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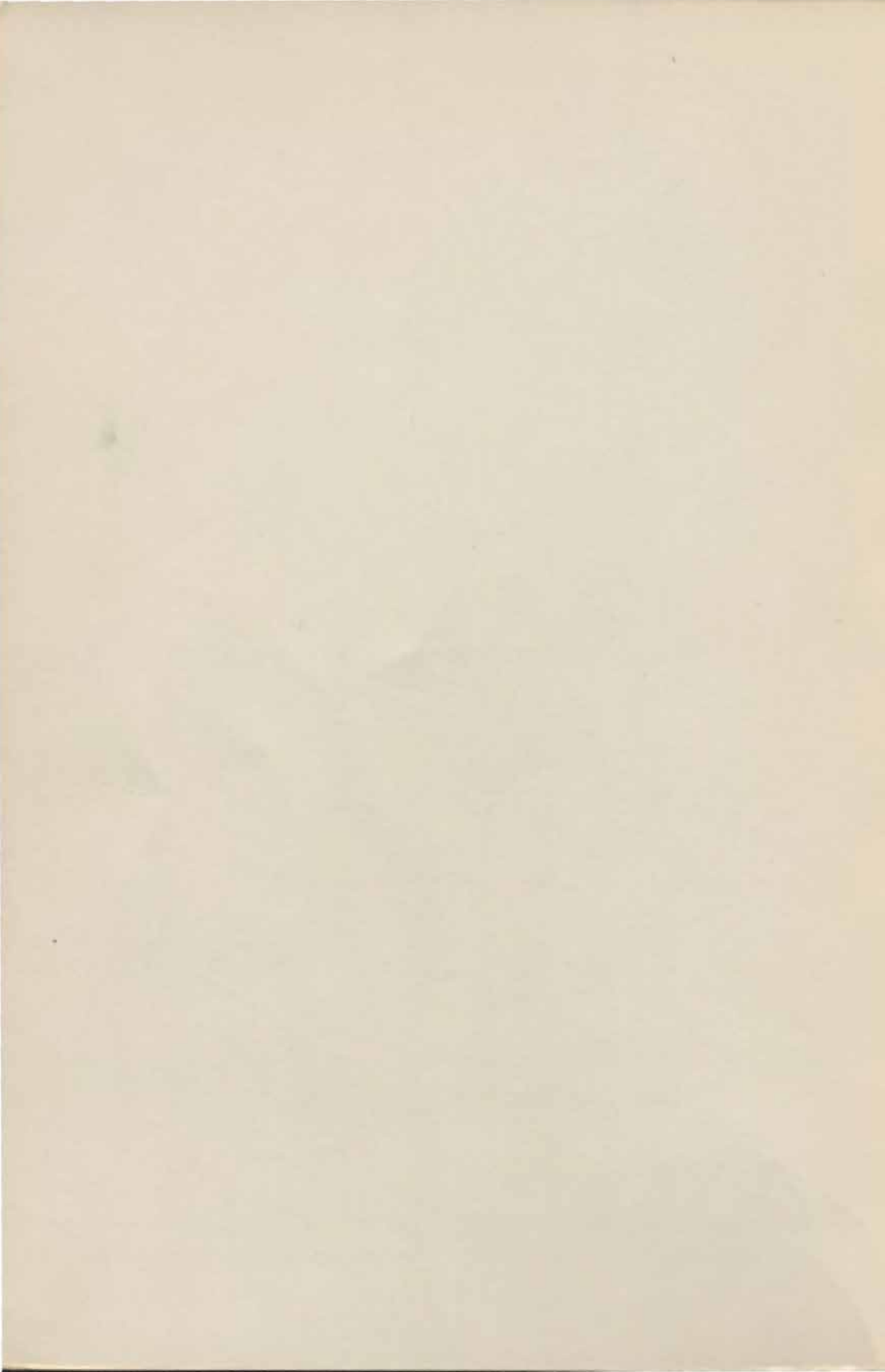
The University of Texas of the Permian Basin

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A color photograph of a university campus. In the foreground, a paved walkway leads towards a large, modern building with a curved roof and open sides. To the left of the path is a green lawn with several trees. To the right is a circular fountain with water spraying upwards. Benches are placed along the path. Two flagpoles are visible in the background, one with a Texas state flag and the other with the American flag.

1980-81 CATALOG

***The University
Of Texas
Of The Permian Basin***



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1980-81 CATALOG

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

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The University of Texas of the Permian Basin reserves the right to withdraw courses at any time, change fees, rules, calendar, curriculum, degree programs, degree requirements, graduation procedures, and any other requirement affecting students. Changes will become effective whenever the appropriate authorities so determine and may apply to both prospective students and those already enrolled. The provisions of this catalog do not constitute a contract, express or implied, between any applicant, student, or faculty member and The University of Texas System and The University of Texas of the Permian Basin.



EQUAL OPPORTUNITY STATEMENT

With respect to the admission and education of students, with respect to the availability of student loans, grants, scholarships and job opportunities, with respect to the employment and promotion of teaching and nonteaching personnel, and with respect to the student and faculty activities conducted on premises owned or occupied by the university, The University of Texas of the Permian Basin shall not discriminate either in favor of or against any person on account of his or her race, creed, age, sex, national origin, or handicap.



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 Thomas Wolff, Ph.D. Assistant to the President

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 J. Edwin Becht, Ph.D. Dean, College of Management
 Robert C. Reeves, Ph.D. Dean, College of Science and Engineering

Learning Resources Center

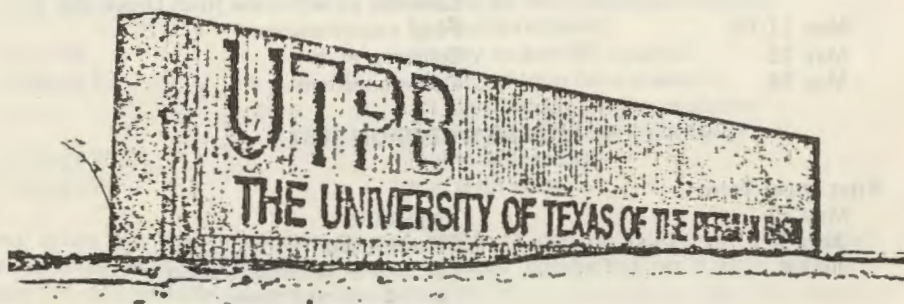
Dick L. Chappell, M.S.L.S. Director, Learning Resources Center
 Douglas M. Abrams, M.A., M.L.S. Assistant Director, Library

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 Jesse Chavez. Acting Chief of Police
 Bonnie J. Holly. Purchasing Agent
 Bruce Revell, B.B.A. Chief Accountant

Student Services

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 Vickie Gomez, M.A. Associate Director, Admissions
 Sherwood D. Kupper, M.A. Director, Student Life
 Joyce Thompson. Director, Financial Aid and Placement



UNIVERSITY CALENDAR 1980-81

FALL SEMESTER 1980

September 1	Labor Day
September 2-3	Registration
September 4	Classes begin
September 19	Last day of late registration
	Last day to add classes
	Last day to file for graduation
November 19	Last day to submit master's theses & master's reports to committee
November 20-21	Thanksgiving holidays
November 24	Last day to add SPI courses
November 28	Last day to take oral examinations (graduate students)
December 17	Last day of classes
	Last day to drop classes
	Last day to withdraw from University
December 18, 19, 22 & 23	Final examinations
December 23	Semester ends

SPRING SEMESTER 1981

January 15-16	Registration
January 19	Classes begin
February 6	Last day of late registration
	Last day to add classes
	Last day to file for graduation
April 13-20	Spring vacation
April 23	Last day to submit master's theses & master's reports to committee
May 1	Last day to add SPI courses
	Last day to take oral examinations (graduate students)
May 8	Last day of classes
	Last day to drop classes
	Last day to withdraw from University
May 11-14	Final examinations
May 15	Semester ends
May 16	Commencement

SUMMER SESSION 1981

First Short Term

May 29	Registration
June 1	Classes begin
June 4	Last day of late registration
	Last day to add classes
	Last day to file for graduation
June 12	Last day to submit master's theses & master's reports to committee

June 18	Last day to take oral examinations (graduate students)
June 24	Last day to add SPI courses
July 6	Independence holiday
July 8	Last day of first short-term classes
	Last day to drop first short-term classes
	Last day to withdraw from University
July 9-10	Final examinations
July 10	First short term ends

Second Short Term

July 13	Registration
July 14	Classes begin
July 17	Last day of late registration
	Last day to add classes
	Last day to file for graduation
July 20	Last day to submit master's theses & master's reports to committee
July 28	Last day to take oral examinations (graduate students)
July 31	Last day to add SPI courses
August 19	Last day of second short-term classes
	Last day to drop second short-term classes
	Last to withdraw from University
August 20-21	Final examinations
August 21	Second short-term ends

Long Term

May 29	Registration
June 1	Classes begin
June 4	Last day of late registration
	Last day to add classes
	Last day to file for graduation
July 6	Independence Holiday
July 9-12	Mid-term vacation, no classes
July 20	Last day to submit master's theses & master's reports to committee
July 27	Last day to take oral examinations (graduate students)
July 30	Last day to add SPI courses
August 19	Last day of long-term classes
	Last day to drop long-term classes
	Last day to withdraw from University
August 20-21	Final examinations
August 21	Long term ends

Final dates for adding courses do not apply to courses taught on a self-paced instructional basis nor to certain other courses conducted on a basis different from the conventional lecture-discussion. For information about specific courses, students should see their academic advisers.

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 degree programs in basic disciplines and several professional fields. 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 primary, 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. By December, 1975, the university was notified of its accreditation in the minimum permissible time by the Southern Association of Colleges and Schools.

Innovation was a byword from the beginning at UT Permian Basin and remains so. Self-paced instruction, contract study, experiential learning or internships and open laboratories are among the most successful innovations. 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.

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.

University buildings are connected by pedestrian concourses providing cover from inclement weather.

Internally, buildings are functionally flexible. The use of snap-in steel walls allows conversion of interior space to fit changing needs. Faculty offices are interdisciplinary in occupancy. This, plus the cooperative open laboratories for common use by behavioral, physical and life sciences, further encourages communication and understanding among students, faculty and staff.

A gymnasium-pool complex provides facilities for recreation, classes and intramural participation for students, faculty, staff and their families.

The student housing area, accommodating up to 200 students, is within easy walking distance of the gymnasium-pool complex and the student lounge.

Academic excellence is stressed at The University of Texas of the Permian Basin. The Permian Basin Honors Award and The University of Texas of the Permian Basin Merit Award are presented to incoming junior students with an excellent academic background. Each year, outstanding academic students in the three colleges are honored at an Honors Convocation. Academic excellence is an integral part of the education program at this university.

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 plus the learning resources center. Colleges and the degree programs offered within each are:

The College of Arts and Education offers the Bachelor of Arts degree in anthropology, art, government, history, humanities, literature, mass communications (print journalism and radio/TV), music, physical education, 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 emphases in administration, counseling, early childhood, elementary, reading, secondary education (including emphasis in anthropology, computer science, and life/earth middle school science), special education and supervision.

The College of Management offers the Bachelor of Arts degree in criminal justice management, criminal justice, and economics; and the Bachelor of Business Administration degree in accounting and in management. 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 science, engineering, life science, and mathematics. This college also offers the Master of Science degree in control engineering and life science.

The Learning Resource Center (LRC) functions to provide the tools and services to the faculty, staff and students that facilitate learning and research. The LRC operates through three subdivisions—library services, instructional media services and computer services. These divisions are described as follows:

1. *Library Services.* The library services component of the LRC contains a rapidly expanding collection of more than 360,000 volumes of books,

microfilm and periodicals. The library subscribes to approximately 1600 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 division 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.* The computer services division 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

To be admitted to undergraduate study or to nondegree study, the applicant must meet the following requirements:

1. Have satisfactorily completed 60 semester credits of coursework at a state and regionally accredited community college, senior college or university. Students who have completed at least 54 but fewer than 60 credits may enroll but during the first semester at UT Permian Basin, students must complete coursework at a nearby community college or university to accumulate a total of 60 lower division credits.
2. Have a C average in all courses applicable toward the degree for which the student expects to study. Grades of F carry no transferable credit to the university.
3. Be in good standing at the last institution attended or qualify for readmission to that institution.
4. Submit to the admissions office a completed application for admission form and official transcripts of all college or university work previously completed.*
5. Nondegree or Encore students submit a transcript only from the last institution attended indicating completion of a minimum of 60 semester hours

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of academic coursework.**

6. 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.

*Transcripts must be sent directly from the registrar of each college previously attended. Student-carried copies cannot be accepted.

**There are five types of applications available upon request (1) regular undergraduate, (2) regular graduate, (3) nondegree, (4) international student and (5) Encore.

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

Director 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 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.

Any applicant who is denied admission may petition for reconsideration and should submit additional information that might relate to the reason for the petition.

Students entering UT Permian Basin are required by law to submit proof of immunization within the last 10 years against diphtheria-tetanus. (Not required for students enrolled only in off-campus courses.) Students are required to submit this proof with their application.

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. Photocopies of transcripts from previous colleges attended may be supplied to the student only and the same charges will be made as apply to the university transcript service. Official or certified copies of these transcripts must be requested from the originating institution. It is not possible for the university to dispatch official transcripts for another institution.

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. 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 from Australia, New Zealand, the British Isles and Canada.)
 - b. Students who have satisfactorily completed two years of college-level coursework at an accredited institution prior to transferring to UT Permian Basin or who have obtained an associate's degree.
 - c. Students who have earned bachelor's degrees or higher at accredited U.S. colleges or universities.
4. It is compulsory for international students on F-1 visas to carry medical and hospitalization insurance.
5. 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.
6. 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.
7. Students wishing admittance to graduate programs must comply with all of the above requirements in addition to the graduate student requirements.
8. 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 advisers prior to scheduled registration dates for degree and schedule-planning but will not be able to register prior to scheduled dates. Late registration begins on the first day of classes and ends with the 12th day of classes (4th day of summer session classes). Except in unusual circumstances, students may not register for conventionally taught, partially-self-paced or contract courses after those dates. Students must be officially enrolled at UT Permian Basin in the semester in which they graduate.

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

Audit/Encore. Persons who wish to enroll in one or more courses at the university for special purposes may do so 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 have completed at least 60 hours of undergraduate college credit, be in good standing with the previous college attended, furnish official transcripts (not hand-carried) from the previous colleges attended, provide proof of immunization against diphtheria and tetanus within the last 10 years. 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. A substantial number of courses are 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 and five days prior to the last day of classes during the summer session, subject to approval by the course instructor.

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 is assigned a grade of Z. The student must reregister for the course in subsequent semesters but is given two full semesters to replace the Z with another appropriate letter grade. Students enrolling in a self-paced course after the final day of late registration will not have such courses and grades appear on their transcripts until the end of the following semester.

Summer school registration. Students enrolling for the first time at UT Permian Basin, even summer school students, must furnish a letter of good standing followed by a transcript showing they have completed 60 semester hours of college-level work. These statutory requirements must be met whether or not students plan to continue their enrollment at UT Permian Basin the next fall semester.

Summer transient student or nondegree student. Students in good standing at another college or university may be considered for admission during the summer or for one of the long sessions. Only the transcript from the last institution will be required provided the transcript indicates the completion of a minimum of 60 semester hours 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).

Once admitted as a summer transient or as a nondegree student, a student may enroll in subsequent terms without filing a new admission application. However, should the student decide to pursue a degree from UT Permian Basin, a regular application for admission must be completed, and 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.

Once a student matriculates at UT Permian Basin with 60 semester hours of lower-level credit, additional credits from another college or university will not be accepted as counting toward a UT Permian Basin degree without prior approval of the dean of the college.

Concurrent enrollment. UT Permian Basin normally limits concurrent enrollment to community colleges. Students desiring credit for concurrent enrollment at another four-year or upper-level institution(s) must have the prior expressed permission in writing from the appropriate dean before enrollment. Students with at least 54 but less than 60 semester hours will be *required* to enroll concurrently for the minimum number of hours needed to meet the 60 hour requirement *the first semester* in which they enroll at UT Permian Basin.

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.

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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.

To establish residency, a student must reside and be gainfully employed in the state 12 months preceding registration in an educational institution. 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 above tuition, there are certain fees assessed as explained on the following pages.

Refund of tuition fee for students withdrawing from the university or reducing course elections. 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:

1. Refunds shall be made of applicable tuition and fees collected for courses from which students drop within the first 12 days of a semester or 4 days in any summer term. No refund will be made after the 12th class day (4th day in summer).

2. Refunds of tuition and mandatory fees shall be made to students withdrawing from the institution during academic quarter according to the following schedule.

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

Students who enter the spring semester not knowing their fall semester grades and who are required to withdraw because of failure in work of the fall semester will have all registration and tuition fees for the spring semester refunded.

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 listed are subject to change by the legislature without notice.)

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 \$2.50 per semester credit hour for 1-11 credits. Students registered for 12 credits or more are charged \$30. Students who register for the summer session are charged on the same basis as students registered during the regular academic year. The fee covers free or reduced rates for campus events and activities such as lecture and film series, as well as cultural and athletic events. Use of most athletic facilities and special publications also is included.

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Students' spouses who are not registered at UT Permian Basin may purchase an activities card for \$10 which will entitle them to free or reduce admission to lecture series, cultural event programs and film series.

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 \$4 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. If notification is made before final exams begin, the graduation fee may be applied to a subsequent semester or refunded as the student wishes. If the student fails to notify the registrar and does not graduate, the fee of \$8 will be charged for a subsequent graduation. A fee of \$7.50 is charged for duplicate diplomas if requested within 12 months.

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.

Unofficial copies of transcripts from previous colleges attended and photocopies of materials in the dossier will be sent to the student only by special request. The charges per page of records requested will be applied as the transcript service described above: This is in compliance with the Federal Family Education and Rights to Privacy Act and the Texas Open Records Act.

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 director of admissions determines a student's eligibility for admission 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 office of admissions maintains listings of students by major field of study if a student needs clarification on this matter.

The registrar's office has forms available to effect a change of major if students desire to do so. The dean's office of the college in which the new major is to be studied, as well as the faculty adviser in the new major, must endorse this form and the completed form must then be filed with the registrar's office. This normally occurs at the time of registration.

Students are encouraged to visit with their faculty advisers and instructors anytime they feel the need for it. 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 of the dean of his/her college.

Dropping and adding 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 12 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 12th class day (4th class day in summer) and the last day to drop classes as given on the academic calendar. Normally no credit will be awarded if the course is dropped, but in certain courses -- such as a course offered for variable credit -- the instructor may award credit and a grade.

