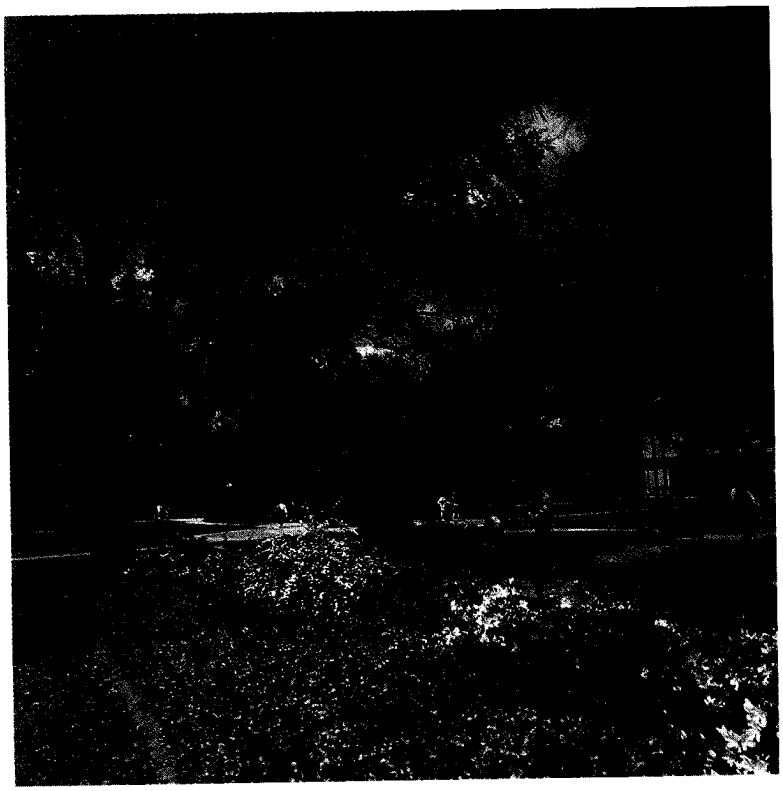
LAMAR UNIVERSITY – BEAUMONT

Graduate Catalog
1994-1996



LAMAR UNIVERSITY

COLLEGE OF GRADUATE STUDIES

1994-96 • Catalog • Volume 42 Number 2

Twenty-third catalog issued with announcements for 1994-96.

Founded in 1923, and established as a four-year coeducational, state-supported college on September 1, 1951.

The provisions of this bulletin do not constitute a contract, expressed or implied, between any applicant, student and faculty member in Lamar University. Lamar University reserves the right to withdraw courses at any time, change fees, calendars, curricula, graduation procedures and any other requirement affecting students. Changes become effective when the proper authorities so determine the application to both prospective students and to the students already enrolled. For additional and complete information refer to the Lamar University General Bulletin.

Lamar University is an equal opportunity/affirmative action educational institution and employer. Students faculty and staff members are selected without regard to their race, color, creed, sex, age, handicap or national origin, consistent with the Assurance of Compliance with Title VI of the Civil Rights Act of 1964; Executive Order 11246 as issued and amended; Title IX of the Education Amendments of 1972, as amended; Section 504 of the Rehabilitation Act of 1973. Inquiries concerning application of these regulations may be referred to the Vice President for Administration and Counsel.

Catalog of Lamar University. (USPS 074-420). Third class postage paid at Beaumont, Texas 77710. Published monthly except in June, July and August.

LAMAR UNIVERSITY SYSTEM

BEAUMONT CAMPUS

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1994-95 Calendar

Fall Semester – 1994

August 1994

16 Orientation Day
17 Residence halls open at 1:00 p.m.
Dining halls open at 4:30 p.m.
18 Arena Registration
19 Arena Registration
22 Classes begin
Schedule revisions – late registration **with penalty fee**
23 Last day for schedule revisions and/or late registration **with penalty fee**
24 Applications for December 1994 graduation begin

September

5 Labor Day – NO CLASSES
7 Twelfth Class Day
30 Last day to drop or withdraw without academic penalty
Last day to petition for no grade

October

3 Last day to apply for December graduation (graduate students)
Last day to pay for diploma, cap and gown

November

3 Comprehensive written examinations
7 thru Dec 7 Period for oral exam/thesis defenses
7 Registration for Spring semester begins
10 Last day to drop or withdraw
17 Last day to submit single unbound first copy of thesis to the graduate office
23 Thanksgiving recess begins at 10:00 p.m.
Dining halls close at 6:00 p.m.
Residence halls close at 6:00 p.m.
27 Residence halls open at 1:00 p.m.
Dining halls open at 4:30 p.m.
28 Classes resume at 7:00 a.m.

December

6 Finals preparation day – no classes prior to 5:00 p.m.
7 End oral exam/thesis defense period
Final copy of thesis due in the graduate office
Deadline for payment of thesis binding fees
7-13 Final examinations
14 Dining halls close at 9:00 a.m.
Residence halls close at 10:00 a.m.
15 Grades for graduating students due by 8:30 a.m.
All grades due by 4:00 p.m.
17 Commencement

AUGUST

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SEPTEMBER

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Spring Semester – 1995

January 1995

5	Orientation Day
8	Residence halls open at 1:00 p.m. Dining halls open at 4:30 p.m.
9	Registration
10	Registration
11	Classes begin Schedule revisions – late registration **with penalty fee**
12	Last day for schedule revisions and/or late registration **with penalty fee**
13	Applications for May 1995 graduation begin
16	Martin Luther King, Jr., birthday – NO CLASSES
27	Twelfth Class Day

February

21	Last day to drop or withdraw without academic penalty Last day to petition for no grade

March

6	Last day to apply for May graduation (graduate students) Last day to pay for diploma, cap and gown
10	Spring recess begins at 5:00 p.m. Dining halls and residence halls close at 6:00 p.m.
19	Residence halls open at 1:00 p.m. Dining halls open at 4:30 p.m.
20	Classes resume at 7:00 a.m.

April

3 thru May 10	Period for oral exam/thesis defenses
6	Comprehensive written examinations
10	Registration for Summer and Fall Semesters begin
14	Good Friday – NO CLASSES
17	Last day to drop or withdraw
20	Last day to submit single unbound first copy of thesis to the graduate office

May

9	Finals preparation day – no class prior to 5:00 p.m.
10	End oral exam/thesis defense period Final copy of thesis due in the graduate office Deadline for payment of thesis binding fees
10-16	Final examinations
17	Dining halls close at 9:00 a.m. Residence halls close at 10:00 a.m.
18	Grades for graduating students due by 8:30 a.m. All grades due by 4:00 p.m.
20	Commencement

JANUARY

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MAY

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Summer Session – 1995
First Term

June 1995

1	Orientation Day
4	Residence halls open at 1:00 p.m. Dining halls open at 4:30 p.m.
5	Registration
6	Classes begin – schedule revisions and/or late registration **with penalty fee**
7	Application for August 1995 graduation begins Last day for schedule revisions and/or late registration **with penalty fee**
9	Fourth Class Day
12	Last day to apply for August graduation (graduate students) Last day to pay for diploma, cap and gown
19	Last day to drop or withdraw without academic penalty Last day to petition for no grade
20-22	Orientation Days
26 thru Aug 9	Period for oral exam/thesis defenses

JUNE

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July

3	Last day to drop or withdraw
4	Independence Day observance – NO CLASSES
10	Comprehensive written examinations
12	Last class day
13	All grades due by 4:00 p.m.

Summer Session – 1995
Second Term

July 1995

12	Registration
13	Classes begin – schedule revisions and/or late registration **with penalty fee**
14	Last day for schedule revisions and/or late registration **with penalty fee**
18	Fourth Class Day
20	Last day to submit single unbound first copy of thesis due in the graduate office
18-20	Orientation Days
26	Last day to drop or withdraw without academic penalty Last day to petition for no grade
25-27	Orientation Days

August

9	End oral exam/thesis defense period Final copy of thesis due in the graduate office Deadline for payment of thesis binding fees
10	Last day to drop or withdraw
17	Last class day Dining halls and residence halls close at 6:00 p.m.
18	Graduating students grades due by 8:30 a.m. All other grades due by noon
19	Commencement

AUGUST

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1995-96 Calendar

Fall Semester – 1995

August 1995

22 Orientation Day
23 Residence halls open at 1:00 p.m.
Dining halls open at 4:30 p.m.
24 Registration
25 Registration
28 Classes begin
Schedule revisions – late registration **with penalty fee**
29 Last day for schedule revisions and/or late registration **with penalty fee**
30 Application for December 1995 graduation begins

September

4 Labor Day – NO CLASSES
13 Twelfth Class Day

October

2 Last day to apply for December graduation (graduate students)
Last day to pay for diploma, cap and gown
6 Last day to drop or withdraw without academic penalty
Last day to petition for no grade

November

2 Comprehensive written examinations
6 Registration for Spring semester begins
6 thru Dec 13 Period for oral exam/thesis defenses
16 Last day to drop or withdraw
21 Last day to submit single unbound first copy of thesis to the graduate office
22 Thanksgiving recess begins at 10:00 p.m.
Residence and dining halls close at 6:00 p.m.
26 Residence halls open at 1:00 p.m.
Dining halls open at 4:30 p.m.
27 Classes resume at 7:00 a.m.

December

12 Finals preparation day – no classes prior to 5:00 p.m.
13-19 Final examinations
13 Final oral exam/thesis defense period
Final copy of thesis due in the graduate office
Deadline for payment of thesis binding fees
20 Dining halls close at 9:00 a.m.
Residence halls close at 10:00 a.m.
21 Grades for graduating students due by 8:30 a.m.
All grades due by 4:00 p.m.
23 Commencement

AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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Spring Semester – 1996

January 1996

4	Orientation Day
7	Residence halls open at 1:00 p.m. Dining halls open at 4:30 p.m.
8	Arena Registration
9	Arena Registration
10	Classes begin Schedule revisions – late registration
11	Last day for schedule revisions and/or late registration **with penalty fee**
15	Martin Luther King, Jr., birthday – NO CLASSES
16	Application for May 1996 graduation begins
26	Twelfth Class Day

February

20	Last day to drop or withdraw without academic penalty Last day to petition for no grade

March

4	Last day to apply for May graduation (graduate students) Last day to pay for diploma, cap and gown
8	Spring recess begins at 5:00 p.m. Residence and dining halls close at 6:00 p.m.
17	Residence halls open at 1:00 p.m. Dining halls open at 4:30 p.m.
18	Classes resume at 7:00 a.m.

April

1 thru May 1	Period for oral exam/thesis defenses
4	Comprehensive written examinations
5	Good Friday – NO CLASSES
8	Registration for Summer and Fall 1996 begins Last day to drop or withdraw
11	Last day to submit single unbound first copy of thesis to the graduate office
30	Finals preparation day – no classes prior to 5:00 p.m.

May

1	End oral exam/thesis defense period Final copy of thesis due in the graduate office Deadline for payment of thesis binding fees
1-7	Final examinations
8	Dining halls close at 9:00 a.m. Residence halls close at 10:00 a.m.
9	Grades for graduating students due by 8:30 a.m. All grades due by 4:00 p.m.
11	Commencement
30	Orientation Day

JANUARY

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FEBRUARY

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MARCH

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APRIL

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MAY

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Summer Session – 1996
First Term

June 1996

3	Registration
3	Residence halls open at 1:00 p.m. Dining halls open at 4:30 p.m.
4	Classes begin – schedule revisions and/or late registration **with penalty fee**
5	Application for August 1996 graduation begins Last day for schedule revisions and/or late registration **with penalty fee**
7	Fourth Class Day
10	Last day to apply for August graduation (graduate students) Last day to pay for diploma, cap and gown
17	Last day to drop or withdraw without academic penalty Last day to petition for no grade
24 thru Aug 7	Period for oral exam/thesis defenses
25-27	Orientation Days

JUNE

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JULY

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July

2	Last day to drop or withdraw
8	Comprehensive written examinations
10	Last class day
11	All grades due by 4:00 p.m.

Summer Session – 1996
Second Term

July 1996

10	Registration
11	Classes begin – schedule revisions and/or late registration **with penalty fee**
12	Last day for schedule revisions and/or late registration **with penalty fee**
16	Fourth Class Day
16-18	Orientation Days
18	Last day to submit single unbound first copy of thesis to the graduate office
23-25	Orientation Days
24	Last day to drop or withdraw without academic penalty Last day to petition for no grade

August

7	End oral exam/thesis defense period Final copy of thesis due in the graduate office Deadline for payment of thesis binding fees
8	Last day to drop or withdraw
15	Last class day Residence and dining halls close at 6:00 p.m.
16	Graduating students grades due by 8:30 a.m. All other grades due by noon
17	Commencement

AUGUST

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Dean of Graduate Studies: Robert D. Moulton, Ph.D.
Editor: Martha S. Reed

A larger-than-life sculpture of Mirabeau B. Lamar, the father of Texas education, is located in the center of the Beaumont campus quadrangle.

General Information

Location

Lamar University-Beaumont is a state-supported institution located in Beaumont, Texas. Beaumont is one of the world's largest petrochemical centers and has a population of about 130,000. The city offers private and public schools, churches, museums, shopping districts and a wide range of leisure-time activities. A civic center, convention center and coliseum draw professional entertainers and a wide variety of business, social and professional groups to the city. Beaumont is convenient to major recreational facilities of southeast Texas, including the Gulf of Mexico, large lakes and the Big Thicket National Preserve.

Lamar University-Beaumont is part of the Lamar University System which also includes two-year community colleges in Orange and Port Arthur. The Lamar Institute of Technology, which offers technical and vocational training, is located adjacent to the Lamar University-Beaumont campus.

History

Lamar University-Beaumont began as South Park Junior College in 1923. In those early years, the junior college was part of the South Park School District. In 1949, the school became the first junior college in Texas to become a four-year state-supported college and the name was changed to Lamar State College of Technology.

In 1962, a graduate school was established offering Master's degrees in several fields. By 1971, enrollment had reached nearly 11,000 and, in that year, the Doctorate in Engineering was established and the name of the school was changed to Lamar University. In 1993, a doctoral degree program in deaf education was established. Lamar University-Beaumont currently offers more than 130 fields of study.

Government

A board of nine regents, appointed by the Governor and approved by the State Senate for terms of six years, governs the Lamar University System. The Board of Regents delegates the direction of University affairs to the chancellor, presidents, campus administrative officers and faculty.

Mission Statement

Lamar University-Beaumont is a multipurpose university commissioned by the Texas Legislature to provide an environment for learning for the people of the state. The University is an educational, scientific, technical and cultural resource center committed to the three-fold mission of teaching, research and service. The University seeks partnerships with business, governmental, industrial and other educational organizations to more efficiently accomplish its goals.

Teaching Mission

Lamar University-Beaumont emphasizes general education, student access to faculty and careful student counseling. The University creates a liberating educational experience for each student which expands knowledge, awakens new intellectual interests, examines values, develops talents, provides new skills and prepares each student to assume an effective role as a citizen in a democracy.

The University's mission in graduate education is broad-based at the master's level, and includes the doctorate in engineering and in deaf education. Other doctoral-level educational opportunities for the region are enhanced through cooperative arrangements between Lamar University-Beaumont and other institutions of higher education. The University's mission in graduate education is characterized by an emphasis on professional fields of study. The main thrust of the University continues in engineering, business, sciences, health sciences and education.

Dating from its origins as a junior college, the mission of Lamar University-Beaumont also still accommodates post-secondary vocational-technical education in the Lamar Institute of Technology, with particular emphasis on programs designed to meet the special needs of industrially-oriented Southeast Texas.

Although basically traditional in its goals, Lamar University-Beaumont is strongly committed to the continual enhancement of the teaching/learning methodologies used in delivering its programs, and systematic assessment of new methodologies for application in other educational settings.

Research Mission

As a multipurpose university with extensive educational programs in professional fields, the University's research efforts are predominantly directed to "applied research" and deliberately concentrated in areas of unique strength.

Lamar University-Beaumont accepts as a fundamental obligation the maintenance of a faculty that is professionally creative and productive in its respective disciplines. The University encourages faculty members to assume responsibility for professional growth through research, the pursuit of professional interest and the production of creative materials.

Service Mission

The University's educational mission extends to all residents of the Southeast Texas area, and, in special cases, beyond the region. In recognition of that mission, the University provides continuing education programs for professional up-dating in scientific, technical and administrative skills for practitioners; and for broad, cultural enrichment and personal growth.

The University contributes to the cultural life of the region through cultural and artistic presentations and events by the faculty, students and visiting artists and performers.

Accreditation and Approval

Lamar University-Beaumont is accredited by the Commission of Colleges of the Southern Association of Colleges and Schools to award Bachelor's, Master's and Doctor's degrees. The College of Graduate Studies is a member of the Council of Graduate Schools in the United States, the Conference of Southern Graduate Schools and the Texas Association of Graduate Schools.

Programs in the College of Engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. In the College of Business, graduate programs are accredited by the American Assembly for Collegiate Schools of Business.

Other accreditations include Chemistry by the American Chemical Society; Music by the National Association of Schools of Music; the College of Education and Human

Development by the National Council for the Accreditation of Teacher Education and the Texas Education Agency, Sociology by the Council on Social Work Education; programs in Speech-Language Pathology and in Audiology by the American Speech-Language-Hearing Association and in Deaf Education by the national Council for Education of the Deaf and the Texas Education Agency. The University is also a member of a number of academic councils, societies, associations and other such organizations.

The Library

The eight-story Mary and John Gray Library building dominates the campus from its central location. Built to house a million volumes, the Library occupies six floors with on-line public access catalog to 800,000 volumes. Seating accommodates 1,200 students and faculty.

The first floor service areas include circulation, reference and interlibrary loans. The second floor houses reserve reading, current periodicals and government documents. Four floors provide stacks for books and periodicals shelved in Library of Congress classification sequence from class A on the third floor through class Z on the sixth floor.

The seventh floor houses the library administrative offices, the Media Services Department, the Micro-Computer Lab and Special Collections.

The eighth floor offers expansion space for the future, but is presently shared with other University services. This spacious and elegant floor, furnished by community donors, serves as a University Reception Center for meetings and conferences.

Expanding library collections support continuously evolving academic programs. In addition to a collection of books and periodicals, the Library provides access to state and federal government documents and participates in the library networks which extend access to information resources. The Library coordinates multi-media programs on campus and is developing basic collections of equipment and materials for central distribution.

Research Office

A Research Office was formally organized in 1956. It is administered by the Associate Vice President for Research and Dean of Graduate Studies who serves as the chair of the faculty research committee. All externally-funded research grants and projects are coordinated through the Research Office.

Information Systems (Computer Center)

The University Information Systems Division is responsible for providing the computing services for the academic, administrative and research communities of Lamar University-Beaumont.

The Computer Center, a department of the Information Systems division, provides for administrative computing with a BULL DPS8/49D computer system while it converts to a new DEC VAX 7610 computer. The BULL system has a processing speed of 2.2 million instructions per second (MIPS), has 32 mega bytes (million bytes) of processing memory and 9.8 giga bites (billion bytes) of disk storage. The operation system is GCOS 8 and the transaction processor is TP8. This system supports two line printers capable of printing 1200 lines of output per minute each, and three 9 track magnetic tape drives providing 1600 or 6250 bytes per inch. A total of 160 terminal connection ports are available. The new DEC VAX 7610 which all administrative systems will be converted to in the next two years is presently running the John Gray

Library DRA software and the SCT FRS administrative financial system for the Port Arthur and Orange campuses. The VAX 7610 system has a processing speed of 35 million instructions per second (MIPS), has 512 mega bytes (million bytes) of processing memory and 20 giga bytes (billion bytes) of disk storage. The operating system is VMS 5.5-2 and uses TCP/IP for network communications. The system supports three line printers, one capable of printing 1200 lines of output per minute and, two capable of printing 600 lines of output per minute. In addition, the system has two laser printers, one capable of two sided print at 20 pages per minute and, the second capable of 40 pages per minute. The system has a TF857 cartridge tape unit capable of 42,000 bytes per inch, the second unit is a 9 track magnetic reel to reel drive which provides 1600 or 6250 bytes per inch capacity. This system is configured to handle 300 concurrent users of the new SCT administrative software systems.

Computers available to support academic computing are a VAX 6310, three VAX 3300s, a DEC 5100, an IBM AS/400, and a PRIME.

The VAX 6310 system processes at 3.5 million instructions per second (MIPS) and has 124 mega bytes of memory and 9.6 giga bytes of disk storage. The operating system is VMS and supports a TA79 and TF857 tape drive. This system is in a software cluster with the three VAX 3300, and an Ethernet connection with the DEC 5100 for sharing of the 200 and two 600 line per minute printers. This system supports approximately 120 terminals.

The three VAX 3300 systems primarily supports the Computer Science students and faculty. These systems are capable of processing 7.0 million instructions per second (MIPS), containing 20 mega bytes of memory each and share 1.35 giga bytes of disk storage. Two of the VAX 3300s run the VMS operating system while the third runs ULTRIX, and they all use Ethernet ports to share printers and tape units.

The DEC 5100 is an academic research and instructional computer used by students and faculty. This system has a processing speed of 19 million instructions per second (MIPS), has 32 mega bytes (million bytes) of processing memory and 2.2 giga bytes (billion bytes) of disk storage space. The operating system is ULTRIX and uses an Ethernet port to share printer devices with the VAXs.

The IBM AS/400 system primarily supports student and faculty in the Technical Institute. This system has 12 mega bytes of memory and 1.8 giga bytes of disk storage space. The operating system is OS/400. It supports a 3200 bytes per inch tape drive, a 300 line per minute printer, 25 terminals, and 20 PS/2 microcomputers.

The PRIME system is primarily used by engineering students and faculty for computer aided design (CAD). This system contains 48 mega bytes of memory and 2.6 giga bytes of disk storage. The operating system is PRIMOS. The system supports 18 workstations, one CALCOMP 3 color plotter, one 300 line per minute graphics printer, and one Prime tape drive which will read at 1600 or 6250 bytes per inch.

Early Childhood Development Center

Lamar University's Early Childhood Development Center is located at 950 East Florida. The Center provides high quality extended day-care services and pre-school, pre-kindergarten, and kindergarten programs for children between the ages of 18 months and five years.

The Center is staffed with degreed teachers who create a stimulating environment and provide unlimited opportunities for learning. In addition to providing care for young children, the Center, under the administration of the College of Education and Human Development, provides a site for college students to observe and work with

children as part of their course work and training. The Center is accredited by the National Academy of Early Childhood Programs.

The Early Childhood Development Center accepts children on a part-time or full-time basis with the fees based on the number of hours children are in attendance.

Learning Assistance

A full range of learning assistance, advising and testing services are provided in the Center, located in the Wimberly Student Services Building. Professional staff assist students with concerns, questions, problem solving, adjustment, decision making, goal planning, testing and skill development. Staff will refer students to other offices and personnel in accord with the needs and interests of the individual.

Educational counseling is available. In order to best serve as many students as possible, problems of a long-term, therapeutic nature cannot be addressed; however, initial consultation is available and, when feasible, referral to campus and community resources.

The Center coordinates testing required by the University; provides individual interest, aptitude, and personality assessment; and, as a National Test Center, administers the following: Graduate Record Examination (GRE), Law School Admissions Test (LSAT), Graduate Management Admission Test (GMAT), Scholastic Aptitude Test (SAT), American College Testing Program (ACT), College Level Examination Program (CLEP), Miller Analogies Test (MAT) and the Texas Academic Skills Program (TASP). The majority of these tests are administered on scheduled testing dates and require application and fee payment in advance of the testing day. Information and application forms may be obtained from the Center.

Learning Skills Program

The Learning Skills Program is designed to aid students in the development of skills necessary for successful performance in their academic course work and completion of their degree or certificate program. The program office is in Wimberly Student Services Building.

Carefully selected and trained student counselors conduct a systematic instructional program under the direct supervision of the Director of Learning Skills. Individual computer-assisted instruction is also available. The program is designed to serve all students, both the very capable learner and the student with potential academic problems. More information is available upon request.

Career Development and Placement Center

The Center, Galloway Building, Suite 102, offers career guidance, including seminars on specific career fields, as well as personal career counseling/career planning. Two computerized career guidance systems are utilized: SIGI PLUS (ETS) and DISCOVER (ACT). Vocational interest inventories and personality tests are also administered. Students undecided about their career plans should seek help during their first semester at Lamar. The Center can also be extremely valuable in helping students select appropriate graduate or professional schools.

The Center's **Student Employment Service** offers all students referrals for off-campus part-time and summer jobs, internships and co-ops. These jobs, available regardless of financial need, frequently are career-related positions and offer valuable experience.

Placement services for students about to graduate include fall and spring on-campus recruiting programs, job postings, job referrals and the opportunity to be listed in a database available to recruiters nationally. Students graduating in spring should begin interviewing the previous fall. Seminars and workshops on job hunting strategies, resume writing and interview techniques are offered. Experienced interviewers are available to videotape mock interviews and critiques.

The Center sponsors career fairs on campus and in Houston sponsored jointly by other area colleges. An annual Teachers Job Fair is co-sponsored by the Center and the College of Education and Human Development.

The Center maintains credential files for students going into the teaching fields. An excellent career library, alumni services and spouse relocation assistance for new members of the Lamar community are available.

Health Center

The University maintains a Health Center for use by Lamar students. Outpatient service is available for illness or injury that does not require constant supervision.

While it is not possible for the University to provide unlimited medical service, some routine laboratory tests are available at the clinic at a reasonable cost. More extensive laboratory tests and x-rays are available from private physicians if requested by the Health Center Director.

All drugs, splints, special bandages, as well as serums, vaccines and gamma globulin, which may be prescribed by the Health Center are dispensed at prices equal to the cost assessed the University. Pre-admission vaccinations are not given. Emergency Room or other outside medical care is not the responsibility of the University and is not offered by the Health Center. Any student who has a chronic illness or disability requiring continuing medical attention should make arrangements with a local private physician.

Student Health Center services are available during regular hours when the University is in session.

Veterans Education

Lamar is approved for educational training under all of the Veterans Educational Assistance programs.

Veterans and their dependents who are interested in attending Lamar under federal laws which provide educational assistance are directed to secure information by consulting the Office of Veterans' Affairs, Wimberly Student Affairs Building.

This office advises veterans on program and training opportunities, academic assistance and counseling.

Loan Funds and Scholarships

Financial assistance in the form of loans, grants and scholarships is available for a number of qualified students. Details may be obtained on request from the Director of Financial Aid, P.O. Box 10042, Beaumont, TX 77710.

Teaching Fellowships and Assistantships

A number of teaching fellowships and assistantships are available in the various departments of the College of Graduate Studies. Application forms and additional information may be obtained either from the department chair or from the Dean of the College of Graduate Studies.

Fellowships and assistantships are awarded **only** to those individuals who meet all requirements for admission to a graduate degree program, including satisfactory GRE/ GMAT scores.

The stipend for a teaching fellow varies in accordance with the number of courses taught. Students must reduce their academic load in relation to their teaching assignment (the combined teaching and course load may not exceed 15 load units in the long term). The maximum teaching responsibilities for a teaching fellow or assistant is six load units.

Tuition and fees are not waived for teaching fellows or assistants, but nonresidents of Texas are not required to pay out-of-state tuition.

Applications should be received by February 1 for the following academic year.

Teacher Certification

Lamar University has been approved by the Texas Education Agency to offer professional certification programs in administration, counseling and guidance, elementary, secondary, special education, reading, supervision and visiting teacher. Specific information concerning certification may be found in the College of Education and Human Development section of this catalog or may be obtained from the Director of The Division of Professional Services in the College of Education and Human Development.

Certification in Special Education and in Composite Science

The College of Education and Human Development has been approved by the Texas Education Agency to offer an alternative certification program in the areas of Generic Special Education K-12 and Composite Science (Secondary, 6-12). Information concerning either of the two programs may be obtained from the Division of Professional Services.

Fees and Expenses

Payment of Fees

Lamar University reserves the right to change fees in keeping with acts of the Texas Legislature and the University's Board of Regents.

A student is not registered until all fees have been paid in full or the installment plan down payment has been paid and the installment agreement has been signed. Payment may be made by check, MasterCard/VISA, money order or currency. Checks and money orders not in excess of total fees should be made payable to Lamar University. Checks and drafts deposited with Federal Reserve banks cannot be handled through regular bank collection channels if received without the magnetic ink MICR transit number.

Installment Payment Agreement

Tuition and selected fees may be charged on an installment plan, for those students who are **not** on financial aid (scholarships, grants, etc.). This plan provides for payments to be made in 3 installments for courses taken during the fall and spring semesters.

