSES IN COMPUTER SCIENCE

CPSC 300 Basic Programming for Business (3) Problem analysis and design of algorithms for business applications using the interactive language BASIC. (Cannot be applied toward a computer science degree).

CPSC 301 Problem Solving, FORTRAN (3) Problem analysis and formation of algorithms for solution of scientific problems using FORTRAN. (Cannot be applied toward a computer science major.)

CPSC 302 Problem Solving, COBOL (3) Problem analysis and formation of algorithms for solution of business problems using COBOL. Recommended prerequisite: another programming language or introductory computer science course. (Cannot be applied toward a computer science major.)

CPSC 303 PASCAL Programming (3) Programming of business and scientific problems using PASCAL. Prerequisite: an introductory course in another programming language or introductory computer science course. (Cannot be used as part of the 24 semester hours required for a computer science major.)

CPSC 304 Finite Math for Computers (3) Sets and elementary logic, introduction to probability, vectors, matrices, linear programming and graphs as they apply to computers. Prerequisite: college algebra (cross list with MATH 304).

CPSC 310 Digital Computer Organization (3) Design of arithmetic, control and memory units, binary data representation, error-detecting and error-correcting codes.

CPSC 315 Information Systems Design (3) Computer systems and relationships between hardware and software components. Emphasis on business system design and analysis.

CPSC 320 Data Structures (3) Computer storage and data retrieval. Data structures include linear lists, linked lists, pushdown stacks, queues, graphs, trees and strings.

CPSC 340 Assembly Language Programming (3) Arithmetic, logic, control and input/output statements. Assemblers with macro programming and conditional assembly capabilities.

CPSC 350 Simulation and Identification (3) Same as ENGR 350.

CPSC 411 Information Systems Theory and Analysis (3) Same as ACCT 411.

CPSC 415 Database Systems (3) Survey of database architecture including network, heirarchical, and relational models. Prerequisites: CPSC 310, 320.

CPSC 416 System Audits (3) Same as ACCT 416.

CPSC 420 Numerical Analysis (3) Same as MATH 420.

CPSC 425 Programming Algorithms (3) Modular programs using structured programming techniques. System library and utility programs with job-control language. Prerequisite: working knowledge of one procedure-oriented language.

CPSC 430 Operating Systems (3) Resource allocation of central processor, main memory, I/O devices and software resources. Assemblers, macro processors, loaders and compilers. Prerequisites: CPSC 315, 320.

CPSC 440 Minicomputers and Microprocessors (3) Hardware and software design of mini-computers and microprocessor systems. Available systems, assembly language, machine language and microprogramming techniques. Prerequisite: CPSC 310.

CPSC 450 Artificial Intelligence and Heuristic Programming (3) Analysis of information content by statistical, syntactic, semantic and heuristic methods; systems which answer questions, play games, prove theorems and recognize patterns. Prerequisites: CPSC 310, 320.

CPSC 460 Theory of Automata (3) Mathematical theory of automata. Survey of finite automata, regular expressions, recursive functions, abstract machines, Turing machines and computational complexity. Prerequisites: CPSC 304, 310 *or* permission of instructor. Same as MATH 460.

CPSC 470 Data Communications (3) Design and development of computer networks; network types; protocols; transmission rates; and data integrity. Prerequisites: CPSC 310 *and* permission of the instructor.

CPSC 480 Programming Languages (3) Fundamental concepts and general principles underlying programming languages in current use; e.g., FORTRAN, P/L-1, ALGOL 60, APL, SNOBOL, and PASCAL. Prerequisites: CPSC 304, and CPSC 320. CPSC 310 is recommended.

Control Engineering

Control Engineering is a professional engineering program to educate students in the fundamentals of engineering and then to prepare them to apply computer controls and automation in one of several industries. Better efficiency and productivity is required to make U.S. industry competitive in world markets. It is increasingly being realized that automatic controls, robotics, and computerized information handling are important means of achieving these improvements.

Control systems are widely used because they provide convenience, high productivity, ability to minimize cost and maximize performance, and improved safety and reliability. Many new automobiles utilize computer control of almost all engine and transmission functions. The level of fuel economy they achieve would not be possible without automatic controls.

The Control Engineering degree program begins in the lower division with studies in the calculus, physics, and chemistry. It continues in the upper division with engineering sciences, design, and technical specialty courses. Not only must control engineers know basic engineering; they must also be familiar with computer hardware and software required for implementing automatic controls.

The computer electronics revolution combined with the urgent economic need for improved, high-efficiency machines and plants insures a continuing future need for control engineers in a wide variety of industries.

The Bachelor of Science degree in control engineering requires completion of the transfer curriculum in engineering developed by the Coordinating Board, Texas College and University System. In addition, the transfer student should have completed 3 semester credit hours each of: calculus (Calculus III), differential equations, and dynamics, and the prerequisites for the above courses.

At graduation all students must have completed the minimum ABET (Accreditation Board for Engineering and Technology) requirements. This means that, in addition to the above, each student must complete at least 9 semester credit hours of humanities courses beyond the 6 hours of history already taken. Courses in sociology, anthropology, literature, psychology, philosophy, or other approved subjects related to man and his culture satisfy these humanities requirements. These may be taken in either the lower or upper-division level.

Those students who are interested in the application of control engineering to chemical processes should take organic chemistry with laboratory (8-10 semester credit hours) in addition to the other lower-division (freshman and sophomore-level) courses. Those whose interests lie in the application of control engineering to geophysics and petroleum production should take physical and historical geology in addition to the other courses.

Prospective students are encouraged to contact UT Permian Basin engineering faculty members concerning questions regarding career opportunities, degree requirements, and other aspects of the study and practice of engineering.

The upper-division control engineering curriculum requires the following core courses, plus enough technical electives to total at least 66 semester credit hours.

CORE CURRICULUM FOR CONTROL ENGINEERING

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ENGR 310	3	ENGR 331	3	ENGR 441	3	ENGR 481	4
ENGR 311	3	ENGR 332	3	ENGR 385	3	ENGR 482	3
ENGR 322	3	ENGR 340	3	ENGR 403	3	ENGR 492	3
ENGR 323	1	ENGR 350	3	ENGR 480	4	Techical	
ENGR 330	3	ENGR 380	3	Technical		electives	6-9
MATH 419	3	ENGR 382	1	electives	3-6		
Technical		Technical					
electives	3	electives	3				
	19		19		16-19		16-19

To round out a student's knowledge and ability to apply control engineering to industrial problems, technical electives must be chosen from among the non-required engineering courses and CHEM 401, 402, 403, and 404, GEOL 305, 308, 314, 428, 454, CPSC 440, 450, 460, and MATH 435, 440, 445, 470.

COURSES IN ENGINEERING*

ENGR 309 Dynamic Analysis of Mechanical Systems (3) Motions analysis in mechanical systems using Newton's laws. Includes: particle motion, rigid body motion and problems in vibration. Prerequisites: Physics I, Calculus I, II, Statics. Corequisite: Differential Equations.

ENGR 310 Mechanics of Materials (3) Methods of determining the stresses present in structural members under various types of loading, failure criteria, mohrs circle. Prerequisite: Statics.

ENGR 311 Materials Science (3) Introduction to engineering materials and their properties and behavior under stress, compression, working and temperature changes.

ENGR 322 Introduction to Electrical Systems (3) Electrical devices, DC and AC circuit theory including Kirchoff's laws and network theorems. Introductory electrical power systems, magnetic circuits, transformers, rotating machines and transducers.

ENGR 323 Electrical Circuits Laboratory (1) Laboratory to accompany ENGR 322, stressing fundamental principles and components in electrical measurements.

ENGR 330 Thermodynamics I (3) Steady and unsteady material and energy balances for typical engineering systems. Properties, charts, tables and equations of state for single component substances. Elementary cycle analysis.

ENGR 331 Fluid Mechanics (3) Principles of fluid mechanics applied to typical engineering fluid problems, emphasizing steady and unsteady measurement and control of fluid flow.

ENGR 332 Heat Transfer (3) Laws of conduction, convection, and radiation heat transfer. Emphasizes steady and unsteady heat transfers situation appropriate to measurement and control of temperature. Prerequisite: ENGR 330. Corequisite or prerequisite: ENGR 331, MATH 419.

ENGR 340 Engineering Systems Analysis I (3) Modeling processes, response analyses and characteristics of systems. Includes differential and difference equations, transfer functions, Z-transforms, and state variable models and computer analysis of systems. Prerequisites: ENGR 322, 330, MATH 419. Corequisite or prerequisite: ENGR 350

ENGR 350 Simulation and Identification (3) Simulation of linear, nonlinear, continuous and discrete systems on analog and digital computers including simulation languages, identification methods and transfer function simulation. Prerequisite: MATH 419, Corequisite: ENGR 340.

ENGR 380 Electronic Systems and Instrumentation (3) Introductory analysis and design of analog and digital electronic systems and instrumentation including transistor models and circuits, operational and amplifiers, digital circuits and other integrated circuit components. Prerequisites: ENGR 340, 350.

ENGR 382 Electronic Systems Laboratory (1) Laboratory to accompany electronic systems and instrumentation. Prerequisite: ENGR 323; Corequisite ENGR 380.

ENGR 385 Engineering Economy and Management (3) Methods of evaluating the economic feasibility of engineering projects. Time value of money, interest factors, evaluation criteria. Management of engineering projects.

ENGR 395 Introduction to Optimization Methods (3) Includes introductory concepts of optimization of engineering systems: Linear programming, static optimization techniques such as Lagrangian multiplier and hill climbing methods. Prerequisite: ENGR 350.

ENGR 400 Energy Systems (3) Effects of energy availability, distribution and consumption upon the political, social and technical communities.

ENGR 403 Fundamentals of Engineering Design (3) Application of engineering science to design. Design philosophy, specifications, use of programmable calculators. Solution of two and three-week design problems.

ENGR 405 Electrical Machinery and Power (3) Principles of electromagnetic induction machines. Application of AC, DC and linear induction machines to control systems. Electric power production and distribution. Transmission lines.

ENGR 406 Advanced Electronic Circuits (3) Analog and digital circuit design. Coupling of electrical and electronic systems (design of control systems interfaces). Networks and filters. Principles of physical realization in electrical systems. Electro-acoustics and the principles of speech-processing by computers.

ENGR 421 Reservoir Engineering I (3) Production performance analysis using decline curve and material balance techniques. Natural water drive reservoirs and gas cap drive predictions. Fundamentals of rock and fluid properties. Steady and unsteady flow systems. Pressure buildup analysis. Gas and Gas condensate reservoir analysis. Permission of instructor only, no other prerequisites. Recommended but not required: ENGR 331.

ENGR 422 Reservoir Engineering II (3) Secondary and tertiary oil recovery predictions. Waterflood design and field applications. Control systems used in waterflood projects. Introduction to reservoir simulation. Prerequisite: Reservoir engineering I (ENGR 421).

ENGR 423 Drilling and Completion (3) Principles of drilling, drilling rigs, bits and drilling fluids. Casing design, perforating, hydraulic fracturing, acidizing and well completions. Control systems used in drilling and completion operations.

ENGR 424 Oil and Gas Production (3) Performance charactertistics of oil and gas wells, with emphasis on control systems to monitor production and produce data for the efficient operation of wells. Exponential production curves, production engineering techniques including flowing well performance, intermittent production, gas lift techniques, sucker rod pumping, well instruments, production economics and lease operations. Permission of instructor only, no specific prerequisites.

ENGR 430 Thermodynamics II (3) Application of thermodynamic principles, including multicomponent systems. Free energy and equilibrium applied to systems involving mixtures and solutions, phase change and chemical reaction. Prerequisites: ENGR 330, MATH 419.

ENGR 431 Chemical Process Dynamics and Control (3) Chemical process characteristics. Modelling techniques including transfer functions, response analysis, state variable representation, proportional-integral-differential chemical process controller, and the simulation of linear and nonlinear chemical systems by digital and analog computers.

ENGR 433 Separation Processes (3) Rate processes for separating components of mixtures by the transfer of mass between phases of matter; emphasizing equipment operation and control. Pre- or Corequisites: ENGR 430.

ENGR 434 Chemical Reactor Operations (3) Rate processes for transformation of matter by chemical reaction, emphasizing equipment operation and control. Pre- or Corequisite: ENGR 430.

ENGR 441 Engineering Systems Analysis II (3) Continuation of ENGR 340 to include nonlinear and distributed parameter systems and an introduction to stochastic systems. Prerequisite: ENGR 340, 350. Corequisite: ENGR 480.

ENGR 451 Mechanical Design (3) Application of basing engineering principles to design of mechanical systems, including analysis, design development, testing, and evaluation of control systems.

ENGR 461 Environmental Control (3) Theory of environmental control: air conditioning, refrigeration and heating systems, heat pumps, heating and cooling, passive solar design, active solar heating. Prerequisites: ENGR 332 Coregistration in ENGR 463.

ENGR 463 Environmental Control Laboratory (1) Introduction to environmental control equipment, with experiments in air conditioning, refrigeration, heat pumps, solar collectors, dynamics of passive heat flow, ducting and fans. Prerequisites: ENGR 332 Coregistration in ENGR 461.

ENGR 470 Introduction to Signal Processing for Control Systems (3) Introduction to signal processing methods. Sampling theory, signal analysis in the time and frequency domains. Elementary applications including data reduction techniques and signal reconstruction from digital data.

ENGR 480 Continuous Control Systems (4) Classical and modern methods of designing controllers for linear components, continuous control systems. Extensive work with computers and control hardware. Prerequisites: ENGR 340, 350.

ENGR 481 Discrete Control Systems (4) Analysis and design of linear control systems that include sample-data components. Emphasizes use of small digital computers in direct digital control of single and multivariable systems. Prerequisite: ENGR 480.

ENGR 482 Control System Design Laboratory (3) Application of previously acquired competencies to design and test laboratory control systems. Prerequisite: ENGR 480. Pre- or Corequisite: ENGR 481.