Courses taught on a conventional basis normally may not be added after the second week of classes. Students enrolling late in the course should not expect

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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 on SPI basis may be added up to four weeks prior to the end of the semester, with approval of the instructor of the course and the dean of the college in which the students are majoring. Students not completing an SPI course by the end of the semester must register for the course in each subsequent semester, except summer terms, and pay all applicable fees in order to complete the course. 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. SPI courses enrolled in after the 12th class day (final day to enroll in other than SPI courses) may not appear on the students transcript until the following semester.

Withdrawals. Students desiring to withdraw from the university should secure the appropriate form from the registrar's office, complete it, and secure the endorsement of the dean of the college in which enrolled, the learning resources center, and the financial aids office. In case of illness, students may have someone notify the dean who will arrange for withdrawal.

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.

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 1-3 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 once per week with students who desire to meet as a group.

Most laboratory instruction is offered on a self-paced basis. Rather than a scheduled laboratory period, students perform laboratory exercises during most hours of the week at their own convenience. For each course, a schedule is posted stating when students may undertake the laboratory exercises, including those hours when instructors and/or laboratory assistants are available for assistance.

Class attendance. It is assumed that by the time students enroll at the university they are able to organize time in accordance with 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 responsibility 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 and senior courses not eligible for graduate credit.
- 400-499 Senior courses acceptable for credit in some graduate programs. To qualify for graduate credit, the student must be admitted as a graduate student and petition for graduate credit by the last day of registration.
- 500-599 Fifth-year professional programs. (Not offered at UTPB)
- 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 the graduate program.

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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.

392 Practicum (College of Arts and Education) 1-3

392 Experiential Learning (College of Management) 1-3

392 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.

398 Senior Seminar 1
Seminar in the discipline or related disciplines. University-wide interdisciplinary seminars are listed as UNIV 399.

489 Selected Topics 1-3
Same as 389 but open 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.

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

Course load. The normal course load for an undergraduate student is 15 semester credits during the regular semester. Students making satisfactory academic progress may take 18 credits. If they are performing better than average they may, in some cases, take up to 21 credits with permission of the dean's office 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 when students have petitioned the appropriate college dean's office and secured the written approval of that office.

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.

Satisfactory scholastic progress. Students are considered to be making satis-

factory scholastic progress when they are carrying an approval schedule of classes, are not on probation, 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	W = Withdrawal from university
D = Minimal achievement	S = Satisfactory
F = Failure to achieve minimally	U = Unsatisfactory
+ = High grade	Z = Acceptable progress (SPI)
- = Low grade	NG = Audit; no grade

Only grades of A, B, C, D, 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, W, S, V, 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. After reporting an I grade, the instructor must complete an "Incomplete Report" specifying: (1) the work to be done, (2) the length of time allowed to complete the work (no later than the end of the subsequent semester, summer excluded), and (3) the grade that would have been submitted at the time the incomplete is reported. If students do not complete the course requirements specified by the instructor, the I will be changed to the grade that would have been submitted at the time the incomplete was reported. 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 may, at the discretion of the instructor, 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).

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

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registered, the instructor may report a Z grade. Students desiring to complete the course must reregister in the subsequent fall or spring semester in which they next enroll and complete all remaining requirements for the course within that semester.

The grade of F may be awarded for unsatisfactory progress in self-paced courses, or upon failure to complete a self-paced course in two regular semesters.

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 vice president for academic affairs; otherwise, normal grading procedures apply.

Grade reports. The student grade report is a cumulative record of all coursework 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, U, Z, I, Q and NG will not be included in the determination of probation (GPA), but students should avoid accumulating grades of U, Z, or Q, 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 in writing 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 to investigate the issue and report back. 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 vice president for academic affairs, following the same procedure as in the appeal to the dean. The vice president for academic affairs after an analysis of the problem and the evidence related thereto, which may or may not involve the appointment of an investigating committee, will inform the students and the dean of the college involved of any decision. The vice president for academic affairs 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 123 semester credits. At least 48 (51 in BBA program) must be at the junior or senior level in fulfillment of the requirements of the degree program in which a student desires to take the degree. The student must have a C average or better and no F grades in any credits presented 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.

A minimum of 30 credits must be completed at UT Permian Basin of which at least 6 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.

Students may choose to graduate under the requirements set forth in the catalog at the time they enrolled or the requirements in effect at the time they graduate.

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.

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Graduate record examination. All candidates for a bachelor's degree anticipating graduate study should complete the Graduate Record Examination.

Writing and conversation. Every student pursuing a bachelor's degree must demonstrate the ability to write the English language and to hold a conversation with another person on a one-to-one basis in English acceptable to the faculty adviser and college dean. These two competencies are crucial to success in almost every profession and to a satisfying personal life. UNIV 301 and 306 are designed for students needing or desiring improvement in written and oral skills.

Applied courses. As a part of the degree program at UT Permian Basin, each student majoring in one of the basic arts or sciences disciplines *must* complete a total of two courses in separate applied fields. In general, the term "applied courses" refers to courses which relate to direct, operational and realistic contacts with people and materials. Applied courses are inherent in such areas as accountancy and information systems, art, creative writing, criminal justice, computer science, engineering, mass communications, management, music, pedagogical studies, Spanish, speech, theatre and other similar study areas. The applied courses may not be in the same field, except for arts and sciences majors who are completing requirements for teacher certification.

Lifetime sports. Every student is encouraged to enroll in lifetime sports. A maximum of two 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	Humanities.	HUM
American Studies	AMST	Life Science	LFSC
Anthropology.	ANTH	Literature	LIT
Art	ART	Management.	MNGT
Aviation Mngt.	AVMG	Marketing	MRKT
Behavioral Science.	BVSC	Mass Communications	MCOM
Chemistry	CHEM	Mathematics.	MATH
Computer Science	CPSC	Music	MUS
Creative Writing	CWRT	Natural Science.	NTSC
Criminal Justice	CJUS	Pedagogical Studies	PED
Criminal Justice Management	CJMG	Philosophy.	PHIL
Decision Science	DSCI	Physical Education	PHED
Earth Science	ERSC	Physics	PHYS
Economics	ECON	Psychology.	PSYC
Engineering	ENGR	Sociology.	SOC
Finance	FIN	Spanish	SPAN
Government	GOVT	Speech	SPCH
Great Books	GTBK	Theatre	THEA
History	HIST	University Courses.	UNIV

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. Complete at least 48 credits at the upper level (51 in the BBA program). A total of 30 credits must be completed at UT Permian Basin, of which at least 6 must be advanced credits in the student's major field. Of the last 30 credits, at least 24 must be completed at UT Permian Basin.
3. Complete 6 credits in American government and 6 credits in American history.
4. Demonstrate proficiency in writing the English language.
5. Demonstrate proficiency in conversation in English.
6. Majors in basic arts and sciences disciplines must complete two courses in applied fields.
7. Maintain at least a C average in all courses applicable toward degree as well as a C or better in all major courses.
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 Test.
9. Complete at least 24 credits in major (more in most curricula). Eighteen in minor arts and sciences curricula: at least 18 of major credits and 12 of minor credits must be at upper level; at least 6 credits in major must be taken at UT Permian Basin. Candidates for elementary and all-level teacher certification are not required to complete a minor.
10. 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.
11. 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.

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.

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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 most fields or degree programs, and students are encouraged to arrange schedules so they may take at least one course on an SPI basis. 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 so on, 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 receive marks of Z (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 study occasionally will be used for a formal course during a term when that course is not offered. When a formal course is taken on a contract study basis, the course will appear on the transcript with the appropriate contract study number and the normal course title. Enrollment in these courses must be completed only during the registration period or only through the 12th class day.

Experiential learning. Unless they have had appropriate work experience, candidates for the bachelor's degree are expected 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 director 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.

Other teaching approaches. The university offers *seminars*, occasional *filmed courses*, a limited number of *computer assisted courses* and a few courses on an *auto-tutorial* basis. Special stress is placed on the use of the instructional media services of the learning resources center in all courses in those using new teaching approaches as well as those taught on a conventional basis.

The audio cassette is used extensively by students at UT Permian Basin. Instructions for some laboratory exercises are provided on cassette; some lectures are available on cassette. Therefore, each student should have a portable cassette tape player with headphone or earplug attachment.

INTERDISCIPLINARY STUDIES

Considerable opportunity is available for students to build interdisciplinary programs. The requirements of a minor for the BA and BS degrees represents an attempt to broaden one's education, as does the requirement of courses in applied fields. Most interdisciplinary studies are planned within the context of offerings in the respective disciplines.

There are courses which are not peculiar to any discipline. These courses are:

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| UNIV 301 | Communication Workshop
Adapted to individual needs and provides oral and written situations for becoming fluent 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.) | 1 |
| UNIV 304, 305 | Great Books, I, II
Major western books. Part I — classical past, medieval Christendom and early modern world. Part II — baroque, revolutionary and reactionary periods and the Victorian and 20th Century ages. <i>Will not count toward a major or minor in literature. However, if a student transfers to UT Permian Basin with 9 hours or less in freshman/sophomore English, these courses will count toward total of 120 hours required for a BA degree.</i> | 1-3 |
| UNIV 306 | Processes in Communication
English language structure and how to manage controlled and effective discourse using the student's fields of study as vehicles of expression. | 3 |
| UNIV 362 | Theories of Creativity
Interdisciplinary course examining the creative processes and approaches; their functions in society and expression in the arts. | 3 |
| UNIV 399 | University Seminar
Interdisciplinary course examining various societal issues, topics and situations. May be repeated and credit may apply toward degree when approved by faculty adviser. | 1 |

Environmental studies minor. The environmental studies minor is an interdisciplinary program primarily for nonscience majors desiring to know more about the world around them. The objectives of this minor are to provide knowledge and skills for coping with technology and to aid students in developing attitudes

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to deal with stress and change. In addition to courses in the sciences, course offerings include the behavioral sciences (anthropology, psychology, sociology, and management). Requirements for this minor include:

- a. A minimum of 18 semester credits (may include 8 semester credits of lower-level introductory science).
- b. 3 or 6 semester credits of contemporary natural science (NTSC 301 and 302).
- c. The remaining credits chosen from NTSC 301, 302, anthropology, computer science, life science, earth science, management, psychology and sociology. The exact program will be arranged in consultation with the dean of the College of Science and Engineering.

More information can be obtained from the dean's office in the College of Science and Engineering.

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. Toward that end, undergraduate students should concentrate studies in their 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 an academic program which best fits their individual interests. These requirements normally include at least one year of English, 2 years of chemistry and one year each of physics, mathematics and biology.

Concepts and vocabulary common to the sciences which 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., and in some cases later. 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. Many full-time students have both daytime and evening classes.

FINANCIAL AID & CAREER SERVICE

Statement of Equal Educational Opportunity: As stated elsewhere in this bulletin but repeated in this section for emphasis: *with respect to the admission and education of students, with respect to the availability of student loans, grants, scholarships and job opportunities, with respect to employment and promotion of teaching and nonteaching personnel, with respect to the student and faculty activities conducted on premises owned or occupied by the university, The University of Texas of the Permian Basin shall not discriminate either in favor of or against any person on account of his or her race, creed, age, sex, national origin or handicap.*

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:

	<i>Resident</i>	<i>Commuter</i>	<i>Self-Supporting</i>	<i>Married</i>
Texas resident	\$3,722	\$2,456	\$4,470	\$6,200
Non resident	\$-----	\$-----	\$5,324	\$7,050

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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.

STUDENT LOAN PROGRAMS

Guaranteed Student Loan Program. Undergraduate applicants may borrow up to \$2,500 each academic year. However, aggregate amounts must not exceed \$7,500 for total undergraduate schooling. Graduate and professional students may borrow up to \$5,000 per year. Aggregate amounts cannot exceed \$15,000 for graduate and professional students including loans made to borrowers before (s)he became a graduate or professional student. While attending school, students borrowing from banks under this program pay no interest. The interest is paid by the federal government at a maximum rate of seven 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 normally begin between 9 and 12 months after the borrower graduates or leaves school. Borrowers may be allowed up to 10 years to repay the loan.

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.

National Direct Student Loan. This is a federally funded program under which undergraduate students may receive up to \$2,500 for their first two years of school but not more than \$5,000 for their total undergraduate years. Repayment begins after students finish degrees or serve with the Peace Corps or Vista. Students have 10 years to repay the loan at a 3 percent per annum interest rate. No interest is charged until repayment begins. A partial cancellation per year is available to students who choose to teach in Head-Start programs, handicapped programs or in schools where at least 30 percent of the student body are from low income families.

Short-term loans. The office of financial aid can make limited loans to students with temporary emergency needs. In general, the maximum amount of such loans will not exceed \$150 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.

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. Applications must be negotiated at least one week prior to registration.

Military Veterans Loans. Military veterans may apply for a VA loan for educational purposes. Interested persons should see the veterans counselor in the admissions office.

UNIVERSITY GRANT PROGRAMS

Basic Educational Opportunity Grant. 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 \$1,600 depending upon available funding. BEOG applicants must submit a separate application in addition to the UT Permian Basin financial aid application. Applicants should expect notification of eligibility from the basic grants office within 5 weeks.

Supplemental Educational Opportunity Grant. This is a federally supported program. Applicants with exceptional need are eligible for SEOG awards which range from \$200 to \$1,500 a year. The total award to a student cannot exceed \$4,000 over a four-year period of study and \$5,000 for a five-year period of study. Awards may not exceed 50 percent of the student's estimated need. Awards are available to students attending UT Permian Basin at least on a half-time basis.

Law Enforcement Education Program. Applicants who are in-service law personnel and plan to enroll in UT Permian Basin's criminal justice programs or other related fields of study are eligible to receive up to \$400 a semester for fees and tuition. Applicants must complete an institutional application form for financial aid in addition to the LEEP application. Application should be submitted not later than 30 days prior to the semester in which the student hopes to receive benefits and utilize them.

Texas Public Education 2-1-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 \$90 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 \$1,500 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:

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- 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 financial aid 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 check prior to the payment of fees during the registration process.

Students who receive scholarships that are nationally administered (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.

Tuition scholarship. Tuition scholarships are made available to eligible recipients through state support. Assistance under this program is not available to aliens. For the purpose of this program, an alien is a person who is neither a citizen, a national, nor a permanent resident of the United States. Awards are made through the office of financial aid on the basis of financial need and/or academic merit of the applicant. Financial need is established through the American College Testing Program. Merit is determined on the basis of the potential academic excellence at the time of application.

No award may exceed the actual tuition charges paid by the student recipient.

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 \$750. 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 university 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.

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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 services is concerned with developing 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 the student population 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.

Publications. Two student publications, "The Sandstorm," "The Waterwell," a literary magazine and a magazine-yearbook, also are 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, chili cook-offs 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 spouses 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 due to the high cost of the U.S. medical delivery system, international students 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 modular home units available for single or married student rental. While generally available on a first-come, first-served basis, preference is given to students outside a normal commuting distance. Each unit is completely furnished and has central heating and air conditioning. Rental rates vary depending upon the accommodations desired. Additional information and housing applications are available through the student housing office.

To assist students in locating off-campus housing, the university provides a listing of householders in the community who have accommodations available for rent. Individuals who desire such a listing or wish to obtain 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.

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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 upon 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. Cards, gifts, and sundry items are also 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.



ARTS and EDUCATION

The College of Arts and Education offers degree programs leading to the Bachelor of Arts degree in anthropology art, government, history, humanities, literature, mass communications (journalism and radio-television), music, physical education, 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 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, a 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, specified on page 24, 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 semester credits. 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 major requirements may be more than 30 semester credits. Completion of 18 semester credits in an area of study, of which at least 12 credits must be at the upper level, shall constitute a minor. In the humanities, the major and minor requirements do not apply (see appropriate catalog sections for those specific program requirements). Students majoring in music and art will complete a major and minor as described above. Students preparing for elementary teacher certification are not required to complete a minor. Most students preparing for secondary teacher certification must complete two 24-credit teaching fields.

LOWER DIVISION OR COMMUNITY COLLEGE PREPARATION

The Core Curricula for Public Junior Colleges in Texas (located immediately before the index in this catalog) established by the Coordinating Board, Texas College and University System, will be accepted in its entirety and applied toward appropriate de-

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grees, 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 or the Bachelor of Science degree, although it is recommended for certain majors. Because of special interest or career plans, some students would be well advised to complete four semesters of one foreign language.

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.

Subject	(Semester Credits)	
	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
Psychology	-	3
Sociology or Anthropology	-	3
Speech	-	3
Philosophy	-	3
Economics	-	3

¹Required by state statute

²May be taken at either the lower level or at UT Permian Basin

Students should complete all required courses before entering UT Permian Basin, but it is not necessary. If 60 semester credits have been completed and some required courses are lacking, students are admitted to UT Permian Basin and may complete those courses either at UT Permian Basin or concurrently at a local community college.

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

PROGRAMS OF STUDY

American Studies (see Literature)

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, pedagogical studies, life science or related disciplines.

A major in anthropology consists of 24 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 365 Women in World Societies (3) Case studies of women's roles in various types of societies. Interactions with men in those societies and on world-wide social, political and economic contributions.

ANTH 375 Introductory Linguistics (3) Significant sounds and meaningful units in the struc-

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ture 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, Aztec 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 archaeological 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 429 Structuralism (3) Levi-Strauss' theory considering social units as incomplete expressions of deeper structure (form and emergent wholes—not functional units).

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. Same as PSYC 449.

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 that can lead to careers in college teaching or commercial art. The art major requirement is 30 credits, 18 of which must be taken at UT Permian Basin. For those who successfully complete a 49-credit program, 25 of which are required at UT Permian Basin, a senior exhibition in the university gallery is offered.

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.

ART 402, Concepts in Modern Arts, is required of all Art majors.

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 (3)** Open to nonart 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 develop-

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ment of individual expressions. Spring semester only.

Painting

*ART 321 Painting Techniques — Water (3) Water soluble media including transparent water-color, 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 320 or ART 322. Development of personal imagery.

*ART 421 Painting Techniques II (3) Prerequisite: ART 320 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) Prerequisite: ART 331. Welding, brazing, foundry skills to develop individual expression.

*ART 431 Human Figure Modeling (3) Modeling the figure in clay.

*ART 432 Advanced Sculpture (3) Prerequisite: ART 330. 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) Wheeling throwing techniques. Spring semester only.

*ART 437 Clay and Glazes (3) Composition of glazes and preparation of clay with emphasis on inventiveness and creativity.

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

*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 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 488 Commerical Design and Internship (3) Prerequisite: ART 380. 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 (See Graduate Study)

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Creative Writing (See Literature)

Government

The Bachelor of Arts degree program in government 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 government, 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 government appropriate preparation for law school. A major in government is suitable for students planning to teach government or social studies.