Students are required to enter into a legally binding contract that obligates them to pay the full amount of the fees, regardless of whether they complete the semester. The student whose fees are to be paid in installments must sign the installment agreement. Tuition refunds for students using the installment payment plan are calculated as a percentage of the total fees assessed, not as a percentage of any partial payments.

A non-refundable service charge of $20 is assessed for the 3 payment plan. A late fee of $15 is assessed beginning the first day after an installment due date for each delinquent installment payment.

Students who are delinquent on installment will be prohibited from registering for class until the installment debt is paid in full. A single delinquent installment results in the entire remaining balance being immediately due and payable. Continued delinquency may result in withdrawal from the University. Also, holds are placed on academic records so that students cannot obtain transcripts until all installments are paid.

All delinquent installment accounts will be forwarded to a collection agency/Credit Bureau which results in additional fees of approximately one-third of the unpaid balance being added (Delinquent accounts must be paid at the collection agency; payment will **not** be accepted at the Lamar Cashier's Office.) All costs of collecting delinquent installments are payable by the student.

Tuition and Fees

Tuition is based upon the number of hours for which the student registers, and is determined by the student's classification as a Texas resident; a nonresident U.S. citizen; or a citizen of another country.*

**Determination of legal residence for tuition purposes is made on the basis of statutes of the State of Texas. Refer to the Coordinating Board, Texas College and University System "Rules and Regulations for Determining Residence Status" as revised, July 15, 1981, available in the Office of the Director of Admission Services.*

Student Responsibility for Residence Classification

The responsibility of registering under the proper residence classification is that of the student. If there is any possible question of the student's right to classification as a resident of Texas, it is his/her obligation, prior to or at the time of registration, to raise the question with the Director of Admissions and have his/her status officially determined.

Every student who is classified as a resident student but who becomes a nonresident at any time by virtue of a change of legal residence by his/her own action or by the person controlling the student's domicile, is required to notify the Dean of Records and Registrar.

Publication of and Public Access to Thesis/Field Study/ Dissertation Abstracts

The Graduate Council requires that thesis and field study abstracts be published by University Microfilms. Fees for this service are $35 for a master's thesis and $45 for a doctoral field study. If copyrighting is desired, an additional fee of $20 is charged. All theses, field studies and dissertations will be placed in the library if permission to do so is granted by the student.

Refund of Tuition and/or Fees

Students requesting a refund of tuition and/or fees resulting from dropped courses or from withdrawing from the University should direct questions to the Finance Office. Refunds are calculated as a percentage of *total* fees assessed, *not* as a percentage of partial payments on installments. Refunds are generally processed at the end of the second week past the 12th class day for Fall or Spring (2 weeks after the 4th class day for summer session).

Dropped Courses

Students who drop courses during the drop period will receive a refund on tuition and fees, based on the following:

Fall or Spring Semester

1. Through the twelfth class day, 100 percent.
2. After the twelfth class day, no refund.

Summer Session

1. Through the fourth class day, 100 percent.
2. After the fourth class day, no refund.

Withdrawal from the University

Any student officially withdrawing during the first part of the semester will receive a refund on tuition, Setzer Center, student service, laboratory, building and general use and private lesson fees according to the following schedule:

Fall or Spring Semester

1. Prior to the first class day, 100 percent.
2. During the first five class days, 80 percent.
3. During the second week of the semester, 70 percent.
4. During the third week of the semester, 50 percent.
5. During the fourth week of the semester, 25 percent.
6. After the fourth week of the semester, none.

Summer Session

1. Prior to the first class day, 100 percent.
2. During the first, second or third class day, 80 percent.
3. During the fourth, fifth or sixth class day, 50 percent.
4. Seventh class day and after, none.

The $10 Property Deposit is refundable upon written request by the student to the Finance Office.

Withdrawing from the University does not relieve the student of any financial obligations under the Installment Payment Agreement or for any student loans as these are the student's legal financial commitments.

NOTE: Students withdrawing from the University are required to surrender their Student Identification Card and their Parking Permit. Also, withdrawal from the University precludes the student from receiving a refund for dropped courses.

Summaries of Fees

Additional fees and charges which are applied on a selective basis are listed following the Summary of Fees.

Lamar University
Spring 1994

No. Sem. Hours	Tuition		Stu. Serv. Fee	Gen. Use Fee	Setzer Center Fee	Property Deposit	Computer Use Fee	Total	
	Texas Resident	Non-Texas Resident						Texas Resident	Non-Texas Resident
0	$ 70	$ 70	$13	$ 10	$30	$10	$ 3	$136	$ 136
1	100	162	13	10	30	10	3	166	228
2	100	324	26	20	30	10	6	192	416
3	100	486	39	30	30	10	9	218	604
4	104	648	52	40	30	10	12	248	792
5	130	810	65	50	30	10	15	300	980
6	156	972	78	60	30	10	18	352	1168
7	182	1134	91	70	30	10	21	404	1356
8	208	1296	104	80	30	10	24	456	1544
9	234	1458	117	90	30	10	27	508	1732
10	260	1620	117	100	30	10	30	547	1907
11	286	1782	117	110	30	10	30	583	2079
12	312	1944	117	120	30	10	30	619	2251
13	338	2106	117	130	30	10	30	655	2423
14	364	2268	117	140	30	10	30	691	2595
15	390	2430	117	150	30	10	30	727	2767
16	416	2592	117	150	30	10	30	753	2929
17	442	2754	117	150	30	10	30	779	3091
18	468	2916	117	150	30	10	30	805	3253
19	494	3078	117	150	30	10	30	831	3415
20	520	3240	117	150	30	10	30	857	3577

Note: 0 Semester Credit Hours – $70 charge is a special fee, not tuition, but is shown here for comparison purposes.

Lamar University
Summer 1994

No. Sem. Hours	Tuition		Stu. Serv. Fee	Gen. Use Fee	Setzer Center Fee	Property Deposit	Computer Use Fee	Total	
	Texas Resident	Non-Texas Resident						Texas Resident	Non-Texas Resident
1	$ 50	$ 162	$14	$ 12	$15	$10	$ 3	$104	$ 216
2	52	324	28	24	15	10	6	135	407
3	78	486	42	36	15	10	9	190	598
4	104	648	56	48	15	10	12	245	789
5	130	810	63	60	15	10	15	293	973
6	156	972	63	72	15	10	18	334	1150
7	182	1134	63	84	15	10	21	375	1327
8	208	1296	63	96	15	10	24	416	1504
9	234	1458	63	108	15	10	27	457	1681
10	260	1620	63	120	15	10	30	498	1858

Parking: Spring 1994 – $20; Summer 1994 – $11

Lamar University
Fall 1994/Spring 1995

No. Sem. Hours	Tuition: Texas Resident	Tuition: Non-Texas Resident	Stu. Serv. Fee	Gen. Use Fee	Setzer Center Fee	Property Deposit	Computer Use Fee	Total: Texas Resident	Total: Non-Texas Resident
1	$100	$ 162	$14	$ 12	$30	$10	$ 3	$169	$ 231
2	100	324	28	24	30	10	6	198	422
3	100	486	42	36	30	10	9	227	613
4	112	648	56	48	30	10	12	268	804
5	140	810	70	60	30	10	15	325	995
6	168	972	84	72	30	10	18	382	1186
7	196	1134	98	84	30	10	21	439	1377
8	224	1296	112	96	30	10	24	496	1568
9	252	1458	126	108	30	10	27	553	1759
10	280	1620	126	120	30	10	30	596	1936
11	308	1782	126	132	30	10	30	636	2110
12	336	1944	126	144	30	10	30	676	2284
13	364	2106	126	150	30	10	30	710	2452
14	392	2268	126	150	30	10	30	738	2614
15	420	2430	126	150	30	10	30	766	2776
16	448	2592	126	150	30	10	30	794	2938
17	476	2754	126	150	30	10	30	822	3100
18	504	2916	126	150	30	10	30	850	3262
19	532	3078	126	150	30	10	30	878	3424
20	560	3240	126	150	30	10	30	906	3586

Note: Fees are subject to change by action of the Board of Regents or Texas State Legislature.
Parking: Fall 1994 – $32.00; Spring 1995 – $22; Summer 1995 – $12

Lamar University
Summer 1995

No. Sem. Hours	Tuition: Texas Resident	Tuition: Non-Texas Resident	Stu. Serv. Fee	Gen. Use Fee	Setzer Center Fee	Property Deposit	Computer Use Fee	Total: Texas Resident	Total: Non-Texas Resident
1	$ 50	$ 162	$14	$ 12	$15	$10	$ 3	$104	$ 216
2	56	324	28	24	15	10	6	139	407
3	84	486	42	36	15	10	9	196	598
4	112	648	56	48	15	10	12	253	789
5	140	810	63	60	15	10	15	303	973
6	168	972	63	72	15	10	18	346	1150
7	196	1134	63	84	15	10	21	389	1327
8	224	1296	63	96	15	10	24	432	1504
9	252	1458	63	108	15	10	27	475	1681
10	280	1620	63	120	15	10	30	518	1858

Parking: Fall 1994 – $32.00; Spring 1995 – $22; Summer 1995 – $12

Laboratory Fees

A laboratory fee of $2 is charged each semester for courses with a combined lecture and laboratory credit of from one to three semester hours. The laboratory fee is $4 per semester for courses of four or more semester hours credit.

Computer Use Fee

A $3 computer use fee is charged per semester credit hour with a maximum of $30.

Private Lessons in Voice and Instrumental Music

Graduate applied music courses (per semester hour) $18.00

Late Registration Fee

A charge of $5 is made during the first day of late registration. This fee increases to $10 for the second day and $15 for the third and subsequent days.

Parking Fee

Each student who pays the necessary fee is issued a card that permits parking on the campus. This card is numbered and is to be displayed as instructed in official parking and traffic regulations, which are issued when automobiles are registered. Strict observance of traffic and parking regulations is necessary for the safe, orderly flow of vehicles in the campus area.

Charges for parking on campus are made at registration. Automobile registration fees are as follows: Summer '94, $11; Fall Semester, $32; Spring Semester, $22; Summer '95, $12. Only one registration is required during an academic year, and a student's parking fee is honored until the end of Summer Session II.

Property Deposit

Each student will be required to pay a $10 property deposit. Any unused portion of the $10 will be refunded upon request after the student graduates or withdraws from the University.

Health and Accident Insurance

Health and accident insurance coverage is available at registration for students carrying nine or more semester hours. Insurance fees are as follows: Fall Semester, $99; Spring and Summer Semesters, $158; yearly fee, $250. This or similar insurance is required of all international students. Additional information may be obtained from the Student Affairs Office.

Miscellaneous Fees

Thesis binding (each copy) $13.65
Microfilming (Master's) 35.00
Microfilming (Doctor's) 45.00
Diploma Fee 12.99
Cap, Gown and Hood Rental (Master's) 25.50
Cap, Gown and Hood Rental (Doctor's) 27.50
Returned Checks 15.00
Transcript Fee 2.00
Photo Identification 5.00

Returned Check Fees

Checks written in payment of registration fees and returned to the University due to insufficient funds will result in a $15 check charge plus a $15 late registration fee.

A student already enrolled in the University is automatically suspended from the University if a check is returned unpaid. The student may re-enter upon redemption of the check plus payment of the returned check fee of $15.

Students who write insufficient funds checks will be placed on a "cash only" basis for the remainder of the academic year.

Fine and Breakage Loss

All library fines, charges for breakage or loss of equipment or other charges must be paid before a transcript of credit or a permit to re-enter the University will be issued.

Matriculation Fee

A matriculation fee of $15 will be incurred by students who withdraw prior to the first day of class. This $15 fee will be deducted from refunds.

Housing

The student housing program at Lamar is designed to supplement the academic program by providing opportunities for social and intellectual development and recreation in a pleasant living environment. The University recently completed a multi-million dollar renovation program, making its residence halls among the most modern in Texas. A variety of living styles is available and includes modern furniture, semi-private rooms, carpet, central heating and air conditioning and various color schemes in the dormitories. Apartment accommodations in newly remodeled buildings also are available.

Students who do not feel the residence hall program meets their personal needs may elect to find living accommodations off campus.

Questions concerning the housing system, its policies, room and board rates, should be directed to the Student Housing Office, Lamar University Station, Box 10041, Beaumont, Texas 77710.

The Mary and John Gray Library, the centerpiece of the Lamar University – Beaumont campus, provides access to more than 800,000 volumes in this eight-story building.

Academic Information

Course Numbering

Semesters of a course are numbered separately and each number contains three or more figures. Master's level courses are numbered 400G and 500. Doctoral level courses are numbered 500D and 600. Students who receive graduate credit for 400 (also 400G) level courses are expected to complete extra assignments in the courses over and above what is required for undergraduate credit.

The second figure indicates the number of semester hours credit. The third figure or figures indicates the order in which the course normally is taken. The letter "A" or "B" following course numbers indicates partial credit in each course; full credit for such numbered courses will be granted only when the series has been completed.

In this bulletin, each course title will be followed by three digits separated by colons such as (3:3:1). This code provides the following information. The first number is the semester hours of credit for the course. The second number is the class hours of lecture, recitation or seminar meetings per week. The third number is the required laboratory hours per week. The letter "A" indicates that the hours are arranged, usually with the instructor of the course.

Changing Schedules

All section changes, adds and drops must be approved by the department chair of the student's major field. All such changes are initiated by the completion of the proper form available in the department chair's office. Usually, a course may not be added after the first two days of a regular or summer session.

Dropping Courses

After consultation with their advisor and/or department chair, students may drop a course and receive a grade of "Q" during the first six weeks (two weeks in the summer session) of the semester. For drops after this penalty-free period, grades are recorded as "Q" or "F" indicating that the student was passing or failing at the time of the drop. A grade of "Q" may not be assigned unless an official drop has been processed through the Office of Records. A student may not drop a course within 15 class days of the beginning of the final examinations or five class days before the end of a summer term.

Students should check published schedule for specific dates. A written petition to the Dean of the College in which the course is offered is required of students wishing to drop after the official drop date.

Withdrawal from the University

Students officially withdrawing during the periods noted below will receive a refund on tuition, Setzer Center, student service, laboratory, building and general use and private lesson fees according to the following schedule:

Fall or Spring Semester

1. Prior to the first class day, 100 percent.
2. During the first five class days, 80 percent.
3. During the second week of the semester, 70 percent.
4. During the third week of the semester, 50 percent.
5. During the fourth week of the semester, 25 percent.
6. After the fourth week of the semester, none.

Summer Session

1. Prior to the first class day, 100 percent.
2. During the first, second or third class day, 80 percent.
3. During the fourth, fifth or sixth class day, 50 percent.
4. Seventh class day and after, none.

The $10 Property Deposit is refundable upon written request by the student to the Finance Office.

Withdrawing from the University does not relieve the student of any financial obligations under the Installment Payment Agreement or for any student loans as these are the student's legal financial commitments.

NOTE: Students who withdraw from the University are required to surrender their Parking Permit in the Finance Office for appropriate refunds. Identification cards must also be surrendered in the Finance Office. Photo ID Services will replace the ID card when the student returns to the University and presents a paid fee schedule and receipt.

Enforced Withdrawal Due to Illness

The Director of the Health Center and the Associate Vice President and Dean of Students, on the advice of competent medical personnel, may require withdrawal of or deny admission to a student for health reasons (mental or physical).

Academic Records

Academic records are in the permanent custody of the Records Office. Transcripts of academic records may be secured by an individual personally or will be released on the student's written authorization.

Students who owe debts to the University may have their official transcripts withheld until the debt is paid.

Chapter 675, Acts of the 61st Legislature, 1969 Regular Session, provides that "no person may buy, sell, create, duplicate, alter, give or obtain a diploma, certificate, academic record, certificate of enrollment or other instrument which purports to signify merit or achievement conferred by an institution of education in this state with the intent to use fraudulently such document or to allow the fraudulent use of such document."

"A person who violates this Act or who aids another in violating this Act is guilty of a misdemeanor and upon conviction, is punishable by a fine of not more than $1,000 and/or confinement in the county jail for a period not to exceed one year."

Educational Records and Student Rights

The following information concerning student records maintained by Lamar University is published in compliance with the Family Education Rights and Privacy Act of 1974, PL 93-380.

Access to educational records directly related to a student will be granted to him or her unless the type of record is exempted from the provision of the law.

The types, locations and names of custodians of educational records maintained by the University are available from the Dean of Records and Registrar.

Access to records by persons other than the student will be limited to those persons and agencies specified in the statute. Records will be maintained of persons granted such access and the legitimate interest in each case.

The release of information to the public without the consent of the student will be limited to the categories of information which have been designated by the University as directory information and which will be routinely released. The student may request that any or all of this information be withheld from the public by making written request to the Dean of Records and Registrar. The request must be made by the last official day to register for a given session and applies to that session only. Directory information includes name, current and permanent address, telephone listing, date and place of birth, marital status, country of citizenship, major and minor, semester hours load, classification, eligibility for and participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, with dates, and the last educational agency or institution attended.

A student has the right to challenge records and information directly related to him or her if they are considered to be inaccurate, misleading or otherwise inappropriate. Issues may be resolved either through an informal hearing with the official immediately responsible or by requesting a formal hearing. The procedure to be followed in a formal hearing is available in the Office of Records.

The right of parental access to student records may be established by either of two methods; first, by the student filing a written consent statement or, second, by the parent validating the student's dependency as defined by IRS.

Summons

An official summons takes precedence over other university activities of the student and should be answered promptly on the day and hour designated.

Student Conduct

In order to meet its educational objectives, an institution of higher learning must expect rational, mature behavior from its constituency. To accept anything less is to invite the destruction of not only academic freedom but the system of higher education itself.

Disciplinary procedures, specific University rules and regulations and statements of student rights and responsibilities are published each year in the *Student Handbook*. Copies of the *Student Handbook* are available in the office of the Dean of Students.

Penalty

A student who makes a false statement to any university official or office or on any official form submitted to the University is subject to immediate dismissal.

Student Debts

The University is not responsible for debts contracted by individual students or student organizations and will not act as a collection agency for organizations, firms or individuals to who students may owe bills.

Students and student organizations are expected to honor contractual obligations promptly.

Penalty for failure to clear up these obligations may be (a) no readmission, (b) withholding of grades and transcripts, (c) withholding of degree.

Parking

At registration, each student who pays the necessary fee is issued a permit which allows parking on the campus. This permit is numbered and is to be attached to the back of the rear-view mirror of the car.

Change of Address or Name

Students are responsible for all communications addressed to them at the address on file in the Office of Student Development, in the Office of the College of Graduate Studies and in the Office of Records. Any student who moves during a semester must immediately register the change of address in the above offices. Change of address forms are available in the Office of Records.

Change of name due to marriage, or correction of name because of spelling errors, may be made by completing a name change card at the Office of Records. All name changes must be accompanied by a copy of the legal document making the name change official. This document will be kept on file in the student's confidential folder.

Class Attendance

Regular class attendance is important to the attainment of the educational objectives of the University. Especially in lower division courses and in large classes at any level, the instructor should keep attendance records and should formulate an attendance policy consistent with departmental policies but suited to the needs of the particular course. The instructor's policy is to be explained in detail to the class at the beginning of the semester.

Policy on Student Absences on Religious Holy Days

In accordance with the Texas Education Code 51.911, a student who is absent from classes in observance of a religious holy day will be permitted to take an examination or complete an assignment scheduled for that day at a time specified by the instructor if, not later than the 15th day after the first day of the semester, the student notifies the instructor of each class the student had scheduled on that date that the student would be absent for a religious holy day.

"Religious holy day" means a holy day observed by a religion whose place of worship is exempt from property taxation under Section 11.20, Tax Code.

Notifications of planned absences must be in writing and must be delivered by the student either (a) personally to the instructor of each class, with receipt of the notification acknowledged and dated by the instructor, or (b) by certified mail, return receipt requested, addressed to the instructor of each class. A form, *Notification of Planned Absence for Religious Holy Days,* may be obtained from the Office of Records and Registrar, Wimberly Building, for the purpose of notification. The completed form must be delivered by the student to the instructor of each class affected by the absence. Upon review of the notification form, instructors will sign and date the receipt of the notice, retaining a copy for the instructor and returning one copy to the student.

Instructors may refer any questions regarding the qualification of the absence to the Associate Vice President and Dean of Students. Students may be required to present to the Associate Vice President and Dean of Students a written statement documenting that such absence qualifies under the terms of a religious holy day.

College of Graduate Studies

History

The College of Graduate Studies was instituted in Fall 1960 with the offering of the Master of Arts degree in the fields of history and English.

In 1962, master's degrees were begun in mathematics, engineering and elementary education; in 1965, in business administration, chemistry, special education and secondary education; in 1968, in health and physical education, political science, speech, and guidance and counseling; in 1969, in biology, and in 1970, in educational supervision. Also in 1970, a doctor's degree in engineering was authorized. In 1972, a master's degree in school administration was approved. Master's degrees in public administration and in psychology were authorized in 1974. In 1975, master's degrees in music, music education and home economics were initiated. In 1981 the Master of Science in Deaf Education was approved and the Master of Engineering Management degree was begun in 1983. A Master of Science in Computer Science was added in 1984. A Doctor of Education in Deaf Education is approved beginning in 1994.

Objectives

The objectives of the College of Graduate Studies are as follows:

1. Advancement of knowledge through research.
2. Intensification within a student's chosen field of specialization and allied areas.
3. Development of the student's skill in the methodology of research.
4. Promotion of the power of independent thought by making students responsible for their own scholarship.

Degrees Offered

Master of Arts
- Master of Arts in English
- Master of Arts in History
- Master of Arts in Visual Art

Master of Business Administration

Master of Education
- Master of Education in Elementary Education
- Master of Education in Counseling and Development
- Master of Education in Secondary Education
- Master of Education in Special Education
- Master of Education in Supervision
- Master of Education in Administration

Master of Engineering

Master of Engineering Management

Master of Engineering Science

Master of Music

Master of Music Education

Master of Public Administration

Master of Science
- Master of Science in Biology
- Master of Science in Chemistry

Master of Science in Computer Science
Master of Science in Deaf Education
Master of Science in Environmental Engineering
Master of Science in Environmental Studies
Master of Science in Kinesiology
Master of Science in Home Economics
Master of Science in Mathematics
Master of Science in Psychology
Master of Science in Speech (Speech Pathology, Audiology, Public Address)
Master of Science in Theatre

Doctor of Education in Deaf Education

Doctor of Engineering

Regulations

Student Responsibility

It is the responsibility of each student to know the regulations of the Graduate College and the major department, to enroll in the appropriate course work to complete the degree plan, and to maintain the standards of the University, the College of Graduate Studies, and specific departments and programs.

Enrollment

Admission to Graduate Programs

All students seeking admission to a graduate degree program must first meet the minimum standards of the College of Graduate Studies. Applicants must also have the approval of the department in which the degree program is offered. The admission standards of departments may exceed those of the College of Graduate Studies.

Applications for admission to graduate programs are processed by the Graduate Admissions Coordinator. The Graduate Admissions Coordinator sends to graduate programs only those applications which meet the minimum standards of the College of Graduate Studies. The graduate departments then select those to be recommended to the Graduate Dean for admission. **NOTE: Meeting the admission standards of the Graduate College does not imply admission to a particular degree program.** The Graduate Dean notifies the Graduate Admissions Coordinator of admission decisions and the Coordinator provides written notification of admission status to the applicants. Statements by other university officers concerning the applicant's admissibility are not valid until confirmed by the Graduate Dean.

Admission to any degree program is valid for one year from the admission date. The applicant who does not enroll during that period will be required to resubmit all application materials and meet the admission standards in force at the time of the second application.

Graduate students wishing to change from one major field to another must make application to the Office of the Graduate Dean and must meet all specific program admission requirements for the new major.

1. **Application Deadlines:** Domestic students (U.S. citizens and permanent residents) must submit all application materials at least 30 days before Fall, Spring, or Summer registration. Deadlines for international students are May 15 for Fall semester, October 1 for Spring, and February 15 for Summer terms.
2. **Application Submission by Domestic Students (U.S. citizens or permanent residents):** Applicants for admission to the College of Graduate Studies must submit the following to the Graduate Admissions Coordinator at least 30 days before registration:
   A. **Completed Application Form**
   B. **Transcripts.** Submit an official transcript from each college or university attended. All transcripts submitted to Lamar University become the property of the University and are not returnable.
   C. **GRE and GMAT Test Scores.** With two exceptions, all prospective graduate students are required to submit scores on the Graduate Records Examination (GRE). Applicants should have the Educational Testing Service, which administers the GRE, send test scores directly to Lamar University. The two exceptions to the GRE requirement are applicants for the Master of Business Administration (MBA) and deaf applicants. MBA applicants are not required to take the GRE, but *must* submit scores on the Graduate Management Admission Test, GMAT. See the College of Business section of this *Bulletin* for specific requirements. Deaf applicants may substitute performance intelligence and reading ability test scores for the GRE. See the College of Fine Arts and Communication section of this *Bulletin* for details on admission of deaf applicants. **GRE and GMAT scores more than five years old will be accepted only with permission of the Graduate Dean.**
3. **Admission Standards for Domestic Students (U.S. citizens and permanent residents):**
   A. **Undergraduate Degree.** A prospective student must have a bachelor's degree from an institution approved by a recognized accrediting agency.
   B. **GRE Scores.** All applicants, except for deaf students and those seeking admission to the MBA program, must meet **one** of the following GRE criteria:
      1. A minimum combined score of 950 on the Verbal plus Quantitative sections of the GRE.
      2. A minimum combined score of 900 on the Verbal plus Quantitative sections of the GRE with a minimum of 350 on the Verbal section.
      3. Minimum scores of 400 on the Verbal section and 400 on the Quantitative section of the GRE with a minimum total of 900 on these two sections.
   C. **GMAT Scores.** Admission to the Master of Business Administration (MBA) program is based in part on a formula which considers both the undergraduate GPA and the GMAT score. See the College of Business section of this catalog for details.
   D. **Undergraduate Grade Point Average.** Except in the College of Business, all applicants must have a 2.75 grade point average on the last 60 semester hours of work, or 2.50 on all undergraduate work. The grade point average is calculated by dividing the total number of grade points earned by the total number of semester hours attempted ("A" equals 4 grade points, "B" equals 3, "C" equals 2, "D" equals 1, and "F" equals 0). The College of Business also considers the undergraduate grade point average in the admissions process, but in a somewhat different manner. See the College of Business section of this catalog for details.

E. **Undergraduate Work in Intended Major Field, Prerequisites and Deficiencies.** The applicant for graduate study ordinarily must have completed no fewer than 24 semester hours of undergraduate work in the intended major field, 12 of which must be at the junior and/or senior level. Applicants who do not meet this requirement may be required to make up such deficiencies as prescribed by the graduate major. A GPA of 3.0 for assigned deficiency/leveling courses must be maintained and grades below "C" will not be accepted. Departments which wish to do so may establish more stringent requirements. MBA students with deficiencies will be required to complete first year MBA courses as determined by the College of Business with a grade of "C" or better and an overall GPA of "B" or better in all course work taken.

4. **Admission Procedures and Standards for International Students.** International students are required to follow the procedures and meet the standards for domestic students as stated above. Additional requirements for international students include the following:

   A. **Transcripts.** International students must submit official certified transcripts from all colleges and universities attended. If the transcripts are not in English, the student must provide certified translations.

   B. **TOEFL score.** Most international students whose first language is not English must take the Test of English as a Foreign Language (TOEFL) and score better than 525. Lamar University-Beaumont must receive the official TOEFL scores before admission can be granted. For information about testing dates and places, write to TOEFL, PO Box 899, Princeton, NJ 08540, USA. The TOEFL is not required of those international students who have received an undergraduate or graduate degree from a university where English is the language of instruction (e.g., universities in the United States, Canada, and England).

   C. **Proof of Financial Resources.** International students must prove that they have the financial resources to attend Lamar University-Beaumont. As part of the application process, international students must submit an original Confirmation of Financial Resources form which asks for personal, family, and/or sponsor financial information and a bank verification of financial holdings. All international students are required to have health and accident insurance for themselves and all their dependent family members in the United States. Insurance may be purchased at the University during the registration period.

   D. Proficiency in spoken English may be required by some graduate programs.

5. **Admission Procedures and Standards for Doctoral Degrees.** Prospective Doctor of Engineering (D.E.) students must send a letter to the Dean, College of Engineering, Box 10057 Lamar University, Beaumont, TX, 77710. The letter should give information on the applicant's engineering experience, current employment and major research interests. For details on GPA, GRE, TOEFL and background requirements, see the College of Engineering section of this catalog.

   Prospective Doctor of Education in Deaf Education (Ed.D.) students must send a letter to the Chair, Department of Communication Disorders (Speech and Hearing), Box 10076 Lamar University, Beaumont, TX 77710. The letter should give information on the applicant's deaf education experience, training, employment history, current employment, and major research interests. Deaf applicants are encouraged and experience as a teacher of the deaf is required. For details on GPA, GRE, TOEFL and background/experience requirements, see the College of Fine Arts and Communication section of this catalog.