ENGR 483 Nonlinear Control Systems (3) Introductory analysis and design of nonlinear control systems and to optimal control of systems. Includes continuous and on-off control, time-optimal control and other optimal control strategies. Prerequisite: ENGR 480. Corequisite: ENGR 481.

ENGR 485 Optimal Control Systems (3) Includes introduction to the calculus of variations, dynamic programming, quasilinearization and other optimal control strategies applied to engineering systems. Prerequisite: ENGR 395 and MATH 419.

*Except as noted, all junior and senior courses require as a minimum mathematics through three semesters of calculus and differential equations, one year each of chemistry and physics, and one semester each of engineering mechanics statics, engineering mechanics-dynamics and scientific programming (FORTRAN). Specific prerequisites beyond these are under individual courses.

Geology

Studies in geology prepare students for graduate work and for careers in the petroleum and mining industires, elementary and seconday school teaching, and a variety of other activities. Two plans are available : (1) a Bachelor of Science in Geology, primarily for those who wish to practice the profession of geology and/or seek additional education in geology in graduate school and (2) a Bachelor of Science in Earth Sciences, primarily for those who plan to teach earth sciences at the elementary or secondary school level and/or plan on graduate study in earth science education, or who desire a knowledge of the earth sciences but do not wish to actively practice the profession of geology.

BACHELOR OF SCIENCE IN GEOLOGY

For the Bachelor of Science in Geology, students must take the courses in the core curricula for public junior colleges in Texas except that statics and graphics are not required, only strongly recommended, plus physical and historical geology. A course in scientific computer progamming (FORTRAN or PASCAL) is also required. Geomorphology is highly recommended. In addition to the required courses, the following are strongly recommended:

For those desiring to specialize in paleontology:	
biology	8
For those desiring to specialize in petroleum geology/organic geochemistry:	
organic chemistry	6-8
For those desiring to specialize in geophysics or physical geology:	
3rd semester engineering physics	4
3rd semester calculus	3
differential equations	3
For those desiring to specialize in geochemistry or chemical geology, including petrology and ore deposits:	
analytical chemistry	3-6
differential equations	3

To provide a well-rounded background, the following distribution of coursework totalling 37 upper-division credit hours is required for the degree.†

Group 1. Mineralogy†, petrology†, optical mineralogy†, petrography†, carbonate petrology, geochemistry, volcanology: a minimum of 13 hours.

Group 2. Paleontology†, stratigraphy and sedimentation†, sedimentology†, paleoecology, micropaleontology, carbonate dispositional environments, clastic depositional environments, oceanography: a minimum of 11 hours.

Group 3. Structural geology†, plate tectonics, geophysics: a minimum of 4 hours.

Group 4. Petroleum geology, well-site geology, groundwater hydrology, mineral deposits, non-metallic deposits, engineering geology: a minimum of 3 hours.

Group 5. Summer field geology†, 6 hours.

Noted courses (†) are *required* courses.

*In addition to the required geology courses, a minor in mathematics, chemistry, computer sciences, biology/life science, or physics, or a distributed minor (wth an approved combination of mathematics, physics, chemistry and/or life science/biology) of at least 12 upper-level credits is required.

BACHELOR OF SCIENCE IN EARTH SCIENCES

For the Bachelor or Science in Earth Sciences, the student should take the lower-division courses listed in the appropriate transfer curricula for public junior colleges in Texas. Two semesters of physics with laboratory (Engineering calculus-based physics is recommended, general non-calculus-based physics is acceptable) is required and is a prerequisite for several required upper-division earth sciences courses. Mathematics through trigonometry is required, calculus is recommended. Two semesters of general chemistry with laboratory is required. Two semesters of biology with laboratory is recommended. Physical and historical geology are required, and geomorphology is strongly recommended.

To provide a well-rounded background, the following distribution of coursework totaling 28 upper-division semester credit hours is required for the degree.†

Group 1. Mineralogy†, Petrology†, Optical Mineralogy†, petrogaphy†, carbonate petrology, geochemistry, volcanology: A minimum of 10 hours.

Group 2. Paleontology†, stratigraphy and sedimetation†, sedimentology†, paleoecology, micropaleontology, carbonate dispositional environments, clastic depositional environments, ocenography: a minimum of 8 hours.

Group 3. Structural geology†, plate tectonics, geophysics: A minimum of 4 hours.

Group 4. Petroleum geology, well-site geology, groundwater hydrology, mineral deposits, non-metallic deposits, engineering geology.

Six additional hours from groups 1-4.

Noted courses (†) are *required* courses.

Students seeking teacher certification geology/earth science as a second teaching field must complete a minimum of 24 semester credit hours to include: physical and historical geology, GEOL 305, 307, 308, 314, and one additional geology course or NTSC 303 plus the requirements set forth by the Faculty of Education. However, if the degree is to be a Bachelor of Science in Earth Sciences, all of the courses required for that degree must be taken.

Students minoring in geology are required to have physical and historical geology as well as GEOL 308, 314 and 440 plus one additional upper-level geology course.

In addition to the required geology courses, a minor in mathemathics, chemistry, computer sciences, life science, or physics, or a distributed minor (with an approved combination of mathematics, physics, chemistry and or biology) of at least 12 upper-level credits is recommended; other subjects may be used, however.

COURSES IN GEOLOGY**

GEOL 301 Excursions in Geology (3) Simulated field trip approach to basic geology in an audio-visual-tutorial format. Design for students with little or no science background. Not for earth science majors.

GEOL 302 Geomorphology (3) Surface features of the globe, their form, nature, origin and development and the changes they are undergoing.

GEOL 303 Mineralogy (4) Identification, classification and origin of minerals based on their chemical and physical properties and geologic association. Prerequisites: one year inorganic chemistry, one year physics (calculus-based physics and engineering recommended).

GEOL 304 Petrology (3) Study of the characteristics, identification in hand specimen, distribution, and origin of igneous, sedimentary and metamorphic rocks. Prerequisite: GEOL 303 or equivalent.

GEOL 305 Structural Geology (4) Principles of structural geology, including theory of rock behavior under stress, and descriptions of major structural features. Prerequisites: trigonometry (high school or college), physics (calculus-based physics and engineering recommended).

GEOL 306 Optical Mineralogy (3) Optical crystallography and identification of minerals using the polarizing microscope. Prerequisites: GEOL 303 or equivalent; one year of college physics, including optics (calculus-based physics and engineering recommended).

GEOL 307 Introduction to Paleontology (4) History and evolution of life based on fossil evidence.

GEOL 308 Stratigraphy and Sedimentation (4) Principles of stratigraphy and sedimentation including weathering, transport, deposition and characteristics of sedimentary rocks, and their correlation. Stratigraphic and paleotectonic-development of North America and classical areas elsewhere in the world. Prerequisite: GEOL 303 or 314. Strongly recommended: GEOL 305, 307.

GEOL 314 Minerals and Rocks (3) Rock-forming minerals and common igneous, metamorphic and sedimentary rocks. Includes laboratory. Not for geology majors.

GEOL 323 Environmental Geology (3) Relationships of earth science to human problems and the environment, especially geological problems associated with mass urban growth. Not for geology majors.

GEOL 400 Field Geology (6) Field techniques for systematic geologic mapping utilizing topographic maps. Prerequisites: GEOL 304, 305, 307, 308.

GEOL 401 Skeletal Petrography (3) Identification of skeletal particles as seen in thin-section. Prerequisites: GEOL 306, 307.

GEOL 403 Carbonate Petrology (3) Description and classification of carbonate rocks. Recrystallization, diagenesis and porosity formation. Prerequisite: GEOL 306.

GEOL 407 Geophysics (3) Gravitational, magnetic, thermal, electromagnetic and seismic properties of the solid earth. Emphasizes seismic methods relative to petroleum exploration. Prerequisites: GEOL 304, 305, and one year of calculus recommended.

GEOL 408 Geochemistry (4) Geologic and chemical processes that produced the observed distribution and abundances of the elements. Prerequisite: GEOL 304.

GEOL 409 Sedimentology (3) Processes of weathering, transportation, and deposition of sediments, including low-temperature geochemistry and diagenesis. Characteristics and attributes of sedimentary rocks, including formation of permeability and porosity, and interpretation of the sedimentary record. Prerequisites: GEOL 305, 308.

GEOL 410 Micropaleontology (3) Microscopic study of fossils and principles underlying their use relative to correlation problems. Emphasizes fossil groups recoverable from well drill cuttings. Prerequisite: GEOL 307.

GEOL 412 Carbonate Depositional Environments (3) Modern carbonate depositional environments emphasizing their sedimentary and paleontological characteristics. Prerequisites: GEOL 307, 309. Strongly recommended GEOL 403.

GEOL 414 Clastic Depositional Environments (3) Physical nature of modern and ancient siliclastic deposits emphasizing use of modern analogs in interpretation of ancient deposits.

GEOL 415 Plate Tectonics (3) Tectonic forces that have been responsible for redistribution of major portions of the earth's crust. Prerequisite: GEOL 305.

GEOL 417 Petrography (3) Description, classification and origin of igneous, metamorphic and sedimentary rocks. Laboratory course utilizing thin sections and the polarizing microscope. Prerequisite: GEOL 304, 306.

GEOL 422 Oceanography (3) Geological, physical, chemical and biological aspects of the marine environment, including marine geomorphology and depositional environments.

GEOL 423 Nonmetallic Mineral Deposits (3) Origin, geologic association, and development of nonmetallic deposits; exploration, environmental factors controlling development and economic trends will be considered. Prerequisite: GEOL 304.

GEOL 424 Metallic Mineral Deposits (3) Origin, characteristics and migration of ore-bearing solutions; controls of ore deposition; and geologic associations, distribution, exploration for and exploitation of metaliferous deposits. Prerequisites: GEOL 304, 305, 306, 417.

GEOL 425 Groundwater Hydrology (3) Theory and engineering concepts of groundwater flow and development; relationship of groundwater and surface water; occurrence of water in sedimentary, volcanic and igneous rocks; and basin analysis. Prerequisites: GEOL 305, 308, 309.

GEOL 426 Engineering Geology (3) Application of geology to evaluation of construction problems and site investigations of major engineering projects, including case histories of major projects; characteristics and uses of geologic construction materials. Prerequisites: GEOL 305; 375, 425 recommended.

GEOL 428 Petroleum Geology (3) Origin, nature, migration and accumulation of petroleum; coal and oil shale; exploration for and exploitation of mineral fuel deposits. Prerequisites: GEOL 305, 308.

GEOL 431 Paleoecology (3) Principles, concepts and techniques of environmental analysis and interpretation of marine and terrestrial fossil ecosystems. Prerequisite: GEOL 307.

GEOL 440 Earth Resources and the Energy Cirsis (3) Geology, origin and general economics of mineral and fuel deposits, their importance to the national economy, and current problems of supply.

GEOL 451 Imagery and Map Interpretation (3) Analysis and interpretation of space and aircraft imagery and photography and topographic and thematic maps, including land descriptions.

GEOL 454 Well Site Geology (3) Methods employed in the subsurface search for petroleum. Prerequisite: GEOL 305. Recommended: GEOL 428.

GEOL 456 Texas Geology (3) Geologic history of Texas supplemented with field trips to some unique geologic features that occur within Texas.

GEOL 457 Volcanology (3) Volcanos and volcanic rocks. Prerequisites: GEOL 305, 417.

GEOL 493 Research (1-4) Variable credit involving field, laboratory and/or library research in geological problem solving.

**In addition to any specific listed prerequisites, physical and historical geology are prerequisites for all courses except GEOL 301 (Excursions in Geology), GEOL 314 (Minerals and Rocks) and GEOL 323 (Environmental Geology).

Life Science

Courses in life science apply to the Bachelor of Science degree with a major in life science, to a minor in life science, and to the first and second teaching fields in education; the courses also may be used as electives in other degree programs. Programs in life science provide preparation for careers in elementary, secondary and college teaching; research in basic and applied biological sciences; medicine, veterinary medicine, dentistry, and other health-related fields. Life science is a good supporting field for majors in chemistry, earth sciences, psychology, anthropology, physical education and the behavioral sciences.

Students majoring in life science should complete the lower-level coursework listed in the appropriate transfer curricula for public junior colleges in Texas. Specifically included should be:

Subject	Semester Hours
Inorganic chemistry	8
Biology	8
College algebra (or equivalent)	3

Preprofessional students in the health sciences should include such other lower-level courses as are required for admission to specific professional schools. Students who desire to use life science as the minor field of study should complete one year of biology prior to enrolling at UT Permian Basin. Students transferring credits to UT Permian Basin in clinical courses such as nursing, medical technology and other allied health areas should consult with the life science chairman to determine the number of credits that may apply toward a degree. The life science faculty help students design programs of study to satisfy specific career objectives.

PLAN A LIFE SCIENCE PREPROFESSIONAL STUDIES

Plan A is for students planning to enter graduate school or professional school (medicine, dentistry, veterinary medicine, medical technology and other health professions). This preprofessional degree plan includes a minimum of 40 semester credits in the major with at least 28 credits of upper-level courses including LFSC 300, 301, 320, 321, 440, 441, 442, 452, and 453. One year each of physics and inorganic chemistry, and one semester of calculus is required; it is strongly recommended that these be taken prior to enrolling at UT Permian Basin.

PLAN B LIFE SCIENCE TEACHER CERTIFICATION

A major with elementary or secondary teacher certification includes 24 semester credits in life science of which 18 must be upper-level courses. LFSC 303, 343, or 440, 350, 351, 442, and 454-455 or 472-473 or their equivalents are required. Students desiring secondary certification (either first or second teaching field) must include one semester of organic chemistry with laboratory.

PLAN C LIFE SCIENCE GENERAL STUDIES

This plan is for students not planning a career in biology and not entering a professional school. It includes 36 semester credits in the major with at least 24 upper-level credits. Plan C allows for more flexibility of course selection than plans A and B. Only one year of chemistry is required. Consult with the faculty chairman for the preparation of a degree plan.