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

SAMPLE DEGREE PLAN – GOVERNMENT*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
GOVT 313	3	GOVT 321	3	GOVT 425	3	GOVT 413	3
GOVT 401	3	GOVT 452	3	GOVT Elective	3	GOVT Elective	3
GOVT Elective	3	Courses in Minor	6	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 GOVERNMENT

†GOVT 311 State and Local Government (3) Texas and other selected state constitutions, legislatures, governors, courts, counties, municipalities, special district and intergovernmental relationships.

GOVT 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.

†GOVT 315 The Legislative Process in the United States (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.

GOVT 317 Interest Groups in the American Political Process (3) Groups in the United States able to exert sufficient pressure upon the governmental process to influence, to an appreciable state, the outcomes of that process.

GOVT 321 Introduction to Comparative Government (3) Government and politics of selected nations of the economically developed world as compared to U.S. politics and institutions.

GOVT 322 Comparative Politics: Developing Nations (3) Conceptual and substantive problems of political modernization and development as found in the third world today.

- GOVT 401 Scope and Methods of Political Science (3)** Philosophical foundations of political inquiry. Behavioral versus institutional approaches to the study of politics and the use of quantitative methods.
- GOVT 413 Empirical Political Theory (3)** Contemporary theories explaining political behavior in a variety of contexts including parties, politicians, voters, political entrepreneurs, interest groups and favor buyers.
- GOVT 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.
- GOVT 425 Comparative Political Analysis (3)** Comparative method and related research strategies. Application of the comparative method to different substantive fields.
- GOVT 427 International Relations (3)** Enduring factors affecting interactions between nation states, compares diverse theories and models of analysis. Predictive values of theories and models are considered.
- GOVT 431 American Political Thought (3)** Major trends in American political thought, related to the socioeconomic and political development of the nation.
- GOVT 443 American Foreign Policy (3)** Origin, conduct and application of American foreign policy in world affairs.
- GOVT 451 History of Political Inquiry (3)** Principles of government from their earliest appearances in Western thought to their effect on recent government. Major figures and movements from ancient to modern political thought.
- GOVT 452 20th Century Political Thought (3)** Development operation and consequences of such modern ideologies as communism, fascism, democracy, liberalism and radicalism.

†These courses meet State of Texas statutory requirements in government.

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 predicting the future.

History is an ideal major for students preferring a broad liberal arts education rather than professional preparation. 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, at the same time allowing flexibility so students may build emphasis in an area or areas of history of special interest. UT Permian Basin has special strengths in history of the American West and in Latin American history.

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

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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. These courses usually are designated as HIST 459. Other courses are selected by students and their advisers in the context of background or preparation interests, needs and professional plans.

SAMPLE DEGREE PLAN – HISTORY*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
HIST 411 or 413	3	HIST 322 or 352	3	HIST 433	3	HIST 434	3
HIST Elective	3	HIST Elective	3	HIST 403	3	HIST 459	3
Courses in Minor	6	Courses in Minor	6	HIST Elective	3	HIST Elective	3
Elective	3	Elective	3	Course in Minor	3	Course in Minor	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 HISTORY

HIST 301 The Development of Modern Texas (3) Political, social, economic and historical development of modern Texas. Includes field work in state and local history.

HIST 305 History of the 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 314 History of Modern Latin American (3) Political, social, cultural and economic development of South America and Caribbean from Independence to the present.

HIST 321, 322 Europe Since the French Revolution I, II (3, 3) Major social, economic, political and intellectual developments in Western Europe from the French Revolution to the present. The course divides at 1914.

HIST 331 The United States in the 19th Century (3) Jacksonian Democracy, sectionalism, the Civil War and reconstruction, industrial development, agrarian radicalism.

HIST 351 Tudor-Stuart England (3) Political, religious, economic and social development of England between 1485 and 1714.

HIST 352 Great Britain 1714-1914 (3) Primary and secondary sources for the study of the 18th and 19th century Britain.

HIST 381 Ethnic Minorities in the United States (3) Contributions of the various ethnic minorities to the development of American political and cultural traditions and institutions.

HIST 401 The Frontier in American History (3) Historical literature analysis relating to Frederick Jackson Turner's frontier thesis and application of findings to research projects in local history.

HIST 403, 404 History of the American West I, II (3, 3) Settlement and development of the American West and the impact of the West on the history of the United States.

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

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

†HIST 433, 434 The United States in the 20th Century I, II (3, 3) Political, economic and social domestic affairs contributing to the 20th century development of industrial, urban and rural America.

†HIST 435 American Colonial and Early National History (3) Primary and secondary source materials relating to the political ideas and institutions and social development in America before 1820. The American Revolution is emphasized.

†HIST 437 The Civil War and Reconstruction (3) History of the nation from 1850 to 1876 is approached through analysis of primary source materials and scrutiny of selected scholarly articles and monographs.

†HIST 438 Women and Family in Pre-Industrial America (3) Changing nature of family and positions of women in America from 17th to late 19th century.

†HIST 451, 452 The History of American Thought I, II (3, 3) Puritan theology, the American enlightenment, transcendentalism, naturalism and social Darwinism, pragmatism and experimentalism and ideological pluralism.

HIST 461, 462 United States Foreign Relations, I, II (3, 3) Foreign policy and relations involved in the development of America from the Revolution through World War I and from 1920 to the present.

HIST 459 Studies in History (3) Seminar for readings, research and discussion on selected topics in history.

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

HIST 469 Sequential to HIST 459 (3) Investigation of specific aspect of subject studied in 459 to include extensive study of primary source evidence and presenting findings in a research paper.

†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. Within broad limits, each program is individually designed by students and their advisers. The program includes primarily humanistic studies but requires that **students become acquainted with several other disciplines.**

The humanities major is considered a wise choice for students who are nonvocationally oriented or who are planning postgraduate study of law, theology, the liberal arts and certain other fields.

The BA in humanities requires 120 semester credits including the following:

1. 9-15 credits in each of 2 of the following: American studies, creative writing, literature, mass communications and speech.
2. 9-12 credits in one of the following: history, Spanish (or other foreign language) and literature (or philosophy).
3. At least 6 credits in each of 2 of the following: music, art, theatre, dance.
4. At least 6 credits in each of 2 of the following: anthropology, sociology, economics, government, pedagogical studies and psychology.

The above may include courses completed in meeting lower-level requirements;

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however, one-half of each group must be at the upper level. Additional courses shall be determined in consultation with the adviser following discussions of the student's education background and professional goals and needs, provided all courses included in the program for the humanities have intellectual coherence. There is no minor in humanities.

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 literature program offers coursework in 3 fields of specialization: American, British and Spanish. (Spanish programs and course offerings are described in Spanish section.) Literary studies also figure prominently in the interdisciplinary degree program of humanities. (See separate description for this program.)

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

LIT 301 & 302, The History of American Literature

LIT 321 & 322, The History of British Literature

LIT 351, Short Fiction

LIT 371, The English Language

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 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 371	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, 302 History of American Literature I, II (3, 3)** Chronological examination of writers, works and movements (fiction, nonfiction, poetry) from beginning to the present. Course divides at 1865.
- LIT 321, 322 History of British Literature I, II (3, 3)** Chronological study of major works in English literature, beginning with Old English and examining the historical development of the literature. Course divides after the Augustans.
- LIT 341, 342 History of World Literature (3, 3)** Reading and critical discussion of masterpieces of world literature in translation. Course divides at the Renaissance.
- 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 361 Literary Criticism (3)** Major approaches to literary texts: historical, sociological, psychological, biographical, anthropological, linguistic and aesthetic.
- LIT 371 The English Language (3)** Applied English linguistics including the nature and historical development of English; interrelationships among linguistic, social and psychological systems; problem-solving methodologies.
- LIT 401, 402 American Poetry I, II (3, 3)** Development and influence of an indigenous American poetry. Analysis of the theories and practice of major poets. Course divides at 1900.
- LIT 405 American Drama (3)** Historical development of American drama; types of dramatic literature and masterpieces in American drama.
- LIT 411, 412 American Fiction I, II (3, 3)** Masterpieces in American prose fiction, beginnings to late 19th century and late 19th century to the present.
- LIT 421, 422 British Poetry I, II (3, 3)** Poetry as a literary genre through major works of British poetry from the Middle Ages to present. Course divides at 1800.
- LIT 425, 426 British Drama I, II (3, 3)** Drama as a literary genre through major works of British drama from the Middle Ages to present. Course divides at 1800.
- LIT 431, 432 British Fiction I, II (3, 3)** Novel and short as literary genres through major works of British prose fiction from beginnings in the Renaissance to present. Course divides at 1800.
- LIT 433 Modern British Fiction (3)** Novel and short story as literary genres through works of the 20th century.
- 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, 446 Comparative Drama I, II (3, 3)** Reading and critical discussion of masterpieces in drama, classical to present. Emphasis on major periods, national developments, dramatic types and techniques.
- LIT 450 The Bible as Literature (3)** Selected books of both Old 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, 452 Comparative Fiction I, II (3, 3)** Novella and novel from their origins to present. Authors include major writers from Europe, Asia and Latin America.
- 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 469 Studies in a Major Author (1-3)** Works of a major author in American, British or world literature.
- LIT 471 The English Language in the Classroom (3)** Application of the basic linguistic concepts to the classroom situation for primary grades through college. (This course serves students certifying in language arts).

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COURSES IN AMERICAN STUDIES

The following courses in American Studies are offered to meet the needs of students enrolled in other degree programs.

AMST 314, 315 Anglo-American Images, I, II (3, 3) Artifacts, painting, sculpture and architecture resulting from the Anglo-American presence on the North American continent from 1620-1940. Same as ART 314, 315.

AMST 319 American Musical Theatre (3) Development of the genre of the American musical as an indigenous art form. Emphasis is on theatrical and literary innovations. Same as MUS 319 and THEA 319.

AMST 419 Advanced Musical Theatre (3) Production of a Broadway musical from selection, role identification, budget development and sets to theatrical completion of the show. Same as MUS 419 and THEA 419.

AMST 425 Colloquium in American Studies (3) Multidisciplinary approach to a topic of major concern in the development of American civilization.

AMST 451, 452 History of American Thought I, II (3, 3) Puritan theology, the American enlightenment, transcendentalism, naturalism and social Darwinism, pragmatism and experimentalism and ideological pluralism. Same as HIST 451, 452.

COURSES IN CREATIVE WRITING

The following courses in creative writing are offered to meet the need of students enrolled in other degree programs.

CRWT 305 Advanced Exposition (3) Emphasis essential aspects of language that help a student write clearly. The student practices writing information and opinion papers to develop effective expression.

CRWT 335 Television Drama (3) Writing and analysis of television drama including an analysis of artistic norms, values and objectives of contemporary television programs.

CRWT 337 Short Drama (3) Combines the study and practice of writing plays. The student will write two short plays and analyze student and other works.

CRWT 352 Fiction (3) Short fiction and outside reading to develop insights into languages and have practice in writing fiction.

CRWT 362 Writing nonfiction (3) Development of writing skills to express ideas in nonfiction more exactly.

CRWT 415 The Short Story (3) Writing and revising short-story drafts.

CRWT 425 Poetry (3) Verse writing and discussion of student and other works are emphasized, including a variety of verse forms.

CRWT 428 Teaching Creative Writing (3) For the practicing or prospective classroom teacher at both the elementary and secondary levels.

CRWT 490 Writing Tutorial (3) Advanced writing course allowing students to further develop skills in the genre of his choice — whether fiction, poetry or drama.

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 pedagogical studies 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 Management.

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 308	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.

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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 Bachelor of Arts degree for its majors with two options: 1) a liberal arts degree, and 2) teacher certification.

Students entering music study at UT Permian Basin should have completed 2 years of courses in music theory and 2 years of applied music at the freshman and sophomore level. Students deficient in the preceding requirements may have the opportunity of completing these courses of study at UT Permian Basin after consultation with their faculty adviser.

The liberal arts program provides students an opportunity to concentrate in music while pursuing a broad program of studies. Students must complete the following requirements:

1. MUS 305 and 306 (history)
2. 6 credits from either of these 2 vocal or instrumental categories:
 - a. Choral-Voice
MUS 301 and 302 (conducting)
MUS 308 and 402 (choral arranging and methods)
 - b. Instrumental-Performance Practice
MUS 309 and 310 (form and analysis and orchestration)
MUS 480 and 481 (performance practice and instrument history)
3. 6 credits in applied music on the 300 and 400 level
4. 2 credits of ensemble chosen from choral, symphonic or collegium groups

Students in the liberal arts program are further urged to take MUS 490 in their senior year in order to complete a special project in their major area of study (e.g., a recital, research project or composition).

Besides the 20 credits of required music courses, students enrolled in the liberal arts degree must also complete a suitable minor of at least 18 credit hours. They may complete their program with credits broadly distributed in the humanities.

There are 3 options leading to certification for teaching:

1. *Instrumental Music (all level)*. A program designed to develop competencies necessary for the successful teaching of instrumental music at all levels in the public schools. Students considering careers as band or orchestra directors should register in this curriculum. The required music course for this program are MUS 301, 302, 303, 305, 306, 309, 310, 401 and 420 (18+ credits). As is the case with all certification programs, a number of education courses and student teaching activities must also be completed.
2. *Vocal Music (all level)*. A program designed to prepare students for careers in all levels of choral conducting. Required courses are MUS 301, 302, 303, 305, 306, 308, 325, 402, and 420 (20+ credits).
3. *Elementary School Music (elementary)*. A program designed to prepare the student for the teaching of grades K—8. Required courses are MUS 303 (key-board or voice), 306, and 325.

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 302	2	MUS 401 or 402	3	MUS 379	1
MUS 303	2	MUS 303	2	MUS 420	2	MUS 403	2
MUS 305	3	MUS 306	3	MUS 379	1	MUS 420	2
MUS 325	3	MUS 379	1	MUS 403	2	PED 332	3
MUS 379	1	MUS 420	2	PED 331	3	PED 377 or 378	6
PED 344	3	PED 331	3	Elective	3		
Elective	3	PED 390	3				
17		16		14		14	

*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 MUSIC

MUS 301 Beginning Conducting (2) Includes techniques of downbeat, cueing, release through all meters and rhythmic patterns.

MUS 302 Intermediate Conducting (2) Solving interpretive techniques, ensemble preparation and translation of choral and instrumental scores to performance. Prerequisite: MUS 301 or equivalent.

MUS 303 Applied Music I (2) Studio instruction in music major's principal instrument or voice. One hour lesson per week and 7 hours practice required. Two years previous college applied music required.

MUS 305, 306 Historical Survey of Form in Music I, II (3, 3) Development of styles and forms in the musical periods from 1300 through the Rococo, Classic, Romantic, Impressionistic and early and middle 20th century.

MUS 307 Orchestration (2) Scoring music for standard large orchestral instrumentations. Practice in score reading with frequent periods of listening to orchestral recordings augmenting the written work.

MUS 308 Choral Arranging (2) Techniques of writing, arranging and editing choral music for a variety of performance media. Emphasis on public school choral performance problems.

MUS 319 American Musical Theatre (3) Historical development of the Broadway musical as an

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indigenous American art form. Emphasis on specific relationships between the musical and its American sources. Same as AMST 319 and THEA 319.

MUS 321 Fundamentals of Music Theory (3) Mechanics of music notation, harmony, melody and rhythmic structure. Emphasis on the relation of music to the self contained elementary classroom.

MUS 325 Music in Elementary School (3) Problems of children—singing, rhythmic concepts, listening, percussion and melodic instruments, notation and materials critique. Practicum in elementary music teaching.

MUS 379 Ensemble (1) Laboratory experiences in performing choral and instrumental music.

MUS 401 Instrumental Music in the Secondary School (3) Instrumental music instruction, organization of the public school music department, rehearsal techniques and related problems.

MUS 402 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.

MUS 403 Applied Music II (2) Advanced studio instruction in music major's principals instrument or voice. One hour lesson per week and 7 hours practice required.

MUS 419 Advanced Musical Theatre (3) Production of a Broadway musical from selection, role identification, budget development and sets to theatrical completion of the show. Same as AMST 419 and THEA 419.

MUS 420 Elementary Music Pedagogy: Brass, Woodwinds, Percussion, Strings, Voice (2) Theories and practices of teaching beginner students. Sections deal with homogenous grouping of performance media, i.e., woodwinds, brasses, etc.

Pedagogical Studies

The term "Pedagogical Studies" is derived from pedagogy—the art and science of teaching and learning—and at UT Permian Basin refers to the courses dealing with professional teacher education.

The 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 science, 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, phy-

sical education, history, journalism, life/earth middle school science, mathematics, music (vocal, instrumental), physical science, physics, psychology, sociology, Spanish and speech.

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 to the secretary of the Teacher Education Council. Those preparing for teaching at the elementary and/or kindergarten levels take courses in pedagogical studies (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 pedagogical studies (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 pedagogical studies 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 PED) 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 courses required for certification.

55/PEDAGOGICAL STUDIES

SAMPLE DEGREE PLAN – ELEMENTARY PROVISIONAL CERTIFICATE*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
PED 311	3	PED 326	3	PED 321	3	PED 322	3
ERSC	3	PED 344	3	PED 325	3	PED 323	3
ERSC	3	PED 390	3	ERSC	3	PED 324	3
MUS 321 or 325	3	ART 372	3	ERSC 314	3	PED 373/374	6
Major or Elective	3	ERSC	3	PHED Methods	3		
	15		15		15		15

ENDORSEMENTS

Kindergarten: PED 411, 412, 413, 372

Special Education: 9 to 15 additional credits from PED 451, 452, 455, 456, 457, 458. Schedule to be designed by PED 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	PED 390	3
Second Teaching field	6	PED 344	3	PED 331;332	6	PED 375 or 376	6
Elective or Major	3	Second Teaching field	6	Elective/major/		Electives or Major	6
		Elective/and field	3	and field	3		
	15		15		15		15

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

COURSES IN PEDAGOGICAL STUDIES

Courses in Elementary Education

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

PED 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.

PED 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.

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

PED 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.

PED 325 Teaching Reading in the Elementary School (3) Basic methods, trends, recent materials and issues in reading programs of prekindergarten, elementary levels.

PED 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.

PED 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.

PED 461 Educational Psychology of the Bilingual Child (3) Methods, materials, language

organization and developmental principles affecting the bilingual child and his learning environment.

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

PED 463 Methods of Teaching in the Bilingual Classroom (3) Field-based course in which students working with bilingual children will apply methods of teaching-content areas in the English language as well as the language of the target population.

PED 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

PED 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.