6. **Readmission of Former Graduate Students.** A former graduate student who has not maintained continuous enrollment for two semesters (summers excluded), but who is academically eligible to continue in the graduate degree program where he or she was most recently enrolled, may be permitted to return. The procedures are dictated by the period of absence from enrollment as follows:
   1. **Less Than Two Years.** The student simply notifies the Graduate School and the program coordinator of his or her plans to return.
   2. **Two to Four Years.** A new application must be submitted and endorsed by the program coordinator and the Graduate School. The application must show any intervening graduate work, and appropriate official transcripts of the work may be required by the Graduate School. The applicable admission standards are those that were in effect when the student originally enrolled.
   3. **Four or More Years.** The student is considered a new applicant and new supporting materials are required. The applicable standards are those in effect when the student applies for readmission. Coursework more than six years old may not be counted toward a graduate degree.

Appeal of Admission Denial

Prospective students who have been denied admission to the College of Graduate Studies have the right of appeal through the Graduate Appeals Committee. The Committee meets on the second Wednesday in October and the first Wednesday in March unless otherwise indicated. The Committee considers appeals on an individual basis and makes recommendations to the graduate dean. Contact the Office of Graduate Studies (219 Wimberly Building) for complete details on the appeals process.

Post Baccalaureate (PB) Admission for Nondegree Students

1. **Definition.** The Post Baccalaureate (PB) classification carries undergraduate status, does not culminate in a graduate degree, and should not be considered as a means to enter graduate school. The PB admission category is designed primarily for students who do not intend to earn a graduate degree but wish to enroll in graduate courses. All students who enroll in graduate courses without meeting admission standards or completing the admission process are given PB status.
2. **Admission.** To receive the PB classification, the applicant must:
   A. Have received a bachelor's degree
   B. Submit an application for admission with PB status to the Graduate Admissions Coordinator
   C. Submit an official transcript from each college previously attended, showing highest degree earned
   D. Be approved for admission with PB status by the University
3. **Enrolling in Courses as a PB Student.** PB students are not permitted to enroll in graduate courses without the prior consent of the chair of the department offering the course/s desired. PB students are not permitted to enroll in graduate business courses without the prior consent of the Associate Dean of the College of Business. PB students who want to enroll in elective undergraduate courses for personal or professional development are advised through the Center for Adult Studies – 106 Montagne Center.

4. **PB Classification and International Students.** International students will not be admitted with PB status.
5. **Application of PB Credits Toward a Graduate Degree.** If a PB student is eventually admitted to the Graduate College, a maximum of six semester hours earned under PB classification may be applied toward a graduate degree if approved by the department and by the Graduate Dean.
6. **Competitive Graduate Scholarships and Assistantships for PB Students.** PB students are not eligible for graduate assistantships and scholarships.

Academic Policies

All graduate students are expected to be familiar with the policies and regulations of the College of Graduate Studies.

1. **Academic Year.** The University divides the academic year into two long semesters (Fall and Spring) and two summer terms of six weeks each.
2. **Time Limit for Degree Completion.** All course work applied toward a given degree, except for doctoral degrees, must be *completed* within a period of six years. This time limit applies to all work at the graduate level, including work transferred from another institution. Time spent in active military service is not included in the six-year limit.
3. **Maximum Semester Course Load.** The maximum course load for graduate students during spring and fall semesters is 15 hours per term. The maximum course load for graduate students for any one summer term is six semester hours, or seven hours if a lab is taken. These maximums apply even when the graduate student is enrolled in a combination of graduate and undergraduate courses.
4. **Definitions of Full and Part-Time.** A full-time graduate student is defined as a student taking at least nine semester hours of graduate work during fall or spring semesters, or both 669A and 669B (thesis) during the same semester, or enrolled in Egr. 662 (doctoral field study). During their final semester, students enrolled in thesis 669B may be considered full-time with six semester hours. Students taking less than nine semester hours of graduate work during a semester are considered part-time. Full-time status is required for fellowships and scholarships. Teaching/research assistants must also be full-time, though their teaching/research time can be used in the computation of full-time equivalency (e.g., a teaching assistant might enroll in two graduate courses and assist in the teaching of one or two courses).
5. **Permission for an Undergraduate Student to Enroll in Graduate Courses; Reservation of Work by Undergraduates for Graduate Credit.** An undergraduate student who is within 12 semester hours of graduation may take a maximum of six semester hours of graduate courses which may be applied toward a master's degree. The program director/chair of the intended graduate program and the graduate dean must approve, and the total academic load may not exceed 15 semester hours. Permission forms are available in the Graduate Office (219 Wimberly) and in departmental offices.
6. **Transfer of Graduate Credits to Lamar University–Beaumont.** With the approval of the chair/program director of the major department and the graduate dean, a student may transfer up to six semester hours of graduate work completed at another regionally accredited institution. Only courses with grades of "A", "B" or "S" (satisfactory) which were accepted as graduate credit at the institution where the work was taken may be considered for graduate transfer.

7. **Application of Institute Hours Toward a Degree.** A maximum of six semester hours of work done in institutes may be approved for graduate credit toward a degree. Institutes are defined as graduate courses of less than three weeks duration.
8. **Application of Credits from One Master's Degree Toward a Second Degree.** A maximum of six semester hours taken for one master's degree may be counted toward a second master's degree with the approval of the department in which the second degree is sought.
9. **Use of Advanced Undergraduate Courses Toward a Graduate Degree.** With approval, junior- and senior-level courses may be used for graduate credit if they are taken while the student is enrolled in graduate school and the professor assigns additional material/work to upgrade the course to graduate level. Approval is obtained by filing a completed "Use of 300 or 400 Level Course for Graduate Credit" form with the Graduate Office before the 12th class day of the semester in which the course is taken.
10. **Correspondence Credit and Credit by Examination.** Courses taken by correspondence are not accepted for graduate credit. Credit by examination is not accepted for credit toward graduate degrees.
11. **Course Repetition.** With approval of the chair of the major department, a student may enroll for a course a second or subsequent time and have it counted as part of the semester's load. If a course is repeated, the last grade recorded will be considered the official grade, but the original grade remains on the student's record as a course taken. A repeated course will be included in the student's cumulative record and in the computation of the GPA. Independent study/special topics courses may have the same course number but are not considered to be the same course if the topics differ.
12. **Change of Major.** Except in the College of Business, changes of major must be approved by the chair and/or the graduate advisor in the new graduate program and by the Graduate Dean. In the College of Business, changes must be approved by the associate dean and by the dean of the College of Graduate Studies. New international students may begin the process of changing majors during their first semester but may not actually make the change until their second term.
13. **Enforced Withdrawal or Course Drop.** A graduate student may be required to drop a course or courses or withdraw from the University temporarily or permanently if the student's academic work is below the standards of the College of Graduate Studies (see discussion of probation/suspension below), or if the student is found to have engaged in academic dishonesty or misconduct.
14. **Academic Dishonesty, Misconduct, Discipline Code.** Student conduct regulations, as found in the Lamar University-Beaumont *Student Handbook*, apply to all graduate students. These regulations include policies relating to academic dishonesty, plagiarism, University disciplinary code, and student rights and responsibilities. It is the responsibility of all graduate students to read the *Student Handbook* and to abide by all University regulations.
15. **Grading System.** The grading system for graduate students is A, B, C, D, F, I (incomplete), S (satisfactory), U (unsatisfactory), Drop, and Withdrawal. In computing grade point averages, an A is valued at four grade points, a B three, a C two, a D one, and an F zero. An overall grade point average (GPA) of B (3.0) on all graduate work attempted is required for graduation. Thesis grades are not included in the computation of grade point averages. Incomplete work that is not

finished during the next long semester (spring or fall) will be credited with an F. With compelling justification, the Graduate Dean may grant an extension of the time limit for the completion of incomplete work.

16. **Additional Departmental GPA Requirements.** A department or graduate program may impose GPA standards for its majors which exceed those of the Graduate College.
17. **Admission of Faculty to Graduate Degree Programs.** Lamar University-Beaumont faculty will not be permitted to work toward a graduate degree within their own department at Lamar University-Beaumont. To pursue a graduate degree in another department, faculty must have the approval of the Graduate Dean.
18. **English Proficiency Required of International Students for Graduation.** International students whose first language is not English are required to pass the Michigan Test before they may be admitted to candidacy for a graduate degree. The Michigan test is not used as an admission requirement to the Graduate College and is taken after the student is admitted and arrives on the Beaumont campus. International students who do not pass the Michigan Test are required to enroll in an English as a Second Language (ESL) course until they pass the test.
19. **Rule Changes.** The University reserves the right to change any of its rules, regulations, or course requirements without notice.
20. **Waiver of Regulations.** Graduate students have the right to file a petition for exemption from any academic regulation of the Graduate College. Petitions for exemption are considered by the Graduate Appeals Committee, which makes recommendations to the Graduate Dean. Decisions of the graduate dean may be appealed through administrative channels.
21. **Open Records Policy.** Student records, which generally include information concerning the student and the student's individual relationship to the educational institution, are available on request to Lamar University-Beaumont personnel who have an educational interest in the records. Individual records are also accessible to the student in question, the student's parent or legal guardian until the student reaches the age of 18, and thereafter if the student is a dependent of the parent or legal guardian. Without written consent of the student, records are not released except as noted above.

Quality of Work Required, Probation/Suspension Regulations

The graduate student must maintain a 3.0 grade point average on all courses that receive graduate credit, whether or not they are to be applied toward a graduate degree. A student whose GPA in graduate work falls below 3.0 must make up the deficit, either by repeating courses in which the grades are low, or by completing other graduate courses with grades high enough to bring the GPA up to 3.0.

Graduate students who do not meet the academic standards of the Graduate College will be placed on probation or suspended. Students on probation may enroll in graduate courses but may not apply for graduation. Suspended students may be temporarily or permanently denied permission to enroll in graduate courses. In computing graduate academic status, all graduate work taken during the previous six years except thesis and field study courses apply. Graduate work taken at another institution will be included in the computation only when that work is applied toward a degree in progress at Lamar University-Beaumont.

1. **Minimum Academic Performance.** Graduate students with grade point averages of 3.0 or better are in good standing. Students with GPAs below 3.0 will be placed on probation or suspended, depending on the GPA deficit.
2. **Computation of Grade Point Deficiency for Probation and Suspension.** Grade point deficiencies are used to determine academic status when the GPA falls below 3.0. In determining grade point deficiencies, As are valued at 1 positive point, Bs are neutral and have no point value, Cs are equivalent to 1 negative point, Ds carry 2 negative points, and Fs are valued at 3 negative points. In computing the grade point deficiency, the semester hour credit for each course is multiplied by the grade point value. For example, a student with grades of D, C, B, and A would be 6 grade points deficient: (–2x3) + (–1x3) + (0x3) + (1x3) = –6.
3. **Probation.** Graduate students with grade point deficiencies of six or less are placed on academic probation. Probationary status is removed when the GPA is improved to 3.0 or better. Students on probation may enroll in courses but may not apply for admission to candidacy or graduation.
4. **Suspension.** A graduate student with a deficiency of more than six grade points at the end of the fall or spring semester will be suspended for the following long semester. Suspended students may enroll in summer graduate courses. Suspension for the fall semester may be removed if the student reduces the deficiency to six or less during summer terms. The first academic suspension shall be for one long semester (fall or spring) and the second suspension will be for two long semesters. The third suspension will be permanent.
5. **Transfers to New Major Departments by Students on Probation/Suspension.** Suspended students may be admitted to another department only after they have completed their suspension, provided that they meet the admission standards of the new graduate major. Students on probation may transfer to a different graduate program with the approval of the chair of the new program, but will remain on probation until their GPA is 3.0 or better.
6. **PB Students and Probation/Suspension.** Post baccalaureate students taking graduate course work are not subject to probation or suspension until they have been admitted to the graduate college and a graduate degree program.
7. **Grades Earned in Deficiency, Leveling, or Background Courses.** A GPA of 3.0 must be maintained for all undergraduate and graduate courses assigned as deficiency, leveling, or background work by the student's major department. Such courses must be repeated if grades of D or less are received.
8. **Additional Departmental Regulations.** A department may require its majors to meet additional standards with regard to probation, suspension, and dismissal. These may be found in the appropriate departmental section of this catalog.

General Degree Requirements

1. Students must earn the number of semester hours of graduate credit specified by their major departments. Specific details may be found in the departmental section of this Bulletin.
2. A minimum of 18 semester hours of the required hours must be courses numbered 500 or above.
3. Any student who writes a thesis must defend it orally before his/her committee. Students who do not write theses must pass a comprehensive examination, which may be oral, written, or a combination of both. Please consult the departmental section of this catalog for specific details.

4. The student must meet the specific requirements as set forth in this catalog for a particular degree program.

Master of Arts

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work: 18 in the major field, six in thesis, six in an approved minor or six additional hours in the major.
3. Present evidence of a reading knowledge of at least one foreign language. This requirement may be satisfied by examination or by submitting college credit equivalent to that required for the degree of Bachelor of Arts in this institution.
4. For the Master of Arts in Political Science, successful completion of nine hours of quantitative skills courses (Pols 3319, Pols 4319, and Pols 530) may be substituted for the foreign language requirement.

Master of Business Administration

1. Meet all general degree requirements.
2. Complete 30 hours of second year MBA courses specified under College of Business degree requirements if a thesis is written, plus any first year MBA courses required.
3. If a thesis is not written, complete 36 hours of second year MBA courses as specified under College of Business degree requirements, plus any first year MBA courses required.

Master of Education

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work if a thesis is written or 36 semester hours if a nonthesis program is selected.
3. Meet the specific requirements listed in the College of Education section of this catalog for each degree program.

Master of Engineering

1. Meet all general degree requirements.
2. Complete 36 semester hours of graduate work or complete 30 hours of graduate work plus a three-hour design project.

Master of Engineering Science

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work, including six semester hours in thesis.
3. Meet the specific requirements listed in the College of Engineering section of this catalog.

Master of Music (Performance)

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work: 12 hours in the Applied Major, six in Music Literature, six in Music Theory and six in Music Education.
3. Special requirements in addition to the above: a formal public recital and a research paper OR a lecture recital.

Master of Music Education

1. Meet all general degree requirements.
2. Complete 36 semester hours of graduate work: 18 in Music Education, six in Music Literature, six in Music Theory, and six in Thesis.
3. Exceptions: six additional hours in Music Education may be substituted for the Thesis, and six hours in Applied Music may be substituted for Music Education courses.

Master of Public Administration

1. Meet all general degree requirements.
2. Complete 36 semester hours of graduate work as specified for the degree in the Department of Political Science section of this catalog.
3. Pass both oral and written comprehensive final examinations.

Master of Science

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work: 15 to 18 semester hours in the major field, six in thesis and six to nine semester hours in the minor field. With the approval of the head of the major department, a student may elect to take all work in the major field.
3. If a thesis is not required, complete 36 hours of approved course work.
4. The graduate degree in psychology requires 36 hours in approved course work and six hours in thesis.
5. Students applying to the Computer Science program must satisfy the depth and breadth requirements as defined by the Graduate Faculty of the Computer Science Department.

Doctor of Education in Deaf Education

1. Obtain credit for all courses required by the student's doctoral committee. The number and extent of these courses will depend upon the student's pre-doctorate educational preparation, previous experience and specialization emphasis during the program. In general, a 30 semester hour core curriculum and a minimum of 30 semester hours of electives/cognates for a total of 60 semester hours.
2. Satisfactorily pass preliminary written and oral examinations after the completion of 18 semester hours.
3. Complete a four consecutive semester (1 calendar year) residency requirement.
4. Obtain admission to candidacy by completing all coursework required for the degree, complete 12 hours of dissertation credit following admission to candidacy, and successfully defend the dissertation prior to graduation.

Doctor of Engineering

1. Obtain credit for all courses required by the student's doctoral committee. The number and extent of these courses will depend upon the student's diagnostic examination, engineering experience and educational objectives. In general a minimum of 30 semester hours of 500 and 600 level course work, excluding Egr 632 and Egr 662, beyond the equivalent of a master's degree will be required.
2. The student shall complete a residency of one year.
3. Satisfactorily pass candidacy examinations as required by the student's doctoral committee.

4. Complete a field study, normally 30 semester hours, involving some technological innovation.
5. Submit and defend a formal engineering report on the field study.

Advisement and Admission to Candidacy

New graduate students do not have an advisory committee and are advised by the chair of the major department or a member of the graduate faculty designated as the initial advisor.

Graduate students are not considered to be candidates for a degree until they have completed a specified set of graduate courses and have proven their academic capability. In some programs, students must pass a qualifying exam before being admitted to candidacy. Students who have been admitted to candidacy are assigned an advisory committee, and the committee establishes a graduation plan.

1. **Initial Advisement.** For the first 12 hours of graduate work, students are advised by the chair of the major department or a member of the graduate faculty who has been designated by the chair as the initial advisor. In the College of Business, all graduate students are advised each semester by the Office of the Associate Dean.
2. **Timing of Admission to Candidacy.** Admission to the Graduate School does not imply admission to candidacy for a graduate degree. Students seeking a graduate degree must be admitted to candidacy **after** completing a minimum of 12 semester hours of graduate study and **before** their last 9 semester hours.
3. **Restrictions and Prohibitions to Admission to Candidacy.** Graduate students may not be admitted to candidacy if they a) are on probation, b) are suspended, c) have not removed all undergraduate deficiencies, and/or d) have not completed at least 12 hours of recommended graduate courses. International students required to pass the Michigan Test to indicate English proficiency must do so before they can be admitted to candidacy.
4. **Procedure for Applying for Admission to Candidacy.** The student is responsible for initiating the process for admission to candidacy by submitting the "Application for Admission to Candidacy for Master's Degree" form to the chair of the major department. The form is available in the Graduate Office (219 Wimberly Building) and departmental offices. Students should submit the form after completing 12 graduate hours but before enrolling in their final 9 hours.
5. **Recommendation of Advisory Committee and Degree Plan.** After receiving the "Application for Admission to Candidacy for Master's Degree" form, the departmental chair or the designated graduate advisor submits a recommended degree plan and suggested graduate committee to the Graduate Dean by filing a "Recommendation for Admission to Candidacy for Master's Degree" form. If these recommendations are approved, the student is admitted to candidacy. The graduate dean has the option of appointing additional members to an advisory committee.
6. **Composition and Roles of the Advisory Committee.** The advisory committee will include a member of the graduate faculty designated as the supervising professor along with at least two other members of the graduate faculty. The committee will assist in monitoring/supervising the remainder of the student's program, including revision of the degree plan; supervision of research; writing and approval of the thesis, field study, or dissertation; and administration and evaluation of the final comprehensive examination.

7. **Candidacy Examinations.** Departments may require passing examination scores in the admission to candidacy process.

Summary of Graduate School Master's Degree Requirements

Language requirement	M.A. only
Minimum GPA for good standing	3.00
Minimum TOEFL (international students)	525
Probation	6 grade points deficient or less
Suspension	more than 6 grade points deficient
Maximum transfer	6 semester hours
Maximum PB credits toward degree	6 semester hours
Minimum thesis credits	6
Time limit for degree	6 years
Maximum age of GRE scores	5 years
Minimum credit hours, most degrees	30 semester hours
Minimum credit hours, second degree	30 semester hours
Maximum registration, long semester	15 semester hours
Maximum registration, summer term	6-7 semester hours
Minimum residence	18 semester hours
Maximum transfer	6 semester hours
File for candidacy	after 12 hours and before final 9 hours

Doctor of Engineering

A student will be admitted to candidacy for the Doctor of Engineering degree only upon the recommendations of his/her doctoral committee. In general this committee will require the following:

1. Satisfactory progress in all course work.
2. Continuous pursuit of the degree by earning at least three semester hours credit in a two consecutive semester period. Any student who does not do so must apply to the graduate engineering faculty for permission to continue in the program.
3. Prepare a proposal for a field study involving a technological innovation and defend this proposal to a doctoral committee as part of the candidacy exami nations.
4. Satisfactorily pass other examinations designed to determine whether the student is ready to do the field study.

A student who fails to be admitted to candidacy on the first attempt may take additional courses or otherwise prepare for an additional attempt as may be recommended by the doctoral committee. Any student who does not meet the minimum requirements as established by the student's doctoral committee may be required to withdraw from the doctoral program.

Doctor of Education in Deaf Education

A student will be admitted to candidacy for the Doctor of Education in Deaf Education degree only upon the recommendations of his/her doctoral committee. In general, this committee will require the following:

1. Satisfactory progress in all course work.
2. Continuous pursuit of the degree by earning at least three semester hours credit in a two consecutive semester period. Any student who does not do so must apply to the graduate faculty in deaf education for permission to continue in the program.
3. Preparation of a proposal for a research study involving deaf studies/education issues and defend this proposal to a doctoral committee as part of the candidacy examinations.
4. Passing satisfactorily other examinations designed to determine whether the student is ready to do the dissertation.

A student who fails to be admitted to candidacy on the first attempt may take additional courses or otherwise prepare for an additional attempt as may be recommended by the doctoral committee. Any student who does not meet the minimum requirements as established by the student's doctoral committee may be required to withdraw from the doctoral program.

Advisory Committees

Members of a student's advisory committee are appointed by the Graduate Dean upon recommendation by the Chair of the student's major department at the time the student is admitted to candidacy. After admission to candidacy, but before the date of the final examination, the student may request a change in the committee composition with the approval of the student's department chair. If the department Chair does not approve a request for a committee change, the student may request the Graduate Dean to appoint a three member Review Committee. In the event the Review Committee fails to effect an agreement between the student and the original committee, a new committee may be selected for the student by the Graduate Dean, the Dean of the student's academic college and two members of the graduate faculty of the student's academic college chosen by the Graduate Dean. The time period should not exceed 10 class days from the date of receipt by the Graduate Dean of a written request for review and arbitration by the student and the appointment of a new committee, should one be necessary.

Thesis Requirements

A thesis is required for the Master of Science degrees in biology, chemistry, and psychology, and for the Master of Engineering Science degree. It is not available in programs leading to the Master of Public Administration and Master of Music degrees, or the Master of Education degrees in Guidance and Counseling or in School Administration. A thesis is optional in all other degree programs. Students who write theses are expected to follow the procedure below.

1. Register for the departmental thesis course with the approval of the student's graduate advisor. The first registration is for Thesis 669A; all subsequent registrations are for Thesis 669B. All students are expected to register for Thesis 669B until the thesis has been completed. NOTE: No academic credit is given for thesis courses until the thesis has been approved by the major department and accepted by the College of Graduate Studies. At that time, six semester hours credit will be awarded.

2. Write a thesis under the direction of the supervising professor. The form and style of the thesis must follow the *Thesis Information Manual* which is available from the College of Graduate Studies.
3. Submit a single, unbound copy of the thesis in final form to the Dean of the College of Graduate Studies at least two weeks before the oral defense and at least 30 days before the date of graduation.
4. Defend the thesis orally at least 10 days before the date of graduation at a time and place specified by the supervising professor. The defense must be scheduled in the Graduate College at least 10 days before the defense is to be held. The supervising professor will report the results of the defense to the College of Graduate Studies within two working days.
5. Submit three official final copies of the thesis on rag content paper to the Graduate College at least 10 days before graduation. Additional copies may be turned in for binding at the same time if desired or if required by the student's major department. All copies must be signed by the student's supervising professor and committee members, department head, and academic dean.
6. Submit two extra copies of the thesis abstract and a completed University Microfilms form at least 10 days before graduation.
7. Pay all binding and abstract publication fees in the University Bookstore at least 10 days before graduation.

Non-Thesis Requirements

1. All candidates for graduate degrees who do not write theses must pass a comprehensive final examination which must be taken during the last semester of attendance and at least 10 days before the conferral of the degree. The form of this examination is determined by the student's major department, and may be oral, written, or a combination of both.
2. A student registers for the comprehensive examination by applying for graduation in the Graduate College. Applications must be filed **before** the deadline established by the Graduate College. Those deadlines are:

For December graduation	First Monday in October
For May graduation	First Monday in March
For August graduation	First Monday of Summer Term I

Specific dates will be found in the calendar at the front of this Bulletin.

3. If all requirements for graduation except the comprehensive examination have been completed, the student may take the examination during a later semester without being enrolled in the College of Graduate Studies.
4. All oral examinations must be scheduled in the Office of the Graduate Dean at least 10 days prior to the date of the examination. The Dean may attend or may send a representative to attend.
5. All oral examinations will be scheduled as follows:

Fall Term	First Monday in November until 10 days before the date of graduation
Spring Term	First Monday in April until 10 days before the date of graduation
Summer Term	Last Monday in June until 10 days before the date of graduation

6. Written comprehensive examinations will be administered in accordance with the following schedule.

Fall Term	First Thursday in November
Spring Term	First Thursday in April

NOTE: Written comprehensive examinations will be given only once during the summer: on the last Monday of the first summer term. If this date conflicts with the July 4 holiday, the examinations will be given on the last Monday in June. For specific dates, please consult the official calendar in the front of this Bulletin or call the Graduate College for details.

7. Failure to pass a comprehensive examination in three attempts will result in a student being permanently suspended from that degree program. The examination may be taken only once each term. Students suspended under this provision may be admitted to another degree program if they meet the required standards and are accepted by the new degree program.

   A department may prescribe additional academic requirements for its majors with the approval of the Dean of the College of Graduate Studies.

Graduation Procedure

Students who intend to graduate at the end of a particular semester must apply for graduation in the office of the Graduate Dean on or before the official deadline for application as established by The College of Graduate Studies.

Degree candidates must be present at the commencement exercises unless they have been excused by the Graduate Dean. Written requests to graduate in absentia must be approved by the Graduate Dean for at least four weeks before the scheduled date of graduation.

College of Arts and Sciences

The College of Arts and Sciences offers programs of study leading to the Master of Arts degree in the fields of English, political science and history; to the Master of Science degree in the fields of biology and chemistry; and to the Master of Public Administration degree. In addition, graduate study is available in geology, physics and sociology as areas of support or specialization in other advanced degree programs.

Persons seeking admission to these programs must meet the requirements specified by the College of Graduate Studies and the individual department. Admission to a degree program is not an admission to candidacy.

Department of Biology

The Department of Biology offers a program of study leading to the Master of Science in biology degree. It is designed to enhance the professional competence of graduates in biology or closely related disciplines who are presently engaged in or planning to enter secondary school or college teaching, or who expect to be employed by private or governmental agencies in biologically oriented fields.

Applicants must 1) have completed a minimum of 24 semester hours in the biological sciences, 2) have completed a minimum of one semester of organic chemistry and one semester of statistics, 3) remove any deficiencies as provided in the section on admission, 4) score a total of 950 (Verbal plus Quantitative Sections) on the Graduate Record Examination, or if V + Q score falls between the Graduate College minimum score and 949, receive a majority vote of the biology graduate faculty, 5) have an undergraduate grade point average of at least 2.5/4.0 overall or on the last 60 hours of undergraduate work.

Degree Requirements

The candidate for the M.S. in biology must meet all the College of Graduate Studies general requirements as listed in this catalog. Additional specific requirements are

1. Submit a written proposal for the thesis. After the thesis proposal is written, pass an oral examination before the biology graduate faculty on the experimental design of the proposed thesis and related disciplines. Note: This requirement should be completed during the first year of enrollment and **must** be completed by the end of the second year of the program.
2. For their professional development, students will enroll in Bio 511 Graduate Seminar each Fall and Spring semester. A maximum of two semesters credit will be counted toward the Master's degree; subsequent enrollments will be for a grade but will not count toward the degree. Exceptions must be approved by the biology graduate faculty.
3. Thirty-three hours of graduate credit which may include a maximum of 16 hours in approved 400 level courses with augmented requirements. All course work will be in biology. Exceptions must be approved by major advisor and by the Chair, Department of Biology.

Graduate Faculty

Associate Professor David L. Bechler
Animal behavior, ichthyology
Assistant Professor Thomas S. Bianchi
Estuarine and marine ecology, biogeochemistry
Professor Wayne W. Carley
Physiology
Associate Professor Michael W. Haiduk
Genetics, vertebrate systematics
Professor Richard C. Harrel
Limnology, ecology, invertebrate zoology
Associate Professor Madelyn D. Hunt
Medical microbiology, epidemiology
Assistant Professor Richard A. Roller
Developmental physiology, marine biology
Associate Professor John T. Sullivan
Parasitology, immunology
Professor Michael E. Warren
Entomology, mosquito biology

Biology Courses

510 Materials and Techniques of Research **1:1:0**
Survey of laboratory and library research techniques, instrumentation and materials requisite to scientific investigation. Required of all entering graduate students.