COURSES IN LIFE SCIENCE*

LFSC 300 Microbiology (3) Growth, morphology, metabolism, and ecology of microorganisms.

LFSC 301 Microbiology Laboratory (1) Techniques for study of microorganisms. Corequisite: LFSC 300, Prerequisite: 8 hours general chemistry.

LFSC 303 Contemporary Human Health (3) Biological basis of major health problems related to nutrition, exercise, and environment.

LFSC 307 Parasitology (3) Host-parasite relationships and survey of animal parasites of medical and veterinary importance. Offered alternate years.

LFSC 320 Cell Biochemistry (3) Structure, function and integration of cell components. Prerequisite or corequisite: one semester of organic chemistry.

LFSC 321 Cell Biochemistry Laboratory (1) Quantitative experiments and techniques in the study of cellular activities. Pre- or Corequisite: LFSC 320.

LFSC 330 Plant Morphology (1) Structure, development, reproduction and relationship of the major plant groups. Prerequisite: one course of lower-division biology. Offered alternate years.

LFSC 331 Plant Morphology Laboratory (3) Morphology and taxonomy of the major plant groups. Corequisite: LFSC 330 biology. Offered alternate years.

LFSC 343 Human Genetics (3) Mechanisms of inheritance of human traits. *Not* for preprofessional life science majors.

LFSC 350 Human Anatomy and Physiology (3) Human anatomical systems and their physiological functions with special emphasis on the skeletal, muscular, nervous, circulatory and respiratory systems. Primarily for physical education majors. Prerequisite: 4 credits only of lower-division biology.

LFSC 351 Human Anatomy and Physiology Laboratory (1) Anatomy of the human and cat. Corequisite: LFSC 350.

LFSC 356 Vertebrate Anatomy and Development (3) Development, structure and function of vertebrate anatomy. Prerequisite: 8 credits of biology. Offered alternate years.

LFSC 357 Vertebrate Anatomy and Development Laboratory (1) Dissection of vertebrate anatomical systems and analysis of developing embryological systems. Corequisite: LFSC 356. Offered alternate years.

LFSC 398 Life Science Seminar (1) Interactive small group discussions of varied topics in life science.

LFSC 401 Virology (3) Structure, composition, replication and host interactions of animal, plant and bacterial viruses. Prerequisite: LFSC 300 or 320; one semester of organic chemistry. Offered alternate years.

LFSC 403 Pathogenic Microbiology (3) Bacterial pathogenesis, the methods the body uses to resist infection, the epidemiology of infections and mechanisms of bacterial toxicity. Prerequisite: LFSC 300 or equivalent.

LFSC 404 Clinical Microbiology Laboratory (3) Isolation, identification, and characterization of pathogens from clinical specimens.

LFSC 423 Immunology (3) Structure and function of the mammalian immune system. Prerequisite: LFSC 300 and 320. Offered alternate years.

LFSC 430 Plant Physiology (3) Nutrition, growth and development of plants, emphasizing vascular plants. Prerequisite: one semester of organic chemistry. Offered alternate years.

LFSC 431 Plant Physiology Laboratory (1) Experiments in plant nutrition, growth, development and metabolism. Corequisite: LFSC 430. Offered alternate years.

LFSC 440 Genetics (3) Structures and functions of hereditary material, emphasizing recent developments. Prerequisite: LFSC 300 or 320.

LFSC 441 Laboratory in Genetics (1) Laboratory experiences in manipulation of genetic systems and interpretation of data. Prerequisite: LFSC 301 or equivalent; Corequisite LFSC 440.

LFSC 442 Evolution (3) Population variation and mechanism of evolution and speciation. Prerequisite: 8 credits of biology.

LFSC 452 Animal Physiology (3) Development, function,, and mechanism of action of the major physiological systems in animals. Prerequisite: LFSC 320.

LFSC 453 Animal Physiology Lab (1) Experiments and demonstrations of physiological phenomena. Corequisite: LFSC 452.

LFSC 454 Animal Behavior (3) Control and physiological basis of animal behavior. Offered alternate years.

LFSC 455 Animal Behavior Laboratory (1) Experimental studies to observe and quantify the behavior of animals. Corequisite: LFSC 454. Offered alternate years.

LFSC 456 Endocrinology (3) The endocrine system and control of bodily functions.

LFSC 472 Ecology (3) Analysis of the principles of population and community ecology. Prerequisite: 8 credits in chemistry. Offered alternate years.

LFSC 473 Ecology Laboratory (1) Experimental studies to illustrate population and community ecology techniques. Corequisite: LFSC 472. Offered alternate years.

LFSC 475 Field Biology (3-6) Field problems in the Permian Basin. Prerequisite: 12 credits of biology. Offered summers only.

*All courses in life science require one year (two semesters) of basic college biology, with laboratory, except as otherwise noted under the course descriptions.

Mathematics

A Bachelor of Science degree with a major in mathematics requires a minimum of 120 semester credits. The major in mathematics requires a minimum of 24 semester credits exclusive of basic calculus and pre-calculus courses of which 18 must be at the upper level.

Variations in the plan of study will be made in keeping with an individual's interests and can be oriented to prepare students for careers in public school teaching, industrial and government research or for graduate study in mathematics or a related field.

All major programs include courses in linear and abstract algebra, probability and statistics, and analysis (MATH 301, 310, 315 and 360 or 401). Mathematics electives are selected according to student's educational objectives and may include up to 6 semester credits in related fields such as computer science, operations research, etc., all subject to mathematics faculty approval. A minor consisting of 18 semester credits, of which 12 must be upper level, is required. The choice of a minor also should be made in light of the student's interests and goals.

In addition to the lower-level coursework outlined in the general sections for the College of Science and Engineering, mathematics majors should have the following lower-level coursework completed:

Subject	Semester Hours
Laboratory science	8
Scientific Computer Programming	3
Differential, Integral and Multivariate Calculus	9

Courses in accounting, economics and modern languages are recommended.

Students seeking teacher certification must take MATH 350 (Topics in Geometry) as a part of the 24 semester credit major. If mathematics is the second teaching field, it is considered as a minor of 24 semester credits. The degree plan would include differential and integral calculus, linear and abstract algebra, advanced geometry, probability and statistics. This program provides students with the mathematical background necessary to teach algebra and geometry effectively in middle and secondary school.

SAMPLE DEGREE PLAN MATHEMATICS*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
MATH 310	3	MATH 301	3	MATH electives	6	MATH electives	6
MATH 360	3	MATH 315	3	Courses in Minor	6	Course in Minor	3
Courses in Minor	6	Course in Minor	3	Elective	3	Electives	6
Elective	3	Electives	6				
	15		15		15		15

*Degree plans vary depending upon a student's goals and preparation prior to enrolling at UT Permian Basin. Students should consult with their faculty advisers for specific degree planning.

COURSES IN MATH

MATH 300 Mathematics for Elementary Teachers (3) Basic set theory, axiomatic structure of the number system, foundation of arithmetic and informal geometry.

MATH 301 Statistics (3) Basic concepts and applications of statistics, including probability, standard statistical distributions, descriptive statistics, testing of hypothesis, confidence intervals, linear regression and correlation. Same as DSCI 301.

MATH 303 History of Mathematics (3) Evolution of mathematical thought and processes from antiquity to present.

MATH 304 Finite Math for Computers (3) Sets and elementary logic, introduction to probability, vectors, matrices, linear programming and graphs as they apply to computers. Prerequisite: college algebra (Same as CPSC 304).

MATH 305 Introduction to Applied Mathematics I (3) Basic algebra and calculus with applications to the nonphysical sciences. Does not replace basic calculus sequence for physical science and engineering majors. Prerequisite: college algebra or equivalent or permission of the instructor.

MATH 306 Introduction to Applied Mathematics II (3) Single and multivariate calculus with applications to the nonphysical sciences. Does not replace basic calculus for physical science and engineering majors. Prerequisite: MATH 305 or equivalent.

MATH 310 Linear Algebra (3) Vectors, vector spaces, matrices; linear transformations, eigenvalues, eigenvectors, and canonical forms, and their applications.

MATH 315 Algebraic Structures (3) Sets, groups, rings and fields, with applications to the ring of integers and polynomial rings. Applications to computer science.

MATH 318 Elements of Differential Calculus (3) Limits, derivatives, graphs of functions of single variables. Applications to optimization and related rate problems.

MATH 319 Elements of Integral Calculus (3) Integral calculus of a function of single variables. Transcendental functions. Applications to areas, volumes and arc length.

MATH 320 Calculus of Several Variables (3) Differential and integral calculus of functions of several variables. Prerequisites: integral and differential calculus of a single variable.

MATH 330 Differential Equations (3) Ordinary differential equations including power series, Laplace transform methods and systems of linear differential equations with applications. Prerequisite: multivariable calculus.

MATH 350 Topics in Geometry (3) Cross ratio, elementary transformations, Euclidean constructions, introduction to non-Euclidean geometrics, and other topics in modern geometry.

MATH 360 Intermediate Analysis (3) Limits, continuity, uniform continuity, derivatives, integrals and mean value theorems.

MATH 401 Probability and Statistics (3) Fundamentals of probability theory and properties of distribution functions encountered in modeling and hypotheses testing. Prerequisites: calculus and MATH 301.

MATH 405 Discrete Mathematical Models (3) Discrete deterministic and stochastic models for social science and management application. May include decision models, finite game. Prerequisites: linear algebra and statistics.

MATH 406 Continuous Mathematical Models (3) Mathematical models in the biological and management sciences that employ continuum principles. May include optimization, epidemics, growth, etc. Prerequisites: linear algebra, statistics and calculus.

MATH 415 Theory of Numbers (3) Divisibility of integers, congruence, quadratic residues, Diophantine equations and continued fractions. Prerequisite: MATH 315.

MATH 419 Applied Mathematics (3) Ordinary and partial differential equations, including special functions, transform methods, Fourier series and calculus of variations. Prerequisite: MATH 330.

MATH 420 Numerical Analysis (3) Initial value problems, transcendental equations and systems of linear equations. Interpolation, averaging and quadrature processes. Error analysis stressed. Same as CPSC 420. Prerequisites: MATH 310, 330 and knowledge of a programming language.

MATH 435 Vector and Tensor Analysis (3) Vector and tensor analysis, subdivided into 1) the vector calculus, 2) integral transformations of Green, Gauss and Stokes and 3) tensor calculus. Prerequisites: MATH 310, 320; MATH 330 recommended.

MATH 440 Nonparametric Statistics (3) Statistical procedures that are not dependent on a knowledge of the underlying distributions. Prerequisite: MATH 301 or equivalent.

MATH 445 Multivariate Statistics (3) Operationally oriented study of multivariate regression, analysis of variance and covariance and related topic. Prerequisite: MATH 301 or equivalent.

MATH 470 Complex Variables (1-3) Complex analysis, including analytic functions, power series, residues and conformal mapping. Prerequisites: calculus, and MATH 360.

Natural Science

This is an integrated two- or three-semester course sequence designed to emphasize the contemporary aspects of biology, chemistry, earth sciences and physics while minimizing the distinction between the disciplines. Stressed throughout are:

a. The impact of science on the individual's life.

b. The interaction of science with social, economic and political forces.

c. The strengths and limitations of science.

d. An understanding of science as a human endeavor.

These courses are designed for nonscience majors, but may be taken with permission as electives for science majors. They also may be used to satisfy the physical and biological sciences requirements for graduation as well as the science requirements for teacher certification. These courses are independent of each other and one, two or all three may be taken in any order.

COURSES IN CONTEMPORARY NATURAL SCIENCE

NTSC 301 Contemporary Natural Science I (3) Interaction of populations and life-support systems (energy, air, resources, water); environmental ethics.

NTSC 302 Contemporary Natural Science II (3) Man as part of the environment: food chains, chemicals, radioisotopes, health.

NTSC 303 Contemporary Natural Science III; Meteorology, Oceanography, Space Science (3) Meteorology; climatology; the hydrological cycle; chemical, physical and biological oceanography; ocean resources; the planets, stars and galaxies; optical and radio astronomy; and remote sensing.

Physics

The university does not offer a degree in physics but does offer courses which students may include in their general education or for a minor.

COURSES IN PHYSICS

PHYS 301 Mechanics (4) Measurement, vectors, kinematics, conservation of energy and rigid body motion. Includes a laboratory. Prerequisite: differential and integral calculus.

PHYS 302 Electricity and Magnetism (4) Electric charge and Coulomb's law, electromagnetic fields, magnetic force fields, Ampere's law, Biot-Savart's and Faraday's laws. Includes a Laboratory Prerequisites: differential and integral calculus.

PHYS 303 Heat, Light, and Sound (4) Simple harmonic motion, traveling waves, the superposition principle, temperature and heat, the kinetic theory ideal gases, entropy and the second law, light intensity, polarization, Doppler shift, reflection and refraction, interference and diffraction. Includes a laboratory. Differential and integral calculus.

GRADUATE STUDY

Unlike most universities, UT Permian Basin does not have a separate graduate school. The university's graduate programs are administered by the college deans under the direction of the chief academic officer. There is no formal or operational distinction between the administration of the graduate and undergraduate programs. A graduate council, composed of the college deans and elected members from the graduate faculty, is responsible for developing policies and procedures concerning graduate education, and advises the deans, chief academic officer and president on the operation of graduate programs.

ADMISSION TO GRADUATE STUDY

Those seeking admission should write to the dean of admissions for an application form which must be filled out and returned. Also, official transcripts of all prior college or university study must be sent from those institutions directly to the UT Permian Basin admissions office.

There are five basic requirements for admission to a graduate program: (1) a bachelor's degree from an accredited institution in the United States or proof of equivalent training at a foreign institution, (2) B average in upper-level (junior and senior level) work and in any graduate work already completed or other evidence that one can succeed in graduate study, (3) a satisfactory score on the Graduate Record Examination or the Graduate Management Admission Test, (4) adequate subject preparation for the proposed graduate program and (5) acceptance by the dean of the college in which the student expects to pursue graduate study.