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

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

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

PED 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.

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

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

Courses in Secondary Education

PED 312 Human Growth and Development: Adolescent (3) Characteristics, needs and problems of adolescence. Emphasis on principles and development important to teachers.

PED 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 microteaching episodes.

PED 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

PED 372 Student Teaching: Kindergarten (3)

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

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

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

57/PEDAGOGICAL STUDIES

PED 379 Student Teaching: Special Education (3)

Courses in Early Childhood Education

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

PED 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.

PED 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.

PED 414 Cognitive Development in Young Children (3) Major theoretical constructs and research findings relevant to the cognitive development of young children. Will concentrate on genetic and environmental factors which are believed to be related to cognitive development.

PED 415 Social and Emotional Development of the Child (3) Major theories and research relevant to social and emotional development of children. Focus is on innate and environmental influences affecting children's personal development in families, school and society.

Courses in Special Education

PED 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.

PED 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: PED 451 or consent of instructor.

PED 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.

PED 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.

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

PED 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

PED 425 Teaching Reading in the Content Areas (3) Skills and knowledge to evaluate and incorporate the secondary student's reading competencies into specific content areas.

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

PED 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.

PED 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: Ped 311 and 344 or equivalent.)

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 of a minor.

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 program includes development of competencies in physical education. In addition, students may become certified to teach their primary (major) and secondary (minor) fields of study in Texas public schools. The student, with the aid of a faculty advisor, will plan learning experiences to satisfy his degree and career objectives. The major in physical education requires a minimum of 30 nonactivity semester credit hours, 18 of which must be at the upper level. The minor in physical education requires a minimum of 18 nonactivity semester credit hours, 12 of which must be at the upper level. However, for a student interested in teacher certification, the minor field of study must include 24 semester credit hours, and the minor selected should complement degree and career objectives. Due to 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.

The uniqueness of study in this area is the emphasis of human movement and performance. Studies focus on the psychological, kinesiological, physiological and developmental factors in human movement and their application to instructional programs.

59/PHYSICAL EDUCATION

The Bachelor of Arts degree in physical education is designed to accommodate students with different career objectives. A major in physical education is appropriate for students interested in elementary and/or secondary school teaching, physical therapy, corrective therapy, athletic training, youth leadership (e.g., YMCA or YWCA work, coaching), graduate study and the study of medicine.

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

- 1. Foundations of Physical Education
- 2. Physical Activity courses (as many as possible)

To graduate from UT Permian Basin, students must demonstrate varied competencies which correspond to their degree objectives. Each student majoring or minoring in physical education should demonstrate the ability to measure human performance (PHED 400) and demonstrate knowledge of the following factors that affect human movement:

- a. performance factor (PHED 309)
- b. psychological factor (PHED 320 or 420)
- c. kinesiological factor (PHED 340)
- d. physiological factor (PHED 350)

Students majoring in physical education and also seeking teacher certification are required to take a minimum of 30 nonactivity semester credit hours in physical education. These students must demonstrate performance competencies in the skills and strategies of teaching movement activities (PHED 410 and 480). See the pedagogical studies section of the catalog for teacher certification programs.

Students majoring in physical education, but not seeking teacher certification are required to gain additional expertise in at least one specific application area (i.e., coaching, athletic training, youth leadership). With the aid of a faculty adviser, the student will arrange to gain experience working in a field in which a physical education major might find employment upon graduation. Through enrolling for practicum (PHED 392), the student gains course credits for the work experience. These credits may be applied to the 30 nonactivity semester credits minimally required for a physical education major.

SAMPLE DEGREE PLAN – PHYSICAL EDUCATION
WITH TEACHING CERTIFICATE*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
LFSC 350	4	PHED 350	3	PHED 310, 320,		Course in Minor	6
PED 344	3	PHED 340	3	or 420	3	PED 390	3
PHED Elective	3	PHED 400	3	PED 331, 332	6	PED 375 or 376	6
PHED 410	3	PHED 480	3	Courses in Minor	6		
Course in Minor	3	Course in Minor	3				
	16		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 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 normal and handicapped children of infant, early childhood and later childhood ages.

PHED 320 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 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) Integrate skeletal and neuromuscular anatomy with mechanical principles of human movement to structurally and prescriptively analyze movement patterns for performance improvement.

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.

PHED 359 Lifetime Sports (1) Skill and knowledge of a lifetime sport. Sections including bowling, golf, tennis, handgunning, 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.

PHED 400 Measurement of Physical Performance and Achievement (3) Physical measurement and evaluation. Trends in the field, basic statistics for test interpretation, physical and psychological tests and grading students.

PHED 410 Curricular Innovations in Physical Education (3) Movement experiences for public school children, application of trends in physical education programs, and innovative 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 480 Design of Learning Environments for Movement (3) Analysis and application of teaching activity that facilitates the learning of human movement skills.

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 government; 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. The psychologist is concerned with the discovery and application of principles of behavior.

The program in psychology leading to the Bachelor of Arts degree is designed to prepare students with differing educational goals. The primary emphasis of the degree program in psychology is in the applied field. Another option is available for those wishing to pursue graduate education in psychology. However, the two options are not completely separate; a student pursuing one option may receive extensive preparation in the other.

Psychology constitutes an excellent major for students whose career goals involve working with people. Students contemplating a career in teaching, personnel work, advertising, the medical and paramedical fields, crime prevention, counseling, child care, recreation and urban planning may find psychology an appropriate major. The growing need for psychological technicians in recent years provides many opportunities for psychologists trained to the baccalaureate level.

A major in psychology requires a minimum of 30 semester credits and a minor of 18 credits. The minor should complement the major field of study. Sociology and anthropology are excellent minor fields for students in psychology, especially those interested in the applied psychology field. For the students planning graduate work in psychology, mathematics and the biological or physical sciences are also appropriate minor fields.

Courses in introductory psychology and descriptive statistics are required for all students majoring in psychology. In addition, all students majoring in psychology will be required to complete a senior research or senior readings project (PSYC 395) during their senior year. Those choosing the senior research project — recommended for those students planning to attend graduate school in psychology — will create a problem, design the procedures to solve it and conduct the research. A research project in applied psychology should involve some community agency or resource such as the schools, courts, industries or other commercial enterprises. Those selecting the senior research project will generally be allowed to conduct the research in areas of psychology of particular interest to them.

SAMPLE DEGREE PLAN — PSYCHOLOGY*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
PSYC 301	3	PSYC 321	3	PSYC 401	3	PSYC 395	3
PSYC 305	3	PSYC 323	3	PSYC 405	3	PSYC 451	3
PSYC 375	3	PSYC 341	3	Course in Minor	3	Course 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 300 Contemporary Theories and Systems in Psychology (3) Current theories and systems in representative areas of psychology. Analyzed: historically, conceptually, with explanatory models and probable future trends.

PSYC 301 Descriptive Statistics (3) Measures of central tendency, variability and correlations with major emphasis on the applications of statistical methods and experimental design to psychological research.

PSYC 305 Principles of Behavior Modification and Conditioning (3) Operant and respondent

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principles and techniques involved in the development, maintenance and modification of behavior, emphasizing applications to human behavior. Prerequisite: PSYC 300 or equivalent.

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 315 Learning: Theory and Research (3) Major research results as related to basic concepts involved in verbal motor and perceptual learning of the human. Prerequisite: PSYC 300 or equivalent.

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

PSYC 323 Personality (3) Major theorists and their theories of personality compared and discussed in the context of the research literature.

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

PSYC 375 History 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 390 Applied Research Project (3) Personal and individual development of research project in applied psychology. Design and conduct research resulting in formal written report.

PSYC 395 Senior Research/Readings Project (3) Creation and conduct of independent research investigation or creation and conduct of an independent library project. Each requires a formal written report.

PSYC 401 Inferential Statistics (3) Advanced statistical methods as applied to interpretation of psychological data. Prerequisite: PSYC 301.

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

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

PSYC 412 Introduction to Biopsychology (3) Neurophysiology and neuroanatomy. Variables that contribute to behavioral effects in the areas of sensation, perception, motivation and learning. Prerequisites: PSYC 301, plus 305, 315, or 375.

PSYC 415 Theories of Learning (3) Assumptions, constructs and research evidence of the various theories of learning. Prerequisites: PSYC 305, 315 or 375.

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 449 Culture and Personality (3) Past and existing theories and methods in the comparative study of personality and sociocultural environments in the context of current research. Same as ANTH 449.

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

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PSYC 460 Applications of Behavior Modification (3) Principles of behavior modification and the application of these principles to the school and home. Same as PED 460.

PSYC 471 Motivation (3) Theories and experimental research concerning drives, needs and preferences as proposed by scientists studying personality, learning and physiology. Prerequisites: PSYC 301, plus 12 credits in psychology.

Sociology

Sociology is the scientific study of human society and social behavior. Sociologists investigate the fundamental processes of social interaction that underlie personality development, group formation and social organization. Professional sociologists build theories and discover uniformities about individual acts, such as a friendly greeting to a neighbor; social relationships, like those of husbands and wives, teachers and students, buyers and sellers, etc.; organizations large and small, from the high school activity club to the federal government; and the total system of communities or nations.

The sociology major at UT Permian Basin is designed to provide students with a knowledge of social forms and processes to provide them an enriched liberal arts education as well as preparation for various professions. Interrelationships between pure sociological knowledge and its application to social problems is emphasized.

Sociology majors may work toward teaching the social sciences at the secondary level; preprofessional preparation for social work in casework, group work, or public welfare administration; corrections and law enforcement; industrial relations; social research; foundation or governmental agencies; and preparation for graduate work. A sociology major requires at least 24 semester credits, of which 18 semester credits must be at the upper level. Two courses are required for the major: SOC 325, SOC 427. Students have the option of applying up to 3 credits in anthropology toward their major requirements, but an anthropology course applied toward the major may not be applied toward an anthropology minor in a student's program.

The sociology minor requires 18 semester credits of which 12 credits must be upper level. SOC 301 at UT Permian Basin or an introductory sociology course from another school is required. Students minoring in sociology may apply an anthropology course toward the minor requirements.

SAMPLE DEGREE PLAN — SOCIOLOGY*							
JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
SOC 301	3	SOC 325**	3	SOC 417	3	SOC 431	3
SOC 311	3	SOC 375 or 386	3	SOC 427**	3	SOC 444 or 480	3
Elective	3	Courses in Minor	6	Courses in Minor	6	Courses in Minor	6
Elective	3	Elective	3	Elective	3	Elective	3
Elective	3						
15		15		15		15	

*Assumes 60 lower-level semester credits with the basic general education requirements completed.

**Required

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 325 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 328 Social Interaction Processes (3)** Societal norms and values influencing social interaction processes; the symbolic interaction perspective of family, peer groups, and group structure and size associated with social attitudes and behavior.
- 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 386 Formal Organization (3)** Contemporary empirical studies in organizations: prisons, governmental bodies, unions and hospitals. Prerequisite: 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 386 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 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 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.

Spanish

Because it shares Hispanic heritage of Texas and close proximity to Latin American countries, UT Permian Basin offers the Spanish student and potential professional unique learning and cultural experiences as well as scores of career possibilities and opportunities. Besides a living language and 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

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All but the last course of study will 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 will consist 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 will consist of 18 credits, 9 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.

SAMPLE DEGREE PLAN – SPANISH MAJOR IN LITERATURE*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
SPAN 301	3	SPAN 302	3	SPAN 401	3	SPAN 402	3
SPAN 431	3	SPAN 421	3	SPAN 411	3	SPAN 412	3
Courses in Minor	6	Courses in Minor	6	Courses in Minor	6	Courses in Minor	6
Elective	3	Elective	3	Elective	3	Elective	3
	15		15		15		15

The majority of the courses offered are conducted in Spanish.

*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 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 Pre-hispanic 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 441 Hispanic Dramatic 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 357, 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 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.

Speech

Speech as an academic field encompasses the theory and practice of oral and written 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 pedagogical studies to obtain professional courses directed toward teacher certification.

Many students interested in humanities, social science, or pedagogical studies 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 330	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 Theatre (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 following courses in theatre are offered to meet needs of students enrolled in other degree programs. Interested students should contact the office of the dean of the College of Arts and Education for information as to course availability and the scheduling of specific courses.

COURSES IN THEATRE

- THEA 358 Directing (3)** Performance principles and use of the stage in dramatic action, from director's initial concept through work in rehearsals. Includes production, organization and dramatic analysis.
- 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

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techniques for dramatizing an idea, feeling or situation. Drama as "play" rather than performance.

THEA 405 American Drama (3) Same as LIT 405.

THEA 406 Reader's Theatre (3) Same as SPCH 406.

THEA 419 Advanced Musical Theatre (3) Same as AMST 419 and MUS 419.

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 451 Makeup and Costume (3) Techniques of stage makeup and major historical periods of dress.

THEA 452 Lighting and Set Construction (3) Fundamentals of lighting and the techniques of building scenery for the stage.

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 Pedagogical Studies)



MANAGEMENT

The goals of the College of Management 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 the students possess a flexibility which comes from a broad education.

An integrated approach to the function of management 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, real estate, transportation and other fields of their choice and to enter a wide range of specialized fields in both profit and nonprofit organizations.

Organizationally, the College of Management offers four undergraduate programs of study: (1) accountancy and information systems, (2) criminal justice and criminal justice management, (3) economics and (4) management. The Bachelor of Business Administration degree is offered in accountancy and information systems and in management, and the Bachelor of Arts degree is offered in economics and in criminal justice and criminal justice management. A minimum of 123 semester credits is required for the BBA degree, of which at least 51 must be upper level. The BA degree requires 120 credits with at least 48 upper-level credits. Students selecting a management program of study may choose to emphasize accounting, decision sciences, economics, finance, criminal justice management, management, logistics/physical distribution, marketing, personnel or production. At the graduate level, a Master of Business Administration degree program is offered.

DEGREE REQUIREMENTS

Lower Division or Community College Preparation

The Core Curricula for Public Junior Colleges in Texas (located immediately before the index in this catalog) 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 accountancy and information systems and management should include:

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Subject	Semester Hours
<i>Expected</i>	
Accounting	6-8
Business Law	3
College Algebra	3
Computer Programming ²	3
Economics	6
English Composition or Composition and Rhetoric	6
Government, Federal and State ^{1,2}	6
U.S. History (one may be Texas History) ^{1,2}	6
.....	
<i>Recommended Electives</i>	
Calculus	3
Introduction to Business	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 Management. 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 rare cases, it may be necessary to complete them concurrently at a community college.

¹ Required by state statute.

² May be taken as junior-level courses at UT Permian Basin.

The above recommended lower-level preparation is also generally applicable for the criminal justice management major.

Students not having previous police academy training or actual police experience are encouraged to complete the following courses at the lower level before transferring to UT Permian Basin:

Introduction to Law Enforcement
Police Organization and Administration
Criminal Investigation

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.

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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.

The requirements to sit for the CPA (Certified Public Accountant) examination in Texas include a minimum of 20 semester credits in accounting plus 9 credits in related business subjects.

The 3rd- and 4th-year degree requirements consist essentially of three parts:

Electives **12 credits**

(9 credits must be in the College of Management)

Basic Management Core **27 credits**

The basic core provides students with a common body of knowledge in management. 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 management core consists of the following courses: ACCT 300, DSCI 301, ECON 300/400 level course, FIN 320, MNGT 340, 360, 366, MRKT 310 and 314.

Accountancy and Information Systems **24 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 Management. Requirements in accountancy and information systems are ACCT 301, 302, 303, 305, 333, 400, 406 and 411.

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SAMPLE DEGREE PLAN – ACCOUNTANCY AND INFORMATION SYSTEMS*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ACCT 300	3	ACCT 302	3	ACCT 305	3	ACCT 406	3
ACCT 301	3	ACCT 303	3	ACCT 400	3	MGMT 366	3
DSCI 301	3	ACCT 333	3	ACCT 411	3	MRKT 314	3
MGMT 360	3	MGMT 360	3	ECON 300-400	3	College Electives	6
MRKT 310	3	College Elective	3	FIN 320	3		
				College Elective	3		
15		15		18		12	

*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 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: demonstrate knowledge of 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: demonstrate knowledge of 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: ACCT 300.

ACCT 305 Federal Income Tax – Individuals (3) Provisions and procedures of federal income tax laws and requirements affecting individuals, including problems of tax-planning and compliance. Prerequisite: demonstrate knowledge of accounting principles.

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.

ACCT 400 Advanced Accounting (3) Special accounting problems for partnerships; branches; corporate mergers, acquisitions, liquidations, and reorganizations; interim financial reporting; and multinational business organizations. Prerequisite: ACCT 302.

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 302.

ACCT 406 Auditing Theory and Practice (3) Auditing standards and supporting philosophy. Techniques available to independent public accountants. Prerequisite: ACCT 302.

ACCT 410 Oil and Gas Accounting (3) Accounting principles and procedures for the petroleum industry. Includes exploration, leasing, drilling and production problems. Prerequisite: ACCT 302 or 601.

ACCT 411 Information Systems Theory and Analysis (3) Introduction to the information systems approach and of appropriate computer applications for varied types of organiza-

tions. 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.

ACCT 414 Nonprofit Organization Accounting (3) Budgeting, accounting and reporting in state and local government and other nonprofit units. Special problem areas. Prerequisite: ACCT 302 or 601.

ACCT 415 Advanced Income Tax (3) Federal Income Tax laws, rules and regulations relating to partnerships, corporations, estates and trusts. Prerequisite: ACCT 305.

ACCT 416 System Audits (3) Auditing of EDP systems and basic approaches to auditing other types of business/organization systems.

ACCT 425 Estate, Trust, Gift and State Taxation (3) Federal and state taxation, laws, rules and regulations affecting estates, trusts and gifts. Includes tax planning and compliance. Prerequisite: ACCT 305.

Finance

Finance is not offered as a major; however, some emphasis in this field is possible by completing courses ancillary to the major in accountancy and information systems or to the major in management.

Finance coursework provides (1) an understanding of the financial structure of the U.S. economy, (2) an understanding of the principles of monetary theory and practice, (3) an understanding of the investment management principles used in operating the major financial institutions and pension funds, and (4) an understanding of the principles underlying the finance function in industrial and commercial firms.

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 investments and other financial affairs.

The 3rd- and 4th-year requirements for the finance emphasis consist essentially of 3 parts. Parts I and II are the same as listed for the accountancy and information systems programs. Part III includes 3 courses in accounting, 4 courses in finance, beyond those courses listed in I and II, or students may opt to follow the management program of study described under that area's program description.

COURSES IN FINANCE

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: elementary accounting.