511 Graduate Seminar **1:1:0**
Current topics in biological research. See requirement 3 under Degree Requirements.

540 Ornithology **4:3:3**
Natural history, taxonomy and ecology of birds.
Prerequisite: Bio 440.

541 Animal Behavior **4:3:3**
An analysis of the development and significance of various behavior patterns in animals from an evolutionary point of view.

542 Toxicology **4:3:3**
Toxicological principles and responses of the major organ systems. Pesticides, metals, and solvents and their effects on the environment will be considered.
Prerequisite: Organic chemistry

543 Ichthyology **4:3:3**
Natural history, taxonomy and ecology of freshwater and marine fishes. Required field trip.

544 Herpetology **4:3:3**
Natural history, taxonomy and ecology of amphibians and reptiles. Required field trip.

545 Mammalogy **4:3:3**
Natural history, taxonomy and ecology of mammals. Required field trip.

546 Marine Invertebrate Zoology **4:3:3**
Field study and identification of area species; current research. Required field trips.
Prerequisite: Bio 346 or 445.

547 Ecology of Polluted Waters **4:3:3**
Analyses of effects of water pollutants on aquatic ecosystems.
Prerequisite: Bio 443.

548 Aquatic Entomology **4:3:3**
Biology and classification of aquatic insects. Field trips and personal collection required.

549 Comparative Physiology **4:3:3**
Fundamental physiological processes in animals from the phylogenetic viewpoint.
Prerequisite: Bio 344, Chm 342.

558 Molecular Genetics **5:3:6**
Detailed treatment of molecular aspects of nucleic acids and genetic systems of pro-and eucaryotic organisms. Laboratory emphasis on isolation, purification, restriction digests, Southern blotting and recombinant DNA techniques.
Prerequisite: genetics, organic chemistry, and/or biochemistry recommended.

5101, 5201, 5301, 5401 Special Topics 1-4:A:0
Research in areas other than thesis.
Prerequisite: Approval of graduate advisor. May be repeated when topic changes.

669A-669B Thesis 6:A:0
Prerequisite: Approval of graduate advisor.

From the list below, a maximum of 16 semester hours of 400 level courses with augmented requirements may be taken for graduate credit, subject to approval by the graduate advisor and department chair. A College of Arts and Sciences Graduate Credit form must be submitted for each 400 level course taken.

4302 Cellular Physiology 3:3:0
Basic processes in physiology, metabolism, transport, energetics, molecular and cellular mechanisms. (Offered Spring semester)
Prerequisite: Junior standing, credit for organic chemistry.

440 Ornithology 4:3:3
Natural history, taxonomy and ecology of birds.

4402 Taxonomy of Vascular Plants 4:3:3
The classification of vascular plants; family characteristics, specific identification of the local flora and dominant plants of floristically different areas of Texas.

4404 Estuarine Ecology 4:3:3
Physical, chemical, and biological aspects of the zone interfacing freshwater and marine environments. Laboratory includes field trips for collecting data and specimens.

4405 Immunology 4:3:3
Organs, tissues, cells, and molecules of the immune response and their interactions.
Prerequisite: Bio 243

4406 Epidemiology 4:3:3
A study of the distribution and determinants of diseases and injuries in human populations. Laboratory utilizes a case history approach.
Prerequisite: microbiology; statistics recommended.

4307 Systematic and Evolutionary Biology 4:3:3
A survey of evolutionary mechanisms from molecular to population levels. Consideration of speciation, adaptation and historical geology.

441 Parasitology 4:3:3
A study of the morphology, life history and host-parasite relationships of parasites of man and other animals.
Prerequisite: Bio 141-142.

442 Entomology 4:3:3
Physiology, morphology, life history, collection, classification and control of insects.
Prerequisite: Bio 141-142.

443 Limnology 4:3:3
Fauna, flora, ecology and productivity of fresh water.
Prerequisite: Bio 141-142.

444 Vertebrate Natural History 4:3:3
Collection, identification and natural history of area fish, amphibians, reptiles, birds and mammals. (Offered Spring semester)Prerequisite: Bio 141-142.

445 Marine Biology 4:3:3
Habitats and community relationship of marine plants and animals.
Prerequisite: Bio 141-142.

446 Ecology 4:3:3
Quantitative approach to both field and experimental studies. Interrelationships of organisms and their environment.
Prerequisite: Bio 141-142.

Department of Chemistry

The Department of Chemistry offers a program of study leading to the Master of Science degree in Chemistry. Those seeking admission to this program must meet the general requirements as set forth in this catalog for admission to the College of Graduate

Studies and must have a minimum grade point average of 2.0/4.0 overall or on the last 60 hours of undergraduate work. In addition, the applicant must offer the substantial equivalent of the course in general chemistry, inorganic chemistry, analytical chemistry, organic chemistry and physical chemistry required of undergraduate students in the chemistry curriculum. The applicant also must have completed one year of college physics and mathematics through integral calculus.

Students working toward the graduate degree in chemistry will take a set of four proficiency examinations, one in each of the fields of chemistry; analytical, inorganic, organic and physical. These examinations are taken on entrance and are offered in the fall and again during the beginning of the Spring semester. The results of these examinations are used for orientation and guidance.

Degree Requirements

The candidate for the M.S. degree in Chemistry must meet all the College of Graduate Studies general degree requirements as listed in the catalog. Additional specific degree requirements are as follows:

1. Fifteen to 18 semester hours of course work in Chemistry which must include Chm 531, 533, 535, 537 and at least one 500 level Selected Topics course in Chemistry with a grade point average of "B" (3.0) in these courses.
2. Presentation of a thesis.
3. Six to nine additional semester hours of 400G or 500 level courses in an approved field of study.
4. Competence in computer science.
5. Examination results on the chemistry section of the GRE must be submitted before graduation.

Graduate Faculty

Professor Hugh A. Akers
Biochemistry
Assistant Professor Paul T. Buonora
Organic chemistry
Professor David L. Cocke
Analytical chemistry, environmental chemistry
Professor Keith C. Hansen
Organic chemistry
Professor John P. Idoux
Organic chemistry
Professor J. Dale Ortego
Inorganic chemistry
Associate Professor Shyam S. Shukla
Analytical chemistry, environmental chemistry
Professor John A. Whittle
Organic chemistry, biochemistry

Chemistry Courses

531 Advanced Analytical **3:3:0**
Prerequisite: Graduate standing or consent of instructor.

533 Advanced Inorganic **3:3:0**
Prerequisite: Graduate standing or consent of instructor.

535 Advanced Organic **3:3:0**
Prerequisite: Graduate standing or consent of instructor.

537 Advanced Physical **3:3:0**
Prerequisite: Graduate standing or consent of instructor.

539, 569 Graduate Problems in Chemistry **3 or 6:A:0**
May be repeated for credit. Techniques of research under close supervision of instructor; individual consultations; reports. May not be substituted for required courses.
Prerequisite: Graduate standing and consent of instructor and department head.

25101, 5201, 5301, 5401, 5501, 5610 Special Topics 1-6:1-6:0-6
The course is designed to meet special needs of students. Each topic is offered on an irregular schedule as the demand requires.
Prerequisite: Departmental approval.

5311 Selected Topics in Analytical Chemistry 3:3:0
May be repeated for credit when topic varies. Description of courses content will appear in schedule of classes.
Prerequisite: Chm 531 or consent of instructor.

5331 Selected Topics in Inorganic Chemistry 3:3:0
May be repeated for credit when topic varies. Description of course content will appear in schedule of classes.
Prerequisite: Chm 535 or consent of instructor.

5352 Modern Synthetic Organic 3:3:0
Selected topics in modern synthetic organic chemistry.
Prerequisite: Graduate standing.

5371 Selected Topics in Physical Chemistry 3:3:0
May be repeated for credit when topic varies. Description of course content will appear in schedule of classes.
Prerequisite: Chm 537 or consent of instructor.

669A-669B Thesis 6:A:0
Prerequisite: Approval of graduate advisor.

The following courses may be taken for graduate credit with augmented requirements, subject to approval by the departmental graduate advisor.

412 Senior Seminar 1:1:0
Reports and assigned reading.
Prerequisite: Senior standing in chemistry.

430 Organic Polymers 3:3:0
Chemistry of industrial polymerization of organic compounds, petro-chemistry of organic monomer preparation and chemical characteristics of organic polymers. Industrial field trip(s).
Prerequisite: Chm 342, Chm 431 or CHE 441 or parallel.

436 Inorganic 3:3:0
Study of the quantized atom, valency and the chemical bond, and coordination chemistry with applications to biological systems.
Prerequisite: Chm 431.

441 Biochemistry I 4:3:4
Structure chemistry and functions of biological compounds. A survey of the detailed structures, chemistry and functions of the various classes of biologically important compounds.
Prerequisite: Chm 342.

442 Biochemistry II 4:3:4
A detailed survey of metabolic pathways and processes.
Prerequisite: Chm 441.

444 Qualitative Organic Analysis 4:2:8
A study of systematic methods for the identification of organic compounds and mixtures of organic compounds.
Prerequisite: Chm 241 and 342.

446 Instrumental Chemical Analysis 4:3:4
Instrumental techniques of chemistry. Theory and practice in optical, electrometric and chromatographic methods.
Prerequisite: Chm 241, 342, 431.

Department of English and Foreign Languages

The graduate program of the Department of English and Foreign Languages offers opportunity for intensive study of language and literature. Scholarly interests of members of the department include old and middle English, the Renaissance, Shakespeare, eighteenth century studies, English and American romanticism, the Victorian age, modern English and American literature, and comparative literature. In addition to the study of literature through courses organized by genre, period and individual author, the student may explore the history and structure of language and language acquisition and the crafts of both creative and technical writing.

Degree Requirements

The degree of Master of Arts in English requires the completion of 30 semester hours of graduate work: 24 in English (or 18 with an approved six-hour minor), and six in thesis. In general, students are encouraged to emphasize graduate seminars (courses numbered 500 or above) in their graduate coursework, although appropriate 400 level courses, with augmented requirements, may also apply. In the non-thesis alternative, 12 semester hours of coursework may be substituted for the thesis. The creative thesis, as well as the traditional critical thesis, is an option.

All students must have a minimum undergraduate grade point average of 2.5/4.0 overall or on the last 60 hours of undergraduate courses. In addition, international students must score at least 550 on the TOEFL before admission. Students interested in pursuing an M.A. degree in English whose undergraduate major was not English should consult the English department chair.

Professional Certification Requirements (Texas) in English

The plan for the Professional Certificate—Secondary requires the completion of 36 semester hours of graduate work: 18 in English, six in resource areas and 12 in approved teacher education. At least 12 semester hours must be in English courses numbered 500 or above. The courses in the resource areas must be approved by the Chair of the Department of English and Foreign Languages; such approval will be given on the basis of the support they can give to the major and on the specific needs of the graduate student. The 12 semester hours of teacher education must be taken in courses specifically approved for the Professional Certificate-Secondary.

Depending on the student's undergraduate course work, the graduate program in English will ordinarily include English 533, 539, and two courses from 535, 536, 537, 538 or 5311.

Graduate Faculty

Professor Christopher P. Baker
English Renaissance

Associate Professor Lloyd M. Daigrepont
American literature before 1900

Professor Marilyn D. Georgas
Renaissance and Victorian literature

Professor R.S. Gwynn
Creative writing and post-modernism

Assistant Professor Gregory Kelley
Romanticism, Critical Theory

Assistant Professor Max Loges
Technical Writing

Assistant Professor Joseph E. Nordgren
Modern British Literature

Professor R. Victoria Price
English as a second language, Modern American and British literature

Associate Professor Dale G. Priest
English Renaissance, Eighteenth century

Assistant Professor James Sanderson
Creative writing, American literature

Assistant Professor Pamela S. Saur
German literature, the drama

Associate Professor Sallye J. Sheppeard
Medieval and Renaissance literature and rhetoric, women's studies

Professor Charles T. Summerlin
American literature, literary criticism, Bible as literature

Assistant Professor Stephenie Yearwood
Writing, English education, seventeenth century

English Courses

511 Composition Practicum 1:1:0
Practicum in the teaching of writing. Involves classroom experience, peer discussion and mentor consultation. Graded on S-U basis.
Prerequisite: Graduate teaching fellow standing.

533 Special Topics in Old and Middle English Languages and Literature 3:3:0
Intensive study of the languages necessary for reading literature of the period. Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing and Eng 430.

535 Special Topics in Renaissance and Seventeenth Century English Literature 3:3:0
An intensive study of an author or related authors selected from the period. Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

536 Special Topics in Restoration and Eighteenth Century English Literature 3:3:0
An intensive study of an author or related authors selected from the period. Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

537 Special Topics in Nineteenth Century English Literature 3:3:0
An intensive study of an author or related authors selected from the period. Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing

538 Special Topics in Twentieth Century Literature 3:3:0
An intensive study of an author or related authors selected from the period. Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

539 Special Topics in American Literature 3:3:0
An intensive study of an author or related authors selected from the period. Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

5311 Special Topics in Comparative Literature 3:3:0
Intensive study of an author or authors, genre or period selected from the range of world literature. Emphasis on analysis and literary method. Course may be repeated for a maximum of six semester hours credit when the topic varies.

5312 Special Topics in Language and Linguistics 3:3:0
Intensive study of special problems in linguistics, such as the history of American English, regional dialects, new grammars. May be repeated for a maximum of six semester hours credit when the topic varies.

5313A & B Special Topics in English Instruction 3:3:0
Intensive study of theory and pedagogy of language (A) or literature (B) for secondary teachers.

5314 Thesis Writing
Intensive study in the presentation of research in appropriate thesis or dissertation format.

669A-669B Thesis 6:A:0
Prerequisite: Approval of graduate advisor.

The following courses may be taken for graduate credit with augmented requirements, subject to approval of the departmental graduate advisor.

430 History of the English Language 3:3:0
Theory and nature of language. Studies in the growth of English and American forms.

432 Studies in 16th Century Literature 3:3:0
Critical studies in the poetry, prose and drama of the age. May be repeated for credit when the topic varies.

434 Shakespeare 3:3:0
Intensive study of selected major plays. May be repeated for credit when the topic varies.

435 Survey of 17th Century Literature 3:3:0
Critical studies in the poetry, prose and drama of the period 1600-1660. May be repeated for credit when the topic varies.

438 Studies in 18th Century Literature 3:3:0
Critical studies in the poetry, prose and drama of the period 1660-1800. May be repeated for credit when the topic varies.

439 Studies in Romantic Literature 3:3:0
Critical studies in the poetry, prose and drama of the Romantic period. May be repeated for credit when the topic varies.

4311 Studies in Victorian Literature 3:3:0
Critical studies in the poetry and prose of the Victorian period. May be repeated for credit when the topic varies.

4312 Studies in Language and Linguistics 3:3:0
Special problems in linguistics, such as the history of American English, regional dialects, new grammars. May be repeated for credit when the topic varies.

4314 Studies in Women's Literature 3:3:0
Critical studies in poetry, prose and/or drama by women from classical times to the present. May be repeated for credit when the topic varies.

4317 Modern Drama 3:3:0
A study of dramatic trends and representative plays from Ibsen to the present.

4318 Modern Poetry 3:3:0
A study of poetry developments in England and America with emphasis on representative poets from Hardy to the present.

4319 Modern Fiction 3:3:0
A study of prose fiction representative of modern ideas and trends, with emphasis on English and Continental authors.

4326 Studies in Rhetoric 3:3:0
A writing-intensive course focusing on a variety of concerns, including principles of classical rhetoric, matters of style and fundamentals of research. A unit on writing the critical paper is included.

4328 Early American Literature 3:3:0
A survey of all significant writers from the beginning of Colonial America to 1828.

4329 Modern American Literature 3:3:0
A critical survey of major American writers of the 20th century.

4333 Studies in a Particular Author 3:3:0
Intensive critical study of a major writer such as Chaucer, Milton, Hawthorne, Faulkner. May be repeated for credit when the topic varies.

4334 Critical Studies in Literature 3:3:0
Intensive critical study of a particular genre or theme in comparative literature of criticism. May be repeated for credit when the topic varies.

4336 Directed Studies in Literature 3:3:0
Study in literature in an area of mutual interest. May be repeated for credit when the topic varies.
Prerequisite: Junior standing.

4345 Writing Seminar
Intensive study in writing, focusing on specific topics, with either a technical or creative emphasis. May be repeated for credit when the topic varies.
Prerequisite: English 335 or permission of the instructor (for any creative writing seminar).

4355 Editing Technical Communications 3:3:0
Editing technical communications for clarity, conciseness, and form. Emphasis on affective communications within and between organizations and organizational levels including reports, proposals, manuals, memoranda, and news releases.
Prerequisite: Either English 331, 4326, or 4345 (when technically oriented) or permission of the instructor).

4365 Internship 3:3:0
Opportunity to work in "real world" work setting in activities related to professional communication and technical writing.
Prerequisite: At least two courses from English 230, 331, 4355.

English as a Second Language

The following 400 level English courses are applicable to the ESL endorsement program. They may be taken with augmented requirements for graduate credit with the approval of the appropriate graduate advisor.

4320 The Teaching of English as a Second Language 3:3:0
The course deals with techniques for teaching basic English skills and literature to non-native speakers. Socio-cultural aspects of second language learning.

4321 Crosscultural Communication 3:3:0
A general methodology course that focuses on both linguistic and cultural foundations of ESL and examines trends in ESL and strategies for teaching ESL.

4322 Psycholinguistics 3:3:0
Examines the current research and theory of first and second language acquisition and development as a base for teaching English to non-native speakers.

4323 Introduction to Linguistics 3:3:0
Provides background in the nature of language and linguistic changes as a basis for describing and comparing language systems; focuses on a description of the phonological, morphological, and syntactic features of English in contrast to features of other languages.

Department of Geology

The Department of Geology offers the following graduate courses to be used primarily as a support to other advanced degree programs.

Graduate Faculty

Assistant Professor James W. Westgate
Vertebrate paleontology, paleoecology

532 Environmental Geology 3:3:0
The geological aspects of the environment. The environmental significance of man's use of natural resources. Field and laboratory studies of the local environment. Field trip required. Term paper based on laboratory, library or field studies.

534 Fossils and Earth History 3:3:0
The evolution and history of life as recorded by fossils. Laboratory identification of common fossils. Demonstration of "hands-on" approach to the use of materials that illustrate the fossil record. Field trip required. Term paper based on laboratory, library or field studies.

5201 Institute in Earth Science 1:1:0
Summer, in-service, or other institutes for earth science teachers patterned after the inquiry-oriented Earth Science Curriculum Project approach to earth science. The course includes laboratory and field investigations in astrospace science, geology, meteorology and oceanography and "hands-on" experience with rocks, minerals, fossils, maps and other earth science materials and techniques. Field trips required.

5301 Institute in Earth Science 2:2:0
Summer, in-service, or other institutes for earth science teachers. Credit varies with duration. The description of the area of study of each institute will appear on the printed schedule. May be repeated for credit when nature of institute differs sufficiently from those taken previously.

5401 Institute in Earth Science 3:3:0
Summer, in-service, or other institutes for earth science teachers. Credit varies with duration. The description of the area of study of each institute will appear on the printed schedule. May be repeated for credit when nature of institute differs sufficiently from those taken previously.

Department of History

It is the purpose of the Department of History to impart a knowledge and understanding of the past to the students enrolled in the University. This objective is based upon the belief that such knowledge and understanding improves the quality of life for individuals and contributes to the welfare of our society. The Department seeks to accomplish this objective through a program of continued study and research by its members and students. Research interests of the Department focus on both American and European history.

Degree Requirements

Applicants for the Master of Arts in History must meet all Graduate College admission requirements. In addition, they must have an undergraduate grade point average of 2.5/4.0 overall OR on the last 60 hours of undergraduate work. Students who do not have a bachelor's degree in history may need to take background courses on the undergraduate level.

Because students in history must be capable of performing research in cultures other than their own, all students must demonstrate a reading knowledge of one classical or modern foreign language before receiving their master's degree. This requirement may be satisfied by completing the 232 course in a language, OR by passing a nationally recognized standardized test, OR by completing a project administered jointly by faculty members in the Departments of History and of English and Foreign Languages.

The Department offers both thesis and non-thesis options. The thesis program requires completion of 30 semester hours; 18 hours must be in 500 level courses. The student must also take six hours in a minor field which should be chosen to support the student's studies in history. With departmental approval, six additional hours in history may be substituted for the minor. The student receives six hours credit for writing and defending a thesis. The thesis option is strongly recommended for those planning graduate study beyond the masters.

The non-thesis option provides a strong foundation in a wide range of historical areas and periods and is designed for those who do not intend to seek a higher degree. Non-thesis students must complete 36 hours in history; 21 hours must be 500 level courses and six hours may be in an approved minor field. With departmental approval, six additional hours in history may be substituted for the minor. After completing their class-work, students must take a comprehensive examination which may be either oral or written as determined by the student and supervising professor.

Graduate Faculty

Professor Adrian N. Anderson
United States history, revolution, early national

Professor John M. Carroll
United States history, diplomatic, the South

Associate Professor Ronald H. Fritze
Tudor-Stuart England

Professor Howell H. Gwin, Jr.
European history, ancient, classical, medieval

Professor Paul E. Isaac
United States history, recent, the West

Professor John W. Storey
United States history, urban, social intellectual

Professor Walter A. Sutton
United States history, diplomatic

Professor Ralph A. Wooster
United States history, Civil War, the South

History Courses

532 Readings in American History — 3:3:0
Course may be repeated when topic varies.
Prerequisite: Graduate standing.

534 Readings in European History Since 1815 — 3:3:0
Course may be repeated when the topic varies.
Prerequisite: Graduate standing.

535 Seminar in Texas History — 3:3:0
Course may be repeated when the topic varies.
Prerequisite: Graduate standing.

537 Seminar in United States History — 3:3:0
Course may be repeated when the topic varies.
Prerequisite: Graduate standing.

5311 Seminar in European History — 3:3:0
Course may be repeated when the topic varies.
Prerequisite: Graduate standing.

5312 Directed Readings in History **3:A:0**
Directed readings to be arranged by student in consultation with faculty member in area of mutual interest. Course may be applied to 500 level course requirement for a **maximum** of **6** hours in the thesis program and **9** hours in the non-thesis option.

669A-669B Thesis **6:A:0**
Prerequisite: Approval of graduate advisor.

The following courses may be taken for graduate credit with augmented requirements, subject to approval by the departmental graduate advisor.

430 Era of the Renaissance and Reformation **3:3:0**
Western Europe from 1453 to 1610.

431 The Old Regime **3:3:0**
Western Europe from 1610 to 1783.

432 The French Revolution and Napoleon **3:3:0**
Western Europe from 1783 to 1815.

434 19th Century Europe **3:3:0**
Europe from 1815 to 1914.

435 20th Century Europe **3:3:0**
Europe since 1914.

436 The American West **3:3:0**
The American West from colonial times to the present.

437 The Old South **3:3:0**
The American South from colonial times to the Civil War.

4311 Colonial America **3:3:0**

4312 The American Revolution **3:3:0**

4313 The Age of Jackson **3:3:0**

4314 The American Civil War **3:3:0**

4315 Reconstruction and Industrialization: The United States from 1865 to 1898 **3:3:0**

4316 World Power and Reform: The United States from 1898 to 1920 **3:3:0**

4318 Classical Civilization **3:3:0**
Greece and Rome from earliest times to the fall of the Roman Empire in the West.

4319 Medieval Civilization **3:3:0**
Western Europe and the Mediterranean area from the late Roman period to 1453.

4325 Tudor and Stuart England **3:3:0**

4328 Topics in History **3:3:0**
Selected special topics in major areas of history. Course may be repeated for a maximum of six semester hours credit when the topic varies.

4341 World War II **3:3:0**
A military, political and social history of World War II.

4342 Nazi Germany **3:3:0**
A military, political, and social history of Nazi Germany.

Department of Physics

The Department of Physics offers the following graduate courses to provide an area of specialization for the Master of Education degree in Secondary Education and as support to other advanced degree programs. For the M.S. degree in Mathematics, a nine semester-hour minor in Physics is accepted; in addition, the subject of the thesis may be a mathematical problem in physics.

Physics Courses

5101, 5201, 5301, 5401 and 5601 Institute in Physics **1-6:1-6:2-4**
Designed to provide credit for participation in summer, in-service or other institutes. Credit varies with duration. The description of the area of study of each institute will appear on the printed schedule. May be repeated for credit when nature of institute differs sufficiently from those taken previously.

530 Seminar in Physical Science 3:3:0
Designed for non-science majors. Measurement, light, the solar system and stars, force and motion, work and energy, heat, weather, lightning, electric charge and current, magnetism, batteries, atoms and molecules. Credit in this course may not be applied toward a degree in science, engineering or mathematics.

531 Theoretical Physics 3:3:0
The application of typical mathematical techniques, with emphasis on field and potential concepts.

532 Relativity 3:3:0
Brief introduction to the special and general theory followed by detailed study of a particular topic.

533 Seminar 3:3:0
Selected topics pertaining to the research reported in contemporary publications. Course may be repeated for credit when the topic varies, but only six semester hours credit in this seminar may be applied toward a degree.

The following courses may be taken for graduate credit with augmented requirements subject to approval by the student's graduate advisor.

431 Classical Mechanics 3:3:0
Variational principles and Lagrange's equations; the kinematics of rigid body motion; the Hamilton equations of motion; small oscillations.
Prerequisite: Differential Equations and Phy 343.

432 Introductory Quantum Mechanics 3:3:0
Basic concepts of quantum mechanics. Schrodinger's equation; wave functions.
Prerequisite: Phy 343 or 431, Phy 345, and Differential Equations.

448 Optics 4:3:3
Physical and Quantum Optics. Propagation of light; interference; diffraction; optics of solids; thermal radiation and light quanta; optical spectra; lasers.
Prerequisite: Phy 345 and Differential Equations.

Department of Political Science

The Department of Political Science offers a program of study leading to the Master of Public Administration degree. Persons seeking admission must meet the general requirements for admission as outlined in the graduate catalog and must present an undergraduate grade point average of 2.5/4.0 overall or on the last 60 hours of undergraduate work.

Degree Requirements

The degree of Master of Public Administration requires the completion of 36 semester hours of graduate work: 21 in the core curriculum (POLS 535, 5351, 5352, 5353, 5354, 5358, and 5359) and 15 from an approved list of courses. Applicants must have completed the following undergraduate courses or their equivalents: introduction to public administration (three semester hours); urban politics (three semester hours), and statistics for social scientists (three semester hours). Students must pass both written and oral comprehensive final examinations.

Graduate Faculty

Associate Professor David S. Castle
American Politics, methodology

Professor Bruce R. Drury
Comparative politics, Latin American politics

Associate Professor Elbert T. Dubose, Jr.
Public administration

Assistant Professor Christopher Markwood
Constitutional law, judicial process

Professor Glenn H. Utter
Political philosophy, American political thought

Assistant Professor James M. Vanderleeuw
Urban politics, public policy

Political Science Courses

530 Scope and Methods of Political Science 3:3:0
The study in depth of selected topics concerning the theoretical foundations underlying a scientific approach to the study of political phenomena and analytical techniques to be applied to a study of political behavior.
Prerequisite: Graduate standing.

531 Seminar in Political Theory 3:3:0
Selected issues in political thought with emphasis on the classical thinkers and their relationship to contemporary political, economic and social problems.
Prerequisite: Graduate standing.

532 Directed Reading 3:3:0
Graduate students may study individually with an instructor in an area of mutual interest to the student and the instructor.
Prerequisite: Graduate standing and approval of Chair, Department of Political Science.

534 Seminar in American Government and Politics 3:3:0
A survey of the literature in the field of American government and politics. Classical and contemporary works are examined, with emphasis on the modern approaches to the study of American government and politics.
Prerequisite: Graduate standing.

535 Seminar in Administrative Theory 3:3:0
An examination of major theories dealing with organizations and their characteristics, scope and effect on public administration and executive behavior. Emphasis will be placed on the relationships between theories and supporting empirical research.
Prerequisite: Graduate standing.

5351 Seminar in Personnel Administration 3:3:0
Personnel theory and practice in the public setting. The basic methods and functions of personnel administration in the context of public organizations, employee motivation, employee relations and collective bargaining will be emphasized.
Prerequisite: Graduate standing.

5352 Seminar in Fiscal Administration 3:3:0
The study of formulation and administration of government budgeting, including the role of the budget in the policy process, approaches to budget formulation and analysis, the development of PPB approach and other basic concepts and practices in government budget and finance administration.
Prerequisite: Graduate standing.

5353 Seminar in Public Policy Formulation 3:3:0
The process of policy-making within governmental agencies and within the total political process. Emphasis will be placed on decision-making, public policy analysis and policy implementation.
Prerequisite: Graduate standing.