Deadlines for submission of applications. The application and all supporting documents (this includes GRE or GMAT scores and official transcripts from all previous colleges or universities attended) must be received by the University Admissions Office at least 30 days prior to the registration date. International students must have all admissions documents submitted and approved at least 8 weeks prior to the beginning of the semester in which they plan to enroll.

Senior-Graduate concurrent study. UT Permian Basin seniors lacking less than 10 semester credits for graduation but meeting other admission requirements may be admitted to graduate study. They must be registered concurrently for all of the final courses required for the bachelor's degree and obtain written permission from the college dean to be able to take graduate courses.

Standards and levels of Graduate Admissions. A Student who holds a bachelor's degree from an accredited institution of higher education is eligible for admission to graduate study as a degree-seeking student under one of three categories:

1. *Regular Standing.*

   A. With an earned graduate degree from an accredited college or university; *OR*

   B. With a grade-point average (GPA) of 3.0 (or higher on a 4.0 scale) in the upper-division courses required for the degree *and* a total Quantitative -

Verbal - Analytical Graduate Record Examination (GRE) score of 1500 (1000 if only the Quantitative - Verbal exam is taken.)

In place of these GRE provisions, admissions to the MBA program of the College of Business Administration is possible by presenting a satisfactory Graduate Management Admission Test (GMAT). In general, students are accepted as regular candidates who attain a combined score of 1120 and as provisional candidates who attain a combined score of 1000 calculated as follows:

200 x grade point average of the last 60 undergraduate hours plus the GMAT score.

Students who attain lower combined scores will be accepted only under extenuating circumstances which must be presented in the form of a petition to the Graduate Council by the dean of the College of Business Administration. These students usually will be admitted on an "Undergraduate to Qualify" status (see below).

A student whose undergraduate degree was in an academic discipline other than the one in which he/she wishes to do graduate work ordinarily will be required to take graduate levelling or undergraduate courses prerequiste to or supporting the graduate courses to be taken. A 3.0 GPA must be maintained in these courses. Semester credit hours earned for these courses will not count towards the minimum number of graduate credits required for the degree.

2. *Provisional Standing.*

A student whose grade-point average for his/her upper-division courses is not 3.0 but is at least 2.5, *and/or* whose GRE score does not equal 1500 (1000 if only the Quantitative - Verbal is taken), but totals at least 1200 for Quantitative - Verbal - Analytical (800 for Quantitative - Verbal), or by using the above formula for GMAT attains a numerical level of 1000 (but less than 1120) may be admitted provisionally. Students admitted with provisional standing will, upon successful completion of a minimum of nine semester credit hours of graduate coursework, with a 'B' or better in each course taken, be accorded regular standing.
The same provisions regarding an undergraduate degree in a field other than the one in which the graduate study is being undertaken under 'Regular Standing' apply to 'Provisional Standing.'

3. *Undergraduate to Qualify Standing.*

A student whose GPA is less than 2.5, but is at least 2.0, or whose GRE score is less than 800 (Quantitative - Verbal) or by using the above formula for the GMAT does not attain a numerical level of at least 1000, may be admitted to take undergraduate courses in the field in which he/she intends to pursue graduate study. The number of semester credit hours and specific courses will depend on the student's GPA and GRE scores and coursework completed, but will consist of a least 12 credit hours. Courses will be selected jointly by the student and his/her advisor, and will be used to make up prerequisite deficiencies if any in the student's undergraduate preparation for graduate work. A 'B' or better must be received in each course. Upon satisfactory completion

of the coursework, the student will be reviewed for possible regular standing and can begin work toward the degree. The coursework taken in 'undergraduate to qualify' status will *not* count toward graduation requirements.

Individual degree programs may have additional requirements for admission to graduate study and admission to candidacy for the degree.

All application documents should be received by the university at least 30 days prior to registration. This includes all transcripts, GRE or GMAT scores, and petitions.

Conditional admission. Students desiring to work toward an advanced degree in an area which their undergraduate training is insufficient may be admitted with the understanding that noted deficiencies must be made up and will be in addition to the regular degree requirements.

Students with less than minimum grade point averages or with less than satisfactory scores on the GRE or the GMAT may be admitted on the recommendation of a college dean with the approval of the chief academic officer. The dean may assign special conditions regarding the number of semester credits to be taken with the specific grade point average to be maintained.

Properly prepared students may register for graduate courses without a formal admission to a degree program provided they complete a 'declaration of intent form' stating that they are not pursuing a degree. Courses elected at UT Permian Basin under this plan may not be applied toward a degree without first being admitted to graduate studies and developing a degree plan in consultation with a counselor assigned by the dean of the college offering the program.

GRADUATE STUDY REGULATIONS

Students are held responsible for knowing degree requirements for enrolling in courses that apply to their degree program. Knowing university regulations in regard to the standard of work required for continuance in graduate study is also the student's responsibility.

Transfer of Credits. Credit for graduate courses completed at another institution may be applied toward a master's degree at UT Permian Basin. Up to and including 6 credits may be transferred if appropriate for the student's program and approved by the student's adviser, provided the courses were taken with a grade of B or better. Three additional credits may be transferred upon approval of the dean.

A petition to accept more than 9 hours of credit must be directed to the graduate council through the appropriate dean's office *prior to the student's completion of 12 credits at UT Permian Basin.* Timely submission of a petition is the responsibility of the graduate student. The adviser and dean must indicate on the petition approval or disapproval of the request. Should the adviser and/or dean not approve the transfer of any credits, the student has the right to submit a petition to the graduate council, which will make the final determination on acceptance or rejection of the credits.

Prior written approval from the dean of the college of the student's major field must be obtained for any courses taken at another institution after the student has matriculated at UT Permian Basin to insure acceptance of credit toward the master's degree. No correspondence study credits apply toward the minimum requirements for the master's degree, and no credit more than eight years old at the time of graduation may be applied toward requirements for the degree, including any transfer credit. A maximum of six credits of extension coursework, whether completed through UT Permian Basin or at another institution, may be applied toward meeting minimum requirements for the master's degree. Normally, no coursework completed at another institution after a student has already begun a degree program at UT Permian Basin will be accepted for transfer without prior written approval from the dean of the college.

Undergraduate Courses for Graduate Credit. Undergraduate courses may be taken for graduate credit under certain circumstances. Generally 400-level courses in the student's major and minor fields may be used to fulfill the requirements for the degree only when requisite 600-level courses are not offered. Graduate credit for 400-level courses is not automatic and prior approval to have such courses count toward a graduate degree should be arranged at the time a student registers for the 400-level course. Students electing these courses for graduate credit toward a UT Permian Basin degree are expected to complete work in addition to that required of undergraduate students and are expected to perform at a graduate level of academic work; 300-level courses in ancillary or supporting fields may be taken for graduate credit when in the opinion of the student's advisor and committee they are necessary to provide a sufficient background in his/her major and/or minor fields, and when these courses ordinarily are not part of a standard undergraduate program in the student's field.

Course load. The maximum course load for graduate students is 15 semester credits in a fall or spring semester or 6 semester credits in a 6 week summer term. Registration in excess of these requires approval of the dean of the college and is permitted only under exceptional circumstances. Nine credits for graduate students and 12 credits for undergraduate students constitute a full-time semester load. Students employed by UT Permian Basin as teaching assistants or student assistants must reduce course loads correspondingly. Part-time students employed full time should normally take no more than two courses per semester.

The maximum credits for which students may register in a semester or summer term apply to both conventionally taught courses and to self-paced courses. If students finish a self-paced course before the end of the semester or summer term, they may register for another self-paced course immediately or any time during that semester up to 4 weeks prior to the end of the semester.

Grades. Credit is given in graduate programs only for the grades A, B and C. A degree candidate is required to present an overall average of B at the end of his program of study. The College of Business Administration will accept no more than two courses with a grade of C. At the graduate level, some instructors will award pluses and minuses to grades, especially in the case of the grade B, in order to further clarify the meaning of the mark. These marks do not enter into the grade point calculation.

Continuation in graduate school. Continuation in graduate study is dependent on satisfactory progress in resolving any admission conditions and maintenance of a B average.

Graduate students whose GPA falls below a 3.0 will be placed on probation for one semester or 6 credit hours. If they do not bring the cumulative GPA up to a 3.0, they will be dismissed.

After one semester, they may re-apply for admission, and must show evidence of reasonable expectation to succeed in graduate study.

A student being dropped from the MBA program for academic reasons for the first time may re-apply for admission after one semester. If a student is dropped a second time, he/she may re-apply after one full academic year. No student may re-apply if he/she has been dropped twice for academic consideration.

Courses counted for another degree. No course counted toward another degree may be counted toward a master's degree, either directly or by substitution.

English requirements. International students must submit a satisfactory Test of English as a Foreign Language (TOEFL) independent-study score in order to be admitted to graduate study.

Advisement. Upon admission to graduate study, students are assigned a faculty adviser by the dean. Prior to the completion of one-half of the course credits required, the adviser and the student will nominate a committee of 3 or more members of which the adviser may or may not be the chairman or a member. The committee will be composed of a faculty member from the student's major field of study, a faculty member from a cognate field of study and one or more faculty members who may be from the major or cognate field of study or other field for which there is logical reason. The committee is approved and appointed by the dean of the college.

The committee is responsible for developing the student's program of study, for conducting examinations and for certifying the student's completion of all requirements for the degree to include making arrangements for the final examination.

Candidacy. Candidacy for the master's degree is established when graduate students, along with their adviser, plan a program of study. This should be done prior to completion of 12 credits and must be done prior to completion of 18 credits toward the degree and must be approved by both the college dean and the Graduate Council. Students failing to submit a program or receive approval may be required to complete one-half of the required credits (exclusive of thesis) after approval is received. The planned program should list all courses, any special projects and other educational experiences that are to be a part of the master's program. It is not necessary to include the topic if the thesis option is chosen.

Oral examination. Successful completion of all courses and research requirements does not assure receipt of the master's degree. After all requirements have been fulfilled, candidates normally sit for an oral examination by their committee and one outside member. The outside member represents the graduate faculty at the oral examination. The degree candidate may recommend an outside member; however, the final approval rests with the dean of the college, who will make that decision no later than 2 weeks prior to the date of the oral examination. The examination covers the subject matter of the candidate's field or discipline and research. Candidates must demonstrate an appropriate level of knowledge and understanding of their field in the oral examination. Two negative votes on a committee of 3-4 members or 3 negative votes on a committee of 5 or more members results in failure. Candidates failing the oral examination may sit for re-examination only twice more within 5 years of the initial failure. However, candidates failing the examination will be given directions for study in order to improve the chances of passing the examination on a second attempt.

Filing application for graduation. The prospective graduate should complete and file an application for graduation during registration of the semester graduation is planned. The student must pay the graduation fee and initiate a degree check with his/her faculty adviser. The student must enroll for at least one semester hour credit in one of the standard numbered courses during the semester in which graduation actually occurs or, under special circumstances, register *in absentia*.

In Absentia Registration. A candidate for a degree who has completed all the requirements for graduation and who needs to register in the University for the purpose of having a degree conferred, but for no courses, must register *in absentia*. This is the only purpose for which a student may register *in absentia*. After registration for credit during a semester or summer session, a change to *in absentia* status must be approved by the student's academic dean and processed through the add/drop procedure; i.e., a student will drop the courses for which he has registered and add the *in absentia* registration. All fees, less the *in absentia* fee will be refunded if the change is made during the first 12 class days. After the 12th class day, no refunds are made and

no additional charge will be assessed for the *in absentia fee.* The university ID card and original paid fee receipt must be returned before a refund can be issued. No refund is made for the cancellation of an *in absentia* registration.

STANDARD NUMBERS

Several numbers are standard among all disciplines at UT Permian Basin or in certain discipline categories. These include:

689 Selected Topics (1-3) Graduate courses which will be offered only once or will be offered infrequently or which are being developed before a regular listing in the catalog. Offered in all disciplines in which the master's degree is offered.

691 Contract Study (1-3) For students who are pursuing independent study or research as described in the contract study format. Offered in all disciplines in which the master's degree is offered.

692 Experiential Learning (1-3) In disciplines in which the master's degree is offered. Referred to as authentic involvement in the College of Science and Engineering and as practicum in the College of Arts and Education.

695 Seminar (1-3) In disciplines in which the master's degree is offered.

698 Master's Project (1-3) To meet the research requirements in nonthesis master's degree programs.

699 Master's Thesis (1-6) Students must have the approval of the responsible instructor before registering for courses 691, 692, 698 and 699. In some cases, prior approval is required for others and will be so indicated in the schedule of classes.

Arts and Education

PROGRAMS OF STUDY

Master's degrees are offered in 8 fields: MA in behavioral science, MA in education, MA in history, MA in literature, MA in physical education, MBA in management, MS in control engineering, MS in life sciences, and MS in geology.

Behavioral Science

The Master of Arts degree program in behavioral science is open to all qualified students with baccalaureate degrees from accredited colleges or universities.

Fifteen hours of undergraduate prerequisite courses are required for admission to the graduate behavioral science program. These include 3 hours of statistics, 3 hours in psychology of learning, 3 hours in a course in experimental psychology or research methods in psychology, 3 hours in social psychology or social behavior and 3 hours in social problems such as minority groups, race relations, social problems, social stratification or other similar courses. Students who have deficiencies in these prerequisites must either take the course(s) or an examination prepared and evaluated by the instructor(s) of the course(s). The deficiencies must be removed in the first 2 semesters the student is enrolled in the graduate program.

The behavioral science program is interdisciplinary and multidisciplinary in nature, designed to prepare individuals for community service work in a variety of applied fields that would include vocational rehabilitation, community and social service counseling, parole and probation supervision, urban affairs, mental health care, youth counseling or industrial counseling, among others.

The program includes study in the behavioral sciences, drawing upon psychology, sociology, anthropology, and courses in the College of Business Administration. Students take a common core of behavioral science courses, supplemented with additional courses from various disciplines in a configuration that will best meet their career needs. The supplementary courses comprise the required and elective courses of the

specialization options that include applied psychology, applied social science, community counseling, criminal justice, general academic, and personnel management. Students interested in state certification as a psychological associate must complete a 42-hour master's program in applied psychology, including 450 clock hours in practicum.