FIN 322 Commercial 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 324 Financial Institutions (3) Fund flows in aggregate financial systems, structure of financial markets, interaction of aggregate financial factors and policies and operations.

FIN 326 Public Finance - Theory and Practice (3) Financial management principles and practices of public, nonprofit organizations. Prerequisite FIN 320.

FIN 333 Insurance Principles and Practices (3) Life, casualty and property insurance.

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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.

Criminal Justice and Criminal Justice Management

Students enrolled in criminal justice or criminal justice management will obtain a Bachelor of Arts degree based upon a strong foundation in criminal justice and related studies. This type interdisciplinary study is designed to make students able 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 resource personnel. The program is generally concerned with nourishing a student body which possesses a sensitivity to the human and social condition, and particularly with the criminal justice system, coupled with the understanding and ability to constructively participate in the improvement of both.

The program concentrates on a comprehensive examination of the 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, the more effective organization and management of criminal justice resources, the development of planning and research methods to aid in the creation of new approaches, and the development of techniques to engender improvement and change where needed within institutions and agencies.

While all criminal justice and criminal justice management majors take 18 credits of core courses, they may choose to concentrate in management, law enforcement or corrections, with emphasis in one of 3 areas of professional development: managerial, behavioral or multidisciplinary.

The *managerial* area contains courses relating to accounting concepts, business law and other management courses. Students completing this concentration will be prepared for entry in a Master of Business Administration (MBA) program.

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 adviser to meet the student's individual needs from courses offered either in behavioral or managerial areas of concentration. Students completing a multidisciplinary study will not have completed prerequisites for entry into a UT Permian Basin masters program, but will have gained significant educational exposures into means of interacting with people and managing organizations.

The criminal justice and criminal justice management programs are 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

CRIMINAL JUSTICE AND CRIMINAL JUSTICE MANAGEMENT/76

having an interest in completing a bachelor's degree in this professional field.

Students completing a degree will complete the following core courses:

CJUS 300 Police in America	3
CJUS 301 Functions and Process of Criminal Law	3
CJUS 400 Criminal Justice Organization: Theory and Practice	3
CJUS 403 Criminal Justice Research, Planning and Innovation	3
CJUS 420 Corrections in America	3
CJMG 495 Criminal Justice Management Seminar	3
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SAMPLE DEGREE PLAN — CRIMINAL JUSTICE AND CRIMINAL JUSTICE MANAGEMENT*

Each student also must complete one of the following 12-credit areas of concentration:

MANAGEMENT		LAW ENFORCEMENT		CORRECTIONS	
CPSC 330	3	CPSC 330	3	CPSC 330	3
MNGT 360	3	MNGT 360	3	MNGT 360	3
MNGT electives	6	Electives	6	CJUS 421	3
				CJUS 422	3
	12		12		12

In addition, prospective graduates must complete one of the following 21-credit professional development areas:

MANAGERIAL		BEHAVIORAL		MULTI-DISCIPLINARY	
ACCT 310	3	ANTH 301	3	Courses to be selected by student from the managerial and behavioral areas or with the specific advanced approval of the adviser.	
Business Law	3	PSYC 311	3		
DSCI 301	3	DSCI 301	3		
Econ. Analysis	3	PSYC 315			
FIN 320	3	OR			
MNGT 310	3	PED 344	3		
MRKT 310	3	SOC 375 or 444	3		
		BVSC	6		
	21		21		21

An additional 9 credits of unrestricted electives are included in the degree program. Students may choose any UT Permian Basin courses or elective credit from lower-level programs to fulfill this requirement.

*Students should consult with their faculty advisers to develop specific degree plans, since plans may vary depending upon a student's goals and preparation.

COURSES IN CRIMINAL JUSTICE AND CRIMINAL JUSTICE MANAGEMENT

CJUS 300 Police in America (3) Ambivalent roles of law enforcement--order maintenance, protection of constitutional rights, enforcement, providing noncriminal services, and social services. Role conflict. Development of police as a subculture.

CJUS 301 Functions and Process of Criminal Law (3) Legislature and criminalization of conduct. Limits of criminal sanction. Evolution of substantive criminal law. Judiciary and policy formulation. Administration of criminal law.

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

CJMG 400 Criminal Justice Organization, Theory and Practice (3) Organizational environments, structures and practices of police, prosecutors, public defenders and defense attorneys, trial courts and correctional agencies. Application of management principles in these settings.

CJMG 403 Criminal Justice Research, Planning and Innovation (3) Criminal justice planning, philosophy and technique. Elements of scientific perspective. Analysis of published reports and studies to illustrate interaction between theory and practice.

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.

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

CJMG 495 Criminal Justice Management Seminar (3) A forum to integrate criminal justice coursework and theory with experience and field practices. Senior standing.

Economics

The economics program is designed to prepare economists as well as to serve other disciplines such as management, 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, however, 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.

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

SAMPLE DEGREE PLAN – ECONOMICS*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ECON 303	3	ECON 411	3	ECON 425	3	ECON 426	3
ECON 320	3	Minor Elective	3	ECON 415	3	ECON 423	3
DSCI 301	3	MNGT 340	3	Minor Elective	3	Minor Elective	3
ECON 322	3	Minor Elective	3	Minor Elective	3	Free Elective	3
Free Elective	3	Economics Elective	3	Free Elective	3	Free Elective	3
		Free Elective	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 ECONOMICS

ECON 303 Microeconomics (3) Underlying assumptions of rational consumer behavior. Expected actions of profit-motivated firms under perfect and imperfect competitive conditions.

ECON 314 Physical Distribution Management (3) Same as MRKT 314.

ECON 320 Labor-Management Relations (3) Same as MNGT 320.

ECON 322 Commerical Banking (3) Same as FIN 322.

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) Use of economic analytical tools to include demand, forecasting, resource allocation, cost and profitability analysis. Prerequisite: MNGT 340 or DSCI 630 or permission of instructor.

ECON 426 Managerial Economics II (3) Price and nonprice competition, long-range planning, capital budgeting, public and nonprofit agencies. Prerequisite: ECON 425.

Management

Students taking the program of study in management receive a broadly based general management education before specializing in an area of professional concentration. This assists graduates in preparing to meet the diverse challenges of personal as well as professional life.

Lower-level requirements have been spelled out in the introductory section to the College of Management. Upper-level requirements consist essentially of the following:

Basic Management Core 27 credits

Professional Concentration Core 12 credits

Opportunities for advanced work with emphasis in some of the subject areas will be provided consistent with the objectives and capabilities of the student and the College of Management. Available areas of emphasis including accounting, criminal justice management, decision science, economics, finance, management, marketing and in logistics/physical distribution.

Electives 21 credits

(9 credits must be in the College of Management)

Students may select additional, unconstrained electives, depending on the electives taken at the freshman and sophomore level.

SAMPLE DEGREE PLAN — MANAGEMENT*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ACCT 300	3	FIN 320	3	MRKT 314	3	MNGT 366	3
DSCI 301	3	MNGT 340	3	Concentration		College Elective	3
MNGT 360	3	College Elective	3	Electives	6	Concentration	
MRKT 310	3	ECON 300-400	3	Free Electives	6	Electives	6
College Elective	3	College Elective	3			Free Elective	3
		Free Elective	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 MANAGEMENT

MNGT 310 Manpower Management and Human Relations (3) Manpower management in organizations. Administrative problems in business including organization and structure, morale and motivation, power and authority, status and hierarchy.

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 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 360 Management Concepts and Organizational Theory (3) Fundamental concept of management including principles of administration, modern organization theory, goal-setting, leadership and decision-making.

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 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.

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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.

COURSES IN DECISION SCIENCE

DSCI 301 Introduction to Statistics (3) Areas of descriptive statistics, statistical inference, regression and correlation analysis. Prerequisite: demonstrate proficiency in algebra (should be taken prior to 400 level courses).

DSCI 302 Intermediate Statistics (3) Specialized hypothesis testing: ANOVA and Chi-Square. Statistical decision theory in its economic context. Prerequisite: DSCI 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.

COURSES IN MARKETING

MRKT 310 Marketing Management (3) Marketing-planning and decision-making as a business executive, utilizing the interactive elements of product, price, promotion and physical distribution. Prerequisite: knowledge of economic principles.

MRKT 311 Marketing Communications (3) Components of marketing communication including advertising, sales promotion, personal selling. Marketing aspects of public relations activities for consumer and industrial goods. Prerequisite: MRKT 310.

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. Prerequisites: MRKT 310 and 311.

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. Prerequisites: MRKT 310 and 311.

MRKT 414 Marketing Research and Information Systems (3) Behavioral sciences, research methods, social processes and structure influences upon marketing activities and their integration as a total system of marketing action. Prerequisites: MRKT 310, 311 and knowledge of basic statistics.

MRKT 415 Introduction to Marketing Models (3) Quantitative models in the design, implementation and adjustment of seller strategy. Market simulation, forecasting models, optimization models and dynamic programming. Prerequisite: MRKT 414 or equivalent.

MRKT 418 Business Logistics (3) Logistics/transportation 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.



SCIENCE and ENGINEERING

The College of Science and Engineering has programs leading to a Bachelor of Science degree in chemistry, computer science, control engineering, earth science, life science and mathematics. Programs leading to a Master of Science degree in control engineering and in life science are also available.

The college's goal is to provide an educational program that best serves each student's interests and abilities. Students work closely with faculty advisers to develop individualized plans of study around a core of basic offerings. Each curriculum has been carefully designed to ensure that each student develops the necessary professional competencies. These programs are reviewed regularly and are adjusted to keep them current with developments in the field.

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 integrate these varied activities to develop a composite program that is interesting, builds professional competencies and helps prepare students for professional practice or graduate study.

DEGREE REQUIREMENTS

In addition to general university requirements for the Bachelor of Science degree, specified on page 22, students must complete the college degree requirements for their respective degree programs.

Except for engineering, the Bachelor of Science degree in the College of Science and Engineering requires a minimum of 120 credits including a minimum of 24 semester-hour credits in the major field and a minimum of 18 semester-hour credits in the minor field or a distributed minor. Control engineering and earth science—professional geology option require a minimum of 128 semester hours of credit, and the earth science—technical geology option requires 140 semester hours of credit (72 lower division, 68 upper division). Students who are working for secondary teacher certification generally require two discipline fields of at least 24 semester hours of credit each, 12 each of which must be upper division. Specific requirements depend upon the student's study areas and educational objectives. 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 or Community College Preparation

The Core Curricula for Public Junior Colleges in Texas (located immediately before the index in this catalog) 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

COLLEGE OF SCIENCE AND ENGINEERING/84

of courses. Students planning to transfer to UT Permian Basin in life science, earth science, chemistry, computer science, mathematics and engineering should have completed the following required courses, and appropriate recommended and specifically required courses for students' major and minor fields.

Subject	(Semester Credits)	
	Required	Recommended
English Composition	6	-
Literature ^{2,3}	6	-
Government, American ^{1,2}	6	-
History, American ^{1,2}	6	-
Life Science ²	-	8
Physical Science ²	-	8
Fine Arts/Humanities ²	-	3
Psychology ²	-	3
Sociology or Anthropology ²	-	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

³ In engineering and earth science-technical geology options, 3 credits are required

For specialized degree programs in the College of Science and Engineering, there are specific lower-level courses, in addition to those listed above, that are required or highly recommended for completion prior to transferring to UT Permian Basin. If 60 semester credits have been completed and some required courses are lacking, students are admitted to UT Permian Basin and may complete those courses concurrently at a community college.

PROGRAMS OF STUDY

Primary areas of concentration or majors within the college are chemistry, computer science, earth science, control engineering, life science and mathematics. The college also offers courses in physics as needed to support these areas of concentration or majors. Students may develop their own interdisciplinary programs with the counsel of faculty advisers. Program variations are possible within the degree programs of the college.

Students are expected to include a minimum of 3 credits of authentic involvement in their degree program. An authentic experience — working in real-life conditions and constraints involving oral and written communications, project planning and organization — is inherent in this approach. UT Permian Basin provides adequate supervision and consultation in coordination with the cooperating organization to ensure that students gain appropriate experience and produce a credible study.

Within the following disciplines, some subjects are listed with variable credits. This is to provide the necessary versatility for developing individualized plans of study to satisfy the student's educational objectives. For example, students requiring 5 credits of calculus for entrance into a specific health career can have programs designed so they meet exact requirements rather than taking two 4-credit courses for a total of 8 credits.

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 incorporates 2 course selection plans (A and B) which indicate chemistry requirements for the BS degree. The 2 plans differ in that Calculus I and II should be completed at the lower level for plan B as these are prerequisites for the 11-hour physical chemistry sequence which begins only in the fall. Flexibility for the extra hours in math at the lower level should be accommodated by taking fewer hours in literature and history.

Lower-level requirements may be satisfied by examination (CLEP), successful completion of the courses listed or by completion of more advanced courses. Students who plan to transfer to an upper-level institution should avoid taking more than 60 credit hours at the lower level.

Students planning to enter UT Permian Basin chemistry program should have the following lower-level preparation:

Required Courses:	(Semester Hours)	
	Plan A	Plan B
General inorganic chem (with labs)	8	8
Organic chemistry (with labs)	8	8
Physics (with labs)	8	8
English composition	6	6
Government, federal & state	6	6
Math: Algebra & trig or Precalculus I & II	6	6
Math: Calculus I & II	-	6
Literature*	3	-
History, U.S. & Texas*	6	3
Second major or minor courses if other than above (i.e., biology, geology, etc.)	6-8	6-8
Electives to total 60 hours	1-3	1-3
Total	60	60

*6 hours each of literature and history are required in the BS degree program; these may be taken at UT Permian Basin.

The following courses form the core requirements for students desiring a BS degree in chemistry from UT Permian Basin:

Course	Plan A	Plan B
General & Inorganic	8	8
Organic	8-10	8-10
Analytical	4	4
Physical (short sequence)	3	-
Physical	-	11
Research	1-6	1-6
Seminar	1	1
Advanced selections	6	9
Total (minimum)	32	42

The **Plan A** course sequence is designed for the student pursuing a BS degree with a "double major" such as students interested in secondary education, pre-medical, pre-dental, allied health and (chemical) engineering. After completion of the core requirements, students select any two advanced (400 level) chemistry courses. However, *chemistry and engineering "double majors" should take the 11-hour physical chemistry sequence* rather than the 3-hour physical chemistry course listed and the 2 advanced course electives that are listed. Since biochemistry and medicinal chemistry are encountered in depth in medical and dental schools, these are recommended as the advanced electives for pre-professionals.

Plan B follows the guidelines of the American Chemical Society for an approved BS degree in chemistry. After completion of the core requirements, students select 3 or more advanced (400 level) courses. Depending on one's goals and interests, a student may elect to take multiple hours of credit for research up to a maximum of 6 hours. Special scholarships (up to a maximum of \$2,400 per year) are available to chemistry students enrolled in research.

For completion of a minor in chemistry, students must complete the first four-course sequences listed in Plan A. Although this requires about 23 hours, the inherent 6 lecture courses makes this equivalent with an 18 hour - 6 lecture requirement for a minor in other disciplines.

SAMPLE DEGREE PLAN A – CHEMISTRY*

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	1-2	CHEM 395	1-2	2nd Major	3	CHEM 451	3
CPSC 330	3	LIT	3	Electives	8	2nd Major	3
2nd Major	6	2nd Major	6			Electives	6
	14-15		15-16		15		14

SAMPLE DEGREE PLAN B – CHEMISTRY*

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 474	3	CHEM 398	1
CHEM 400	1	CHEM 404	2	CHEM 395	3	CHEM 451	3
CHEM 401	3	CPSC 330	3	HIST	3	Minor	3
CHEM 403	2	LIT	3	Minor	3	Electives	5
LIT	3	Minor	3				
Minor	3						
	16		16		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 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 occurring and biologically important compounds. Prerequisite: CHEM 311. Co-requisite: CHEM 314.

CHEM 313 Experimental Organic I (3) Techniques of separation, purification, synthesis and an introduction to instrumental (IR, NMR, RI, GLC) identification of organic compounds of general and consumer interest. Corequisite: CHEM 311.

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- 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 (1-6)** 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 algebra. Corequisite: CHEM 361. 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 303, 366.
- CHEM 402 Physical Chemistry II (3)** Kinetics, quantum mechanics, bonding and molecular spectroscopy. Prerequisite: CHEM 361. Corequisite: CHEM 367.
- 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 361.
- CHEM 404 Experimental Physical Chemistry II (2)** Continuation of CHEM 366. Prerequisite: CHEM 366. Corequisite: CHEM 362.
- 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)** After a brief historical development of medicinal chemistry and pharmacognosy, commonly used methods of drug design are interspersed. Prerequisites: CHEM 312, 314.
- 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 362.

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 360 or 361 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 374.

Computer Science

Computer science studies are interdisciplinary encompassing the fields of computer science, mathematics and management. These studies are designed for students interested in gaining a broad knowledge of the computer and developing an ability to design and analyze software systems for use in scientific and business applications.

Plans of study will be tailored to satisfy student's career objectives. Two basic plans, each leading to a Bachelor of Science degree, are available — one scientific and one business oriented. The scientific option is oriented toward the inner workings of computer systems and programming languages. The business option is oriented toward the design, specification and construction of information processing systems. Both programs share a set of foundation studies, including CPSC 310, 315 and 320.

Admission to the computer science program presumes students have the equivalent of an introductory course in computer sciences and data processing and familiarity with at least one programming language. Before graduating, students are required to demonstrate the ability to use both a scientific and business-oriented programming language. Most students elect to fulfill this requirement with FORTRAN and COBOL. A major program in computer science requires a minimum of 24 semester credits of computer science courses in addition to basic programming courses.

A variety of alternatives for computer science as a minor is possible. Specific courses recommended depend upon the major and the student's interests. Students having knowledge of a programming language and having completed an introductory course in computer science or who have completed CPSC 330 are eligible to enroll in the other computer science courses.

In addition to the lower-level coursework outlined for the College of Science and Engineering, students majoring in computer science are required to complete the following coursework:

Calculus (Differential and Integral)	6 credits
Introduction to computer science	3 credits
Computer programming	3-9 credits
Minor field of study	6 credits

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The 3rd- and 4th-year requirements consist essentially of five parts:

Computer Science Core **9 credits**

Core courses consist of: CPSC 310, 315 and 320.

Advanced Study **9-12 credits**

Three courses to be selected from the following: CPSC 333, 340, 350, 360, 370, 389, 420, 430, 440, 450 and 460.

Authentic Involvement **3-6 credits**

Math Support **6 credits**

Two courses from the following: MATH 301, 310, 315 and 330.