5354 Seminar in Special Studies in Public Administration 3:3:0
Analysis of selected problems in public administration: urban and regional planning and management, administrative reorganization, the environment and related problems.
Prerequisite: Graduate standing.

5358 Internship 3:A:0
Practical administrative experience in a local, state, regional or federal office or agency that is the equivalent of one-half time for one semester, full-time in a summer semester. Examinations and reports on practices and problems in agencies are required. This course may be waived for students already employed in an administrative capacity in a government agency if they elect three additional hours from the approved program courses.
Prerequisite: Graduate standing.

5359 Internship 3:A:0
Practical administrative experience in a local, state, regional or federal office or agency that is the equivalent of one-half time for one semester, full-time in a summer semester. Examinations and reports on practices and problems in agencies are required. This course may be waived for students already employed in an administrative capacity in a government agency if they elect three additional hours from the approved program courses.
Prerequisite: POL 5358 and graduate standing.

536 Seminar in International Relations 3:3:0
The study of selected problems in international relations. Theoretical, legal and institutional issues as well as specific policies will be examined.
Prerequisite: Graduate standing.

537 Seminar in Comparative Study of Political Systems **3:3:0**
Study of the theory and method of comparative political analysis; systematic examination and explanation of the structure and function of Western and non-Western political systems.
Prerequisite: Graduate standing.

Department of Psychology

The Department of Psychology offers a program of study leading to the Master of Science degree in Applied Psychology. It is designed to prepare professional personnel for employment in business, industry or community mental health. Students may elect to take their primary coursework in industrial/organizational psychology or in community/counseling psychology. Those seeking admission to this program must meet the general requirements as set forth in the catalog for admission to the College of Graduate Studies and must offer the substantial equivalent of a bachelor's degree in psychology (24 semester hours) including courses in statistics and experimental psychology. The department has flexible admission criteria which will allow the faculty to review applicants individually. However, students with GRE scores less than 1000 (V + Q) are not usually accepted. International students must present a minimum TOEFL score of 600. All students must also have a 2.5/4.0 undergraduate grade point average overall or 2.75/4.0 on the last 60 hours of undergraduate course work. Post Baccalaureate students are not permitted to enroll in psychology graduate courses without special permission from the department chair.

Degree Requirements

The candidate for the Master of Science degree in Psychology must meet all of the College of Graduate Studies general degree requirements. Additional specific degree requirements are as follows:

1. Forty-two semester hours of course work in psychology which must include 23 semester hours in Psychology 439G (Multivariate Statistics), 530, 531, 5311, 532, 5320, 5323 and two semester hours in Psychology 512. For the Community Psychology Program, an additional 9 semester hours in Psychology 5310, 5312 and 5313 is required. In the Industrial Psychology Program, an additional 6 semester hours is required in Psychology 5321 and 5322.
2. Candidacy examinations as devised by the Psychology Department graduate faculty. A student may petition to be administered the candidacy (qualifying) examination during the semester in which the appropriate course work listed in No.1 above is to be completed provided the student is in good academic standing. Dates to sit for the examination will be announced each semester. A student must have satisfactorily passed candidacy examinations prior to enrolling in Psychology 5330, 669A, 5310 or 5313.
3. One to three additional semester hours of 400G and/or 500 level courses in an approved field of study.
4. Practicum: Six semester hours in Psychology 5330 and 5331 for I/O students; three semester hours in Psychology 5330 for community students.
5. Thesis: Submission of an acceptable thesis and satisfactory performance on a final written comprehensive and/or oral examination with a minimum of six semester hours in Psychology 669.

Departmental Policies

Special attention is called to the following departmental policies:

1. Graduate students are prohibited from providing psychological services except when supervised by a faculty member as part of a course requirement or when regularly employed by a licensed psychologist, an exempt agency as defined by the *Psychologist's Certification and Licensing Act or a departmental approved nonexempt agency.* Students in training are expected to be aware of and abide by the *Psychologist's Certification and Licensing Act and the Ethical Principles of Psychologists.* A violation of this policy will result in the student's dismissal from the program.
2. More than six hours of "C" level work will result in the student's dismissal from the program.
3. Students may not enroll in the same course more than twice.
4. Qualifying and/or final examinations may be repeated once if failure occurs. In general, a student repeating any portion of the examinations must do so at the next administration of the examination.
5. After admission to candidacy, a student must be enrolled in a thesis course each regular semester until requirements for the degree are completed. In addition a student must be registered for a thesis course each session of the summer term if the student is to receive the degree in August or is involved in research or writing.

Under unusual circumstances and with the approval of the department chair and the student's supervising professor, a student may postpone registration for the thesis course for one or more semesters. Unless special permission has been granted, a student who is not continuously enrolled in a thesis course must repeat the candidacy examinations and apply for re-admission to candidacy.

Graduate Faculty

Professor James K. Esser
Social, industrial-organizational psychology

Assistant Professor Oney D. Fitzpatrick
Developmental psychology, health psychology, medical compliance

Assistant Professor Rolf F. Holtz
Social, industrial-organizational psychology, personality

Associate Professor Joanne S. Lindoerfer
Clinical psychology, community psychology

Professor Richard G. Marriott
Physiological psychology, learning, psychopharmacology, methodology

Adjunct Assistant Professor Donald E. Trahan
Neuropsychology, assessment

Professor James L. Walker, Jr.
Psychological measurement, statistics, instrumentation and methodology.

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Graduate Faculty

Professor James K. Esser
Social, industrial-organizational psychology

Assistant Professor Oney D. Fitzpatrick
Developmental psychology, health psychology, medical compliance

Assistant Professor Rolf F. Holtz
Social, industrial-organizational psychology, personality

Associate Professor Joanne S. Lindoerfer
Clinical psychology, community psychology

Professor Richard G. Marriott
Physiological psychology, learning, psychopharmacology, methodology

Adjunct Assistant Professor Donald E. Trahan
Neuropsychology, assessment

Professor James L. Walker, Jr.
Psychological measurement, statistics, instrumentation and methodology.

Psychology Courses

512 Research Practicum **1:A:0**
Individualized research activities in industrial-organizational psychology and community-counseling psychology. Assignments are designed to supplement the more formal course work by a variety of pre-professional activities such as assisting in research, teaching and working on field projects under staff supervision. Required of all graduate students prior to eligibility for Psy 5330 with a maximum of three semester hours allowed.
Prerequisite: consent of instructor

530 Advanced General Psychology I **3:3:0**
A comprehensive overview of the history of psychology, systems of psychological thought, and the areas of physiological psychology, sensation and perception, learning, motivation, and cognition. Emphasis will be placed on both background material and current research. May be taken out of sequence.
Prerequisite: Consent of instructor.

531 Advanced General Psychology II **3:3:0**
A comprehensive overview of the following areas of psychology; personality, developmental, social and abnormal. Emphasis will be placed on both background material and current research. May be taken out of sequence.
Prerequisite: Consent of instructor.

532 Experimental Design **3:3:0**
A study of the research procedures and techniques commonly used by the applied and theoretical psychologist in the design, execution, control and evaluation of experiments.
Prerequisite: Consent of instructor.

533 Individual Study **3:A:0**
Independent study of special topics or problems in industrial/organizational or community psychology. May be repeated for credit.
Prerequisite: Consent of instructor.

534 Special Topics in Psychology **3:A:0**
Topics in developmental, physiological, social, differential, experimental, quantitative, cognitive or clinical psychology. Includes coursework, library and/or laboratory work and conferences with a staff member. A description of the particular area of study will be indicated. A student may repeat the course for credit when the area of study varies.
Prerequisite: Consent of instructor.

5310 Introduction to Psychological Assessment **3:3:0**
An introduction to intellectual assessment. Includes principles of psychological testing, test statistics, and critical evaluation of a variety of intellectual and achievement measures. Practicum in administration, scoring, interpretation, and formal psychological report writing for all Wechsler measures and the Stanford-Binet.
Prerequisite: Admission to candidacy and Psy 5320.

5311 Community Psychology: Introduction to Psychotherapy **3:3:0**
Psychotherapy skills are introduced using didactic techniques. Emphasis is placed upon each student developing awareness of psychopathology while being exposed to psychotherapeutic techniques by the instructor.
Prerequisite: Consent of instructor.

5312 Advanced Psychological Assessment **3:3:0**
An introduction to the broad area of personality assessment including DSM III diagnostic classifications. Practicum in administration scoring, interpretation, and formal psychological report writing with the MMPI, Rorschach, TAT, and other objective and projective assessment devices.
Prerequisite: Psy 5310.

5313 Community Psychology: Advanced Psychotherapy **3:3:0**
An in-depth study of psychotherapeutic theories and intervention strategies.
Prerequisite: Psy 5311 and admission to candidacy

5320 Theory and Techniques of Psychological Measurement **3:3:0**
A study of procedures used in the development, evaluation, and application of psychological measuring instruments. Topics include vibariate linear correlation, nonlinear correlation, multiple and partial correlation, classical true score theory, validation techniques, and test construction techniques.
Prerequisite: Consent of instructor.

5321 Advanced Industrial Psychology I 3:3:0
A critical examination of the social and organizational factors in the work situation. Primary emphasis on human relations, leadership and organizational influences on behavior.
Prerequisite: Consent of instructor.

5322 Advanced Industrial Psychology II 3:3:0
Psychological principles and techniques applied to job analysis, selection and placement of workers, training and organizational efficiency.
Prerequisite: Psy 5320 or consent of instructor.

5323 Advanced Experimental Psychology 3:3:0
Theory and application of experimental design in psychological research. Students will have an opportunity to design and conduct an original research study.
Prerequisite: Psy 532 or consent of instructor.

5330 Practicum I 3:A:0
Supervised training and experience in a local, state or regional agency, institution or employment setting. The specific nature of the practicum depends on the professional background and goals of the candidate and will be determined by the candidate, his/her faculty advisor and a member of the cooperating agency/organization. Under unusual circumstances, this course may be waived by the graduate faculty of the Psychology Department for students in the Industrial Program if they elect three additional hours from the approved program courses.
Prerequisite: Admission to candidacy.

5331 Practicum II 3:A:0
Supervised work in an area of particular interest to the student. The practicum includes both a close relationship with a faculty member of the cooperating agency/organization. Under unusual circumstances, this course may be waived by the graduate faculty of the Psychology Department for students in the Industrial Psychology program if they elect three additional hours from the approved courses.
Prerequisite: Psy 5330.

669A-669B Thesis 6:A:0
Prerequisite: Admission to candidacy.

The following course may be taken for graduate credit with augmented requirements, subject to approval by the department chair.

439 Contemporary Problems in Psychology 3:3:0
A critical and comprehensive examination of current problems in selected areas of psychology. Topics will vary from semester to semester.
Prerequisite: Nine hours in psychology or permission of instructor. May be repeated for credit when topics vary.

Department of Sociology, Social Work, and Criminal Justice

The Department of Sociology, Social Work, and Criminal Justice offers Soc 532, Sociology of Education in support of the Master of Education degree program.

Graduate Faculty

Associate Professor Stuart A. Wright
Religion, social groups

Professor Kevin B. Smith
Social inequality, sociology of education

Sociology Courses

532 Sociology of Education 3:3:0
A study of the multicultural influences on the institutions of education. Included will be a sociological analysis of educational problems in Texas.

College of Business

The College of Business offers a program of study leading to the Master of Business Administration degree (MBA). The MBA program is fully accredited by the American Assembly of Collegiate Schools of Business (AASCB). The objective of the MBA Program at Lamar University is to provide intensive, rigorous training to produce managerial professionals with a thorough conceptual understanding of the economic, legal, and ethical environment of public and private sector organizations and the capability of applying analytical, problem solving skills to a broad range of decision situations that may arise within one or a combination of functional areas within the organization.

Students with degrees in **non-business** fields as well as business undergraduates are *encouraged* to earn the Master of Business Administration degree. Students are encouraged to make an appointment with the Associate Dean a **minimum of 60-90 days in advance** of the semester in which they wish to enroll, and to take the GMAT in the semester *prior* to the desired date of enrollment.

Admission

Persons seeking admission to this program must meet the general requirements for admission outlined elsewhere in this Bulletin, with the following exceptions:

1. The student is *required* to take the Graduate Management Admission Test, GMAT.
2. The applicant's undergraduate grade point average and GMAT scores must equal or exceed the minimum standards. The student must meet at least one of the following standards:
   A. A total of at least 950 points based on the formula: 200 times the overall undergraduate GPA (4.0 system) plus the GMAT score. (See Note below)
   B. A total of at least 1,000 points based on the formula: 200 times the GPA (4.0 system) of the last 60 hours of undergraduate work, plus the GMAT score. (See Note below).

   Note: Students must make a minimum score of 450 on the GMAT for unconditional acceptance regardless of GPA. Students who make 400-450 and meet either standard "A" or "B" above will be admitted conditionally pending satisfactory completion of nine hours with a "B" (3.0) average. A student who makes less than 400 on the GMAT will not be admitted regardless of GPA.
3. A student whose native language is not English is expected to score over 525 on the TOEFL.
4. Post Baccalaureate students are not permitted to enroll in Business courses for graduate credit without the *prior* consent of the Associate Dean.

Degree Requirements

First Year Courses (Designed primarily for students whose undergraduate degree is *not* Business).

ACC 530 Financial Accounting: Concepts and Procedures
ECO 530 Foundations of Economics
BLW 530 Legal Environment of Business
BAC 530 Statistical Analysis for Decision Making

MGT 530 Foundations of Organization Behavior
MGT 531 Operations Management and Information Systems
MGT 532 Administrative Policy and Strategy
OAS 530 Administrative Communications
MKT 530 Marketing Concepts
FIN 530 Foundations of Finance

Note:

1. Please see course descriptions for prerequisites for each course.
2. Students with previously approved academic training may have some or all of the first year courses waived. (See the Associate Dean, College of Business, prior to enrollment.)
3. Students must have met the entrance requirements for the MBA Program to enroll in first year courses. All exceptions must have the **prior** approval of the Associate Dean, College of Business.
4. First year courses may not be taken as second year course electives.
5. All students need to be advised by the Associate Dean **prior** to each semester.

Second Year Courses

Note:

1. All first year courses must normally be completed before beginning the second year courses.
2. The candidate for the MBA degree may follow either of the two plans described below.

Plan I: Thesis Route

ACC 537 Managerial Accounting
MGT 533 Seminar in Management
ECO 537 Managerial Economics
FIN 531 Financial Management
MKT 531 Seminar in Marketing
BAC 531 Advanced Statistical Theory and Analysis for Business
ECO 538 Environment of Business
Three semester hours of approved electives in the College of Business
BA 669A Thesis
BA 669B Thesis

Note: Once enrolled in thesis, a student must be continually enrolled in the thesis course each Fall, Spring, and once in the summer, until the thesis is completed.

Plan II: Non-Thesis Route

ACC 537 Managerial Accounting
MGT 533 Seminar in Management
ECO 537 Managerial Economics
FIN 531 Financial Management
MKT 531 Seminar in Marketing
BAC 531 Advanced Statistical Theory and Analysis for Business
ECO 538 Environment of Business
MGT 538 Business Research
Twelve semester hours of approved electives in the College of Business
A written comprehensive exam will follow the completion of course work.

Graduate Faculty

Professor Charles L. Allen
Economics
Professor Cynthia Barnes
Office Administration
Professor Melvin F. Brust
Management and Finance
Associate Professor Frank Cavaliere
Business Law
Professor Jai-Young Choi
Economics
Professor Nancy S. Darsey
Office Administration
Associate Professor Richard A. Drapeau
Business Statistics
Professor Lynn Godkin
Management
Professor Charles Hawkins
Economics
Assistant Professor Jack L. Howard
Management
Professor Richard W. Jones
Accounting
Assistant Professor Huei Lee
Marketing
Professor Carl B. Montano
Economics
Associate Professor Jimmy D. Moss
Finance
Professor Donald Price
Economics
Assistant Professor Kabir C. Sen
Marketing
Professor Beheruz N. Sethna
Marketing and Management Information Systems
Professor Larry W. Spradley
Business Statistics
Assistant Professor Robert A. Swerdlow
Marketing
Professor Malcolm W. Veuleman
Accounting
Associate Professor Doris M. Wellan
Marketing

Business Courses

Accounting courses must be selected from the following list:

530 **Financial Accounting: Concepts and Procedures** **3:3:0**
Intensive examination of financial accounting. A conceptual study of the Generally Accepted Accounting Principles (GAAP) that impact financial reporting to persons and institutions outside the reporting entity. Attention is given to the three primary financial statements required: balance sheet, income statement and statement of cash flows. Special emphasis is given to intercorporate investments and business combinations, leases, pensions, inflation, foreign operations and financial statement analysis.
Prerequisite: Graduate standing.

534 **Taxation for Graduate Students** **3:3:0**
Provisions of the income tax code as applied to individuals and business in the measurement of income, deductions, gains and losses, and other impacts of the law on business decisions.
Prerequisite: Graduate standing, Acc 530.

537 **Managerial Accounting** **3:3:0**
Application of accounting data in decision making: cost analysis as applied in the development of budgets and standards; accounting as a tool for cost control and pricing; case problems, using the micro-computer as a decision-making tool, which require students to interpret and discuss their analysis in the context of managerial decision-making. Course must be completed with a grade of "B."
Prerequisite: Graduate standing, Acc 530.

Economics courses must be selected from the following list:

530 **Foundations of Economics** **3:3:0**
This is a fast-paced course which discusses both macro and micro economic theory and international economic issues. Macroeconomic topics covered include: inflation, unemployment, fiscal and monetary policy. Microeconomic topics include: demand theory, production and cost theory, price and output determination in markets, demand for and pricing of society's scarce resources.
Prerequisite: Graduate standing.

5301 Money and Capital Markets **3:3:0**
Survey of the functions and performances of financial institutions; analysis of the sources and uses of funds in financial markets, market structures of interest rates; and flow of funds analysis.
Prerequisite: Graduate standing, Eco 530.

531 Seminar in Monetary and Fiscal Policy **3:3:0**
Lecture and group discussions. Topics include the public sector budget and the supply of money as instruments of economic stabilization; the role of expectations, theories of economic fluctuations, and approaches to the problems of inflation and unemployment.
Prerequisite: Graduate standing, Eco 530.

533 International Finance **3:3:0**
A study of international financial decision-making. Measurement, determinants and control of the flow of payments among nations. The spot and forward exchange markets: clearing, hedging, speculation, exposure and official intervention. Short- and long-term portfolio capital movements. Direct foreign investments and multinational corporations. The working and growth of Eurocurrency and Eurobond markets.
Prerequisite: Graduate standing, Fin 530.

534 Collective Bargaining **3:3:0**
Background ideologies, contract provisions, current legal and social developments, public employment and international labor practices.
Prerequisite: Graduate standing, Eco 530.

535 Economics of Entrepreneurship/Consulting **3:3:0**
A study of business development or acquisition from the perspective of both personal ownership and outside consulting. This course is primarily a case-method study which provides the student with the methodology for analyzing business problems and finding solutions for those problems.
Prerequisite: Graduate standing, Eco 530.

536 Econometrics **3:3:0**
Development and testing of hypotheses through the construction and operation of static and dynamic econometric models.
Prerequisite: Graduate standing, Eco 530.

537 Managerial Economics **3:3:0**
A study in the depth of the principles and techniques of economic analysis applicable to the problems of business management.
Prerequisite: Graduate standing, Eco 530.

538 The Environment of Business **3:3:0**
A study of business, government, and consumer interaction in the economy. Efficiency concepts for both the private and public sectors are discussed. Government activities in antitrust, traditional regulation, and new firms operating in foreign markets are reviewed.
Prerequisite: Graduate standing, Eco 530.

539 Special Topics **3:3:0**
Investigation into special areas in economics under the direction of a faculty member. This course may be repeated for credit when topics of investigation differ.
Prerequisite: Graduate Standing and approval of instructor, department chair and deans.

Finance courses must be selected from the following list:

530 Foundations of Finance **3:3:0**
A survey of the financial management function in private business firms, with emphasis on major financial policy decision issues and the analytical techniques used to assist management in making those decisions.
Prerequisite: Acc 530, Eco 530.

531 Financial Management **3:3:0**
A study of the financial policy of business firms along with the theory supporting that policy. Topics include capital budgeting, capital structure, cost of capital, dividend policy, and management of working capital, as well as the unique international dimensions of the financial policy of multinational firms.
Prerequisite: Graduate standing, Fin 530 or equivalent.

532 Seminar in Finance **3:3:0**
Study of selected topics reflecting contemporary trends and problems in the field of Finance. The course may be repeated for a maximum of six semester hours when the topic varies.
Prerequisite: Graduate standing, Fin 531 or consent of instructor.

533 International Finance **3:3:0**
A study of international financial decision-making. Measurement, determination and control of the flow of payments among nations. The spot and forward exchange markets, clearing, hedging, speculation, exposure and official intervention. Short- and long-term portfolio capital movements. Direct foreign investments and multinational corporations. The working and growth of Eurocurrency and Eurobond markets.
Prerequisite: Graduate standing, Fin 530.

539 Special Topics in Finance **3:3:0**
Investigation into special areas in finance under the direction of a faculty member. This course may be repeated for credit when topics of investigation differ.
Prerequisite: Graduate Standing and approval of instructor, department chair and deans.

Management courses must be selected from the following list:

530 Foundations of Organization Behavior **3:3:0**
A study of organizational behavior and management concepts. The course will examine the development of management thought, with special emphasis on motivation, leadership and organizational theories. Topics will include awareness of individual behavior, social interaction, the dynamics of group and intergroup behavior and the effects of the total system of behavior observed with the organization.
Prerequisite: Graduate standing, Acc 530, Eco 530.

531 Operations Management and Information Systems **3:3:0**
Fundamentals of management information systems, including computer applications; mathematical modeling techniques and decision support systems will be examined with respect to production and information systems. Emphasis is given to the concepts, processes and institutions in the production of goods and services, and to the integrating role of information systems in the effective and efficient use of organizational resources.
Prerequisite: Graduate standing, Bac 530, Mgt 530.

532 Administrative Policy and Strategy **3:3:0**
Socio-political change taking place in even remote areas of the globe are impacting on the strategic initiatives of businesses; small and large, international and domestic. This course will focus on the role of top management in welding functional areas such as marketing, management, and finance to fulfill strategic organizational aims. Economic and socio-political conditions existing in various world regions will be considered.
Prerequisite: Graduate standing, Mgt 530.

533 Seminar in Management **3:3:0**
A course designed to give students an integrated approach to management through the application of theory to problem solving situations. Students perform in consulting roles applying management as both science and art. Emphasis is placed on national and international problems and a synergistic effect made to provide positive and applied solutions to actual managerial decisions making.
Prerequisite: Graduate standing, Mgt 532.

534 Seminar in Cross-Cultural Organization Behavior **3:3:0**
In this course students will examine the basic theories of organization behavior. The implications of those theories will be considered in terms of cross-cultural situations evident in domestic and internationally based organizations. Theories in the areas of motivation and leadership will be surveyed.
Prerequisite: Graduate standing, Mgt 532.

535 Management of Technology Transfer **3:3:0**
In contrast to diffusion of technology, which is a random process, technology transfer, in the context of this course, is the volitional movement of technology from a source to recipient. Particularly the linkage between technology transfer and mechanisms joining government, higher education, and industry used to further the process and promote economic development will be at issue. Methods being used in U.S. and in the Third World will be stressed.
Prerequisite: Graduate standing, Mgt 530, 531.

538 Business Research **3:3:0**
The student will design and carry out an individual research project under the supervision of a faculty member. Emphasis will be placed on research design and methodology, sources of business and economic data and the use of quantitative techniques to achieve substantive research results.
Prerequisite: Graduate standing, Mgt 532.

539 Special Topics in Management **3:3:0**
Investigation into special areas in management under the direction of a faculty member.
Prerequisite: Graduate Standing and approval of the instructor, department chair, and deans.

Marketing courses must be selected from the following list:

530 Marketing Concepts **3:3:0**
Marketing orientation and concepts; marketing programs of domestic and global perspectives in the formulation and development of strategies with regard to price, product, channels of distribution, and promotion of goods and services within an ever-changing environment.
Prerequisite: Graduate standing, Acc 530, Eco 530.

531 Seminar in Marketing **3:3:0**
An intensive study of specific marketing concepts and theories. Marketing strategies for the national and multinational firms are surveyed. Emphasis is placed on reading from current journals and other related publications.
Prerequisite: Graduate standing, Mkt 530.

532 Marketing Strategies and Problems **3:3:0**
A survey of current literature and case studies involving marketing strategies in a dynamic environment. Development of analytical skills, critical thinking and communication skills are directed toward a set of simulated business scenarios.
Prerequisite: Graduate standing, Mkt 530.

533 Buyer Behavior and Strategies **3:3:0**
An in-depth study of social and psychological influences on the ultimate and organizational buyer behavior and decision-making processes. Major concepts, models, and theories regarding buyer behavior will be emphasized with emphasis on marketing strategies and environmental changes.
Prerequisite: Graduate standing, Mkt 530.

534 International Marketing **3:3:0**
Analysis and planning of marketing mix on an international scale. The course focuses on the aspects of international marketing such as the international market, the identification of global opportunities and threats, the formulation of international marketing strategy, and the organizations and control of global marketing.
Prerequisite: Graduate standing, Mkt 530.

539 Special Topics in Marketing
Investigation into special areas in marketing under the direction of a faculty member.
Prerequisite: Graduate Standing and approval of the instructor, department chair, and deans.

Administrative Service courses must be selected from the following list:

AS 530 Managerial Decision Support Systems **3:3:0**
The focus of the course in an analysis of the functional information support systems which serve the manager. These systems provide quantitative-based information derived from one or more data bases within an organization and are used to help managers in the decision-making process. Theoretical concepts are applied to real-world applications.
Prerequisite: Graduate standing.

AS 531 Seminar in Information Systems Management **3:3:0**
This seminar provides a broad overview of the information systems management function. The course emphasizes information systems management with particular attention to planning, organizing, and controlling user services and managing the computer information systems development process.
Prerequisite: Graduate standing, AS 530.

AS 535 Business Literature and Contemporary Thought **3:3:0**
An intensive and critical study of several major works in business literature and contemporary thought in order to develop and enhance the student's appreciation for and understanding of the business environment with particular emphasis upon ethics, social responsibility, and competitive business practices.
Prerequisite: Graduate standing

AS 536 International Business Research **3:3:0**
A seminar class featuring intensive investigation of topics in such as Admiralty, Comparative Law, the European Common Market, the European Economic Community, Immigration, International Energy Operations, International Entities and Transactions, International Financial Transactions, the International Monetary Fund, International Tax and/or International Technology Transfers or other areas of international relevance.
Prerequisite: Three hours graduate international business course.

AS 539 Special Topics in Administrative Services **3:3:0**

Intensive investigation of topics in business analysis, business computers, business law, management information systems, or office administration. Library and/or laboratory and conferences with supervising faculty member. May be repeated when area of study differs.

Prerequisite: Graduate Standing and approval of instructor, department chair, and deans.

BAC 530 Statistical Analysis for Decision Making **3:3:0**

Theory and applications of presenting and utilizing data for decision making in business situations. Topics include methods of gathering, presenting, and analyzing quantitative data; probability theory; probability distributions; sampling theory; estimation and tests of hypotheses; simple linear regression/correlation analysis; classical time series; and other statistical procedures commonly used in business analysis.

Prerequisite: Graduate standing.

BAC 531 Advanced Statistical Theory and Analysis for Business **3:3:0**

An advanced course in statistical theory and application of the quantitative techniques commonly used in business research and analysis. Advanced topics in sampling theory, statistical inferences, and regression/correlation analysis are presented. Specific topics include analysis of variance; multiple linear and non-linear regression/correlation analysis; classical time series and forecasting; decision theory; and other statistical models. Students will have the opportunity to use a standard statistical software package.

Prerequisite: Graduate standing, BAC 530 or equivalent.

BAC 533 Business Forecasting **3:3:0**

A course designed to provide an integrated approach to developing a strategy for making business forecasts. Emphasis will be placed on the importance of the selection of an appropriate data set, various forecasting techniques, and the trends through autoregression models and Box-Jenkins techniques will be considered along with other regression and econometric models.

Prerequisite: BAC 531.

BLW 530 The Legal Environment of Business **3:3:0**

A survey of the legal environment of business including concepts of legal rules, the legal framework to resolve disputes, a study of the concept of property rights, contracts, commercial paper, agency and employment laws, government regulations of business through administrative administrative agencies, and introduction to international law.

Prerequisite: Graduate standing.

BLW 531 The International Law of Business **3:3:0**

Origin, composition and application of international law to the multinational business environment. Topics include the International and Transcontinental Judicial Systems, International Treaties on the Regulation of Business, the Foreign Corrupt Practices Act, Import-Export Laws and the rights and responsibilities existing between foreign government and multinational business engaged in international business enterprise.