The common core assures that all students, regardless of their specialized goals, will have a uniform and thorough conceptual understanding of human behavior and the dynamics of social institutions. At the same time, by taking most of their coursework in individual disciplines, students will have considerable flexibility to design curricula in accordance with their special career needs.

In lieu of a traditional thesis, students must develop a project involving a problem in their special area of interest.

Problems are investigated under the supervision and direction of the student's committee and will involve the application of principles and theories of behavior to some problem area of behavior.

In addition to the master's project, students are required to complete 3-6 semester credits in a practicum conducted in the area of their special interest. The supervision of the practicum is shared by the personnel of the facility and the university. An interdisciplinary seminar in the final semester serves as a capstone for the entire program. Faculty members and students completing the program participate in this seminar which is designed to integrate the coursework, the practicum experience and the problem into a coherent and meaningful entity.

An illustrative program assuming a 12-hour semester course load is presented as follows:

First Semester		
BVSC 600	Theories and Systems of Behavior I	3
.....	A selection of courses from psychology, sociology	9
	anthropology, educational psychology and management to fit the career goals of the student.	12
Second Semester		
.....	A selection of additional courses from the 4 disciplinary areas above to fit the particular career preparation needs of the student.	6 12
Third Semester		
BVSC 692	Practicum	3-6
BVSC 695	Seminar	3
BVSC 698	Master's Project	3
.....	Elective	0-3 12

The same sequential order prevails for part-time students in that the practicum master's seminar and master's project will constitute the terminal courses in the sequence.

COURSES IN BEHAVIORAL SCIENCE

BVSC 600 Theories and Systems of Behavior I (3) Overview of psychology, learning theories and concepts; integrative in nature, including a review of research appropriate to the techniques and methods of behavioral science application.

BVSC 601 Theories and Systems of Behavior II (3) Sociological and anthropological theories and concepts; integrative in nature, including a review of research appropriate to the techniques and methods of behavioral science applications.

BVSC 680 Research Methods (3) A review of the research methods used in the investigation of problems within the behavioral and social sciences.

BVSC 695 Interdisciplinary Seminar in Behavioral Sciences Practicum (3) Designed to integrate behavioral science coursework, and practicum experience into a coherent, meaningful entity.

Courses from cooperating colleges and areas of study are selected according to the program requirements and the student's needs in consultation with the faculty director of the program. Such courses and their description are listed under the appropriate college and areas of study.

COURSES IN PSYCHOLOGY

PSYC 605 Advanced Applied Behavior Analysis (3) A study of the applications of the principles and methods of learning to a variety of human behavioral problems.

PSYC 621 Sources of Abnormal Behavior (3) Research on the major sources of variables involved in abnormal behavior.

PSYC 622 Current Psychotherapies I (3) A critical analysis of various psychotherapeutic systems.

PSYC 641 Child Psychology I: Cognitive Processes (3) An analysis of various theoretical interpretations of cognitive functions such as concept formation, problem solving, language, memory and attention. The determinants of differences in cognitive functioning will also be analyzed.

PSYC 642 Child Psychology II: Personality and Social Development (3) Study of various theoretical interpretations and determinants of differences in social and emotional development. Topics include achievement motivation, aggression, moral development, peer relations, adult-child interaction, and so on.

PSYC 650 Seminar in Intelligence Testing (3) An examination of the principles and methods of assessing intelligence.

PSYC 651 Seminar in Personality Assessment (3) An examination of the principles and methods of assessing intelligence.

Education

The Master of Arts degree in education is offered in educational administration, counseling, early childhood education, elementary education, reading, secondary education, special¢¢¢ education and supervision.

Students receiving the MA degree in education must complete a minimum of 36 semester credits of a prescribed course of study. These 36 semester credits must include a minimum of 33 credits of prescribed course work plus the the satisfactory completion of a 3-6 credit Master's Study and its oral defense before the student's master's committee. The Master's study requires the student to pursue a problem involving an issue in education of special interest to the student which is derived from his program of study. This study shall be under the supervision and direction of the student's Master's Committee and shall involve the application of research techniques, theories, and principles of education relevant to the problem studied. The format for the report of the Master's Study shall conform to one of the established manuals of style and the guidelines of the UT Permian Basin Graduate Council.

Graduate students in education seeking Texas certification should have had teaching experience before enrolling in graduate study. Those who have not had such expe-

rience will, except in unusual cases, be expected to gain teaching experience before completion of the MA degree. The Master of Arts degrees in education are open also to students not seeking educational certification. Students without prior professional education may be required to take 6-12 semester hours of leveling courses.

The Master of Arts degree programs in early childhood education, elementary education, secondary education and special education may be so planned as to prepare the student primarily for teaching or for supervisory roles. The MA program in reading is designed to prepare reading specialists for teaching, diagnosis and coordination in elementary and secondary schools. The MA program in educational administration is designed for preparation and certification at the mid-management and superintendent levels. The MA program in supervision is designed to prepare general supervisors in program areas. The MA program in Counseling is designed primarily to prepare counselors in the elementary or secondary schools.

The MA requires at least one-half of the coursework in the major area of study or in areas directly related to it. For those pursuing the MA in secondary education, the minor may be outside the field of education. For those pursuing the MA in elementary education, the minor may be in an academic area outside of education, or in a support area within education.

For those pursuing the MA leading to the professional certificate in elementary or secondary education, the coursework must include: (a) a minimum of 12 semester hours in an approved academic area of specialization; (b) a minimum of 6 semester hours in the professional development area; (c) 6 semester hours in a resource area; (d) 6 semester hours of elective courses; (e) 6 semester hours of degree related coursework.

The following are approved academic areas of specialization that may be used as a part of the course work required for the professional teaching certificate:

Art	Earth Science	Mathematics
Anthropology	Economics	Music
Biology	English (Literature)	Psychology
Business, general (Management)	Government	Physics
	Physical Education	Sociology
Chemistry	History	Spanish
Computer Science	Journalism (Mass Communication)	Speech

MA programs for elementary and secondary may be organized to include endorsements in Bilingual education or English as a second language.

Programs also are offered leading to certification as reading specialists, mid-management educational administrators (principals or central system administrators) and superintendents.

COURSES IN ADMINISTRATION AND SUPERVISION

EDUC 604 Appraisal of School Programs (3) Functions of evaluation, performance and outcome measurement, design, administration and reporting of evaluation programs.

EDUC 606 Organizational Development in Schools (3) Readings and applications, with an emphasis on designing strategies for developing school staff, structures, functions, and behavior.

EDUC 607 Supervision of Instruction (3) Systematic design and analysis of strategies for the supervision of teacher performance with an emphasis on clinical approaches.

EDUC 608 Supervision of Student Teaching (1-3) Supervision of student teachers at secondary or elementary school levels. Techniques and procedures for supervising the effectiveness of instruction, activities and programs.

EDUC 660 Theory and Research in Administration (3) Nature of organizational life and administrative behavior.

EDUC 661 Fiscal and Legal Aspects of Education (3) Application of principles of public fiscal policy to education. Effects of the law on processes of public school education and its administration.

EDUC 663 Administration of Special Programs (3-4) Administration of special and compensatory education, reading, career education, vocational-technical education, and library-media education.

EDUC 666 Administration and Management of Schools (3) Major issues and trends in public school administration: centralization, decentralization, allocation of educational resources, organization, policy development and curriculum change.

EDUC 667 Foundations of Public School Administration (3) Theory of administration. Study of setting, function and and process of administration.

EDUC 668 Principalship (3) Administrative processes and functions of the elementary and secondary school principal in the context of school district organization and administration.

EDUC 669 School Personnel Administration (3) Personnel management theory and research. Emphasizes skills in recruitment, selection assignment, staff development, supervision and evaluation.

EDUC 683 School Finance (3) Principles, trends and practices in financing public education, including sources of school revenue, taxation and fiscal policies.

EDUC 685 Educational Change and Design of Facilities (3) Planning a building program: educational plan, determining objectives, specification, selecting the architect, evaluating plant, school standards and equipment.

EDUC 687 Education and Sociocultural Change (3) Contemporary social issues and their relationship to instruction and policy formation, including professionalization, race relations and pressure group influences and processes.

EDUC 688 Contemporary Philosophical Problems in School Administration (3) Selected contemporary problems in school administration in terms of basic philosophic concepts such as "value," "freedom" and "authority."

COURSES IN CURRICULUM AND INSTRUCTION

EDUC 615 Teaching Language Arts and Reading for Spanish Speakers (3) A critical analysis of materials in Spanish available for teaching language arts and reading and a survey of strategies for teaching reading and language arts to Spanish speakers.

EDUC 616 Teaching English as a Second Language (3) An introduction to theoretical and practical aspects of teaching English as a second language (written and oral) to non-English speaking children.

EDUC 621 Curriculum Foundations of the Elementary School (3) Foundations of curriculum of the elementary school. Review of aims, methods and approaches to curriculum, instruction programs and evaluation.

EDUC 624 Art Since 1945 (3) Starting from abstract expressionism to a study of recent directions in Art. Emphasis is on art criticism.

EDUC 627 Advanced Social Studies Education (3) Issues, teaching strategies and curriculum materials are combined to provide knowledge and experience in recent trends in social studies education.

EDUC 628 Linguistics and Grammar for the English as a Second Language Teacher (3) A survey of structures of English as well as general issues in language such as: language variation, non-verbal communication and uses of languages.

EDUC 630 Theories of Curriculum and Instruction (3) Curriculum development and contemporary instructional models and techniques as related to teaching and administration in elementary and secondary schools.

EDUC 631 New Strategies in Secondary Science (3) Organizing and sequencing lessons and units in junior high and senior high science courses. Students videotape and evaluate their own teaching.

EDUC 632 Current Issues and Trends in Curriculum and Instruction (3) Curriculum theories and compatible instructonal techniques emphasizing alternate values and positions in a pluralistic culture.

EDUC 634 Curriculum Foundation of the Secondary School (3) Foundations of curriculum of the secondary school. Aims, methods and approaches to curriculum, instruction programs and evaluations.

EDUC 636 Advanced Problems in English as a Second Language (3) A comparative and contrastive analysis of the interrelationships of language culture, learning in the classroom setting.

EDUC 637 Problem Solving in Mathematics Education (3) Examines recent findings regarding problem solving and uses models for heuristic applications.

EDUC 638 Strategies for Teaching Science, Mathematics and Social Studies in Spanish (3) Primary emphasis will be placed on developing teaching plans, materials and teaching demonstrations using vocabulary appropriate for the disciplines and grade level at which material is presented.

EDUC 639 Innovations in Teaching Elementary School Science (3) Similarities and differences between newer elementary science programs and existing approaches; interaction with elementary children using materials and activities from current curricula.

EDUC 641 The Design of Instructional Systems (3) Design a course of instruction using systems theory and the programmed instructional process.

EDUC 642 Individualized Instruction Thru Media (3) Defining objectives behaviorally; developing sequential learning activities; analyzing pupil readiness; prescribing appropriate strategies for continuous individual progress through selective use of media.

COURSES IN COUNSELING AND GUIDANCE

EDUC 670 Introduction to Counseling and Guidance (3) Theoretical, experiential and applied overview of counseling and guidance services in the schools and community. Emphasizes functions of counselors in different settings.

EDUC 671 Group Techniques for Counselors (3) Dynamics and theory of group processes as applied to group procedures in counseling and psychotherapy.

EDUC 672 Career Counseling and Career Development (3) Human development perspective of vocational counseling and career planning. Content, processes and strategies, information systems and career guidance services.

EDUC 673 Guidance Testing (3) Group testing; analysis and interpretation of achievement, aptitude, interest and personality tests; synthesizing case data and educational, vocational and general counseling report-writing.

EDUC 674 Micro-Counseling (3) Presentation, demonstration and practice, with the necessary skills to effectively conduct complete counseling interviews. Prerequisite: Permission of the Instructor.

EDUC 676 Counseling: Theory and Practice (3) Counseling theories; competence in applying counseling techniques.

COURSES IN SPECIAL EDUCATION

EDUC 609 Supervision of Special Education (1-3) Administrative and supervisory procedures of special education programs for exceptional children.

EDUC 651 Advanced Problems in Language/Learning Disabilities (3) Literature and research relating to psychological, sociological and educational problems in language/learning disabilities. Prerequisite: permission of instructor.

EDUC 652 Assessment of Language/Learning Disabilities (3) Developing knowledge, skills and testing strategies needed to evaluate and diagnose students with language/learning disabilities. Prerequisites: EDUC4 51, 452 or permission of instructor.

EDUC 656 Advanced Problems in Education of the Mentally Retarded (3) Psychological, sociological and educational problems of the mentally retarded.

EDUC 657 Etiology of the Mentally Retarded (3) The mentally retarded child and his problems. Diagnostic, social, psychological and educational problems manifested by the mentally retarded child.

EDUC 658 Educational Planning for Children With Language/Learning Disabilities (3) Organizational alternatives and methodologies employed by a school district, school or resource teacher. Prerequisite: permission of instructor.

EDUC 675 Classroom Management/Regular and Exceptional Students (3) Using the principles of behavior modification, the course in classroom management assists teachers of the regular and exceptional student to arrange the learning and behavior environment so that children will learn in the most efficient and effective manner.

COURSES IN EARLY CHILDHOOD EDUCATION

EDUC 610 Environmental Factors in Early Childhood Education (3) Theory and issues in early childhood relating to environmental factors influencing cognition, socialization and achievement.

EDUC 611 Early Childhood Education: Curricula, Procedure, and Materials (3) Curricula, materials and methods of preschool and kindergarten programs systematically derived from diverse theoretical and philosophical positions.

EDUC 612 Cognitive Education of the Young Child (3) Education programs for young children which focus on enhancing cognitive growth, including those of Montessori and Piaget.