Electives **0-24 credits**

SAMPLE DEGREE PLAN – COMPUTER SCIENCE*							
JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
CPSC 315	3	CPSC 310	3	CPSC	3	CPSC	3
CPSC 320	3	MATH	3	CPSC	3	Authentic	
MATH	3	Courses in Minor	6	Courses in Minor	6	Involvement	3
Electives	6	Applications	3	Elective	3	Course in Minor	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 COMPUTER SCIENCE

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. Includes addressing, interrupts, channel controller, multi-programming and multiprocessing.

CPSC 320 Data Structures (3) Computer storage and data retrieval. Data structures include linear lists, linked lists, pushdown stacks, queues, deques, graphs and trees.

CPSC 330 Problem-Solving Using Computers (3) Problem analysis and the formation of algorithms for problem solution. Program in either FORTRAN, COBOL or Basic. Open to all students. (It cannot be used as part of a major program in computer science).

CPSC 333 Information Storage and Retrieval (3) Design and implementation of hardware and software systems for data handling in large file applications. Computer use in business application.

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 (1-3) Same as ENGR 350.

CPSC 360 Programming Languages (3) Characteristics of programming languages and applications. Programming languages for digital computers including FORTRAN, PL/1, SNOBOL

and Basic. Prerequisite: working knowledge of one procedure-oriented language or CPSC 330.

CPSC 370 Advanced Computer Programming (3) Modular programs using structured programming techniques. System library and utility programs with job-control language. Prerequisite: working knowledge of one procedure-oriented language or CPSC 330.

CPSC 420 Numerical Analysis (1-3) Same as MATH 420.

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 minicomputers 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. Prerequisite: CPSC 310.

Earth Science

Studies in earth science leading to a Bachelor of Science degree prepare students for graduate work and for careers in secondary school teaching, in the petroleum or mining industries, and in a variety of interdisciplinary activities. Programs of study leading to a Bachelor of Science degree consist of 36 or more semester credits in earth science (upper and lower levels). Students seeking certification in earth science as a second teaching field and those in interdisciplinary studies may complete the minimum of 24 credits.

Three plans are available: (1) a Bachelor of Science in earth science, general plan, primarily for those who plan to teach earth science in high school or who desire a knowledge of earth science but who do not wish to practice actively the profession of geology, (2) a Bachelor of Science in earth science, professional geology plan, primarily for those who wish to practice the profession of geology and/or seek additional education in graduate school and (3) a Bachelor of Science in earth science, technical geology plan, primarily for those who wish to work as applied (exploration, production or engineering) geologists in the petroleum, mining or construction industries or related activities. Plan 3 also provides an adequate foundation for graduate school.

Independent study and authentic-involvement activities are strongly encouraged. Classroom instruction is supplemented by participation in actual job situations and field experience. Earth science majors must complete a field geology course before graduation. This course (ERSC 469) is offered yearly in the first summer session, and ideally should be taken between the junior and senior years, following completion of the necessary prerequisites.

Interdisciplinary areas of concentration such as earth science and life science, chemistry or physics are available to students interested in areas such as paleontology, mineralogy, geochemistry and geophysics. Such programs are planned in consultation with the appropriate faculties. Supporting clusters of studies for students concentrating in earth science might include work in life science, physics, mathematics, chemistry, computer science, management and anthropology and archaeology.

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In addition to the general lower-level coursework outlined earlier for the College of Science and Engineering, the following reveals more specific lower-level preparation for the various degree plans:

For the Bachelor of Science in earth science, general plan:

Subject	Semester Hours
<i>Required</i>	
General inorganic chemistry	8
Geology (physical and historical)	6-8
Trigonometry	3
<i>Recommended</i>	
Physics (engineering physics recommended)	8
Calculus	6
Statistics	3
Biology (for those interested in paleontology)	6
Geomorphology	3

For the Bachelor of Science in earth science, professional geology plan:

Subject	Semester Hours
<i>Required</i>	
Analytical geometry	3
Calculus	9
Engineering physics	8
Inorganic chemistry	8
Physical geology	3-4
Historical geology	3-4
Geomorphology	3
<i>Strongly Recommended</i>	
For those desiring to specialize in paleontology:	
biology	8
For those desiring to specialize in petroleum geology:	
organic chemistry	6-8
For those desiring to specialize in geophysics or physical geology:	
3rd semester engineering physics,	4
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
Scientific computer program (FORTRAN)	3

For the Bachelor of Science in earth science, technical geology plan:

Subject	Semester Hours
<i>Required</i>	
Analytical geometry	3
Calculus	9
Inorganic chemistry	8
Engineering physics	12
Scientific computer programming (Fortran)	3
Graphics	2
Statics	3
Dynamics	3
Physical geology	3-4
Historical geology	3-4
Geomorphology	3

For all three plans, the upper-level earth science core curriculum requirements are: ERSC 303, 304, 305, 306, 307, 308, 309 and 469. In addition to the university requirement of an overall minimum GPA of 2.0 (C average), a minimum GPA of 2.0 is required in all earth science coursework. Students seeking teacher certification must complete a minimum of 24 semester credit hours to include: physical and historical geology, ERSC 305, 307, 309, 314 and 323 plus the requirements set forth by pedagogical studies.

Students minoring in earth science are required to have physical and historical geology as well as ERSC 307, 314 and 323 plus one additional upper-level earth science course.

EARTH SCIENCE – GENERAL DEGREE PLAN***JUNIOR YEAR**

First Semester	Second Semester	Summer Semester
ERSC 303 4	ERSC 304 3	ERSC 469 6
ERSC 305 3	ERSC 306 3	
ERSC 307 4	ERSC 308 3	
ERSC 309 3	Courses in Minor 6	
Technical Writing or elective† 3		
17	15	6

SENIOR YEAR

First Semester	Second Semester
Science elective 3	ERSC elective 6
ERSC elective 3	Science elective† 3
Elective 3	Electives 6
Courses in Minor 6	
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. In addition to the earth science courses, a minor of 18 semester credit hours is required (12 credits must be upper level), preferably in a supporting science area.

†A mathematics, physics, chemistry, life science, engineering or biology course to support the student's earth science interest.

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EARTH SCIENCE – PROFESSIONAL GEOLOGY DEGREE PLAN*

JUNIOR YEAR			
First Semester		Second Semester	Summer Semester
ERSC 303	4	ERSC 304	3
ERSC 305	3	ERSC 306	3
ERSC 307	4	ERSC 308	3
ERSC 309	3	Econ/MGMT	3
Technical Writing	3	Courses in Minor	3
	17		15
			6

SENIOR YEAR			
First Semester		Second Semester	
ERSC 417	3	ERSC 424, 426 or 428	3
ERSC 331 or 375	3	ERSC free elective	3
ERSC 423 or 425	3	Courses in Minor	9
Courses in Minor	6		
	15		15

In addition to the required earth science courses, a distributed minor is required, with an approved combination of mathematics, physics, chemistry and/or biology totalling at least 18 upper-level credits.

EARTH SCIENCE – TECHNICAL GEOLOGY DEGREE PLAN*

JUNIOR YEAR			
First Semester		Second Semester	Summer Semester
ERSC 303	4	ERSC 304	3
ERSC 305	3	ERSC 306	3
ERSC 307	4	ERSC 308	3
ERSC 309	3	ENGR 331	3
Technical Writing	3	ENGR 310 or 330	3
	17		15
			6

SENIOR YEAR			
First Semester		Second Semester	
ERSC 417	3	ERSC 376	3
ERSC 375	3	ERSC 424, 426 or 428	3
ERSC 423 or 425	3	ENGR 322	3
ENGR 330 or 310	3	Humanities electives	6
ENGR ECON/MNGT	3		
	15		15

The requirements for a minor are satisfied by the required engineering, economics and technical writing courses, which total 18 semester credit hours.

COURSES IN EARTH SCIENCE

ERSC 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. For nonmajors.

ERSC 302 Geomorphology (3) Surface features of the globe, their form, nature, origin, and development and the changes they are undergoing.

ERSC 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 (recommended).

ERSC 304 Petrology (3) Study of the characteristics, identification in hand specimen, distribution, and origin of igneous, sedimentary and metamorphic rocks. Prerequisite: ERSC 303 or equivalent.

- ERSC 305 Structural Geology (3)** Principles of structural geology, including theory of rock behavior under stress, and descriptions of major structural features. Prerequisite: High school or college trigonometry.
- ERSC 306 Optical Mineralogy (3)** Optical crystallography and identification of minerals using the polarizing microscope. Prerequisites: ERSC 303 or equivalent; one year of college physics, including optics.
- ERSC 307 Introduction to Paleontology (4)** History and evolution of life based on fossil evidence.
- ERSC 308 Stratigraphy (3)** Principles of stratigraphy and correlation problems. Emphasizes the stratigraphic and paleotectonic development of North America.
- ERSC 309 Sedimentology (3)** Processes of weathering, transportation and deposition; characteristic attributes of the more important types of sedimentary rocks.
- ERSC 314 Minerals and Rocks (3)** Rock-forming minerals and common igneous, metamorphic and sedimentary rocks. Includes laboratory. Not for earth science majors.
- ERSC 322 Oceanography (3)** Geological, physical, chemical and biological aspects of the marine environment. Nature of the ocean bottom and process of marine erosion and deposition.
- ERSC 323 Environmental Geology (3)** Relationships of earth science to human problems and the environment, especially geological problems associated with mass urban growth. Not for earth science majors.
- ERSC 331 Paleocology (3)** Principles, concepts and techniques of environmental analysis and interpretation of marine and terrestrial fossil ecosystems. Prerequisite: ERSC 307
- ERSC 340 Mineral Resources (3)** Geology, origin and general economics of mineral and fuel deposits. Prerequisite: ERSC 304.
- ERSC 375 Geophysics (3)** Gravitational, magnetic, thermal, electromagnetic and seismic properties of the solid earth. Emphasizes seismic methods relative to petroleum exploration. Prerequisite: ERSC 305.
- ERSC 376 Geochemistry (4)** Geologic and chemical processes that produced the observed distribution and abundances of the elements. Prerequisite: ERSC 304.
- ERSC 401 Skeletal Petrography (3)** Identification of skeletal particles as seen in thin-section. Prerequisites: ERSC 306, 307.
- ERSC 403 Carbonate Petrology (3)** Description and classification of carbonate rocks. Recrystallization, diagenesis and porosity formation. Prerequisite: ERSC 306.
- ERSC 410 Micropaleontology (3)** Microscopic study of fossils and principles underlying their use relative to correlation problems. Emphasizes fossil groups recoverable from well drill cutting. Prerequisite: ERSC 307.
- ERSC 412 Carbonate Depositional Environments (3)** Modern carbonate depositional environments emphasizing their sedimentary and paleontological characteristics. Prerequisites: ERSC 307, 309. Strongly recommended ERSC 403.
- ERSC 414 Clastic Depositional Environments (3)** Physical nature of modern and ancient siliclastic deposits emphasizing interpolation of ancient depositional analog. Prerequisite: ERSC 309.
- ERSC 415 Plate Tectonics (3)** Tectonic forces that have been responsible for redistribution of major portions of the earth's crust. Prerequisite: ERSC 305.
- ERSC 417 Petrography (3)** Description, classification and origin of igneous, metamorphic and sedimentary rocks. Laboratory course utilizing thin sections and the polarizing microscope. Prerequisite: ERSC 304, 306.

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ERSC 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: ERSC 304.

ERSC 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: ERSC 304, 305, 306, 417.

ERSC 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: ERSC 305, 308, 309.

ERSC 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: ERSC 305; 375, 425 recommended.

ERSC 428 Petroleum Geology (3) Origin, nature, migration and accumulation of petroleum; (origin, comparison with) coal and oil shale; exploration for and exploitation of mineral fuel deposits. Prerequisites: ERSC 305, 307, 308, 309.

ERSC 455 Subsurface Methods in Petroleum Geology (3) Methods employed in the subsurface search for petroleum. Prerequisite: ERSC 305. Recommended: ERSC 428.

ERSC 456 Texas Geology (3) Geologic history of Texas supplemented with field trips to some unique geologic features that occur within Texas.

ERSC 457 Volcanology (3) Volcanos and volcanic rocks. Prerequisites: ERSC 304, 305.

ERSC 469 Field Geology (6) Field techniques for systematic geologic mapping utilizing topographic maps. Prerequisites: ERSC 304, 305, 307, 308.

ERSC 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 ERSC 301: (Excursions in Geology), ERSC 314 (Minerals and Rocks) and ERSC 323 (Environmental Geology).

Engineering

Students in engineering at UT Permian Basin receive the Bachelor of Science degree with a major in control engineering. Recently designed as a separate discipline, control engineering requires expertise in analyzing and designing automatic control systems. Used for years in industry and in consumer products, control systems improve performance, increase productivity, reduce costs, minimize human effort and accomplish otherwise nearly impossible tasks. A few modern examples include automobile speed control, automatically controlled machine tools or assembly machines in manufacturing, environmental control in large buildings, all-weather flight control systems for aircraft, and computer control of chemical plants. Design of individual components in these systems is usually the role of engineers from the traditional disciplines. Bringing these components together to form a coherent, functional, high-performance system is the role of the control engineer.

In addition to basic courses in engineering science, students study input-output characteristics of individual system components and how to analyze the overall effects of a combination of such components. The design component of the engineering program provides instruction in the design of automatic control systems together with actual equipment experience. The authentic-involvement component

of the program includes student participation in team solutions of real-life industrial problems which begins the transition from classroom to professional practice.

Control engineering students desiring to concentrate on a particular segment of industry may select elective courses that will improve their understanding of systems in an appropriate area. For example, these might be in chemical processing, mechanical systems or electronics.

The Bachelor of Science degree with a major in control engineering requires a minimum of 128 semester credits. The engineering major requires 51 semester credits of which 20 semester credits are electives and 18 semester credits must be at the upper level. Students work closely with faculty advisers in developing a degree plan tailored to their specific interests, goals and background preparation. To help in identifying courses for planning, all engineering courses numbered 300-350 and 400-450 are engineering science, and those numbered 351-399 and 451-499 are engineering design. Engineering students also are required to earn grades of C or better in all courses applicable to the degree.

In addition to the lower-level coursework outlined in the general College of Science and Engineering section, students majoring in engineering are required to complete the following lower-level coursework:

Subject	Semester Hours
Inorganic Chemistry	8
Graphics	2
Engineering Physics	8
Scientific Computer Programming (FORTRAN)	3
Statics	3
Dynamics	3
Calculus (I, II, III)	9
Differential Equations	3

Students are encouraged to contact UT Permian Basin engineering faculty concerning questions regarding career opportunities, degree requirements, degree status, etc.

SAMPLE DEGREE PLAN – ENGINEERING*

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
ENGR 310	3	ENGR 331	3	ENGR 332	3	ENGR 481	4
ENGR 322	3	ENGR 340	3	ENGR 392	3	ENGR 492	3
ENGR 330	3	ENGR 350	3	ENGR 480	4	Electives	9
ENGR 385	3	ENGR 380	3	Electives	6		
Technical electives	6	Electives	6				
	18		18		16		16

(Part-time students will take the same courses over a longer period of time.)

*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 ENGINEERING

ENGR 302 Introductory Systems Laboratory I (2) Lab using general purpose instruments, stressing fundamental principles and components in the electrical, mechanical, fluid and thermal fields. Prerequisites: Physics I, II, Calculus I, II and differential equations.

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- ENGR 303 Introductory Systems Laboratory II (2)** Continuation of ENGR 302. Culminates in elementary control system studies. Prerequisite: ENGR 302.
- ENGR 308 Static Equilibrium of Mechanical Systems (3)** Analysis of mechanical systems using equations of static equilibrium. Prerequisites: Physics I, Calculus I, II.
- 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 or ENGR 308. 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, mohr's circle. Prerequisite: Statics.
- ENGR 311 Materials Selection and Failure Analysis (2-4)** Properties of engineering materials, selections of materials for specific applications, specification of heat treatment and failure analysis. Prerequisites: Chemistry I, II, Statics or ENGR 308.
- 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. Prerequisites: Physics II, Calculus II, Differential equations.
- 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. Prerequisites: Physics I, II; Chemistry I, II; Calculus III.
- 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. Prerequisite: ENGR 330.
- 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: 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 309, 322, 330, MATH 419. Concurrent enrollment in ENGR 350 is expected.
- ENGR 341 Engineering Systems Analysis II (3)** Continuation of ENGR 340 to include nonlinear and distributed parameter systems, identification methods and chemical systems. Prerequisites: ENGR 340, 350.
- ENGR 346 Stress Analysis of Systems (3)** Stress analysis in engineering structures and design of load-bearing members emphasizing analyses pertinent to active control of static and dynamic stresses. Prerequisite: ENGR 309, 340, 350, MATH 419.
- ENGR 349 Interaction of Technology and Society (3)** Historical and current actions and consequences resulting from the interrelationships of technology and social needs. Meets applied course requirements for art and science majors.
- 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, scientific programming. 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 385 Project Management (4)** Manpower and resource allocation, personnel management, scheduling and organizational strategies for engineering projects.
- ENGR 390 Economic Evaluation (3)** Theory and application of economic principles in engineering decision processes.
- ENGR 395 Analytical Decision Processes (3)** Optimization methods, linear programming and hill climbing techniques.
- ENGR 400 Energy Systems (3)** Effects of energy availability, distribution and consumption upon the political, social and technical communities.
- ENGR 401 Pollution Control (3)** Interacting efforts of the political, social and technical communities in various aspects of environmental degradation and control: past, present and future.
- ENGR 412 Mechanisms (3)** Analysis and synthesis of mechanical motion transmission and motion generating systems. Prerequisite: ENGR 309 or Dynamics.
- ENGR 430 Thermodynamics II (3)** Application of thermodynamic principles, including multi-component systems. Free energy and equilibrium applied to systems involving mixtures and solutions, phase change and chemical reaction. Prerequisites: ENGR 330, MATH 419.
- 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 Corequisite: 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 444 Fluid Power Systems (3)** Theory and application of fluid systems in automation, control and power equipment. Prerequisites: ENGR 331, 340.
- 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 and Optimal Control (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.

Life Science

Life science coursework applies to the Bachelor of Science degree with a major in life science, to a minor in life science in the first and second teaching fields or as electives in other degree programs. Life science programs 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 chemistry, earth science, psychology, anthropology, physical education and the behavioral sciences.

In addition to the lower-level coursework outlined in the general section for the College of Science and Engineering, students majoring in life science should com-

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plete the following lower-level coursework.

Subject	Semester Hours
Inorganic Chemistry	8
Biology	8
College Algebra (or equivalent)	3

Pre-professional students in the health professions should review that portion of this catalog to ensure completion of specific requirements. Students who desire to use life science as the minor field of study should complete the equivalent of 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.