Prerequisite: Graduate standing, BLW 530.

OAS 530 Administrative Communication **3:3:0**

Communication theory and practice with emphasis on variables affecting organizational communication. Intrapersonal, organization, and technological dimensions of communications. Specific areas include cultural and international differences in communication; one-to-one, small group and large group communications; formal and informal networks; electronic transmission; business letters and memoranda; and research papers and formal reports.

Prerequisite: Graduate standing.

OAS 531 Contemporary Problems in Business Education **3:3:0**

Problems and materials in teaching business subjects; analysis of various teaching techniques; examination of recent research and experimentation. When the course is offered in sufficiently different areas, students may repeat the course for credit with the approval of the department head.

Prerequisite: Graduate standing and suitable background.

Thesis courses necessary for graduation under Plan I.

BA 669A-669B Thesis

Students must be continually enrolled in Thesis each Fall, Spring, and at least once in the Summer, until the thesis is completed.

Prerequisite: Approval of Associate Dean, College of Business.

College of Education and Human Development

The College of Education and Human Development offers graduate programs of study leading to the Master of Education degree in six different areas and to the Master of Science degree in Kinesiology and in Home Economics.

Persons seeking admission to these programs must meet the general admission requirements of the College of Graduate Studies and of the individual department in which they plan to enroll. Admission to a degree program does not imply admission to candidacy for a degree.

Degrees Offered

Master of Education in Counseling and Development
Master of Education in Educational Administration
Master of Education in Elementary Education
Master of Education in Secondary Education
Master of Education in Special Education
Master of Education in Supervision
Master of Science in Kinesiology
Master of Science in Home Economics

Professional Certificates Available

Counselor
Educational Diagnostician
Elementary Education
Mental Retardation
Mid-Management Administrator (Principal)
Reading Specialist
School Superintendent
Secondary Education
Special Education Supervisor
Supervisor
Visiting Teacher

General Information Concerning Professional Certificates

The Professional Certificate is valid for life unless cancelled by lawful authority, and gives the holder legal authority to perform duties in the public schools of Texas in the specialized areas designated on the face of the certificate. Information about requirements for a particular certificate can be obtained from the department offering the certification program. Once all requirements for a certificate are completed it is the responsibility of the student to go to the Office of Professional Services and Admissions in the College of Education and Human Development and make application for the certificate to be awarded by the Texas Education Agency.

Early Childhood Development Center

The Early Childhood Development Center is an educationally oriented model program for children between the ages of 18 months and five years. The Center, under the direction of The College of Education and Human Development, is an integral part of professional development for graduate students.

The Center is used extensively by the Department of Home Economics, the Department of Professional Pedagogy, the Department of Health, Kinesiology and Dance, and the Department of Educational Leadership. The Center provides opportunities for University students to direct learning of young children who exhibit both typical and atypical development as well as to investigate effective teaching strategies for promoting optimal development among young children. Students have the opportunity to observe and interact with children which enhances understanding of child growth and development. In addition the students are able to relate understanding about the family, nutrition, prenatal care and community interaction to child behavior.

In addition, the Center provides interdisciplinary research opportunities for faculty and graduate students. The laboratory school is also used for strengthening leadership skills in the field of child development through seminars, workshops, and other educational events.

Department of Educational Leadership

Department Chair: Dr. Bob Thompson **204 Education Bldg.**
Program Advisors: **Phone: 880-8689**

Counseling and Development: Dr. Curtis Wills

Educational Administration: Dr. Bob Thompson, Dr. Clinton Ogilvie

Supervision: Dr. Clinton Ogilvie

The Department of Educational Leadership offers graduate programs leading to the Master of Education (M.Ed.) degree in Educational Administration, Supervision, and Counseling and Development. For students already holding a master's degree and teacher certification, the Department offers course work leading to certification as a Superintendent, Mid-management (principal), Supervisor, and School Counselor.

Course prerequisites for the state examination for Licensed Professional Counselor certification are also offered by this department.

Admission

Admission to a master's degree program or a post-master's "certificate only" program is required of all students taking courses in the Educational Leadership Department. A maximum of six semester hours may be taken prior to admission. Non-admitted students wishing to transfer courses to another department or another university must have permission of the department chair before registering.

Admission to a Master's Degree Program

To be admitted to a program leading to a Master's degree in Educational Administration, Counseling and Development, or Supervision, students must fulfill the general requirements for admission to the Graduate College as stated elsewhere in this bulletin plus the departmental requirements. The Educational Leadership Department requires a minimum score of 400 on the Verbal and Quantitative sections of the Graduate Record Exam with a minimum combined Verbal and Quantitative score of 900. Test of English as a Foreign Language (TOEFL) is not accepted as a substitute for minimum scores on the Graduate Record Exam. If a student has applied for admission to a degree program and has not received notification of acceptance (or non-acceptance) within 30 days after application the student should check with the Graduate Admissions Office.

Admission to Candidacy for Master's Degree

After completing at least 12 semester hours of course work on the master's degree with a minimum of 6 semester hours in his/her major field, the student should apply for Admission to Degree Candidacy. Forms for admission to candidacy should be obtained from the Educational Leadership Department Office and returned there upon completion. (NOTE: University regulations require the student be admitted to candidacy prior to beginning the last nine hours of course work). If a student does not have a letter certifying admission to candidacy within 30 days after making application the student should check with the department office.

Step by step procedure for admission to a Master's degree program

1. Apply for Admission to the Graduate College of Lamar University.
   A. Obtain application packet from the Graduate Admissions Office in Room 208 of the Wimberly Building or call (409) 880-8350.
   B. Successfully complete the Graduate Record Examination and have scores sent to Graduate Admissions, Lamar University, P.O. Box 10009, Beaumont, TX 77710.
   C. Have all transcripts sent to Graduate Admissions as in B above.
2. Meet with program advisor to develop a degree plan. **NOTE:** No deviations from the degree plan will be permitted without prior written permission of advisor or department head.
3. In consultation with graduate advisor, select members of graduate committee. (The program advisor will chair this committee.)
4. Complete at least 12 hours of course work from their degree plan (at least six semester hours must be from courses in their major) and apply for Admission to Candidacy. **NOTE:** A Student must be admitted to candidacy **prior to beginning** the last nine hours of course work.
5. Complete remaining course work.
6. Complete requirements for graduation.
   A. Apply for graduation in the Graduate College office (101 Wimberly).
   B. Take and pass comprehensive examination during the last semester of attendance. To take the comprehensive examination a student must be in his/her last semester of coursework, have no incompletes ("I" grade) or unsatisfactory ("D" or "F" grades) on their transcripts and have met all other requirements for graduation.
7. Graduate.
   NOTE: Completion of some Master's programs also includes completion of all course requirements for an additional certification. Student desiring the additional certificate must apply to take the appropriate ExCET Exam at the Office of Professional Services and Admissions. After successfully passing the exam, the student should apply at the Certification Office for the certificate.

Admission to a "Certification Only" (non-degree program)

The Educational Leadership Department offers post master's certification programs leading to certification as a Superintendent, Mid-Management (Principal), Supervisor and School Counselor. Students who hold a master's degree and teacher certification and seek an additional certification offered by this department should apply to the Educational Leadership department for admission to the appropriate certification program. Upon completion of the application and receipt of an official transcript, a

Master's degree with emphasis in school business administration prepares students for proficiency in that field. Texas has not adopted standards for school business administrator certification.

Certification in Educational Administration

Professional Mid-Management Administrator Certification

A student who completes requirements for a Master of Education degree in Educational Administration will have fulfilled the first 36 semester hours of the 45 semester hours required for a Mid-Management certificate. An additional nine semester hours are required for the Mid-Management certificate. The student's degree plan will include the additional courses required for certification.

Students already holding a Masters Degree from an accredited university may enter the "Certification Only" program for Mid-Management certification by making application in the office of the Department of Educational Leadership and providing an official transcript of all applicable graduate work. Once admitted, students will be assigned an advisor who will develop a certification plan.

To receive the Mid-Management certificate a student must complete all requirements for Master's Degree in Educational Administration, complete the additional nine to twelve semester hours of course work, hold a valid Texas Teacher certificate, have 2 years of classroom teaching experience, take and pass the ExCET examination, and apply for the certificate at the Office of Professional Services and Admissions in the Education Building.

Professional Superintendent Certificate

Prerequisites for the Professional Superintendent Certificate include a Master's degree and Professional Mid-Management Administrator certification. Students who meet these prerequisites and wish to seek certification as a school superintendent should apply to the Department of Educational Leadership. Upon completion of the application and receipt of an official transcript of graduate work an advisor will be assigned to develop a certification plan for the student. Students meeting the prerequisites can usually obtain certification as a superintendent by completing twelve to fifteen additional semester hours plus a year-long internship. After completion of the certification plan the student must take and pass the ExCET examination and apply for the certificate at the Office of Professional Services and Admissions in the Education Building.

Master's Degree in Supervision

Students interested in pursuing a master's degree in Supervision can secure an up-to-date degree plan from the Department of Educational Leadership in the Education Building or request a copy by writing to the Department of Educational Leadership, P.O. Box 10034, Lamar University, Beaumont, Texas 77710.

Certification in Supervision

A student who completes requirements for a Master's degree in Supervision will have fulfilled all curriculum requirements for a Professional Supervisor Certificate. Students already holding a Master's degree from an accredited university may enter the "Certification Only" program for Supervision certification by making application in the office

of the Department of Educational Leadership and providing an official transcript of all applicable graduate work. Once admitted, students will be assigned an advisor who will develop a certification plan.

To receive the certificate a student must complete all requirements for a master's degree in Supervision, hold a valid Texas teacher certificate, have 3 years of acceptable classroom teaching experience, take and pass the ExCET examination, and apply for the certificate at the Office of Professional Services and Admissions in the Educational Building.

Graduate Faculty

Professor David L. Bost
Educational foundations
Associate Professor Clinton Ogilvie
Educational administration
Professor Bob Thompson
Educational administration and supervision
Associate Professor Jerry R. Tucker
Educational administration and supervision
Associate Professor Curtis E. Wills
Counseling and development

Counseling and Development Courses (C&D)

5301 Human Psychological Growth **3:3:0**
A psychological study of human development and personality stages of man across the life span. Emphasis on recent psychological theories and experiments relating to human growth and development.

5310 Individual and Group Facilitation Skills **3:3:0**
An introduction of facilitation skills and theory. Indepth analysis of various facilitation techniques for use with both individuals and groups. (Special sections of this course will be offered)
Prerequisite: C&D 5311 or permission of instructor

5311 Individual Counseling Theories and Techniques **3:3:0**
Opportunities are provided for the student to enrich his/her background and experience in interviewing and developing responses to human relations problems.

5312 Group Counseling Theories **3:3:0**
Processes of individual study. Counseling procedures and techniques for individuals and groups.
Prerequisite: C&D 5311

5320 Cross Cultural Counseling **3:3:0**
Studies delineating the personal and psychological characteristics and the affective domain of the culturally different. Identifies educational strategies applicable to the teaching process as well as other supportive pupil service.

5321 Test Administration and Interpretation **3:3:0**
Theoretical and practical study emphasizing the administration, scoring and basic interpretation and practice in the use of individual psychological tests. Students will be trained to administer the Wechsler tests, the Stanford-Binet or other subsequently developed individual intelligence scales.
Prerequisites: EDLD 5334 or permission of instructor

5322 Program Development, Administration, Ethics and the Law **3:3:0**
Essential components and function of the administration of a counseling program. Consideration will be directed toward ethical and legal behavior, issues, and practice.

5323 Career Development **3:3:0**
Concepts of career decisions and development.
Prerequisites: C&D 5322

5350 Abnormal Human Development **3:3:0**
A study of various symptom categories in psycho-pathology including theoretical conceptualizations of these symptoms. The course will include an analysis of the diagnostic categories as well as the research concerning etiology and treatment.
Prerequisite: Approval of Instructor

5351 Consultation **3:3:0**
This course has an emphasis on developing consultation skills for the counselor. Methods and techniques to assist the counselor in implementing appropriate consultation skills in situations where the direct delivery of counseling services is not warranted.

5380/5680 Seminar in Counseling and Development **3-6:3:0**
Designed to advance the professional competence of participants. For each seminar, a description of the particular area of study will be indicated. May be repeated for credit when nature of seminar differs sufficiently from one previously taken. A maximum of six hours in institutes may be applied toward a Master's degree.

5381 Advanced Seminar in Counselor Relations **3:3:0**
An intensive exploration of the dynamics of interpersonal relationships. A critical analysis of various approaches to counseling will be established. Development and demonstration of personal counseling skills will be of major concern.
Prerequisites: C & D 5322, C & D 5311.

5382/5682 Selected Instructional Topics **3-6:3:0**
Significant topics in Counseling and Development. The description of the particular area of study will appear on the printed schedules of Lamar University each semester. Contact hours are the same as those required by a formal instructional course. With permission of advisor in the student's major field, course may be repeated when topic varies.

5390A/5390B School Counseling Practicum **6:A:0**
Supervised observation and practice of guidance and counseling in a school setting during the school day. Must be completed in consecutive semesters (Fall and Spring) in the same academic year.
Prerequisite: Must be within 6 semester hours (excluding practicum) of completing program requirements before beginning internship. A maximum of one additional course may be taken any semester in which a student is enrolled in a practicum.

5391A/5391B Community Counseling Practicum **6:A:0**
Supervised observation and practice of guidance and counseling in an agency setting. Must be completed in consecutive semesters (Fall and Spring) in the same academic year.
Prerequisite: Must be within 6 semester hours (excluding practicum) of completing program requirements before beginning internship. A maximum of one additional course may be taken any semester in which a student is enrolled in a practicum.

Educational Leadership Courses (EDLD)

5301 Research Methods **3:3:0**
Introduction to skills and techniques necessary for descriptive research in education problems. Emphasis on planning, designing, and methodology. One-third time in laboratory exercises and writing a research proposal and report.

5306 Computer Applications for Administrators **3:3:0**
Application of computers and selected computer software to information management, scheduling, and other functions of administration.

5311 Fundamentals of Administration **3:3:0**
A study of the relationships between and among human behavior, belief systems and administrative style.

5314 Foundations of Supervision **3:3:0**
A study of models of supervision, the use of supervision as a means to improve productivity, and the effectiveness of various types of supervisory techniques.

5326 Communications and Public Relations **3:3:0**
Developing personal and mass media communication skills with emphasis on improving school-community relationships through effective communication techniques.
Prerequisites: EDLD 5311, EDLD 5339 and admission to the program.

5332 School Services and Special Programs **3:3:0**
Study of the organization and administration of vocational, exceptional learner, and adult education programs. Such services as attendance, food service, maintenance, and textbooks will be examined in detail.
Prerequisites: EDLD 5311, EDLD 5339 and admission to the program.

5333 Campus Planning and Problem Solving **3:3:0**
A study of short and long-range planning and problem solving techniques. Special emphasis will be given to applications in an individual campus.

5334 Tests, Measurement, and Evaluation **3:3:0**
Analysis and evaluation of types of tests and measurement devices will be conducted. Methods of determining the reliability and validity of tests are investigated. Designs for testing programs and selection of appropriate tests will be included. Evaluation systems of individuals and programs will be discussed.

5335 Curriculum Management **3:3:0**
Models of curriculum development and evaluation with particular emphasis on the management of these functions.
Prerequisites: EDLD 5311, EDLD 5352 and admission to the program.

5339 Organizational Behavior **3:3:0**
Study of school as an organization and how individuals behave in organizations. Students will assess and compare their own personal competencies to the administrative needs of a selected school.
Prerequisite: EDLD 5311

5342 School Finance for Principals **3:3:0**
Analysis of principles of school finance to include problems of budgeting, accounting, and administration of funds.
Prerequisites: EDLD 5311, EDLD 5339 and admission to the program.

5343 Educational Facilities Planning **3:3:0**
Evaluation and administration of school facilities and the relationship of facilities to the achievement of educational objectives.
Prerequisites: EDLD 5311, EDLD 5339 and admission to the program.

5344 School Law **3:3:0**
Interpretation and implementation of school law including a study of the Texas Education Code and the Handbook for Public School Law.
Prerequisites: EDLD 5311, EDLD 5339 and admission to the program.

5345 Personnel Administration **3:3:0**
Fundamentals of human relations and organizational behavior in developing programs of recruitment, selection, assignment, evaluation, promotion and termination of personnel. Prerequisites: EDLD 5311, EDLD 5339 and admission to the program.

5352 Instructional Leadership **3:3:0**
Techniques of improving instruction through application of research on effective schools and models of instruction.

5354 Team Supervision **3:3:0**
Role of peers in formative evaluation. Emphasis on team approach to the improvement of instruction.
Prerequisites: EDLD 5311, EDLD 5352 and admission to the program.

5356 Teacher Appraisal **3:3:0**
Techniques of summative evaluation with particular emphasis on Texas Teacher Appraisal System. All requirements of TTAS training are included in this course.
Prerequisites: EDLD 5352 and admission to the program.

5371 The School Superintendent **3:3:0**
Role and responsibilities of the superintendent as chief administrative officer of the district.
Prerequisite: Certification in Mid-Management.

5375 School Budgeting and Information Systems **3:3:0**
Advanced analysis of school budgeting systems, accounting and the Public Education Information Management System. The course is designed for prospective school superintendent and business managers.

5381 Independent Study **3:3:0**
Supervised investigation into special areas of education under the direction of a graduate faculty member. May be repeated for credit when topic of investigation varies.
Prerequisite: Consent of department chair.

5387 Seminar in School Administration **3:3:0**
Study of basic concepts and principles of school administration as applied to selected topics. Special attention will be given to new and developing programs and to administrators' roles in these programs.
Prerequisites: EDLD 5311, EDLD 5339 and admission to the program.

5188/5688 Selected Instructional Topics **3-6:3:0**
Study of significant topics related to administration and supervision of schools. The description of the particular area of study will appear on the printed schedules of Lamar University each semester. Contact hours are the same as those required by a formal instructional course. With permission of advisor in the student's major field, course may be repeated when topic varies.
Prerequisites: Admission to the program and permission of advisor.

5396 Internship Business Administration **3:3:0**
Designed to give the prospective business manager job-related experience under the joint supervision of a school administrator and faculty of Lamar University-Beaumont.

5397 Internship for Supervision **3:A:0**
Designed to give the prospective supervisor job-related experience under the joint supervision of a school district supervisor and faculty of Lamar University.
Prerequisite: Must have completed all courses in the major and be within 3 semester hours (excluding internship) of completing certification requirements.

5398A/5398B Internship for Mid-Management **3:3:0**
Designed to give the prospective principal or middle level administrator job-related experience under the joint supervision of a school administrator and faculty of Lamar University. (Must be taken in 2 consecutive semesters or 1 long term and 1 summer term.)
Prerequisites: Masters Degree in Educational Administration and within 3 semester hours (excluding internship) of completing mid-management certification.

5399 Internship for School Superintendent **6:A:0**
Designed to give the prospective superintendent job-related experience under the joint supervision of a school superintendent and faculty of Lamar University. Must be completed in consecutive semesters (Fall & Spring) in the same academic year.
Prerequisites: Certification in Mid-Management and within 6 semester hours (excluding internship) of completing superintendency certification. A maximum of one additional course may be taken in any semester in which a student is enrolled in an internship.

Department of Professional Pedagogy

Department Chair: Dr. Doyle Watts
202 Education Building
Phone: 880-8675

Director of Professional Services and Admissions:
Dr. Charles Burke
206 Education Building
Phone: 880-8902

The Department of Professional Pedagogy offers programs leading to the Master of Education (M.Ed.) degree in Elementary Education, Secondary Education, and Special Education. In addition, the Department offers course work leading to six different Professional Certificates. It is the goal of the Master of Education and the Professional Certificate programs to provide the academic climate and practical experience necessary to produce teachers and other specialists of superior competence in their chosen areas of specialization.

Students who wish to pursue a Master of Education and/or a Professional Certificate should contact the Director of Professional Services and Admissions well before the beginning of the semester in which they plan to enroll.

Master of Education (M.Ed.)

General Requirements

To be accepted into a program leading to a Master's Degree in Education the student must:

1. Fulfill the general requirements for admission and the general degree requirements as stated elsewhere in this bulletin.
2. Meet the undergraduate prerequisites appropriate to the chosen program of study. These requirements include:
   A. The applicant in elementary education must have completed 18 semester hours in education, including 6 semester hours in elementary education methods and materials courses.

B. The applicant in secondary education must have completed a minimum of 18 semester hours in education. At least 12 of the 18 hours must be at the 300 level or higher.

3. The student may elect to write a thesis. If so, the student is required to complete a minimum of 30 hours plus the thesis.
4. The student who does not write a thesis must earn a minimum of 36 hours of graduate credit and is required to pass a written comprehensive examination administered during the last semester of attendance.

Step by Step Procedure

1. Apply for Admission to the Graduate College of Lamar University.
   A. Obtain application packet from the Graduate Admissions Office in Room 208 of the Wimberly Building or call (409) 880-8350.
   B. Take the Graduate Record Examination and have scores sent to: Graduate Admissions, Lamar University, P.O. Box 10009, Beaumont, Texas 77710.
   C. Have all transcripts sent to Graduate Admissions as in B above.
2. Meet with program advisor to develop a degree plan. **NOTE:** No deviations from the degree plan will be permitted without written permission of the Director of Professional Services and Admissions.
3. In consultation with the Director of Professional Services and Admissions, select members of graduate committee. (The program advisor will chair this committee.)
4. Complete at least 12 hours of graduate-level course work in the department and apply for Admission to Candidacy. **NOTE:** Students must be admitted to candidacy before beginning their last nine hours of course work.
5. Complete remaining course work.
6. Complete requirements for graduation
   A. Apply for graduation in the Graduate College office (101 Wimberly).
   B. Pass comprehensive examination
7. Graduate

Degree Plan in Elementary Education

To meet individual needs, considerable flexibility is allowed in planning the student's program; however, the usual pattern of course work is as follows:

1. **Professional Development.** Six semester hours must be selected from the following courses:

   Ped 531 Research for Teachers (Req)
   Ped 534 Advanced Study in Human Development
   Ped 535 Psychology of Pedagogy
   Ped 537 Public School Curriculum

2. **Resource Area.** 12 semester hours must be selected from the following courses (nine semester hours if the student elects to write a thesis):

   Ped 536 Problems in Teaching Science and Social Studies in the Elementary School
   Ped 538 Modern Mathematics in the Elementary School
   Ped 539 Teaching of Reading in the Elementary School
   Ped 5393 Seminar in Language Arts
   Ped 5395 Diagnostic/Prescriptive Procedures in Reading

3. **Specialization Area.** Six semester hours of courses must be taken for graduate credit from one or a combination of the following disciplines: history, English, foreign languages, mathematics, science, art, music, speech or health and physical education.
4. **Electives.** 12 semester hours (nine semester hours if student elects to write a thesis) from any of courses listed below or in a concentrated area.

   A. **Reading Specialist**
   Ped 539 Teaching of Reading in the Elementary School
   Ped 5385 Literature: Pre K-12
   Ped 5395 Diagnostic/Prescriptive Procedures in Reading
   Ped 5396 Clinical Practicum in Reading

   B. **Early Childhood Education**
   Ped 5351 Advanced Study in Early Childhood Curriculum
   Ped 5352 Creative Activities in Early Childhood Education
   Ped 5354 Trends and Issues in Early Childhood Education
   Ped 5355 Analysis of Program Implementation in Early Education

   C. **Supervision**
   Ped 5334 Tests Measurements & Evaluation
   Ped 5352 Leadership and Evaluation of Instruction
   Ped 5397 Practicum and Seminar
   Ped 5354 Instructional Supervision

   D. **Special Education**
   Ped 5361 Survey of Learning Potentials of Exceptional Children
   Ped 5364 Behavior Modification and Contingency Management of Disabled Learners
   Ped 5365 Instructional Processes With Exceptional Children
   Ped 5366 Modification of Curriculum and Instruction for the Atypical Learner

   E. **Gifted/Talented Endorsement**
   Ped 5356 The Gifted Learner
   Ped 5367 Creativity and the Gifted Learner
   Ped 5358 Identification and Assessment of Gifted/Talented Learner
   Ped 5359 Gifted/Talented Curriculum
   Ped 5360 Practicum

NOTE: To fulfill requirements concurrently for a Master's degree and for a Professional Certificate, a student may complete 12 additional graduate hours in an area of undergraduate specialization and substitute these hours for 12 hours in the elective area.

Degree Plan in Elementary Education With Professional Certification in Reading

1. To fulfill requirements concurrently for a Master's degree and Professional Certification in Reading, the student:
   A. Must meet general requirements for a Master of Education degree.
   B. Must hold a valid Texas Provisional Elementary or Secondary Certificate.
   C. Must have completed a minimum of three years of creditable classroom teaching.

2. A. **Professional Development Area:** Six semester hours.
   Ped 531 Research for Teachers (Req)
   Ped 534 Normal Human Growth and Development
   Ped 535 Psychology of Pedagogy
   Ped 537 Public School Curriculum
   B. **Resource Area:** Six semester hours.
   Eng 5312 Studies in Language and Linguistics
   Ped 5367 Cross Cultural Counseling
   or
   Soc 532 Educational Sociology
   C. **Reading Specialization Requirements:** Eighteen semester hours
   Ped 539 Teaching of Reading in the Elementary School (Req)
   Ped 5395 Diagnostic/Prescriptive Procedures in Reading (Req)
   Ped 5385 Literature: Pre K-12 (Req)
   Ped 5396 Clinical Practicum in Reading (Req)
   Ped 5393 Seminar in Language Arts
   Ped 536 Problems in Teaching Science and Social Studies in the Elementary School
   Ped 538 Modern Mathematics in the Elementary School
   D. **Professional Secondary: Six semester hours**
   Ped 5319 Problems in Secondary School Instruction
   Ped 5320 Adolescent Development
   Ped 5321 Strategies for Individualizing Secondary Education
   Ped 5312 Research and Instruction in the Middle School

Professional Certificates in Elementary Education

The applicant should hold or be eligible for a Provisional Certificate before admission into a professional program and have three years of teaching experience before being recommended for the Professional Certificate.

Requirements for the Professional Certificate follow an outline prescribed by the Texas Education Agency, consequently, the format for the certificate and the format for the degree are not identical. By selecting a program and with careful planning, a student may fulfill concurrently requirements for the Master's degree and requirements for a Professional Certificate in Elementary Education or the Reading Specialist Certificate. Specific information concerning these certificates may be obtained from the College of Education and Human Development Director of Professional Services and Admissions.

Other Certificates

It is possible for students to complete part or all of the requirements for a Provisional Teaching Certificate or an endorsement to such a certificate while working on a Master of Education degree in Elementary Education. Endorsements in areas such as mental retardation, physically handicapped/minimally brain injured, emotionally disturbed, learning disabilities, early childhood/exceptional children, gifted and talented may be adapted to such an arrangement. Specific information concerning these certificates may be obtained from the Director of Professional Services and Admissions.

Degree Plan in Secondary Education

To meet individual needs, considerable flexibility is allowed in developing the student's plan for a nonthesis or a thesis program; however, the usual pattern of course work is as follows:

1. **Professional Development.** 18 semester hours must be taken as follows:
   Required: Six semester hours
   Ped 531 Research for Teachers (Req)
   Ped 5320 Adolescent Development
   Electives: 12 semester hours should be in one of the following areas:

Classroom Specialist	Reading Specialist
Foundations of Education	Gifted/Talented
	Supervision

   A list of specific courses required or recommended in each of the concentrations is available from the Director of Professional Services and Admissions.
2. **Specialization Area.** For the nonthesis route to the degree, 12-18 semester hours of graduate work must be completed in one of the approved disciplines. A minimum of 12 hours must be taken at the 500 level for the 18-hour specialization. If the student elects to write a thesis or chooses the route leading to the Professional Teaching Certificate which requires a six-hour resource area exclusive of professional education and the specialization, the specialization requirement is reduced to 12 semester hours with at least six at the 500 level.

A plan listing the specific courses required to recommended is available through the Director of Professional Services and Admissions. Specialization areas are available in the following disciplines:

Biology	Kinesiology
Chemistry	History
Earth Science	Mathematics
Physics	English
Speech	Political Science

Degree in Secondary Education With Professional Certification in Reading

With a valid junior high school or high school teaching certificate and three years of classroom teaching experience, a student, may fulfill requirements for a Professional Reading Specialist Certificate (all levels) by completing the program below in lieu of content specialization.