EDUC 613 Early Childhood Education: Theory and Research (3) Major theories and research emphases in early childhood education and psychology from a historical and evolving orientation.

EDUC 614 Issues in Cognitive Development (3) Development of perceptual and conceptual skills; verbal mediation and other cognitive functions.

EDUC 629 Language Development and Acquisition (3) Theories of psycholinguistics and sociolinguistics applied to the acquisition of one or more languages in early childhood and school learning.

EDUC 643 Selected Teaching Strategies in Early Childhood Education (3) Systematic development of programs for young children based on diverse philosophical-theoretical positions.

COURSES IN READING

EDUC 617 Organization of Reading Programs (3) Alternatives for organizing, administering and evaluating a reading program in a school district (grades K-12) or individual school. Prerequisite: one undergraduate reading course or permission of instructor.

EDUC 618 Advanced Problems in Reading (3) Cognitive processes and psycholinguistic models related to reading. Prerequisites: 2 graduate reading courses or permission of instructor.

EDUC 619 Materials, Methods and Media in Reading (3) Programs and other reading materials. Comparison of methods used in the teaching of reading. Prerequisite: one undergraduate reading course or permission of instructor.

EDUC 620 Diagnosis and Remediation of Reading Difficulties (3) Testing strategies needed to evaluate and diagnose students with reading difficulties. Prerequisite: one undergraduate reading course or permission of instructor.

EDUC 626 Analysis and Selection of Literature (3) Literature in the reading program. Emphasizes recent research in literature and related trends in curriculum in the elementary and secondary school.

COURSES IN EDUCATIONAL FOUNDATIONS

EDUC 622 Education of the Disadvantaged Child (3) Complex nature of the disadvantaged child from an educational, political and psychosocial point of view. Techniques and activities for classroom use.

EDUC 623 Philosophy of Art Education (3) An introduction to the activity of doing philosophy of art education through the informal analysis of basic concepts and arguments related to the concerns of the contemporary teacher of art and students of art education.

EDUC 644 Advanced Educational Psychology (3) Perception, learning and memory processes. Problems of school learning including social and personality factors, evaluation, classroom organization and management.

EDUC 647 Human Growth and Development: Socialization and Personality Development (3) Achievement motivation, aggression, discipline, sex identification, moral development, peer relations, adult-child interaction, social-class and ethnic differences. Prerequisite: introduction to psychology or educational psychology.

EDUC 680 Research Design in Education and the Social Sciences (3) Research planning, evaluation of research, sampling, surveys, measurement, research tools, experimental and quasi-experimental designs, historical studies, data analysis and reporting research.

EDUC 681 Statistics (3) Descriptive and inferential statistics as applied to education.

EDUC 690 Philosophy of Education (3) Analysis of fundamental educational ideas related to teaching and administration in terms of assumptions with respect to the nature of knowledge, value, man and democracy.

COURSE IN RESEARCH

EDUC 698 Master's Study (1-6) To meet the research requirement in the Master's Degree Program.

History

The Master of Arts program in history accommodates a wide range of student aspirations, both professional and personal. With strong emphasis on the literature of history, research techniques and writing skills, graduate study in history will benefit teachers, museum and archives personnel, prospective candidates for PhD degrees in history and college graduates wishing to pursue the subject for intellectual enrichment.

Upon nomination by the history Faculty, the Permian Historical Society awards fellowships in regional or business history to full-time graduate students at UT-Permian Basin. Fellows pursue a a regular course of graduate studies that includes the researching and writing of a thesis as part of their master's degree.

Within the requirements for the MA degree in history, considerable individualization of programs is possible. Whether thesis or or non-thesis option, the general structure of the program is flexible in regard to specific requirements, though it is limited with respect to the range of fields which are offered. Special course offerings allow work to be concentrated in areas such as Latin American, Early American, Twentieth Century American, Western American, Foreign Relations, and American Business History. Students may enrich their experiences through organized travel studies with prior approval for their degree plans.

MA candidates must complete 36 credits of graduate work. Candidates who have not completed at least 18 undergraduate semester credits in history will be required to enroll in additional courses to complete their preparation. Students electing to write a

thesis will complete: (1) 12 credits in one major field including one reading and one research course at the 600-level; (2) 9 credits in another field of history including a 600-level reading course; (3) at least 9 additional credits, which may be in history or in related disciplines such as literature, sociology, government and anthropology; and (4) 6 credits upon acceptance of their thesis.

Students choosing the nonthesis option will complete at least 24 credits in history: (1) 12 credits, including one reading and one research course at the 600-level in one major field, (2) 9 credits, including one reading and one research course at the 600-level, in another field of history, and (3) at least 15 additional credits, 12 of which may be taken in related disciplines.

MA candidates must pass an oral examination. There is no general foreign language requirement for the MA in history. However, when mastery of a language is requisite to purposeful study, the demonstration of language skills may be required. For example, candidates in Latin American history must demonstrate the ability to comprehend written Spanish with reasonable accuracy and speed.

COURSES IN HISTORY

HIST 611 Modern Mexico (3) Historical literature relating to major developments and problems of Modern Mexico.

HIST 614 Latin America (3) Historical literature relating to major developments and problems of Latin America, including modern Mexico, modern South America and colonial Latin America.

HIST 637 Studies Through World Travel (*title may vary*) (3) Intensive classroom preparation followed by guided travel to countries and to sites of outstanding historical importance.

HIST 638 Research in World History (3) Methodology and tools for historical research and directed research on special topics in world history.

HIST 639 Studies in World History (*title may vary*) (3) Reading, research, and discussion of selected topics in world history.

HIST 641 Early America (3) Historical literature on colonial and revolutionary periods of American history.

HIST 656 Western America (3) Historical literature relating to major developments and problems in Western history.

HIST 647 Twentieth Century America (3) Examination of historical literature on special topics covering major developments and problems in recent United States history.

HIST 661 American Foreign Relations (3) Examination of historical literature on special topics which cover major developments and problems in United States foreign relations.

HIST 668 American Business History (3) Study of major changes in American business during the twentieth century through analysis of specific industries and case studies.

HIST 677 Studies Through American Travel (*title may vary*) (3) Intensive classroom preparation followed by guided travel to sites of outstanding historical importance in the United States.

HIST 678 Research in American History (3) methodology and tools for historical research and directed research on special topics in American history.

HIST 679 Studies in American History (*title may vary*) (3) Reading, research, and discussion on selected topics in American history.

Literature

The purposes of the Master of Arts program in literature are at least fivefold: to train students to work with the materials of literature with scholarly competence and maturity; prepare students to teach literature in schools and colleges; provide additional professional training for English teachers currently employed in the elementary and secondary schools; prepare students for such nonteaching vocations as publishing, advertising, editing, civil service and management; and offer sound professional training on the master's level for students who intend to pursue a doctorate in American and British literature or American studies elsewhere.

Requirements for admission include a minimum of 24 undergraduate semester credits in English, although exceptions may occasionally be made for exceptionally well qualified students whose undergraduate work was in related areas. Often such students will be required to complete certain undergraduate courses during their first semester in the graduate program.

Requirements for the MA in literature include the following:

1. Successful completion, in the earliest possible semester of enrollment, of LIT 600, Introduction to Graduate Studies, and of LIT 671, The English Language, provided the student has not completed LIT 371 or its equivalent as an undergraduate.

2. PA minimum of 30 semester credits at the 400 or 600 level, 6 of which may be in a field other than literature. The required degree plan must be worked out in consultation with the adviser, and will be based on the student's interests and capabilities as well as on the projected availability of the course.

3. A master's thesis or a comprehensive examination. The student who elects to write the thesis must register for 6 credits of LIT 699, Thesis Research. If students elect the second option, the written examination, they are required to enroll in 6 credits of LIT 690, Directed Reading. The candidate for the MA in literature thus completes a minimum of 36 credits.

4. An oral examination is required, in addition to the thesis or the written comprehensive examination. For students writing a thesis, the examination will include, but not be limited to, a thesis defense. For students doing directed reading, the oral examination will cover the entire range of coursework, reading, and general knowledge of literary scholarship.

COURSES IN LITERATURE

LIT 600 Introduction to Graduate Studies (3) Methods of research, bibliographic techniques, textual editing, serials and book printing, literary journals, library journals, Library of Congress cataloging, criticism and teaching.

LIT 601 American Literature to 1800 (3) Bradford, Bradstreet, Cotton Mather, Taylor, Edwards, Franklin. Content and format of the class varies. Required reading list.

LIT 602 American Literature, 1800-1900 (3) Cooper, Emerson, Thoreau, Whitman, Hawthorne, Melville, Twain, James, Dickinson. Class format varies. Required reading list.

LIT 603 American Literature, 20th Century (3) Frost, Pound, Eliot, Stevens, Williams, Hemingway, Fitzgerald, Faulkner, Steinbeck, O'Neill, Tennessee Williams, Lowell, Bellow and Mailer. Class format varies. Required reading list.

LIT 621 British Literature to 1660 (3) Chaucer, English Renaissance humanists, the Elizabethan lyric, Spencer, Shakespeare, Jacobean and Caroline drama, classical lyrists, the metaphysicals. Required reading list.

LIT 622 British Literature, 1660-1800 (3) Milton, Dryden, Restoration literature, 18th century poetry, fiction, drama and criticism. Required reading list.

LIT 623 British Literature, 19th Century (3) Major Romantic and Victorian poets, novelists and essayists. Required reading list.

LIT 624 British Literature, 20th Century (3) Conrad, Joyce, Lawrence, Forster, Woolf, Shaw, O'Casey, selected poets. Required reading list.

LIT 641 Introduction to American Studies (3) Interdisciplinary study and its problem as these apply to American studies. Theoretical exploration of methods and application of these methods to specific projects.

LIT 642 Society and American Literature (3) American literature as an expression of society; political, social, geographic, and economic structures; regional, cultural and ethnic subgroups; philosophical and artistic movements.

LIT 643 Literature of the Southwest (3) Contribution of the Southwest to the American literary tradition. General prose works and representative poetry and fiction.

LIT 659 Special Studies in Literature (3) Selected works of several authors organized according to historical era, genre or theme. Content varies.

LIT 661 Literary Criticism (3) Theories and practice of criticism; major attention given to modern critical approaches.

LIT 669 Studies in a Major Author (3) Works of a major American or British author.

LIT 671 The English Language (3) Conceptual linguistics and curriculum models applied to the teaching of communication skills in high school and college.

LIT 690 Directed Reading (6) A required reading list and faculty guidance are provided for students electing the comprehensive examination rather than the thesis.

Physical Education

Students studying for the Master of Arts degree in physical education may emphasize one of the 3 following areas of specialization: exercise physiology–PHED 660, 661, 662, and 663; psychology of movement–PHED 620, 621, and 622; or teaching and coaching behavior–PHED 680, 681, 682 and 683; and may select either the thesis or nonthesis option with the approval of their adviser.

Students who select the thesis option will complete a minimum of 24 credits of coursework plus the thesis. Those who select the nonthesis option will complete a minimum of 36 credits which includes a 3 credit research project (paper). It is expected that students who desire to study beyond the master's degree will take the thesis option; whereas, those who plan to cease formal study with the master's degree will follow the nonthesis option.

The additional course credits required for the nonthesis degree plan should provide a greater breadth of systematic learning experiences for the student. Therefore, those who select the nonthesis option must complete at least 9 credits in one of the 3 specialization areas (analysis of movement, psychology of movement, movement for the handicapped) and at least 3 credits from each of the other 2 areas.

The thesis option requires at least 9 credits in one of the 3 areas of emphasis. All candidates for the MA in physical education must complete PHED 600, Strategies for Inquiry in Physical Education, or its equivalent (with consent of the adviser).

Students who desire to major in physical education for the MA degree should possess a bachelor's degree with a major or minor in physical education. Provision is made for the non-physical education major (or minor) student who has a bachelor's degree or its equivalent in another field to enter the graduate program in physical education upon the completion of the following prerequisite (leveling) courses or their equivalents:

Physiology of Exercise (PHED 350), Kinesiology (PHED 340), Measurement of Physical Performance and Achievement (PHED 400), and either Motor Learning and Performance (PHED 430), Psychology of Sport and Physical Activity (PHED 420), or Role of Sport in American Society (PHED 440).

Those who major in physical education for the MA degree may include a maximum of 6 credit hours of 400-level courses in physical education in their graduate coursework. Students who take 400-level courses as prerequisites (leveling) may not include 6 of those credits in their graduate degree program.

It is not necessary that the student have teaching experience or possess a teaching certificate to qualify for the master's degree program.

COURSES IN PHYSICAL EDUCATION

PHED 601 Strategies for Inquiry in Physical Education (3) Research techniques and inferential statistical procedures appropriate to the research process in physical education.

PHED 620 Psychosocial Analysis of Sport and Physical Activity (3) Concepts and research methodology in social psychological study of sport and physical activity. Selected theories of sport involvement applied to sport and physical activity analysis.

PHED 621 Analysis of Motor Skills Acquisition (3) Concepts and research methodology in human motor performance. Selected learning theories in analyzing both skill acquisition and instructional processes.

PHED 622 Psychology of Coaching (3) Identification and analysis of psychological techniques and strategies which may be used by the coach/athlete to improve performance and increase enjoyment of participation in physical activity.

PHED 631 Perceptual-Motor Development of Exceptional Children (3) Basic perceptual-motor abilities and theories of development. Evaluation of perceptual-motor development in children having specific handicapping conditions.

PHED 640 Cinematography in Physical Education (3) Qualitative and quantitative analyses of motion utilizing cine-film recording techniques; both documentation (photo instrumentation) and communication forms of cinematography.

PHED 641 Biomechanics (3) Analysis and quantification of human movement. Nature of linear and angular kinematics and kinetics, forces, moments and couples, friction aerodynamics, ballistics and sports techniques.

PHED 642 Human Performance: Kinesiological and Physiological Components (3) A synthesis of kinesiological and physiological constructs of human motor performance; development of analytic models for quantitative evaluation of performance; critical review of related research and literature.