SAMPLE DEGREE PLAN A – LIFE SCIENCE* PRE-PROFESSIONAL STUDIES

For students planning to enter graduate school or professional schools (medicine, dentistry, veterinary, medical technology and other health professions). The pre-professional plan for majors includes a minimum of 36 semester credits in the major with at least 24 credits of upper-level courses including LFSC 440, 441 and 442 and 4 laboratory courses. One year of organic chemistry is recommended prior to enrollment at UT Permian Basin. A sample degree plan follows:

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
LFSC 352 and 353	4	LFSC 330	4	LFSC 398	1	LFSC 440 and 441	4
LFSC elective	4	LFSC 300	4	LFSC 420 and 421	4	CHEM 360	3
Electives	9	Electives	9	LFSC 442	3	Electives	10
				LFSC 489 or 492	3		
				Electives	6		
	17		17		17		17

SAMPLE DEGREE 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 343 or 440, 442 and 398 are required. Students desiring secondary certification must include one semester of organic chemistry with laboratory. A sample degree plan follows:

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
LFSC 343	3	LFSC 330	4	LFSC 398	1	LFSC 302	3
LFSC 350 and 351	4	LFSC 300	4	LFSC 352 and 353	4	LFSC 472 and 473	4
NTSC 301	3	Electives	9	LFSC 442	3	Electives	10
Electives	7			Electives	9		
	17		17		17		17

SAMPLE DEGREE 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. A typical sample follows:

JUNIOR YEAR				SENIOR YEAR			
First Semester		Second Semester		First Semester		Second Semester	
LFSC 343	3	LFSC 330	4	LFSC 398	1	LFSC 472 and 473	4
LFSC 350 and 351	4	LFSC 300	4	LFSC 442	3	LFSC 302	3
NTSC 301	3	NTSC 302	3	Electives	13	LFSC 356 and 357	4
Electives	7	Electives	6			Electives	6
	17		17		17		17

*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 LIFE SCIENCE

LFSC 300 Microbiology (4) Growth, morphology, metabolism and genetics of bacteria and related organisms.

LFSC 303 Contemporary Human Health (3) Biological basis of major health problems, diseases, nutrition, exercise, environment.

LFSC 330 Plant Morphology (4) Structure, development, reproduction and relationship of the major plant groups. Prerequisite: One course in biology.

LFSC 343 Human Genetics (3) Mechanism of human traits of inheritance. Primarily for non-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 of biology.

LFSC 351 Human Anatomy and Physiology Laboratory (1) Anatomy of the human and cat. Corequisite: LFSC 350.

LFSC 352 Animal Physiology (3) Development, function and mechanism of action of the major physiological systems in animals. Prerequisite: 8 credits of general biology; 8 credits of general chemistry.

LFSC 353 Animal Physiology Laboratory (1) Experiments and demonstrations of physiological phenomena.

LFSC 354 Vertebrate Biology (3) Classification, phylogeny, and natural history of vertebrates. Emphasizes the vertebrates of West Texas. Prerequisite: 8 credits of general biology.

LFSC 355 Vertebrate Biology Laboratory (1) Biosystematic analysis of vertebrates. Corequisite: LFSC 354.

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.

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- LFSC 398 Life Science Seminar (1)** Interactive small group discussions of varied topics in life science.
- LFSC 400 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 401 Virology (3)** Nature, identification, structure, replication and biological importance of animal, plant and bacterial viruses. Prerequisite: LFSC 300; one semester of organic chemistry. Offered alternate years.
- LFSC 420 Cell Biology (3)** Structure, function and integration of cell components. Prerequisite: one semester of organic chemistry.
- LFSC 421 Cell Biology Laboratory (1)** Quantitative experiments and techniques in the study of cellular activities. Pre- or Corequisite: LFSC 420.
- 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)** Structure and function of hereditary material, emphasizing recent developments. Pre- or Corequisite: one semester of organic chemistry.
- LFSC 441 Laboratory in Genetics (1)** Laboratory experiences in manipulating genetic materials and the interpretation of data. Pre- or Corequisite: course in genetics or LFSC 440.
- LFSC 442 Evolution (3)** Population variation and mechanism of evolution and speciation. Prerequisite: 8 credits of biology.
- 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 472 Ecology (3)** Analysis of the principles of population and community ecology. Prerequisites: 8 credits of biology and 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.

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 (biology, chemistry, etc.)	6-8
Scientific Computer Programming	3
Differential and Integral Calculus	6

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. Students seeking elementary teaching certification will have a program similar to that described for the second teaching field at the secondary level.

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, foundations of arithmetic and informal geometry.

MATH 301 Statistics (1-3) 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 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 (1-3) Vectors and vector spaces, matrices and linear transformations, eigenvalues, eigenvectors and canonical forms and their applications.

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- 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 (1-3)** Limits, derivatives, graphs of functions of single variables. Applications to optimization and related rate problems.
- MATH 319 Elements of Integral Calculus (1-4)** Integral calculus of a function of single variables. Transcendental functions. Applications to areas, volumes and arc length.
- MATH 320 Calculus of Several Variables (1-3)** 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 and Laplace transform methods and systems of linear differential equations with applications. Prerequisite: multivariable calculus.
- MATH 350 Topics in Geometry (3)** Cross ratio, elementary transformations and other topics of modern geometry. Euclidean constructions introduction to non-Euclidean geometries.
- MATH 360 Intermediate Analysis (3)** Limits, continuity and uniform continuity, derivatives, integrals and mean value theorems.
- MATH 401 Probability and Statistics (1-3)** 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, 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 (1-3)** Ordinary and partial differential equations, including special functions, transform methods, Fourier series and calculus of variations. Prerequisite: MATH 330.
- MATH 420 Numerical Analysis (1-3)** 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 (1-3)** 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.

Physics

The following courses in physics are offered to meet the needs of students enrolled in other degree programs.

COURSES IN PHYSICS

PHYS 300 Physical Science I (3) Newton's laws of motion, electricity and magnetism, the physical earth, structure and properties of matter, the universe and its structure. For nonscience majors.

PHYS 301 Physical Science II (3) Properties of nuclei and atoms, atomic classifications, laws of motion of microscopic systems, simple molecular systems, combinations of atoms and properties of particles. For nonscience majors.

PHYS 309 Intermediate Mechanics (3) Dynamics, central force problems, rigid body dynamics, oscillations, systems of particles, moving coordinate systems and Lagrangian Mechanics. Prerequisites: 12 credits of lower-level physics, MATH 320, 330.

PHYS 310 Intermediate Electricity and Magnetism (3) Vector analysis, electrostatics, boundary value problems, dielectric materials, magnetostatics, electromagnetic induction, magnetic properties of matter, electric currents and Maxwell's equations. Prerequisites: 12 credits of lower-level physics, MATH 320, 330.

PHYS 320 Optics (3) Foundations of geometrical optics, interference, coherence, diffraction, the electromagnetic nature of light, polarization and holography. Prerequisites: MATH 320 or 330 or consent of instructor.

PHYS 330 Acoustics I (3) Particle vibration theory, plane waves in air, multidimensional waves, interference patterns, diffraction, acoustic impedance, waves in different gases, liquids and solids. Prerequisites: 12 credits or lower-level physics. MATH 320, 330.

PHYS 340 Thermodynamics (3) Work, heat, the first and second law of thermodynamics, entropy, enthalpy, free energy with thermodynamic potentials and applications. Prerequisites: 12 credits of lower-level physics, MATH 320 or 330.

PHYS 345 Advanced Laboratory (3) Experiments including: acoustical measurements, electromagnetic studies, atomic spectra, optics, etc. Prerequisite: 9 credits of upper-level physics; PHYS 362 may be taken concurrently.

PHYS 358 Acoustics II (1-6) Simple harmonic motion through electromagnetic waves to Fourier transforms, nonlinear oscillations, stationary waves, vibrating sources and reflection and absorption of sound waves. Prerequisite: PHYS 330.

PHYS 360 Introduction of Quantum Mechanics (3) Historical development of quantum mechanics, the Schrodinger representation, ordinary and spin angular momentum, the Heisenberg representation, elementary perturbation and scattering theory. Prerequisites: PHYS 309, 310.

PHYS 362 Elements of Modern Physics (3) Special relativity, relativistic kinematics, review of quantum mechanics, atomic structure, elementary nuclear structure and reactions and high energy elementary particle physics. Prerequisite: PHYS 360.

PHYS 398 Physics Seminar (3) Students select topics of current interest to research groups and present this material to the seminar. Prerequisite: senior standing and instructor's permission.

PHYS 400 Advanced Dynamics (3) Lagrangian Mechanics, the variational principle. Hamilton's equations of motion with applications and the Hamilton-Jacobi theory. Prerequisites: senior standing, PHYS 309, 310.

PHYS 419 Mathematical Methods of Physics (3) Varying topics selected from: Fourier Series and boundary value problems, linear vector spaces, Green's functions, orthogonal functions, eigenvalue problems, calculus of variations. Prerequisite: instructor's permission.

PHYS 420 Introductory Solid State Physics (3) Crystal structure and diffraction, reciprocal lattice, crystal binding, phonons and lattice vibrations, energy bands and the Fermi model of a free electron gas. Prerequisite: PHYS 360 and consent of instructor.

PHYS 430 Elements of Nuclear Physics (3) Nuclear sizes and shapes, binding energies, the two-

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nucleon system, nuclear models, nuclear reactions, scattering radioactivity, beta decay, gamma decay and particle accelerators. Prerequisites: PHYS 360, 362 and consent of instructor.

Natural Science

This is an integrated 2 semester course designed to emphasize the contemporary aspects of biology, chemistry and physics while minimizing the distinction between the disciplines. Stressed throughout the courses is:

- 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.

This course is designed as a terminal science course for nonscience majors and is recommended as an elective for science majors. It may be used to satisfy the physical and biological requirements for graduation as well as the science requirements for teacher certification.

COURSES IN CONTEMPORARY NATURAL SCIENCE

NTSC 301, 302 Contemporary Natural Science I, II (3, 3) World population trends and associated environmental problems; life styles and environmental impact; nuclear energy; the automobile, life support systems.



GRADUATE STUDY

Unlike most universities, UT Permian Basin does not have a separate graduate school. The university's graduate programs are administered by the various college deans under the direction of the vice president for academic affairs. 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 selected members from the graduate faculty and chaired by the vice president for academic affairs is responsible for developing policies and procedures concerning graduate education.

ADMISSION TO GRADUATE STUDY

Those seeking admission should write to the director 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 UT Permian Basin's Director of Admission.

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. Applications and official transcripts of all previous college or university work should be filed well in advance of the beginning of the semester or summer session in which registration is planned. 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.

The Graduate Record Examination. The Graduate Record Examination (GRE) or the Graduate Management Admission Text (GMAT) for MBA applicants is a measure of probable success in graduate study. All applicants for admission to graduate study at UT Permian Basin must take the test and present evidence of having

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done so as a degree requirement. In some disciplines, such as engineering, it is recommended that the advanced GRE also be taken to provide ample evidence that one can succeed in graduate study. Applicants with outstanding records may be admitted without the GRE test score but must complete the test prior to formal submission of the master's degree program plan. The test is administered by the Educational Testing Service of Princeton, New Jersey, and UT Permian Basin is a testing center. Dates on which examinations are administered can be obtained from the registrar's office. The test may be taken at several other testing centers (colleges and universities) six times a year, usually October, December, January, February, April and July. For information about where and when the test may be taken, contact the admissions office of UT Permian Basin.

Conditional admission. Students desiring to work toward an advanced degree in an area in 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 Vice President for Academic Affairs. The dean may assign special conditions regarding the number of semester credits to be taken with the specific grade point average to be maintained.

In addition, 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 and enrolling for 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. Up to 6 credits completed at another institution are usually accepted toward the master's degree if appropriate for the student's planned program of study at UT Permian Basin and approved by the graduate adviser, dean of the college and chairman of the graduate council. In some cases a limited number of additional credits may be accepted by petitioning the graduate council through the appropriate dean's office. In petitioning, applicants should specify in writing the reasons that the courses should be accepted and applied toward the degree requirements. No graduate credit with a grade less than B may be transferred to UT Permian Basin. No correspondence study credits apply toward the minimum requirements for the master's degree, and no credit more than 6 years old may be applied toward requirements for the degree. 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.

400-level courses. Acceptance of 400-499 numbered courses for graduate credit

may be permitted with limitations. Generally, the number of 400-level courses in master's degree plans at UT Permian Basin is limited to those special circumstances where needs cannot be met by available 600-level courses. 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.

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 to 12 credits per semester constitute a full-time course 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 only one course per semester. With approval of the student's adviser, 2 courses may be taken provided the individual will have ample time free to study.

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. Every semester credit of C, however, must be balanced by one of A because the degree candidate is required to present an overall average of B at the end of his program of study. 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.

Continuation in graduate school. Continuation in graduate study beyond the first 12 credits is dependent on satisfactory progress in resolving any admission conditions and maintenance of a B average.

Dismissed graduate students may be readmitted for further graduate study; however, they must first obtain the written approval of the dean of the college and the Vice President for Academic Affairs.

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. No one may receive the master's degree from UT Permian Basin without demonstrating the ability to write and speak English acceptably. The examining committee will certify that it has examined the candidate's proficiency in writing and speaking English and that it is appropriate for the holder of a master's degree from UT Permian Basin. 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

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required, the adviser and the student will nominate a guidance committee of 3 or more members of which the adviser may or may not be the chairman or a member. The guidance 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 appointment of additional members may be delayed as explained below. 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 and cognate field representative, plan a program of study. This must be done prior to beginning the last half of the course credit requirements for 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. Prospective graduates should complete and file an application for graduation during registration of the semester graduation is planned, pay fee and initial a degree check with faculty adviser or in the dean's office. They should be officially enrolled for at least one semester hour credit in one of the standard numbered courses during the semester in which graduation actually occurs.

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) Indisciplines in which the master's degree is offered.

691 Contract Study (1-3) In 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.

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 and MS in life science.

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 cultural anthropology, 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 Management. 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.

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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 anthropology, educational psychology and management to fit the career goals of the student.	9
		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	Seminar	3
BVSC 398	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 692 Practicum: Behavioral Science (3-6) Field-based course covering student's special interest. Experiences requiring applications of diagnostic, project-planning and behavioral science methods and techniques.

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 (3) A critical analysis of various psychotherapeutic systems.

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 administration, counseling, early childhood education, elementary education, reading, secondary education, special education and supervision. Students have the following options in each program: (1) thesis, (2) nonthesis research, (3) comprehensive examination. Students selecting the thesis option must complete at least 24 semester credits of prescribed study plus a thesis. Those choosing the nonthesis research paper or the comprehensive must complete at least 36 credits of prescribed study. Students choosing the thesis option should be aware that they may be unable to complete all requirements for certification with only 24 credits of coursework, although 24 credits may suffice for the degree.

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 research techniques and show promise of a contribution to knowledge that would be worthy of publication in a scholarly or professional journal. Students planning to pursue the doctorate should select the thesis option.

Research papers required for the nonthesis option should deal with practical problems of concern to the students. They should follow recognized research procedures but do 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. Frequently the problem and the findings of the study will be of value largely, and perhaps solely, to the school where the student is teaching.

Students selecting the comprehensive examination will be required to integrate and apply the specific knowledge and concepts of their selected programs of study. A test to ascertain this ability will be administered by the student's graduate committee.

Graduate students in education seeking Texas certification should have had

teaching experience before enrolling in graduate study. Those who have not had such experience 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 one 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 administration is designed for preparation and certification at the mid-management (principal and central office) and superintendent level. 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. One-third of the coursework should be taken in a discipline outside education. For those pursuing the teaching concentration in secondary and elementary education, the minor in the field of specialization usually will be outside the field of education. For those pursuing concentrations in reading, counseling, early childhood education, special education and some areas of supervision, the minor may be in education.

Programs also are offered leading to certification as reading specialists, mid-management educational administrators (principles or central system administrators) and superintendents.

The areas of academic specialization under the MA in education are as follows:

Art	Earth Science	Mathematics
Anthropology	Economics	Music
Biology	English (Literature)	Psychology
Business, general (Management)	Government	Physics
Chemistry	Physical Education	Sociology
Computer Science	History	Spanish
Drama	Journalism (Mass Communication)	Speech

COURSES IN ADMINISTRATION AND SUPERVISION

PED 604 Appraisal of School Programs (3) Functions of evaluation, performance and outcome measurement, design, administration and reporting of evaluation programs.

PED 606 Organizational Development in Schools (3) Change and development of school organizational structures, function and behavior. Design of strategy for change or development.

PED 607 Supervision of Instruction (3) Role theory, organizational theory, personality theory, research in processes of change and human relations in leadership at elementary and secondary school levels.

PED 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.

PED 660 Theory and Research in Administration (3) Nature of organizational life and administrative behavior.

PED 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.

PED 663 Administration of Special Programs (3-4) Administration of special and compensatory education, reading, career education and vocational-technical education.

PED 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.

PED 667 Foundations of Public School Administration (3) Theory of administration. Study of setting, function and process of administration.

PED 668 Principalship (3) Administrative processes and functions of the elementary and secondary school principal in the context of school district organization and administration.

PED 669 School Personnel Administration (3) Personnel management theory and research. Emphasizes skills in recruitment, selection assignment, staff development, supervision and evaluation.

PED 683 School Finance (3) Principles, trends and practices in financing public education, including sources of school revenue, taxation and fiscal policies.

PED 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.

PED 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.

PED 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

*** PED 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.

PED 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.

PED 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.

PED 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.

PED 632 Current Issues and Trends in Curriculum and Instruction (3) Curriculum theories and compatible instructional techniques emphasizing alternative values and positions in a pluralistic culture.

PED 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.

PED 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.

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PED 641 The Design of Instructional Systems (3) Design a course of instruction using systems theory and the programmed instructional process.

PED 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

PED 670 Introduction to Counseling: Theory and Practice (3) Counseling theories; competence in applying counseling techniques.

PED 671 Group Techniques for Counselors (3) Dynamics and theory of group processes as applied to group procedures in counseling and psychotherapy.

PED 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.

PED 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. Prerequisite: introductory statistics.

PED 674 Micro-Counseling (3) Presentation, demonstration and practice, with the necessary skills to effectively conduct complete counseling interviews.

COURSES IN SPECIAL EDUCATION

PED 609 Supervision of Special Education (1-3) Administrative and supervisory procedures of special education programs for exceptional children.

PED 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.

PED 652 Assessment of Language/Learning Disabilities (3) Developing knowledge, skills and testing strategies needed to evaluate and diagnose students with language/learning disabilities. Prerequisites: PED 451, 452 or permission of instructor.