1. **Professional Development:** Nine semester hours.
   Ped 531 Research for Teachers (Req)
   Ped 535 Psychology of Pedagogy
   Ped 534 Normal Human Growth and Development
   Ped 537 Public School Curriculum
2. **Resource Area:** Six semester hours.
   Eng 5312 Studies in Language and Linguistics
   Ped 5367 Cross Cultural Counseling
   or
   Soc 532 Educational Sociology

3. **Reading Specialization Requirements:** Eighteen semester hours
   Ped 539 Teaching of Reading in the Elementary School
   Ped 5385 Literature: Pre K-12
   Ped 5392 The Reading Process
   Ped 5393 Seminar in Language Arts
   Ped 5395 Diagnostic/Prescriptive Procedures in Reading
   Ped 5396 Clinical Practicum in Reading
4. **Professional Secondary:** Three semester hours
   Ped 5312 Research and Instruction in the Middle School
   Ped 5319 Problems in Secondary School Instruction
   Ped 5320 Adolescent Development
   Ped 5321 Strategies for Individualizing Secondary Instruction

Program Leading to Professional Teaching Certificate – Secondary

The Texas Education Agency issues a Professional Teaching Certificate to the candidate recommended by the college when he/she has completed an approved 30 semester hour program of credit beyond the bachelor's degree. This program must include work in professional development, in a teaching specialization area and in a resource area. Requirements also indicate that the candidate must hold a Provisional Teaching Certificate and have three years of teaching experience. Specific requirements for the certificate may be obtained from the Director of Professional Services and Admissions.

Degree Plans in Special Education

To meet individual needs, some flexibility is allowed in planning the student's program; however, the usual pattern of course work is indicated below. If a student desires, he/she may complete requirements for a Provisional Certificate as an Educational Diagnostician or in Mental Retardation or in Supervision. In addition, the student may complete requirements for a Provisional Certificate in Special Education-Generic as part of the degree plan. This degree, if the student is pursuing one of the described certifications, is planned as a 36 semester hour non-thesis program. A student not seeking a certificate within the degree hours may complete a degree with a minimum of 30 semester hours plus a thesis.

To fulfill requirements concurrently for a Master's degree and Professional Certification in Supervision, the student also must have or complete a special education endorsement. The student should secure information concerning requirements for certification from the Director of Professional Services and Admissions. General information concerning Professional Certificates is presented in another portion of the College of Education and Human Development section of this bulletin.

A. **M.Ed. in Special Education-Generic Certification**
   1. **Professional Development Area:** Nine semester hours required
      Ped 531 Research for Teachers (Req)
      Ped 534 Normal Human Growth and Development
      Ped 535 The Learning Process
      Ped 537 Public School Curriculum
   2. **Resource Area:** (12 hours)
      Ped 5334 Tests, Measurements and Evaluation (required)
      Ped 5361 Survey of Learning Potentials of Exceptional Children (required)
      Ped 5698 A & B Practicum in Special Education

3. **Specialization Area:** (15 hours)
   Ped 5390 Reading and Language Arts for the Exceptional Child
   Ped 5362 Psychoeducational Evaluation of Exceptional Children
   Ped 5364 Behavior Modification and Contingency Management of Disabled Learners
   Ped 5365 Instructional Processes with Exceptional Children
   Ped 5366 Modifications of Curriculum and Instruction for the Atypical Learner

B. **M.Ed. in Special Education-Mental Retardation Certification**
   1. **Professional Development Area:** Nine semester hours required
      Ped 531 Research for Teachers (Req)
      Ped 534 Normal Human Growth and Development
      Ped 535 The Learning Process
      Ped 537 Public School Curriculum
   2. **Resource Area.** (12 hours)
      Ped 5334 Interpretation and Analysis of Tests and Measurements (required)
      Select three courses from those listed below:
      Ped 5340 Microcomputers for Educators
      Ped 5351 Advanced Study in Early Childhood Curriculum
      Ped 5367 Psycho-Social Foundations of Educating the Culturally Different
      Ped 5316 Administration and Supervision of Special Education Programs
      Ped 5698 Practicum II-Educating the Exceptional Child
      Ped 5362 Psychoeducational Evaluation of Exceptional Children
      Ped 5363 Practicum in Psychoeducational Procedures
      Ped 5365 Instructional Processes with Exceptional Children
      Ped 5366 Modifications of Curriculum and Instruction for the Atypical Learner
      * Other selections must be approved by the chairperson of the student's committee and by the Director of Admissions and Advisement
   3. **Specialization Area:** (15 hours)
      Must be selected from the following courses or in concentrated area when attaining a specific certification.
      Ped 5315 Problems and Issues in Special Education
      Ped 5361 Survey of Learning Potentials of Exceptional Children
      Ped 5364 Behavior Modification and Contingency Management of Disabled Learners
   4. **Student must select six additional hours from courses listed below:**
      Ped 5362 Psychoeducational Evaluation of Exceptional Children
      Ped 5363 Practicum in Psychoeducational Procedures
      Ped 5365 Instructional Processes with Exceptional Children
      Ped 5366 Modifications of Curriculum and Instruction for the Atypical Learner

C. **M.Ed. in Special Education-Educational Diagnostician Certification**
   1. **Professional Development Area.** Nine semester hours required
      Ped 531 Research for Teachers (Req)
      Ped 534 Normal Human Growth and Development (Req)
      Ped 535 The Learning Process
      Ped 537 Public School Curriculum
   2. **Resource Area.** (12 hours)
      Ped 5334 Interpretation and Analysis of Tests and Measurements (required)
      Ped 5335 Individual Testing (required)

Select two courses from those listed below:
Ped 5340 Microcomputers for Educators
Ped 5351 Advanced Study in Early Childhood Curriculum
Ped 5367 Psycho-Social Foundations of Educating the Culturally Different
Ped 5315 Problems and Issues in Special Education
Ped 5316 Administration and Supervision of Special Education Programs
* Other selections must be approved by the chairperson of the student's committee and by the Director of Admissions and Advisement

3. **Specialization Area** (15 hours)
Ped 5362 Psychoeducational Evaluation of Exceptional Children
Ped 5363 Practicum in Psychoeducational Procedures
Ped 5364 Behavior Modification and Contingency Management of Disabled Learners
Ped 5365 Instructional Processes with Exceptional Children
Ped 5366 Modification of Curriculum and Instruction for the Atypical Learner

Professional Certification in Special Education

Educational Diagnostician
Mental Retardation
Special Education Supervisor
Special Education Counselor

Specific information concerning these certificates may be obtained from the Director of Professional Services and Admissions.

Provisional Certificates in Special Education

Special Education
Generic

Students may obtain the provisional certificate in the above listed areas. A combination of graduate and undergraduate courses leading to the certificate is possible. Specific information concerning the certificate may be obtained from the Director of Professional Services and Admissions.

General Information Concerning Professional Certificates

The Professional Certificate is valid for life unless cancelled by lawful authority, and gives the holder legal authority to perform duties in the public schools of Texas in the specialized areas designated on the face of the certificate. It is the responsibility of the student to initiate the process of applying for certification by contacting the College Director of Professional Services and Admissions.

Requirements

1. Have completed the requirements for a Provisional Certificate.
2. Have at least three years of teaching experience.
3. Have completed an approved teacher education program.

4. Be of good moral character.
5. Be a citizen, or in the process of becoming a naturalized citizen of the United States.
6. Believe in and uphold the Constitution of the United States and the State of Texas.
7. Have completed, in a Texas institution of higher learning, a course or courses in which the Constitutions of the United States and the State of Texas have been given special emphasis.
8. Have completed at least six semester hours of American history or three semester hours in American history plus three semester hours in Texas history.
9. Pay an application fee of $30.

Graduate Faculty

Professor Kenneth R. Briggs
Educational psychology
Professor Charles M. Burke,
School curriculum, mathematics education
Associate Professor Mark J. Cooper
Early childhood
Assistant Professor Fara M. Goulas
Reading, special education
Professor W. Richard Hargrove
Educational psychology
Associate Professor Lula J. Henry
Reading
Associate Professor Andrea Karlin
Reading
Associate Professor Ed McCaskill
Science education
Associate Professor Desmond V. Rice
Reading, educational technology
Professor Doyle Watts
Educational Psychology
Professor William White
Foundations, educational measurements

Professional Pedagogy Courses (PED)

531 **Research for Teachers** **3:3:0**
Introduction to skills and techniques necessary for descriptive research as applied to teacher education, with an emphasis on planning, designing and methodology. Research proposal required.

532 **Current Issues in Education** **3:3:0**
Current controversies and trends in public education.

534 **Normal Human Growth and Development** **3:3:0**
A study of development and nature of the human personality. Emphasis on recent psychological and biological experiments.

535 **The Learning Process** **3:3:0**
History and systems of learning which have application to the classroom. Current theories and research in pedagogy.

536 **Problems in Teaching Science and Social Studies in the Elementary School** **3:3:0**
A study of current developments, recent trends and innovative methods of teaching science and social studies in the elementary school, with emphasis upon individual teaching problems and research.

537 **The Public School Curriculum** **3:3:0**
Analysis of the objectives, organization and content of the different areas of the public school curriculum in grades K-12. Emphasis is given to models of curriculum development and to techniques for curriculum improvement.

538 **Modern Mathematics in the Elementary School** **3:3:0**
Problems, research and innovative methods in elementary mathematics. This course is designed for elementary teachers who wish to pursue individual problems. Research and recent methods and trends of teaching elementary mathematics.

539 **Teaching of Reading in the Elementary School** **3:3:0**
Overview of reading: techniques, methods, approaches, materials, classroom management and organization.

5190, 5290, 5390, 5490, 5590, 5690, 5391 Selected Instructional Topics **1-6:1-6:0**
Significant topics in Elementary, Secondary, Special Education, Supervision, Counseling, and Educational Administration. The description of the particular area of study will appear on the printed schedules of Lamar University each semester. Contact hours must be the same as those required by a formal instructional course. With permission of advisor in the student's major field, course may be repeated when topic varies.

5306 Institute in Education **3:3:0**
Designed to advance the professional competence of participants. A description of the institute will be indicated. May be repeated for credit when nature of institute differs significantly from one previously taken. A maximum of six hours in institutes may be applied toward a Master's degree.

5311 Individual Study in Education **3:A:0**
Supervised investigation into special areas of education under the direction of a graduate faculty member. May be repeated for credit when topic of investigation differs.
Prerequisite: Consent of department head.

5312 Middle School Teaching and Research **3:3:0**
Presentation of alternate teaching strategies in middle school programs. Exemplary organizational designs are examined with existing impact of research on middle schools.

5315 Problems and Issues in Special Education **3:3:0**
Appraisal of current problems, trends and practices in the education and care of exceptional children.

5316 Administration and Supervision of Special Education Programs **3:3:0**
Analysis of the functions of special education in the administrative structure of the school; the principles and practices in administration and supervision in special education.

5319 Problems in Secondary School Instruction **3:3:0**
Consideration of the instructional problems encountered by experienced teachers in the secondary schools.
Prerequisite: One year of teaching experience.

5320 Adolescent Development **3:3:0**
Physical, mental, social and emotional characteristics of the adolescent; interests and problems; family and community relationships.

5321 Strategies for Individualizing Secondary Instruction **3:3:0**
An analysis of the strategies for individualizing instruction, including the techniques of diagnosis and prescription for learning problems. Studies of the open classroom, team teaching, independent study, learning modules, nongraded programs and other organizations for instruction are included.

5334 Tests, Measurement and Evaluation **3:3:0**
Analysis and evaluation types of tests and measurement devices will be conducted. Methods of determining the reliability and validity of tests are investigated. Designs for testing programs and selection of appropriate test will be included. Evaluation systems of individuals and programs will be discussed.

5335 Test Administration and Interpretation **3:3:0**
Theoretical and practical study emphasizing the administration scoring and basic interpretation and practice in the use of individual psychological tests. Students will be trained to administer the Wechsler tests, the Stanford-Binet or other subsequently developed individual intelligence scales.

5340 Microcomputers for Educators **3:3:0**
Designed to give teachers an awareness level of computer literacy and allow them to use the computer as an additional tool in the classroom.

5351 Advanced Study in Early Childhood Curriculum **3:3:0**
A comprehensive study of the organization, methods and materials used for instruction in Kindergarten and other programs for young children.

5352 Creative Activities in Early Childhood Education **3:3:0**
Teaching methods and materials for releasing creative expression with music, art and literature. Workshop approach with demonstration of art and music processes.

5354 Trends and Issues in Early Childhood Education **3:3:0**
An analysis of trends and issues in early childhood education.

5355 Analysis of Program Implementation in Early Education **3:3:0**
The inductive analysis and application of specific program and program implementation strategies to the development of cognitive, psychomotor and affective behaviors among young children.

5356 The Gifted Learner **3:3:0**
In-depth study of the characteristics and unique needs of gifted/talented students as they relate to both school and family settings. Understanding of the educational and psychological demands of giftedness and the role of counseling and counselors.

5357 Creativity and the Gifted Learner **3:3:0**
Introduction to theoretical constructs related to creative behavior. Emphasis on the development of competence in identifying the student's creative potential through the administration and interpretation of tests of creative behaviors and on strategies for enhancing the learner's creative behavior.

5358 Identification and Assessment of Gifted/Talented Students **3:3:0**
Theoretical and practical study emphasizing the selection, administration, and interpretation of tests related to identification and curricular planning for gifted and talented students. Attention to state/federal identification mandates and the design of an identification matrix and guidelines for its use in specific educational settings.

5359 Gifted and Talented: Curriculum **3:3:0**
Survey of models of gifted/talented education with attention to the development of appropriate goals and objectives for curriculum differentiation. Understanding of appropriate evaluation criteria at state/district/classroom levels.

5360 Practicum in Gifted Education **3:3:0**
Supervised internship in gifted/talented education providing the intern with an opportunity to demonstrate competence in program planning and instructional delivery in classroom/district settings. May not be taken until all four courses (12 semester hours) are completed.

5361 Survey of Learning Potentials of Exceptional Children **3:3:0**
General survey of the learning potentials of those children deficient in basic integrities which can be categorized into central peripheral nervous system dysfunction and/or behavioral disorder.

5362 Psychoeducational Evaluation of Exceptional Children **3:3:0**
Simulated experiences in the use of formal and informal methods of appraising and communicating pupils' educational status and progress.

5363 Practicum in Psychoeducational Procedures **3:3:0**
Practicum experience in the use of formal and informal instruments in the evaluation of the psychoeducational and social development of children and the utilization of education and clinical data in individual teaching plans.
Prerequisite: SpEd 5362.

5364 Behavior Modification and Contingency Management of Disabled Learners **3:3:0**
The description of specific types of learning, the sequence in learning school-related tasks and the competencies to manipulate events to effect desired learning.

5365 Instructional Processes with Exceptional Children **3:3:0**
Competency in developing educational strategies for the remediation, amelioration or compensation of exceptionality as it interferes with achievement or adjustment in school.

5366 Modification of Curriculum and Instruction for the Atypical Learner **3:3:0**
Information and familiarity with instructional materials necessary for meeting the special needs of exceptional learners. Utilization of Special Educational Instructional Materials Centers.

5367 Cross Cultural Counseling **3:3:0**
Studies delineating personal psychological characteristics and the affective domain of the culturally different. Identifies educational strategies applicable to the teaching process as well as other supportive pupil service.

5378 Instructional Supervision of Student Teachers **3:3:0**
Designed to facilitate instructional personnel who, directly or indirectly, work with/supervise student teachers to better understand their roles of supervision as they relate to student teaching. Emphasis is given to the cooperative endeavor and special relationships as they exist between state regulatory bodies, the supervising teacher and the University supervisor.
Note: This course has been recognized by the Lamar Teacher Center as meeting the in-service requirement of supervising teachers as specified by state statute.

5385 Literature: Pre K-12 **3:3:0**
Emphasis on the selection of literature for children and adolescents, and the development of methods for using literature to develop skills in reading. Provision of experiences which will enable teachers to locate and select age level appropriate literature and to incorporate literacy studies in the curriculum at all grade levels.

5386 Internship in the Coordination of Reading Programs **3:3:0**
Field-based course in which students practice competencies and apply theories acquired as they assume responsibilities associated with the organization and administration of school reading programs. (May be repeated for credit as internship experience varies.)

5387 Reading Research Seminar **3:3:0**
Focus on issues related to research, publication, grant-writing, and in-service/professional development and community issues.

5388 Organization of Reading Programs **3:3:0**
Programs in the improvement of reading instruction; emphasis on approaches, accountability, content, integration and evaluation of materials, staff and programs organization.

5389 Assessment Procedures in Reading **3:3:0**
Evaluation, administration, scoring and interpretation of clinical (diagnostic, standardized) instruments with particular emphasis on their application to reading and language arts instruction. Focus on selection and/or development of formative and summative evaluation designs at the campus/district level and report writing.

5392 The Reading Process **3:3:0**
Psychological, cognitive and perceptual bases of reading comprehension with emphasis on readers, texts, and instruction.

5393 Seminar in Language Arts **3:3:0**
Application of research findings and modern theory to teaching and organizing the language arts in the elementary school. Examination of the relationships between language and cognitive development.

5394 Content Area Reading Instruction **3:3:0**
Relation of reading ability to academic achievement in the content areas, classroom diagnosis and correction of reading problems, study skills, developing flexibility and critical thinking and adolescent reading tastes.

5395 Diagnostic/Prescriptive Procedures in Reading **3:3:0**
Study of the nature and causes of reading problems including observations, demonstrations, and supervised practice in the techniques of diagnosis; attention is given to interview procedures, standard and informal diagnostic instruments, the interpretation and utilization of standardized test data, and report writing.
Prerequisites: Edu 539, Edu 5392, Edu 5394.

5396 Clinical Practicum in Reading **3:3:0**
Clinical course involving direct work with one or more students, diagnosis and teaching according to identified needs. A supervised practicum. (Involves the application of knowledge and acquired competencies in a clinical practicum.)

5397 Computer Applications: Reading and Language Arts **3:3:0**
Instruction covering microcomputer applications in the language arts. Includes diagnostic, instructional, recordkeeping, readability, and word-processing utilities. Evaluation and selection of software for classroom and tutorial use.

5398 Topics in Reading **3:3:0**
In-depth analysis and synthesis of selected recent research and/or problem areas in reading education. May be repeated for credit as topic varies.

5601 Institute in Education **6:6:0**
Designed to advance the professional competence of participants. For each institute, a description of the particular area of study will be indicated. May be repeated for credit when nature of institute differs sufficiently from one previously taken. A maximum of six hours in institutes may be applied toward a Master's degree.

669A-669B Thesis **6:A:0**
Prerequisite: Approval of graduate advisor.

Special Education Courses (PED)

5698 Practicum in Special Education
A&B Supervised experience in Special Education. The practicum is offered by arrangement between the university and the public school.
Prerequisite: Must be within 6 semester hours of completing all certification requirements and permission of advisor.

669A-669B Thesis **6:A:0**
Prerequisite: Approval of graduate advisor.

Graduate Resource Courses

These courses are not offered by the College of Education and Human Development but are required or suggested for certain degree plans.

CS 5301 Computer Systems for Educational Applications **3:3:0**
Functional units of computers including both hardware and firmware; software; analysis, design and evaluation of computing configurations for educational applications; cost estimation techniques for both academic and administrative applications.

Soc 530 Seminar in Sociology 3:3:0
Basic concepts and principles of sociology as applied to the study of selected topics. Designed for education majors or other non-sociology majors.

Soc 532/m/Sociology of Education 3:3:0
A study of the multi-cultural influences on the institutions of education. Included will be a sociological analysis of educational problems in Texas.

Eng 5312/m/Studies in Language and Linguistics 3:3:0
Special problems in linguistics, such as the history of American English, regional dialects, new grammars. May be taken for credit more than once if the topic varies.

Department of Health, Kinesiology and Dance

The Department of Health, Kinesiology and Dance offers a program of study leading to the Master of Science degree in Kinesiology. It is designed to prepare professional personnel for employment in school and community settings and to prepare students for further graduate study at the doctoral level. Candidates seeking admission to the program must meet the general catalog requirements for admission to the College of Graduate Studies. They must also have a 2.5/4.0 undergraduate grade point average (overall or on the last 60 hours of undergraduate course work). They must also satisfy the necessary undergraduate prerequisites as prescribed for a particular area of specialization.

The areas of specialization available include teaching and research and fitness program administration. A teaching and research specialization is offered for those graduate students who are interested in advanced preparation for teaching in school and university settings, research opportunities, doctoral-level work and administrative responsibilities. Fitness program administration involves a concentration in exercise technology and practical applications for those student seeking employment in public, private, or corporate fitness centers.

Degree Requirements

The candidates for the Master of Science degree in Kinesiology must meet all of the College of Graduate Studies general degree requirements as listed in the Graduate catalog. To be sure that requirements are met, students are encouraged to contact the graduate coordinator. Additional specific degree requirements are as follows:

1. Nine semester hours to include Kin 534 (Scientific Basis of Exercise), Kin 536 (Research Methods), and Kin 538 (Motor Learning).
2. The thesis is optional for specialization areas of teaching/research and fitness program administration.
3. Each specialization area requires additional core requirements contingent upon the option selected.

Graduate Faculty

Associate Professor Joel E. Barton III
Health
Professor E. Harold Blackwell
Kinesiology
Associate Professor Douglas Boatwright
Kinesiology, exercise physiology
Professor Vernon R. Crowder
Kinesiology, exercise physiology
Professor V. Raye Holt
Kinesiology, health
Professor Sonny Jolly
Kinesiology
Professor Mildred A. Lowrey
Kinesiology, motor learning, sports psychology

Kinesiology Courses (Kin)

530 Problems 3:A:0
Biological, physiological, social, psychological and other purposes and outcomes; selection and distribution of activities; facilities; teacher preparation; literature; research problems.
Prerequisite: Permission must be obtained from an active teaching member of the graduate faculty.

531 Sport in Society 3:3:0
An analysis of sport in American society. The study of the sociological processes that affect the individual as an active participant in sport and physical activity.

532 Seminar 3:3:0
Designed to develop abilities in location and evaluating literature and research in Kinesiology and in allied fields. Course may be repeated for a maximum of six semester hours as the topic varies.

533 Sport Administration 3:3:0
Developing analytical skills and attitudes of top management in administering the organization as a whole and the interrelationships of all problems in the organization. Establishment of strategic objectives, analysis of changing environments, developing strategies, formulating policies, decision making and problem analysis, personnel resource management.

534 Scientific Basis of Exercise 3:3:0
A study of professional literature and laboratory experimentation on the role of physical activities and their effects on the human organism.

535 Trends and Issues 3:3:0
Designed to assist the student to become knowledgeable on current trends and issues in the area of Kinesiology. Study will include historical, analytical and projective approaches. Course may be repeated for a maximum of six semester hours as the topic varies.

536 Research Methods 3:3:0
Familiarity with types of research in Kinesiology with emphasis on tools and techniques of research and research design.

537 Basis of Sports Medicine 3:3:0
Human environmental factors and their interrelationship in sports injury and their control; accident prevention and injury control in sports activities; philosophy of sports safety; contributions of sports medicine to safety and current trends and issues in sports medicine.

538 Motor Learning 3:3:0
A formalized and scientific study of learning, performance and related factors as applied to gross motor skills.

539 Psychology of Sport 3:3:0
Psychological and sociological concepts related to physical activity. Major concepts and experimental evidence pertaining to learning and behavior are discussed.

5101, 5201, 5301 Workshop in Kinesiology 1-6:1-6:0
This course is designed to advance the professional competence of graduate students in Kinesiology. Topics will vary. A description of the particular area of study will be indicated. Course may be repeated for a maximum of six semester hours if topic varies. A maximum of six semester hours of workshop may be applied to a degree program.

5311 Curriculum Development 3:3:0
Emphasis given to models of curriculum development and to techniques for curriculum improvement. Analysis of objectives, organization and content.

5312 Independent Study 3:A:0
Intensive study in an area of special interest. Course may be repeated for a maximum of six semester hours as the topic varies.
Prerequisite: Demonstrated competence for independent work and research methods, and consent of active teaching member of the graduate faculty.

5316 Exercise and Coronary Heart Disease Risk Factors 3:3:0
Comprehensive review of current literature dealing with coronary risk factors. Emphasis will be placed upon how exercise can mediate the effects of various factors.

5318 Fitness Program Management and Exercise Technology 36:2:1
Review of current literature dealing with physical fitness. Students function as group leaders and learn applied exercise technology, including stress and diet management, fitness testing, and exercise prescription. Preparation for adult fitness program administration.
Prerequisite: Kin 343.

669A-669B Thesis 6:A:0
Prerequisite: Approval of Graduate advisor.

Department of Home Economics

The Master of Science degree in Home Economics allows students to choose courses from the areas of foods and nutrition, textiles and clothing, child development, family relationships, interior design, home management and home economics education. The degree program may be designed for professional advancement in nutrition/dietetics, counseling/family life education, vocational certification, apparel design/merchandising and other home economics careers. Workshops and travel/study tours along with regular daytime and evening classes make completion of a Home Economics Masters degree attainable and rewarding.

Persons seeking admission to this program must meet the general requirements for admission outlined elsewhere in this catalog and must have a 2.5/4.0 undergraduate grade point average (overall or on the last 60 hours of undergraduate work). A student must show evidence of competency in the undergraduate home economics curriculum: food/nutrition, family life/child development, resource management/consumer economics, clothing/textiles, and applied design. The requirement may be satisfied by completing undergraduate Home Economics courses on specifically designated graduate courses in areas of deficiency as approved by the department chair.

Degree Requirements

The Master of Science degree in Home Economics requires the completion of 30 semester hours of graduate work; a minimum of 18 in home economics, six in thesis and six in an approved supporting field. With the approval of the student's graduate committee, 12 semester hours of course work including a professional paper may be substituted for thesis.

The student's graduate program must include HEc 530, Research Methods in Home Economics; HEc 5314, Statistical Theory and Analysis for Home Economics and HEc 537, Management Throughout the Life Cycle. These courses must be completed before or during the semester in which application for candidacy is submitted. No graduate student may submit a thesis proposal prior to completion of HEc 530 and HEc 5314.

A student must be enrolled in at least one graduate-level Home Economics course or in HEc 669B during the semester of graduation.

Graduate Faculty in Home Economics

Instructor Frances Droddy
Child development, program administration, family science

Associate Professor Jane O. Hinchey
Equipment, research, consumer science

Professor LeBland McAdams,
Clothing, fashion merchandising/ retailing, education

Assistant Professor Paula Nichols
Clothing, fashion merchandising/ retailing, education

Assistant Professor Amy Pemberton, R.D.
Foods, nutrition/dietetics, research

Assistant Professor Connie Elliff, R.D.
Foods, nutrition/dietetics, research

Home Economics Courses

530 Research Methods in Home Economics **3:3:0**
Introduction to skills and techniques necessary for conducting research in home economics subject matter areas. Emphasis on research strategies, data preparation and analysis and research reporting. Research proposal required.

531 Recent Advances in Foods and Nutrition **3:3:0**
Readings in and discussion of selected studies and recent developments in the field of nutrition and foods. Implications for dietitians, nutritionists, teachers, extension workers and others.

532 Clothing Design and Merchandising **3:2:3**
An application of couture costume design principles and techniques related to construction and merchandising.

533 Heritage of Dress **3:3:0**
A survey of costume history and customs which have affected garment styles. An analysis of historic costume and its contribution of civilization.

534 Problems in Clothing and Textiles **3:3:0**
Individual and group investigations and discussions of special problems in the various phases of clothing and textiles.

535 Cultural Foods **3:3:0**
An overview of cultural influences on primitive and modern human dietary practices. Emphasis on how humans use culture to adapt to the physical, social and supernatural environments.

536 Adolescent Nutrition **3:3:0**
A study of nutritional needs and concerns during adolescence.

537 Resource Management Across the Lifespan **3:3:0**
Socio-economic changes, public policies and programs and management practices related to individual and family well-being through the various life cycle stages.

538 Occupational Home Economics **3:3:0**
Philosophy and development of vocational home economics education for secondary schools, colleges or universities with emphasis on occupational home economics careers and jobs, curriculum trends and developments. Credit for course applied to six hours required for teaching in occupational home economics programs.
Prerequisite: HEC 5308

539 Nutrition in Aging **3:3:0**
Study of the effects of aging on the nutritional status of the individual. The role of nutrition in the aging process is addressed.

5101, 5201, 5301, 5601 Workshop in Home Economics
Workshops designed to strengthen professional competence needed for addressing societal issues related to home economics. May be repeated for credit when topic of interest varies. Credit: one to six hours.

5308 World of Work in Home Economics **3:3:0**
A study of occupational home economics education within the secondary curriculum focusing on development and supervision of occupational programs. (Credit for course applied to six hours required for teaching in occupational home economics programs.)

5310 Maternal and Infant Nutrition **3:3:0**
A study of nutritional needs and concerns during pregnancy, lactation and infancy.