PHED 660 Advanced Exercise Physiology (3) Functioning of the human body and the responses and adaptations of the different systems as a result of physical exercise. Topics include muscle physiology, the cardiorespiratory system, neural control of human movement, nutrition, athletic performance, physiological applications of physical training and preventive health care. Laboratory experiences included.

PHED 661 Exercise Physiology Laboratory Methods-Procedures (3) Practical applications of the different principles that govern the responses and adaptations of the human body to physical exercise. Laboratory equipment used to collect data and analyze results.

PHED 662 Scientific Principles of Athletic Conditioning (3) Application of scientific principles of exercise physiology in conditioning and training aspects of athletes in various sports. Relative effectiveness of different training methods. Effects of strength, speed, endurance, power, agility, skill, diet, drugs, altitude, warm-up and other influential factors on athletic performance.

PHED 663 Methods and Procedures for Coronary Heart Disease Risk Detection and Reduction (2) A study of the leading risk factors which contribute to the development of coronary artery heart disease. Laboratory methods and procedures used in assessing the differ-

ent risk factors including 12-lead. EKG-graded exercise stress testing. Implementation of programs aimed at risk reduction and prevention of heart disease.

PHED 680 Analysis of Teaching Behavior (3) Observation, description, coding, and analysis of teaching behavior in physical education.

PHED 681 Curriculum Development in Movement Activities (3) Theoritical assumptions and principles of curriculum development applied to construction of curriculum project in physical education.

PHED 682 Movement Patterns of the Severely Disabled (3) Identification of motor performance, capabilities and limitations of the physically disabled, wheelchair bound and the visually impaired; development of prescriptive analysis and assessment techniques–motor performance task analysis. Experiential motor activity planning and involvement.

PHED 683 Measurement for Evaluation in Physical Education (3) The identification of testing and essential statistical procedures for evaluating knowledges, attitudes, skills, and fitness.

Spanish

Although a master's degree is not offered in Spanish, the course below may count as an elective in the master's degree program in literature, education, history or other suitable fields.

COURSES IN SPANISH

SPAN 631 Novelists of Post-War Spain (3) Historical and political background, social and literary development in the Peninsula after the Spanish Civil War of 1936-39, emphasizing novelists who appear from the 1940s onward: Cela, Laforet, Quiroga, Delibes, Matute (Juan), Goytisolo, Sanchez Ferlosio, Martin Santos and others.

SPAN 633 The Contemporary Spanish-American Novel in Translation (3) A study of the most important Spanish-American novelists. Five or six novels are usually read in this course.

SPAN 637 Contemporary Hispanic Cultures (3) A study of different aspects of contemporary culture in Spain, Spanish America, and among Spanish-speaking minorities, including areas as varied as religion, economics, literature, politics.

SPAN 639 Applied Spanish Linguistics (3) Introduction to modern techniques of grammatical instruction, nature and use of instructional materials, development of language skills in students, contextual presentation, structural language drills, oral and syntactical problems.

Business Administration

Management

The MBA program in management is open to all students holding baccalaureate degrees from accredited colleges or universities and meeting the following provisions: satisfactory performance during the last 2 undergraduate years or other evidence predicting success in graduate study and a satisfactory score on the Graduate Management Admission Test (GMAT) or, with prior approval of the dean, the Graduate Record Examination (GRE).

Acceptance to graduate study is granted by the dean of the College of Business Administration. Application should be directed to the office of admissions.

Students without management backgrounds must demonstrate their knowledge in the basic disciplines by completing up to 24 semester credits of leveling coursework based upon experience and/or self study, or by passing examinations in the foundation disciplines which include accounting, business law, decision sciences, economics, finance, logistics marketing, basic administration, and computer techniques.

The MBA program is primarily designed as a professional program rather than preparatory for doctoral study. Both research and nonresearch options are available in

the program. Students planning to pursue doctoral study or having a need for or interest in research should select the research option. Students choosing the nonresearch option must complete a minimum of 36 semester credits of prescribed study, exclusive of the 24 semester credits of leveling coursework. Students choosing the research option must complete either: 30 semester credits of prescribed study plus a thesis, or 33 semester credits of prescribed study plus a research problem.

The thesis must deal with a topic of generalized concern to the profession, be scholarly in its orientation, demonstrate the student's understanding of and ability to use sophisticated research techniques and show promise of a contribution to knowledge that could be worthy of publication in a scholarly or professional journal. The student will arrange with his graduate committee to sit for an oral examination of his/her thesis. With approval of the thesis committee, two students may prepare a joint thesis.

The research problem should deal with a practical problem of concern to the student. It should follow recognized research procedures but does not require the level of sophistication of thesis research, and the findings do not necessarily need to be of such import as to merit publication.

M.B.A. Program

Pre-Professional 24 Hours

ACCT 600	Accounting Concepts	3
BLAW 600	Business Law	3
DSCI 600	Advanced Statistics for Managers	3
ECON 600	Economic Analysis	3
FIN 600	Concepts of Business Finance	3
MNGT 600	Basic Administration	3
MRKT 600	The Marketing Process	3
CPSC 600	Computers in Management and Science	3

**Each graduate business course in the MBA core must be preceded by the appropriate undergraduate preparation or the appropriate professional 600 level course listed above.

M.B.A. Core 27 Hours

ACCT 601	Profit Planning and Control	3
ACCT 611	Information Systems Management	3
ECON 602	Forecasting Business Conditions	3
FIN 620	Financial Management: Theory & Techniques	3
DSCI 603	Analytical Models for Decision Making	3
MNGT 660	Organization Theory (or MNGT 612)	3
MNGT 661	Business Research	3
MNGT 666	Management Policy and Integration	3
MRKT 610	Marketing Strategy and Theory	3

Concentration 9 Hours

Students select nine (9) elective hours of work in his/her area of concentration. Only two 400-level courses may be used in the concentration, and then only with the advance approval of the student's adviser.

COURSES IN ACCOUNTING

ACCT 600 Accounting Concepts (3) Concepts and principles in the recording, classifying and summarizing of financial transactions of a business.

ACCT 601 Profit Planning and Control (3) Integrates functional and operational aspects of organizations through the master budget concept. Prerequisite: demonstrate knowledge of managerial and cost accounting.

ACCT 602 Advanced Accounting Theory (3) Historical development of accounting theory; criteria for choices among income-determination and asset-valuation rules in context of public reporting. Prerequisite: ACCT 302 or equivalent.

ACCT 603 Contemporary Financial Accounting Issues (3) Contemporary issues and research affecting facets of accounting, including financial, governmental, social, public and behavioral accounting areas.

ACCT 604 Tax Planning (3) Methodology used in tax research and in tax planning using the adversary approach.

ACCT 605 Audit Problems (3) Auditing as a profession, including the evaluation of standards and auditing principles and practices. Prerequisite: ACCT 406 or equivalent.

ACCT 611 Information Systems Management (3) Methods and problem resolution in developing and managing company-wide information systems.

COURSES IN BUSINESS LAW

BLAW 600 Business Law (3) General business law, including contracts, sales, commercial paper, secured transaction, agency, corporations, partnerships.

COURSES IN COMPUTER SCIENCE

CPSC 600 Computers in Management and Science (3) Fundamental interactive programming and problem analysis using BASIC. Batch processing of more complex problems using programs like SPSS and SAS.

COURSES IN DECISION SCIENCE

DSCI 600 Advanced Statistics for Managers (3) Statistics, hypothesis-testing review, statistical decision theory and multiple correlation and regression analysis. Computers statpack library routines, casework in managerial decision-making.

DSCI 603 Analytical Models for Decision-Making (3) Deterministic linear programming, networks and dynamic programming. Emphasizes formation and utilization of programming computer packages.

DSCI 613 Quantitative Analysis for Marketing Decision (3) Same as MRKT 613.

COURSES IN ECONOMICS

ECON 600 Economic Analysis (3) Economic efficiency and the determinants of the major economic aggregates such as growth, employment and gross national product.

ECON 602 Forecasting Business Conditions (3) Elements and evaluation of principle forecasts used by business and government. Cases based on forecasts by the President's Council of Economic Advisers. Prerequisite: ECON 600 or 6 credits of undergraduate economics.

ECON 603 Microeconomic Analysis (3) Optimal consumer and producer behavior under various market conditions using mathematical techniques of calculus, linear programming and game theory. Prerequisite: calculus.

ECON 610 Free Enterprise and the Public Interest (3) Perceptions of business, business response to community, state and national issues, press reports of business and attitudes toward free enterprise.

COURSES IN FINANCE

FIN 600 Concepts of Business Finance (3) Managerial use and application of concepts and principles of the finance function of a business.

FIN 610 Free Enterprise and the Public Interest (3) Perceptions of business, business response to community, state and national issues, press reports of business and attitudes toward free enterprise.

FIN 620 Financial Management: Theory and Techniques (3) Investment, financing and dividend decisions of firms seeking to maximize shareholder wealth. Analytical techniques, economic and behavioral theories and financial environment. Prerequisite: permission of instructor.

FIN 621 Business Financial Policy (3) Problems of business finance from a decision-making, internal, problem-solving viewpoint.

FIN 622 Investment Policy and Environment (3) Fixed-capital investment decisions under risk. Management of packages of risky assets. Yield and liquidity cash management.

COURSES IN MANAGEMENT

MNGT 600 Basic Administration (3) Synthesis of traditional and behavioral approaches to studying management. Management process, management history and organizational behavior.

MNGT 610 Organization Dynamics Workshop (3) Impact of organization structures and processes on the performance of organizational members. Role playing, simulations and case studies.

MNGT 612 Human Resource Management (3) Manpower planning and development, organizational climate and the provision of personnel services will be investigated.

MNGT 615 Organization Development and Change (3) Problems in introducing change in organizations, theory and methods of intervention in organization development.

MNGT 622 Industrial Relations (3) Theories, policies and practices in manpower management using the behavioral sciences in labor relations management, organization, administration and staffing.

MNGT 660 Organization Theory (3) Internal organization structure and executive roles and functions in the business enterprise and other goal-directed institution.

MNGT 661 Business Research Management (3) Emphasizes concepts and data bases for effective management of business research functions/activities. Prerequisite: DSCI 600 or equivalent.

MNGT 666 Management Strategy/Policy (3) Development and implementation of knowledge from multiple disciplines and intergration of viewpoints of different functions of an organization. Case evaluation and discussion are stressed. Prerequisite: student must be in last two semesters of MBA program or instructor's approval.

COURSES IN MARKETING

MRKT 600 The Marketing Process (3) Marketing process and its underlying concepts. Information needed and the incorporation of marketing decisions into the management function.

MRKT 610 Marketing Strategy and Theory (3) Macro- and micro-marketing systems and approaches to marketing strategy and theory. Prerequisite: admission to MBA core program.

MRKT 611 Advanced Research Methods in Marketing (3) Quantitative and behavioral approaches to marketing research. Evaluating alternative designs, executing problems and interpreting data. Prerequisites: MRKT 414, 610 or equivalent.

MRKT 612 Consumer Decision Processes (3) Information flows between buyer and seller; informational properties of demand stimulation strategies from the firm, consumer and society viewpoints. Prerequisite: MRKT 610.

MRKT 613 Quantitative Analysis for Marketing Decisions (3) Analytic quantitative models of aspects of the firm's marketing environment and models of marketing decision problems and their use as decision base. Same as DSCI 613. Prerequisites: MRKT 610, DSCI 603.

MRKT 614 Seminar in Physical Distribution Management (3) Integrates business logistics/physical distribution concepts with fields of production, marketing, accounting and transportation. Involves applied mathematics, organizational behavior, resources and economics. Prerequisite: MRKT 610.

MRKT 615 Seminar in Marketing Problems (3) Product assortment and development, pricing, packaging, branding and sales forecasting. Coordination of these decisions with other decision areas. Prerequisite: MRKT 610.

MRKT 621 Oil and Gas Marketing (3) Analysis of the physical and organizational structure of oil and gas distribution within the context of case studies of both major and independent oil companies. Prerequisite: MRKT 600.

Science and Engineering

Computer Science

Although the master's degree is not offered in computer science, the following courses may be taken for elective graduate credit in master's degree programs in related fields.

COURSES IN COMPUTER SCIENCE

CPSC 600 Computers in Management and Science (3) Fundamental interactive programming and problem analysis using BASIC. Batch processing of more complex problems using programs like SPSS and SAS.

Engineering

The Master of Science degree in control engineering provides advanced study in control theory, mathematics, and the engineering sciences. The program of study assumes a preparation equivalent to the core undergraduate UT Permian Basin control engineering curriculum. Students seeking this degree should first review admission and graduate study regulations.

Two general plans of study are available: a 30-hour (minimum) plan (which includes 6 hours credit for the master's thesis) and a 36-hour (minimum) plan (which includes 3 hours credit for the master's project.) The decision on which plan to follow is made jointly by the student and the faculty adviser.

When students enroll in the program, they will be assigned an adviser from the faculty of engineering, who will work with them to develop a preliminary program of study. Upon satisfactory completion of at least 9 semester credit hours of coursework and obtaining a satisfactory score on a qualifying examination, the student will be admitted to candidacy for the M.S. degree. At that time, a graduate committee will be appointed, ordinarily with the adviser as chairperson. The committee will provide guidance in the student's thesis or project, and the student will later defend his thesis or project before the committee.

Students whose undergraduate engineering degrees were not in or closely related to

control engineering may be required to take a number of basic control engineering courses for noncredit towards the degree. Nonengineering graduates will be required to complete sufficient undergraduate engineering and science coursework to meet the ABET (Accreditation Board for Engineering and Technology), minimum requirements for an undergraduate engineering degree as well as those necessary to provide a background in control theory, system dynamics, mathematics, and engineering sciences equivalent to the UT Permian Basin B.S. degree in control engineering.