PED 656 Advanced Problems in Education of the Mentally Retarded (3) Psychological, sociological and educational problems of the mentally retarded.

PED 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.

PED 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.

COURSES IN EARLY CHILDHOOD EDUCATION

PED 610 Environmental Factors in Early Childhood Education (3) Theory and issues in early childhood relating to environmental factors influencing cognition, socialization and achievement.

PED 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.

PED 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.

PED 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.

PED 614 Cognitive Development in Young Children (3) Development of perceptual and conceptual skills; verbal mediation and other cognitive functions.

PED 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

PED 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.

PED 618 Advanced Problems in Reading (3) Cognitive processes and psycholinguistic models related to reading. Prerequisites: 2 graduate reading courses or permission of instructor.

PED 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.

PED 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.

PED 626 Analysis and Selection of Literature (3) Literature in the reading program. Emphasizes recent research in literature and related trends in curriculum.

COURSES IN EDUCATIONAL FOUNDATIONS

PED 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.

PED 644 Advanced Educational Psychology (3) Perception, learning and memory processes. Problems of school learning including social and personality factors, evaluation, classroom organization and management.

PED 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.

PED 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.

PED 681 Statistics (3) Descriptive and inferential statistics as applied to education.

PED 690 Philosophy of Education (3) Fundamental educational ideas related to teaching and administration in terms of assumptions with respect to the nature of knowledge, man and democracy.

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 intellec-

tual enrichment.

Within the requirements for the MA degree in history, considerable individualization of programs is possible. 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. Work may be pursued in Western American, Twentieth Century American, Early American and Latin American history. There are course offerings in other areas such as foreign relations, and European history.

MA candidates must complete 36 credits of graduate work. Candidates who have not completed at least 24 undergraduate semester credits in history will be required to enroll in additional courses to complete their preparation. Students electing to write theses will complete (1) 12 credits in one major field including one reading and one research course at the 600-level, (2) 6 credits in another field of history including a 600-level reading course, (3) at least 12 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 theses.

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) 6 credits, including one reading and one research course at the 600-level, in another field of history, and (3) at least 18 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 read and comprehend written Spanish with reasonable accuracy and speed.

COURSES IN HISTORY

HIST 603 Western American History (3) Historical literature relating to major developments and problems in Western history.

HIST 604 Research in Western American History (3) Research methodology, archival and field-work and construction of the historical narrative.

HIST 611 Latin American History (3) Historical literature relating to major developments and problems of Latin America, including modern Mexico, modern South America and colonial Latin America.

HIST 612 Research in Latin American History (3) Techniques for historical research and directed research on selected topics in Latin American history, including modern Mexican history.

HIST 633 United States in the Twentieth Century (3) Examination of historical literature on special topics covering major developments and problems in recent United States history.

HIST 634 Research in the United States in the Twentieth Century (3) Methodology and tools for historical research and directed research on special topics in recent United States history.

HIST 635 Early American History (3) Historical literature on colonial and revolutionary periods of American history.

HIST 636 Research in Early American History (3) Introduction to methodology and tools for historical research and directed research on specific topics on colonial and revolutionary periods in American history.

HIST 661 United States Foreign Relations (3) Examination of historical literature on special topics which cover major developments and problems in United States foreign relations.

HIST 662 Research in United States Foreign Relations (3) Methodology and tools for historical research and directed research on special topics in United States foreign relations.

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.

1. A minimum of 30 semester credits of coursework, including at least 15 credits in one specialty field. Remaining credits should include 9 credits in a second literature. Program design and course distribution must be worked out and approved in consultation with the adviser.
2. 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 691: Directed Reading. The candidate for the MA in literature thus completes a minimum of 36 credits.
3. An oral examination is required in addition to the thesis or the written comprehensive examination. For students writing a thesis, the examination will be primarily a thesis defense. For students choosing the written comprehensive, the oral examination will be in the second literature or supporting field of study.

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 in 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 English Literature to 1660 (3) Chaucer, English Renaissance humanists, the Elizabethan lyric, Spenser, 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.

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- 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)** Canon 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: analysis of movement, psychology of movement, movement for the handicapped, and may select either the thesis or nonthesis option with the approval of their advisers.

Students preparing a thesis will complete at least 24 credits of coursework plus the thesis. Students pursuing the nonthesis option will complete at least 36 credits including a 3-credit special research paper. It is expected that students desiring to study beyond the master's degree will take the thesis option, whereas students planning to cease formal study with the master's degree will follow the nonthesis option. Additional course credits required for the nonthesis degree plan should provide a greater breadth of systematic learning experiences for the student. Thus, students selecting the nonthesis option must complete at least 9 credits in 2 of the 3 emphases (analysis of movement, psychology of movement, movement for the handicapped) totalling 18 credits. The thesis option requires at least 9 credits in one of the 3 areas of emphasis. All physical education MA degree candidates must complete PHED 600 or its equivalent.

Students desiring 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 nonphysical education major or minor student having a bachelor's degree or its equivalent to enter the graduate program in physical education. It is not necessary that the student have teaching experience or a teaching certificate to qualify for the master's degree program.

COURSES IN PHYSICAL EDUCATION

PHED 600 Strategies for Inquiry in Physical Education (3) Strategies for inquiry and quantification appropriate for theoretical models in psychology of sport, physical activity, motor learning and development, kinesiology, biomechanics, etc. Prerequisite: MATH 601 or equivalent.

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 630 Curriculum Development in Movement Activities (3) Theoretical assumptions and principles of curriculum development applied to construction of curriculum project in physical education.

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 632 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 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 forces, moments and couples, linear and angular kinematics and kinetics, 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 680 Analysis of Teaching Behaviors (3) Observation, description, coding, and analysis of teaching behavior in physical education.

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 the Graduate Record Examination (GRE).

Acceptance to graduate study is granted by the dean of the College of Management. 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 21 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 and basic administration.

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 33 semester credits of prescribed study, exclusive of the 21 semester credits of leveling coursework. Students choosing the research option must complete either: 27 semester credits of

prescribed study plus a thesis, or 30 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.

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.

ACCT 611 Information Systems Management (3) Methods and problem resolution in developing and managing company-wide information systems.

BLAW 600 REVIEW OF BUS. LAW REVIEW

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 formulation and utilization of programming computer packages.

DSCI 608 Decision Science Models in Aviation (3) Programming and statistics to analyze, plan and control various aviation operations activities. Prerequisite: Instructor's approval.

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: 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.

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 Business 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 663 Management Systems Theory (3) Information-decision systems, computational and behavioral decision-making, systems of managerial-planning and organizational control. Prerequisite: 12 credits of MBA core and instructor's approval.

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. Informa-

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tion 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.

Engineering

The Master of Science degree in control engineering is awarded upon achieving specific predetermined professional competencies. Individualized programs are formulated by students in consultation with faculty advisers.

The student's plan to study includes the overall degree objectives, the necessary activities to reach specified competencies and the means by which the student gives evidence for certification of achievement. Early in the student's program the degree plan is documented and submitted to a faculty graduate committee for approval.

Activities are selected according to the above study guidelines. However, students are encouraged to include alternate approaches from the more traditional forms of study, with imaginative means of certifying attainment of professional competency. Typical programs might consist of the following components:

- a. *Advanced studies in science and engineering* — At least 50 percent of the degree program is devoted to an integrated core of specialized and in-depth studies from science and engineering.
- b. *Supporting Studies* — Provides the necessary background for core studies and professional objectives. 20-40 percent of the program may be selected from supporting disciplines.
- c. *Authentic involvement* — 20 percent or more of the program may be devoted to experiential learning or authentic involvement. Students may elect to serve as team participants on a professionally oriented industrial project or as consultants to industry on a special problem. Students interested in a research career or more advanced study normally choose a research-oriented thesis project.
- d. *Free electives* — To provide additional breadth in the degree program, up to

20 percent of the plan may be devoted to unconstrained, graduate-level electives. It is recommended that part of the elective package be devoted to advanced study in art, humanities or social science.

A *minimum* of 30 credits of graduate study is required for the Master of Science degree in control engineering for engineering graduates. Nonengineering graduates may be required to complete a leveling of preparatory study. Leveling work normally consists of specific undergraduate courses selected according to the student's background and degree objectives.

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 formulation. 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, enthalpy 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.

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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, controllability and observability, equilibrium and liapunov stability analysis, nonlinear systems and analysis of nonlinear systems, noninteracting control, model control.

COURSES IN MATHEMATICS

MATH 601 Statistics for Researchers (3) Same as ENGR 601.

Life Science

The Master of Science program in life sciences 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 a 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 grounds, 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 600 Microbial Genetics (3) Mechanics of genetic transfer, gene analysis, control mechanism and the structure and replication of bacterial viruses. Prerequisites: LFSC 300, 440 or equivalent. Alternate years.

LFSC 601 Studies in Virology (1-3) Analysis and interpretation of modern studies on viral structure, synthesis, and pathogenesis. Prerequisites: LFSC 420, 440 or equivalent. Alternate years.

LFSC 623 Immunology (3) Techniques, mechanisms and interpretations of immunological reactions. Prerequisites: LFSC 300 or 420 or equivalent. Alternate years.

LFSC 630 Plant Physiology and Biochemistry (3) Techniques, principles and analysis of problems in plant biochemistry and physiology. Prerequisite: LFSC 420 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.

LFSC 688 Seminar (1) Presentation of independent investigations.



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Core Curricula for Public Junior Colleges in Texas¹

Subject	Major Field I Bachelor of Arts Degree in Arts and Sciences Bachelor of Science in Mathematics & Natural Sciences			Major Field II Bachelor's Degree in Business Administration (Incl. Accounting)		Major Field III Bachelor's Degree in Engineering	
a. English Language Proficiency (i.e., freshman English)	6 hours			6 hours		9 hours	
b. Literature	6 hours			6 hours			
c. Government (to meet state statute requirement)	6 hours			6 hours		6 hours	
d. History (to meet state statute requirement)	6 hours			6 hours		6 hours	
e. Natural Science A	6-8 hours			6-8 hours		8 hours Chemistry*	
f. Natural Science B	6-8 hours			Physical Science		8 hours Physics*	
g. Mathematics (Collegiate level)	6 hours			6 hours		9 hours (analytical geometry and calculus)	
h. Foreign Language†	for the BA degree: 12-14 hours in a single language for the BS degree: 6-8 hours in a single language						
i. Humanities Electives: excluding courses in literature beyond b. above, also no more than 12-14 hours of foreign language may be used in h. and i. combined	6 hours			9 hours		3 hours (to satisfy ECPD requirements)	
j. Special Courses	---			Economics: 6 hours Accounting: 6 hours		Engineering Mechanics 3 hours* Engineering Graphics 2 hours	

*The contents of these courses and the mathematics prerequisites and corequisites of these must be the same as these same courses in the curricula of ECPD accredited senior colleges.

¹From Policy Paper 2, Coordinating Board, Texas College and University System, October 23, 1967. (Effective September 1, 1968.)

†Foreign language is not required for a bachelor's degree at UTPB.

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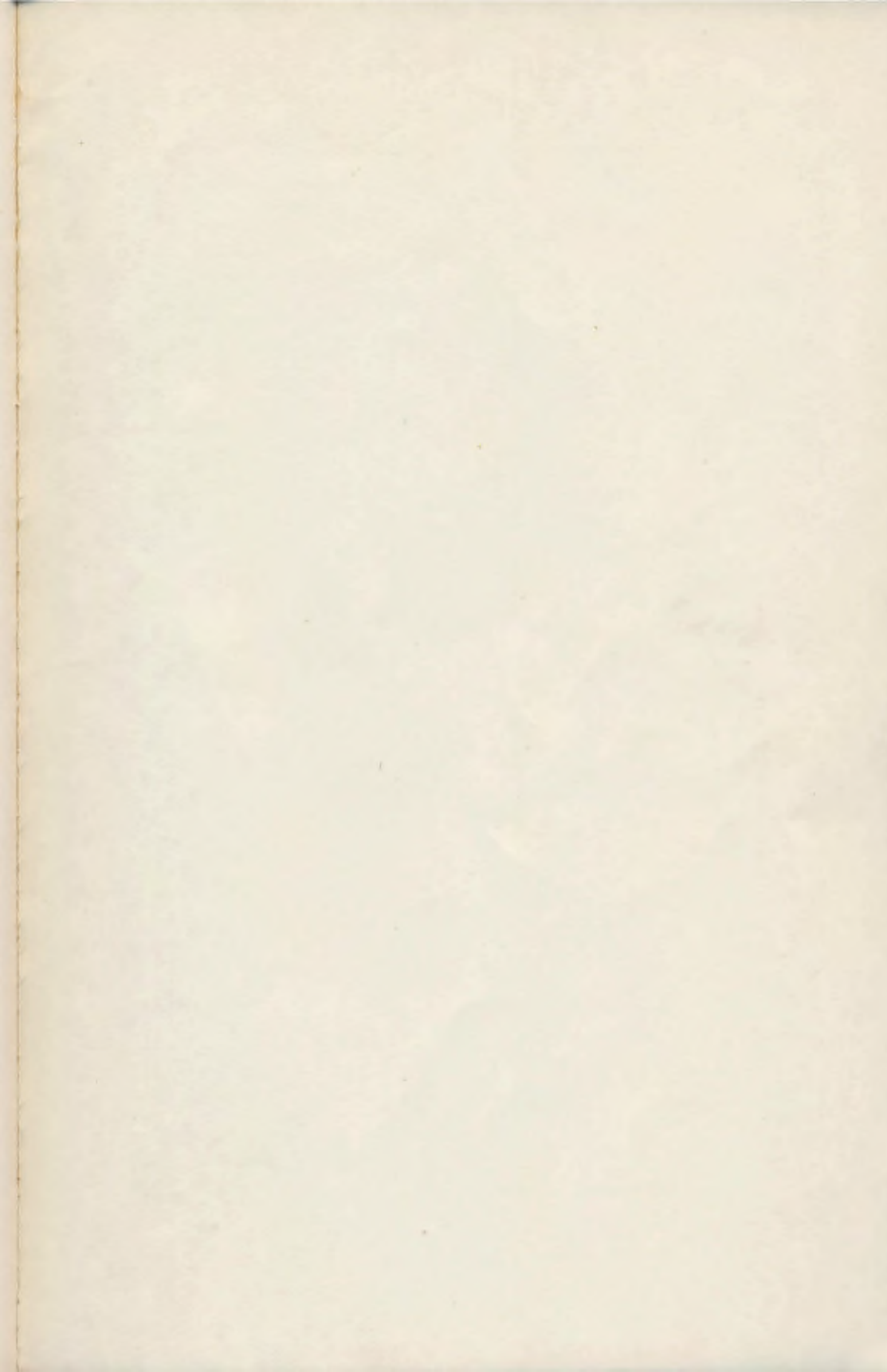
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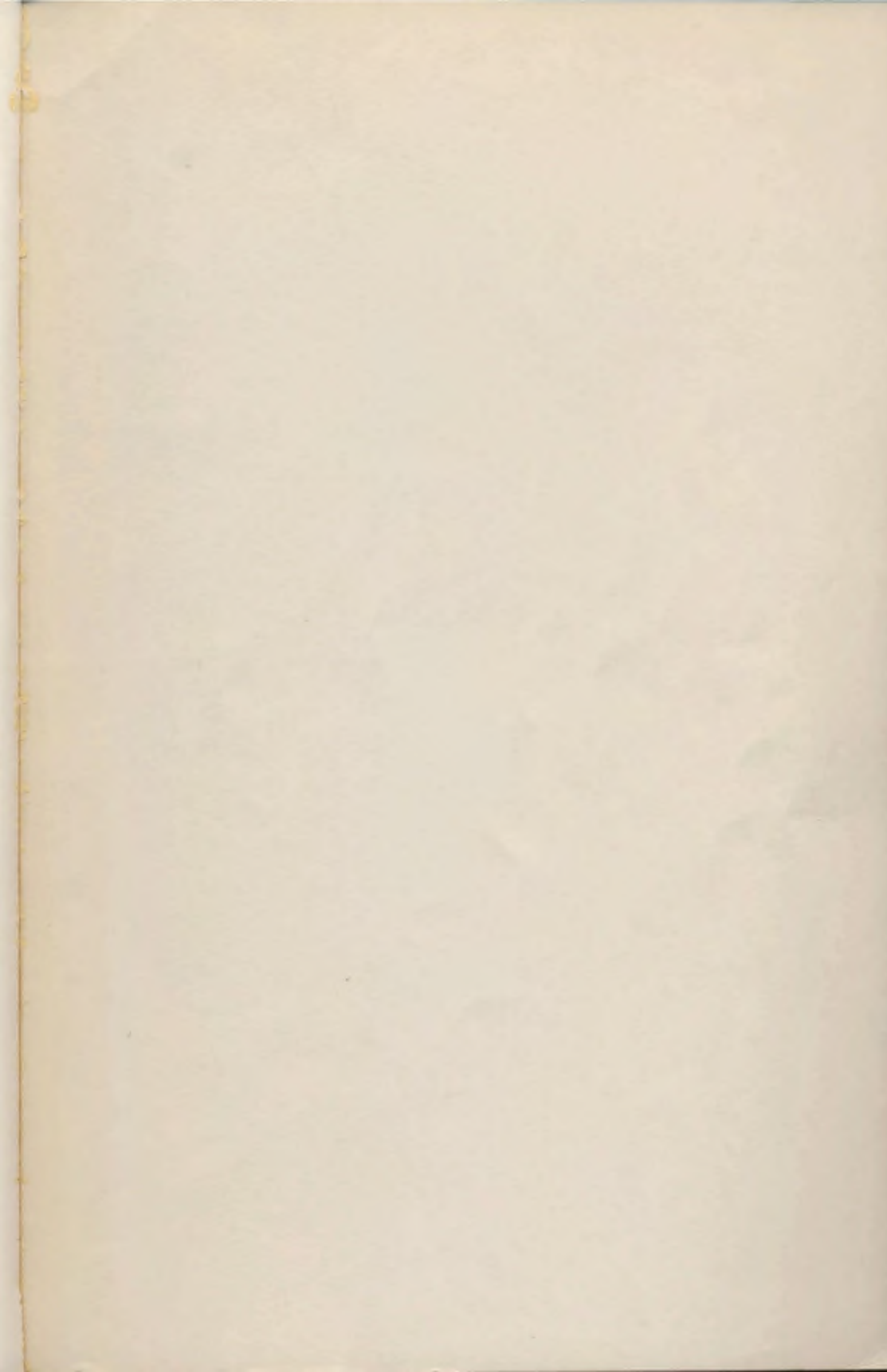
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