All students are required to complete at least 12 semester credit hours in advanced control theory, and in addition, must take or have taken ENGR 680 and 681 or their equivalent. The remainder of the 12 semester credit hours may be chosen from ENGR 620, 621, 623, 624, 671, 682, 683, and 684 and approved by the student's adviser. The additional required coursework should be chosen from the student's area of major interest and to support the thesis or project.

COURSES IN ENGINEERING

ENGR 601 Statistics for Researchers (3) Statistical concepts emphasizing simple and multiple regression, hypothesis testing and analysis of variance. Same as MATH 601. (Not applicable for credit in a mathematics major.)

ENGR 610 Advanced Mechanics of Materials (3) Advanced methods of determining stresses in complex structures subjected to various types of loading.

ENGR 611 Advanced Materials Science (3) Organic and inorganic engineering materials including structures, physical properties, applications, fabrication, heat-treating principles and failure mechanisms.

ENGR 612 Vibration Analysis (3) Free and forced vibration of mechanical systems including single and multiple degree-of-freedom lumped parameter linear systems, nonlinear systems and continuous systems.

ENGR 620 Linear Systems Analysis (3) Linear lumped parameter systems unified through linear graphs and through-across variable concepts. State variable formulation of systems and distributed systems.

ENGR 621 Advanced Systems Analysis (3) Lumped parameter systems via the state variable formation. Discrete, classical and transform approaches to continuous systems behavior and systems identification.

ENGR 623 Stochastic Processes (3) Methods to extract useful information from signals corrupted with random noise. Includes control of linear systems with random inputs and noise-corrupted measurements.

ENGR 624 Optimization Methods (3) Engineering techniques for optimizing the performance of deterministic systems. Discrete and continuous system models; performance measures, Kuhn-Tucker conditions; calculus of variations; maximum principle; dynamic programming and Quasi linearization; successive approximation methods.

ENGR 630 Advanced Thermodynamics (3) Application of thermodynamic concepts to engineering processes. Concepts of energy, enthropy and equilibrium, and multi-component systems involving phase change and chemical equilibria.

ENGR 631 Advanced Fluid Mechanics (3) Hydrodynamic concepts as applied to real fluids. Emphasizes application of a unified body of theory to the solution of fluid dynamics problems of engineering significance.

ENGR 632 Advanced Heat Transfer (3) Methods of computation, analysis and design of heat-transfer processes encountered in engineering.

ENGR 633 Advanced Separation Processes (3) Concepts in selection, behavior and computation of separation processes. Such mass-transfer operations are important to chemical process industries.

ENGR 634 Chemical Reaction Engineering (3) Analytical methods and models for design and operation of commercial chemical reactors encountered in the process industries.

ENGR 635 Cryogenics (3) Gas liquefaction systems, cryogenic refrigeration systems, measurement systems, and control systems for low temperature. Control systems evaluation and analysis.

ENGR 641 Reservoir Simulation (3) The use of difference equations to model the flow of 2 or more phases in reservoir rock. Applications of reservoir simulation programs. Instrumentation for reservoir production control.

ENGR 643 Advanced Electric Log Interpretation (3) Quantitative analysis of electric logs to determine porosity, saturation, moveable hydrocarbons and lithology.

ENGR 671 Advanced Signal Processing (3) Applications to analysis of data from control systems and seismic exploration.

ENGR 680 Control Systems Engineering (3) Analysis and design of continuous control systems via classical and computer methods.

ENGR 681 Advanced Computer Control (3) Analysis and design of computer control systems including techniques for determining the response and stability of discrete-time systems.

ENGR 682 Chemical Process Dynamics and Control (3) Dynamic elements in the control loop, characteristics of real processes, linear and nonlinear controllers, multiloop concepts, feedforward control, interaction and decoupling, control of chemical processes, e.g., distillation column.

ENGR 683 Modern Control Engineering (3) State space representation of system, controlability and observability, equilibrium and liapunov stability analysis, nonlinear systems and analysis of nonlinears systems, noninteracting control, modal control.

ENGR 684 Nonlinear and Distributed-Parameter Systems (3) Characteristics and techniques of analysis of nonlinear control systems. Quasi-linearization, describing functions, phase-plane methods, stability, and simulation. Introduction to analysis and control of distributed-parameter systems.

Geology

The program for the Master of Science in Geology requires a minimum of 24 semester credit hours of graduate-level coursework in geology and supporting or ancillary fields, and 6 semester credit hours of research that results in a master's thesis. A satisfactory score, as determined by the Faculty of Geology, must be obtained in a qualifying examination such as the advanced geology examination of the Graduate Record Examination, or an equivalent examination given by the Faculty of Geology.

When students enroll in the program, they will be assigned an advisor from the Faculty of Geology, who will work with them to develop a preliminary program of study and thesis research. Upon satisfactory completion of at least 9 semester credit hours of coursework and obtaining a satisfactory score on the qualifying examination, a student will be admitted to candidacy for the master's degree. At that time, a graduate committee will be appointed, ordinarily with the advisor as chairperson, in accord with current regulations for the conduct of graduate education. This committtee may include one "outside" member, who upon appointment to the committee will be given appropriate adjunct faculty status. After the committee reviews the student's program and proposed thesis research, it will approve a degree plan and thesis topic.

Coursework for the MS in Geology shall include at least one advanced course in petrology, stratigraphy, and structural/tectonic geology, along with a combination of courses that support the student's main area of interest and thesis research. Students are expected to have completed a "standard" undergraduate curriculum that includes the courses required for an undergraduate degree in geology at UT Permian Basin, as set forth in this catalog. Students who lack any of these courses may be required to complete them in addition to the minimum of 24 semester credit hours of graduate-level coursework needed for the degree.

Candidates for the Master of Science in Geology must complete an acceptable thesis prepared according to the guidelines used by UTPB, and written in standard geologic style as outlined in the American Geological Institute's "Guide to Geowriting" and the U.S. Geological Survey's "Suggestions to Authors" (5th and 6th editions.) The thesis must be defended in an oral examination.

(The above shall be considered as interim regulations and requirements, to be in effect until affirmed or revised by the full Faculty of Geology currently being recruited. However, students enrolling under these regulations will be permitted to complete a degree under them unless they elect to use any revised regulations that may be in effect in the year in which they obtain their degrees.

Any provision of the above may be waived or modified upon recommendation of the student's committee and approval of the chairman, faculty of geology; dean, College of Science and Engineering; and, if necessary, graduate council.)

COURSES IN GEOLOGY*

GEOL 603 Advanced Geomorphology (3) Origin and evolution of relief features of the earth, with particular reference to their application in the interpretation of structure, stratigraphy, and geologic history of an area.

GEOL 605 Advanced Structural Geology and Tectonics (3) Concepts and principles of structural geology and tectonics, with emphasis on physical factors responsible for the deformation of the earth's crust, and the results of the deformation through geologic time.

GEOL 606 Topics in Structural Geology (3) Critical review of modern developments in structural geology.

GEOL 607 Advanced Stratigraphy (3) Concepts and principles of naming and correlating stratigraphic units with emphasis on major elements of local, regional, and North American stratigraphy.

GEOL 608 Topics in Paleontology (3) Major trends and processes in the evolution of life through geologic time. Interrelationships of biological and physical processes in earth history. Application of paleontology to current problems in geology. Critical review of modern developments in paleontology.

*All courses have the following prerequisite: 1) graduate standing and 2) permission of the instructor.

GEOL 611 Carbonate Depositional Systems (3) Study of the origin, textures, distribution patterns, and alteration of recent and ancient carbonate sediments. Emphasis on the chemistry of formation and diagenesis of carbonates.

GEOL 614 Clastic Depositional Systems (3) Study of depositional processes, physiographic and environmental characteristics, and facies types and relationships of fluvial, deltaic, barrier-bar-strand-plain, lagoon-bay-estuary, shelf-abyssal, eolian, lacustrine, and alluvial fan depositional systems and their application to the analysis of past stratigraphic systems.

GEOL 627 Exploration Geophysics I - Seismic Principles (3) Definitions of elastic constants; types of seismic waves, seismic recorders; reflection and refraction. Electronic data processing. Special seismic procedures.

GEOL 628 Exploration Geophysics II - Seismic Stratigraphy (3) Application of seismic data in stratigraphic interpretation; seismic facies analysis; hydrocarbon indicators.

GEOL 629 Exploration Geophysics III - Gravity and Magnetic Methods (3) Gravity and magnetic prospecting methods as applied to geophysical investigations of the crust. Physical principles; instrumentation, field techniques, and data reduction. Geological interpretation and application of these data to the exploration for mineral resources.

GEOL 633 Igneous Petrology and Petrography (3) Study of the origin of magmas and their evolution with emphasis on tectonic and chemical controls. Textures, structures, and associations of igneous rocks.

GEOL 634 Sedimentary Petrology and Petrography (3) Description, classification, and genesis of sedimentary rocks, using hand specimen and petrographic techniques.

GEOL 635 Metamorphic Petrology and Petrography (3) Physical and chemical processes during metamorphism. Phase diagrams. Metamorphic facies and metamorphic stages.

GEOL 636 Isotope Geology (3) Application of isotopic abundance measurements to the origin of the elements, the solar system, and rock systems. Age-dating procedures.

GEOL 638 Structural Petrology (3) Mechanisms of rock deformation. Field procedures, universal stage methods, and data analysis and interpretation.

GEOL 639 Advanced Mineralogy (3) Optical mineralogy, X-ray and chemical properties of rock-forming minerals.

GEOL 640 Mineral Resource Economics (3) Economics of mineral resources; supply and demand; international trade; national mineral policy; conservation; environmental concerns and costs; surveys of individual commodities including oil and natural gas.

GEOL 644 Advanced Ore Deposits (3) Detailed study of the geochemical controls, petrography, and field relationships of selected types of ore deposits.

GEOL 646 Advanced Groundwater Hydrology (3) Principles of occurrence and movement of water beneath the earth's surface, and influence of various geologic situations upon its behavior. Factors applying to estimates of supply.. Engineering aspects of ground water.

GEOL 647 Advanced Subsurface Methods (3) Systematic and accurate acquisition, evaluation, and interpretation of subsurface data as applied in the search for oil and mineral deposits.

GEOL 648 Advanced Petroleum Geology (3) Advanced studies in petroleum exploration. Porosity and permeability as related to lithology and hydrodynamics of fluid flow. Stratigraphic and structural traps; regional trends and basin analysis; the origin of oil; log interpretation; geophysical exploration.

GEOL 652 Remote Sensing and Interpretation (3) Techniques of remote sensing, including conventional photography; visible and near-visible (multispectral), thermal-infared, microwave, and radar imagery; and non-image data. Image processing and enhancement. The geological interpretation of remotely sensed data will be emphasized.

GEOL 655 Thermodynamics of Geologic Processes (3) Thermodynamics applied to problems of igneous, sedimentary, and metamorphic petrology.

GEOL 658 Advanced Geochemistry (3) Advanced studies of the geochemistry of igneous, sedimentary, and metamorphic rocks, as well as the distribution of trace elements in diverse environments.

Life Science

The Master of Science program in life science includes microbiology and plant and animal science and emphasizes a unified view of life science. The program may be used by those intending a career in some area of life science and by those desiring a stronger background for teaching. In consultation with faculty, students will prepare a plan of study. The plan of study includes selected courses outside the major to support the program and meet special needs and interests of students.

To be admitted to the program, students must have 16 credits of biology, 8 credits of chemistry and 3 credits of mathematics at the undergraduate level. Depending upon the student's undergraduate program and career goals, the advisory committee may recommend completion of certain undergraduate courses without credit toward the master's degree.

Approximately 15-18 credits of the minimum 30 credits required for the Master of Science degree will be in life science and approximately 9-12 credits will be in supporting areas of study. The remaining 3-6 credits will be in independent study. Students intending to pursue the doctorate or research careers will complete a thesis in which an original investigation is described and defended. Other students may complete a master's project in which an original contribution is made in nonresearch area. The thesis or project must be an original work and must be defended orally before the advisory committee and other appropriate faculty.

Individualized instruction is used extensively in each student's program. This feature should greatly aid students with diverse backgrounds, part-time students, those having other obligations and responsibilities, those commuting and those who cannot get to campus on a daily basis. Laboratory facilities are ideally suited for individualized instruction, and the faculty of life science are committed to such instruction whenever appropriate.

COURSES IN LIFE SCIENCE

LFSC 601 Studies in Virology (3) Analysis and interpretation of modern studies on viral structure, replication, and patheogenesis. Prerequisites: LFSC 320, 440 or equivalent. Offered alternate years.

LFSC 623 Immunology (3) Analysis and interpretations of studies of mammalian mechanisms of defense against infectious diseases and cancer. Prerequisites: LFSC 300 and 320 or equivalent. Offered alternate years.

LFSC 630 Plant Physiology and Biochemistry (3) Techniques, principles and analysis of problems in plant biochemistry and physiology. Prerequisite: LFSC 320 or equivalent.

LFSC 640 Molecular Genetics (3) Studies of gene transfer, mapping, expression and control mechanisms. Prerequisite: LSFC 300, 301, or equivalent.

LFSC 642 Evolutionary Ecology (3) The evolution of ecological parameters emphasizing population and community parameters. Prerequisite: LFSC 472 or equivalent.

LFSC 650 Advances in Animal Physiology (3) Analysis and interpretation of studies in the laboratory and literature. Prerequisites: LFSC 352, 420 or equivalent.

LFSC 651 Physiological Ecology (3) The physiological adaptations in environmental conditions such as heat, cold, water, stress and altitude; emphasizes vertebrates. Prerequisites: LFSC 352, 472 or equivalent.

LFSC 675 Field Biology (3-6) Field problems in the Permian Basin. Summers only. Prerequisite: 12 credits of biology.

COURSES IN MATHEMATICS

MATH 601 Statistics for Researchers (3) Same as ENGR 601.

FACULTY

Donald M. Allen, Associate Professor of Life Science.
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B.S. (1958), Louisiana State University.

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B.S., Southern Illinois University; M.S., Ph.D. (1951), University of Illinois.

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Martha Edwards, Lecturer in Art and Communications.
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