5311 Advanced Textiles **3:3:0**
Analysis and comparison of recent scientific textile trends with reference to fiber content, yarn, fabrication, color and finish.

5312 Resources in Home Economics Education **3:3:0**
Creative development, selection and evaluation of instructional materials including preparation, selection and use of visual materials.

5313 Current Topics in Home Economics
Intensive study of a current problem of professional interest in home economics. The description of the particular area of study will appear on the printed semester schedule. May be repeated for credit when topic of investigation varies. Credit: three hours.

5314 Statistical Theory and Analysis **3:3:0**
A study of statistical theory with application of quantitative techniques commonly used in home economics research.

5315 Independent Study in Home Economics **3:3:0**
Independent study in an area of interest; review of current literature and research related to individual problems; selection and/or design of instruments used in collecting data. May be repeated for credit when topic of investigation varies. Credit: three hours.

5316 Family Life Education **3:3:0**
Principles and philosophy of family life education, program planning and implementation, educational techniques and materials development and evaluation.

5317 Family Communication **3:3:0**
A study of the interdisciplinary nature of family communication: theoretical approaches including systems, relational and interaction theories; application of theoretical insight and strategies for working with individuals and groups.

5318 Parenting **3:3:0**
Contemporary issues facing both parents and professionals who work with them; specific study of parenting skills, parenting in families with special needs and parent-school relationships.

5320 Regional Market Centers **3:3:0**
A study of the regional market center(s) with emphasis on apparel and/or home furnishings. Field experiences provide opportunities for students to see design workrooms, buying offices and major retail facilities. Seminars, lectures, and presentations by professionals are also included. May be repeated for a maximum of six semester hours when area of study is different.

669A-669B Thesis **6:A:0**
Prerequisite: Approval of graduate advisor.

College of Engineering

Graduate degree programs are offered as follows:

Master of Engineering Management (M.E.M.)
Master of Engineering Science (M.E.S.)
Master of Engineering (M.E.)
Doctor of Engineering (D.E.)
Master of Science in Computer Science (M.S.)
Master of Science in Environmental Engineering (M.S.)
Master of Science in Environmental Studies (M.S.)
Master of Science in Mathematics (M.S.)

Master of Engineering Management (M.E.M.)

The Master of Engineering Management is a non-thesis degree program with all courses offered after 4 p.m. Course work is designed to build onto the education received while completing an accredited bachelor's degree in engineering and the individual's professional experience. Hence, practicing engineers generally will not require undergraduate prerequisites.

A total of 36 credit hours are required at the graduate level. Included among these 36 credit hours are 15 hours of core courses required of all M.E.M. students. Course work in addition to the required core courses is tailored specifically to the needs of the student, but generally has approximately one-third of the courses in the general area of technical management, one-third in Business Administration, and one-third in the student's technical discipline such as Civil Engineering, Chemical Engineering, Electrical Engineering, Industrial Engineering or Mechanical Engineering.

Admission Requirements

Admission standards are designed to ensure that all enrolled students are qualified professionals serving in a leadership role in their engineering discipline. The four primary requirements are as follows:

1. B.S. in Engineering or Equivalent.
2. Graduate Record Examination (GRE) Scores (Verbal + Quantitative) = 1000 or more.
3. Two-to-five years of engineering experience in a leadership role.
4. Letter of recommendation for the program from someone in direct supervision over the applicant in his/her primary employment.

Degree Requirements

1. All of the College of Graduate Studies general degree requirements.
2. Completion of a core program of 15 semester hours of specified courses.
3. Completion of a minimum of at least 36 semester from an approved list of courses. (See typical programs)

Step by Step Procedure

1. Obtain a Bachelor of Science Degree in Engineering.
2. Complete two-to-five years of professional practice in a position of leadership.
3. Apply for Admission to the Graduate College of Lamar University
   a. Complete Graduate application, obtainable by calling (409) 880-8350

   b. Take GRE and have scores sent to: Graduate Admissions, Lamar University, P.O. Box 10009, Beaumont, Texas 77710.
   c. Have all undergraduate transcripts sent to Graduate Admissions.
   d. Have letter of recommendation from supervisor sent to: Coordinator of Engineering Graduate Programs, P.O. Box 10032, Beaumont, Texas 77710.
4. In consultation with Coordinator of Engineering Graduate Programs, select graduate committee.
5. Complete 12 hours of course work including all core courses and apply for admission to candidacy.
6. Complete remaining course work specified in candidacy application
   a. Apply for Graduation
   b. Pass Comprehensive Examination
7. Graduate

Core Courses

1.	Egr	5369	Engineering Management
2.	IE	432G	Statistical Decision-Making for Engineers
3.	IE	4315G	Engineering Organization and Management
			or
	Egr	5321	Quality Control Systems
4.	Egr	5366	Advanced Engineering Economics
5.	Acc	530	Financial Accounting
			or
	Eco	530	Foundations of Economics

Typical Program Options

Each student in consultation with an advisor should design a program tailored to meet his or her own specific educational objectives. The following typical program options are suggested. Substitutions and/or modifications to these programs can be accomplished with the approval of the student's advisor.

I. Manufacturing Management Concentration

Technical Discipline

Egr 5347	Manufacturing Analysis
Egr 5333	Production Control
Egr 5316	Operations Research I
Egr 6349	CAM

Technical Management

*Egr 5369	Engineering Management
*Egr 5321	Quality Control Systems
*Egr 5366	Advanced Engineering Economics
IE 432G	Statistical Decision Making for Engineers

Business Administration

*Acc 530	Financial Accounting
Acc 537	Managerial Accounting
Eco 534	Collective Bargaining
Eco 530	Foundations of Economics

II. Quality Management

Technical Discipline

IE 4321G	Engineering Data Analysis
Egr 5303	Regression Analysis
Egr 5319	Design of Experiments
IE 430G	Statistical Quality Control

Technical Management
Same as Option I
Business Administration
Same as Option I

III. Construction Project Management (CE)

Technical Discipline

Egr 5390	Project Management Systems Elements of Construction
Egr 5387	Systems Stress Analysis
Egr 5318	Cost and Optimization
Egr 5308	Engineering

Technical Management
Same as Option I
Business Administration
Same as Option I

IV. Construction Project Management (CHE)

Technical Discipline

Egr 533	Computer Methods
Egr 5341	Mass Transfer
Egr 5344	Process Modeling
Egr 536	Thermodynamics

Technical Management
Same as Option I
Business Administration
Same as Option I

V. Instrumentation and Control (EE)

Technical Discipline
(Select 4)

Egr 5364	Digital Hardware Design
Egr 6364	Micro Processor Design
Egr 535	Control Theory
Egr 532	Instrumentation
Egr 538	Digital Control

Technical Management
Same as Option I
Business Administration
Same as Option I

VI. Power and Energy (EE)

Technical Discipline
(Select 4)

Egr 532	Instrumentation
Egr 5351	Power Systems I
Egr 5306	Linear Control Systems
Egr 6311	Computer Methods in Power Systems
Egr 5364	Digital Hardware

Technical Management
Same as Option I
Business Administration
Same as Option I

VII. Construction Project Management (IE)

Technical Discipline

Egr 5308	Cost and Optimization
Egr 5303	Regression Analysis
Egr 539	CAD/CAG
Egr 5305	Reliability

Technical Management
Same as Option I
Business Administration
Same as Option I

VIII. Construction Project Management (ME)

Technical Discipline
(Select 4)

Egr 5308	Cost and Optimization Engineering
Egr 5318	Stress Analysis
Egr 5312	Heat Transfer
Egr 537	Thermodynamics - Energy Conversion
Egr 5313	Fluid Mechanics

Technical Management
Same as Option I
Business Administration
Same as Option I

Master of Engineering Science (M.E.S.), Master of Engineering (M.E.), and Doctor of Engineering (D.E.)

The Master of Engineering Science, Master of Engineering and Doctor of Engineering programs are administered by the Graduate Steering Committee. Students entering these programs are responsible to this committee until a permanent graduate committee including a chairman is selected and approved. The student should select an advisor and a permanent graduate committee must be formed before the student has completed 15 semester hours of graduate work. No credit toward a graduate degree will be granted unless approved by either the Graduate Steering Committee or the student's permanent graduate committee.

Core Course Categories for the M.E.S., M.E. and D.E. Programs:

Category	Course Number and Title	
1.	Egr 6314	Computer Control and Instrumentation or
	Egr 6359	Computer Methods in Statistical Quality Control
2.	Egr 6349	Engineering Application or AI/Expert Systems or
	Egr 6389	Computer Aided Software Engineering
3.	Egr 6388	Computer Methods for Engineering Project Management
4.	Egr 6369	Computer Methods for Engineering Optimization
5.	Egr 6339	Hazardous Waste Management

Master of Engineering Science (M.E.S.)

The Master of Engineering Science Degree requires the completion of 30 semester hours of graduate course work, including thesis.

Admission Requirements

For admission to the program, the student must meet the following requirements:

1. The general requirements for admission to the College of Graduate Studies.
2. Hold a bachelor's degree in a field of engineering or related discipline with credit substantially equivalent to that required for bachelor's degrees at Lamar University.
3. These are minimum admission requirements and may be more selective for individual departments.

Degree Requirements

1. All of the College of Graduate Studies general degree requirements.
2. A minimum of 3 semester hours (one course) from those courses listed above as core courses.
3. A minimum of 21 semester hours (seven courses) of electives. Additional core courses may satisfy part of this requirement.
4. Satisfactory completion and defense of thesis (EGR 669A and EGR 669B).

Master of Engineering (M.E.)

The Master of Engineering Degree is a non-thesis 36 semester hour* program designed to suit the needs of the practicing engineer.

Admission Requirements

For admission to the program, the student must meet the following requirements:

1. The general requirements for admission to the College of Graduate Studies.
2. Hold a bachelor's degree in a field of engineering or related discipline with credit substantially equivalent to that required for bachelor's degrees at Lamar University.
3. These are minimum admission requirements and may be more selective for individual departments.

Degree Requirements

1. All of the College of Graduate Studies general degree requirements.
2. Completion of one course from three of the five categories of core courses for a total of 9 semester hours of core course work. The core course categories and core courses are listed above.
3. A minimum of 27 semester hours* (nine courses) of electives. Additional core courses may satisfy part of this requirement.
4. Satisfactory completion of a final comprehensive examination.

*A graduate student holding an Engineer-in-Training (EIT) certificate or a graduate student who is a Professional Engineer registered in the State of Texas (or registered in another state where requirements do not conflict with the provisions of the Texas Engineering Practice Act and are of a standard not lower than those specified in Section 12 of that Act) may satisfy course requirements by completing 12 semester hours of electives provided EGR 631 (Design Project) is included.

Master of Science in Environmental Engineering

Until recently, environmental engineers were primarily concerned with municipal water systems and sewage treatment facilities. The bulk of the course work dealt with the application of engineering solutions to human health problems. Today, the field includes the study of water quality, air quality and methods for disposing of toxic/hazardous wastes. Overall, environmental engineers are engaged in solving the large and complex environmental problems threatening the natural ecosystem.

The Master of Science in Environmental Engineering program is designed to provide engineers with the highly specialized chemical/civil engineering background needed by industry and by regulatory agencies on the federal, state and municipal levels.

Admission Requirements

For admission to the program, the student must meet the following requirements:

1. The general requirements for admission to the College of Graduate Studies.
2. Hold a bachelor's degree in a field of engineering which is equivalent to a bachelor's degree at Lamar University.
3. Because of the diversity of the scientific disciplines which are admitted to the environmental studies program, some students may be lacking in certain fundamental subject areas, usually undergraduate level courses in engineering, microbiology, basic chemistry, geology, and/or mathematics. These courses must be taken in addition to the curriculum required for the master's degree program.

Degree Requirements

1. All of the College of Graduate Studies general degree requirements.
2. A minimum of 21 semester hours (seven core courses) from those listed below

Egr	5330	Biological Waste Water Treatment
Egr	5329	Water Supply and Treatment
Egr	5320	Air Pollution Control
Egr	5350	Unit Operations in Environmental Engineering
Egr	6387	Hydraulics of Environmental Systems*
Egr	5344	Reactor Design for Environmental Systems
Pols	5353	Public Policy and Environmental Affairs

*with committee approval, Industrial Waste Treatment may be substituted

3. A minimum of 6 semester hours (2 courses) of designated electives from the list below.

Egr	5338	Solid Waste Management
Egr	6339	Hazardous Waste Management
Egr	5343	Industrial Waste Treatment
Egr	5334	Waste Minimization
Egr	5337	Incineration
Egr	5348	Advanced Air Pollution Control
Bio	5301	Microbiology
Chem	441	Biochemistry
Bio	443	Limnology
Bio	447	Ecology of Polluted Waters
Geol	4301	Hydrogeology
Chem	436	Inorganic Chemistry
Chem	535	Organic Chemistry
Egr	611	Research Seminar
Egr	5301	Seminar on Federal Programs for Environmental Management

4. Satisfactory completion and defense of thesis*

*with committee approval, 12 credit hours of Environmental Electives may be substituted.

Master of Science In Environmental Studies

The environmental studies program is designed for students who wish to continue to work in their scientific specialty but as it relates to environmental affairs. The degree is especially intended for individuals who wish to work in the evaluation, operations and/or regulatory aspects of the field as opposed to the design or engineering areas. Consequently, the program will provide an understanding of environmental problems and processes from the point of view of the chemist, biologist or geologist and provide the interdisciplinary perspective needed to cope with various environmental issues.

Admission Requirements

For admission to the program, the student must meet the following requirements:

1. The general requirements for admission to the College of Graduate Studies.
2. Hold a bachelor's degree in chemistry, biology, geology, the subdivisions of those fields e.g. microbiology, organic chemistry, hydrogeology, etc. of other closely related field with credit substantially equivalent to that required for bachelors' degrees at Lamar University.
3. Some applicants to this program may be required to take undergraduate level courses in engineering, geology, microbiology, basic chemistry and/or mathematics. These courses must be taken **in addition to** those required for the masters program and will be selected in consultation with the advisor early in a student's graduate career.

Degree Requirements

1. All of the College of Graduate Studies general degree requirements.
2. A minimum of 6 semester hours (2 graduate courses) in the student's mathematics or science specialty.
3. A minimum of 12 semester hours (four core courses) from those listed below.

Egr	5330	Biological Waste Water Treatment
Egr	5329	Water Supply and Treatment
Egr	5320	Air Pollution Control
Egr	5350	Unit Operations in Environmental Engineering
Egr	6387	Hydraulics of Environmental Systems*
Egr	5344	Reactor Design for Environmental Systems
Pols	5353	Public Policy and Environmental Affairs (required)

*with committee approval, Industrial Waste Treatment may be substituted

4. A minimum of 9 semester hours (3 courses) of designated electives from the list below:

Egr	5338	Solid Waste Management
Egr	6339	Hazardous Waste Management
Egr	5343	Industrial Waste Treatment
Egr	5334	Waste Minimization
Egr	5337	Incineration
Egr	5348	Advanced Air Pollution Control
Bio	443	Limnology
Bio	447	Ecology of Polluted Waters
Bio	5301	Microbiology
Chm	436	Inorganic Chemistry

Chm	441	Biochemistry
Chm	535	Organic Chemistry
Geol	4301	Hydrogeology
Egr	611	Research Seminar
Egr	5301	Seminar on Federal Programs for Environmental Management

5. Satisfactory completion and defense of thesis*

*with committee approval, 12 credit hours of Environmental Electives may be substituted

Doctor of Engineering (D.E.)

The Doctor of Engineering Degree is designed to permit the practicing engineer to study practical engineering problems of a complex nature.

Admission Requirements

For admission to the program, the following requirements must be met:

1. The general requirements of the College of Graduate Studies.
2. The applicant must hold a Bachelor of Science degree in a field of engineering. The applicant must have an overall GPA and quantitative section of the GRE score which meets the following criteria: (50*GPA + GRE) 800. International students must have a minimum TOEFL score of 530.
3. The applicant must hold a Master's degree or have completed at least 30 semester hours of course work at the graduate level in a field of engineering or a closely related discipline.
4. These are minimum admission requirements and may be more selective for individual departments.

Degree Requirements

1. All of the College of Graduate Studies general degree requirements.
2. The student shall complete a residency of one year.
3. The student shall register for EGR 611, Professional Seminar, each semester in which the student is registered for more than six hours or in which the student is registered for field study. A minimum of 4 hours is required.
4. Completion of one course from each of the five categories of core courses for a total of 15 semester hours of core course work. The core course categories and core courses are listed above. Exceptions to this rule must be approved by the Doctoral Committee.
5. Completion of the diagnostic examination. This examination has the objectives of determining the student's qualifications for a doctoral program and to provide guidance for the selection of a study program. This examination must be completed before the student has earned 15 semester hours of course credit after admission to the program.
6. Completion of a minimum of 15 credit hours of field study preparatory courses in a concentration designed to form a cohesive degree plan and must be approved by the student's advisory committee. The field study preparation includes completion of one semester of EGR 632, Justification of Engineering Project.
7. Completion of candidacy examination. The purposes of this examination are to test the ability of the student to comprehensively relate the subjects of the study program and to ascertain the student's qualifications to perform the field study.

8. Completion of the field study. After the student is admitted to candidacy a formal engineering proposal format must be presented to the doctoral committee. Upon committee approval of the proposed field study the work is initiated. Normally, 30 semester hours of field study is required.
9. Defense of field study. Upon completion of the field study a formal engineering report with a standard format shall be submitted to the committee and defended in an oral examination.

Graduate Faculty

Professor Wendell C. Bean
Control systems, biomedical signal processing

Associate Professor Daniel H. Chen
Process control, optimization, numerical methods

Associate Professor Hsing-wei Chu
Operations research statistical decision analysis, networks

Assistant Professor Paul Chiou
Statistics, reliability theory

Associate Professor Paul Corder
Mechanical systems design; stress analysis; finite element models

Associate Professor Saeed Daniali
Stuctural analysis and design

Professor David C. Gates
Decision-making processes; plant layout, human factors, engineering management

Associate Professor John B. Harvill
Computer architecture, microcomputer systems, database systems, programming languages, computer science education

Professor Tho-Ching Ho
Fluidization, heat transfer, optimization

Professor Jack R. Hopper
Reaction kinetics, catalysis

Assistant Professor Peggy Israel
Neural networks, parallel processing, genetic algorithms, optimization

Professor Enno Koehn
Construction, planning, scheduling and productivity. Design and analysis

Associate Professor Hikyoo Koh
Artificial intelligence, software testing, language translation, computational complexity analysis

Associate Professor Michael Laidacker
Set topology, applied mathematics

Assistant Professor Sun Chai Lee
Soil and foundation engineering, soil properties and behavior, geo-environmental engineering

Professor Ku-Yen Li
Mass transfer, thermodynamic properties, gas-liquid reactions

Professor Peter A. Mantz
Ocean engineering, coastal and wave process

Associate Professor Alec L. Matheson
Spaces of analytic functions, harmonic analyses

Professor Bernard J. Maxum
Electromagnetics, antennas and propagation, rf, microwave, mm waves, optics

Professor Harry T. Mei
Computer applications, humidity control, solar energy

Professor William E. Morgan
Environmental engineering

Assistant Professor Nilus J. Orth
Solid mechanics, mechanical systems, materials science engineering

Assistant Professor Lawrence Osborne
Parallel processing, operating systems, distributive systems, algorithms

Professor Branislava Peruničić-Draženović
Power systems, variable structure systems, graph theory applications in electrical engineering

Regents' Professor David Read
Computer networks, operating systems, natural language processing

Assistant Professor G.N. Reddy
VLSI Design, artificial neural networks, digital signal processing, Kalman filtering

Professor Bruce G. Rogers
Ultimate load characteristics of structures, analysis
Professor William E. Simon
Heat transfer, energy conversion, fluid mechanics, thermodynamics
Associate Professor James L. Thomas
Computer-aided manufacturing
Computer-aided design
Professor Joseph T. Watt
Digital systems, microcomputers and work stations
Professor Carl L. Yaws
Physical and thermodynamic properties, solar energy, cost engineering
Professor Fred M. Young
Fluid dynamics, heat transfer
Professor Victor Zaloom
Engineering economics, manufacturing productivity, computer applications, statistical quality control
Assistant Professor Wen-Ran Zhang
Computer engineering, cooperative distributed artificial intelligence
Assistant Professor Qi Zheng
Theoretical computer science, graph theory, parallel processing, computer architecture

Engineering Courses

531 **Materials Science** **3:3:0**
Principles underlying the behavior of materials existing in the solid, liquid and gaseous phases.

532 **Instrumentation** **3:3:0**
Consideration is given to the design and analysis of instruments that are used to interface with analog, microprocessor and minicomputer applications that involve data acquisition and process control.

533 **Computer Methods in Engineering Analysis** **3:3:0**
Computer techniques will be introduced and employed. Numerical methods for solving transcendental equations, polynomials, simultaneous linear algebraic equations and partial differential equations. Monte Carlo method, random numbers and simulation of engineering systems will be introduced.
May be repeated one time for graduate credit with prior approval where course content varies.

535 **Advanced Process Control** **3:3:0.**
Modern control theory concerning state-space formulation, multivariable control, optimal control, and discrete control for lumped/distributed parameter systems is addressed. Applications of control theory and the implementation of control strategies for the chemical processing industries are demonstrated.

536 **Thermodynamics-Process Industry** **3:3:0**
Thermodynamic laws are derived and applied to physical chemical phenomena. Ideal and non-ideal gas, liquid and solid solution behavior are developed for physical and chemical equilibria. Course credit in chemistry is optional.
May be repeated one time for graduate credit, with prior approval, where course content varies.

537 **Thermodynamics-Energy Conversion** **3:3:0**
The basic laws of thermodynamics are derived and applied in the analysis of power cycles, energy conversion and specific processes. Basic principles of irreversible thermodynamics and phenomenological relations are presented. An elementary statistical approach is presented with simple examples of the calculation of the transport properties of gases, liquids and solid.
May be repeated one time for graduate credit, with prior approval, where course content varies.

538 **Discrete Control Systems** **3:3:0**
Principles of digital and sampled-data control systems. Analysis of response, and stability. Analytical compensation by Z-transform and other methods. Extensive use of computers.
Prerequisite: EGR 5306.

539 **CAD/CAG** **3:3:0**
The analysis and the utilization of state of the art computer hardware and software to solve the problems associated with the utilization of computers in both graphics and engineering design problems.
Prerequisite: Graduate standing in the College of Engineering and consent of the instructor.

5101, 5201, 5301 Special Topics **3:1-3:0**
An investigation into specialized study in advanced areas of engineering under guidance of a faculty member. This course may be repeated for credit when topics of investigation differ.

5303 Regression Analysis 3:3:0
Review of regression analysis; theory of least squares; multivariate analysis; theory of the general linear hypothesis model.

5305 Reliability 3:3:0
Statistical theories pertinent to solution of engineering problems in reliability; distribution and failure theory including failure rate and mean time to failure for the exponential, log normal, gamma and Weibull distributions.

5306 Linear Systems Control Theory 3:3:0
Review of control systems analysis involving frequency domain and state variables. Analytical procedures for design of Lag, Lead, Laglead, and PID compensation. State variable system representation and design. Extensive use of computers.
Prerequisite: undergraduate course in control theory or consent of instructor.

5308 Cost and Optimization Engineering 3:3:0
Includes the mathematics of cost comparisons, profitability, productivity, and optimization with emphasis on processing or construction cost estimation and control. May be repeated for credit when the subject matter varies.

5309 Problems in Design and Finite Analysis 3:3:0
Advanced techniques and analysis involving microcomputers, finite elements, finite differences. May be repeated for credit when the subject matter varies.

5310 Advanced Concrete Design 3:3:0
Analysis and design of concrete members based upon working stress and strength design methods. Consideration given to pre-stressing or post-stressing of beams and structural components. May be repeated for credit when the subject matter varies.

5311 Heat Transfer Analysis 3:3:0
Fundamental principles of heat transfer by conduction, convection and radiation. Emphasis will be given to the analysis of problems combining the various heat transfer mechanisms.

5312 Transport Mechanisms 3:3:0
This course will be concerned with individual mechanisms of heat transfer, mass transfer, or momentum transfer. May be repeated for credit as topics vary.

5313 Fluid Mechanics 3:3:0
Fluid statics, fundamentals of fluid motion, systems and control volumes, basic laws, irrotational flow, similitude and dimensional analysis, incompressible viscous flow, boundary layer theory and an introduction to compressible flow. Vector methods will be employed.

5314 Hydraulic Engineering 3:3:0
Design considerations of hydraulic systems including closed and open channel flow together with related hydraulic accessories. May be repeated for credit when the subject matter varies.

5315 Theory of Elasticity
General analysis of stress and strain, equations of equilibrium and compatibility, stress and strain relations, two dimensional stress problems, elastic energy principles, thermoelastic problems. May be repeated for credit when the subject matter varies.

5316 Operations Research I 3:3:0
The use of advanced mathematical models for optimizing engineering problems with emphasis on management decision. Includes special techniques based on systems analysis, design of experiment, linear programming, queuing, simulation and probabilistic analysis.

5318 Stress Analysis 3:3:0
Topics in advanced strength of materials including unsymmetrical loading of beams, shear center, curved beams, torsion of non-circular cross sections, strain energy, virtual work, plasticity, fatigue, and introduction to the theory of elasticity. May be repeated for credit when the subject matter varies.

5319 Design of Experiments 3:3:0
Experimental design and analysis of experiments are developed as tools of the manufacturing and process industries. Exploratory and evolutionary EVOP designs, analysis of variance ANOVA, error and regression are treated in some detail.
Prerequisite: Course in statistics or equivalent.

5320 Fundamentals of Air Pollution 3:3:0
Pollutant sources, emissions and transport. Air pollution control methods. Particulate collection theory, gaseous pollutant removal theory. Atmospheric sampling and analysis methods. May be repeated for credit when the subject matter varies.

3:3:0

5321 Quality Control Systems
Application of statistical methods to industrial problems; regression and correlation theory; analysis of variance; use of control charts for control of manufacturing operations.

3:3:0

5323 Advanced Steel Design
Analysis and design of structural members using steel. Consideration is given to elastic and inelastic buckling in beams and columns due to local, flexural, torsional and torsional flexural action. May be repeated for credit when the subject matter varies.

3:3:0

5324 Wave Mechanics in Particulate Matter
Propagation of elastic waves in semi-infinite media. Surface waves and body waves. Behavior of particulate masses under the effect of dynamic loading, impact and transient phenomena. Effect on substructures of waves from industrial, seismic and nuclear sources. Mechanical and electronic recording. May be repeated for credit when the subject matter varies.

3:3:0

5326 Waves and Coastal Processes
Hydrodynamics of waves, wave generation, reflection, energy transmission and dissipation. Coastal phenomena, harbors and breakwaters, analysis of tides, and tidal currents. Salt water, fresh water interaction and diffusion in estuaries; erosion and shoaling in tidal waters. May be repeated for credit when the subject matter varies.

3:3:0

5327 Numerical Methods of Structural Analysis
Matrix methods applied to analysis of trusses, beams and frames. May be repeated for credit when the subject matter varies.

3:3:0

5328 Inelastic Theory of Structures
Investigation of structural behavior under conditions of overload. Design of structures using principles of ultimate strength and plastic design theories. Consideration of load and safety factors, stress redistribution and shakedown.
May be repeated for credit when the subject matter varies.

3:3:0

5329 Water Supply and Treatment
An investigation of the chemistry of water treatment processes including the study of treatment process selection and associated design parameters.

3:3:0

5330 Biological Wastewater Treatment
Principles of treatment for domestic and industrial wastewaters with emphasis on process kinetics and biological action.

3:3:0

5331 Similitude and Model Design
Dimensional analysis, data processes, prediction equations and model design, including a study of distorted and dissimilar models. Models studied include structural fluid flow, thermal, electrical, magnetic, acoustical and illumination types. Various analogs from second-order ordinary and partial differential equations are also discussed. May be repeated for credit when the subject matter varies.
Prerequisite: Mth 434G recommended.

3:3:0

5332 Operations Research II
Advanced topics in operations research-linear programming, non-linear programming, advanced topics in queuing and inventory theories, sensitivity analysis and dynamic programming.
Prerequisite: EGR 5316 or equivalent.

3:3:0

5333 Production Control
Advanced topics in techniques employed in different types of manufacture for planning and controlling production.

3:3:0

5334 Waste Minimization
Waste minimization of hazardous waste includes any source reduction or recycling activity that results in volume reduction of hazardous waste or toxicity reduction. Waste minimization practices by major streams are reviewed. Technology and concepts that promote strategies by which waste minimization can be increased are identified.

3:3:0

5336 Operations Research III
Recent advances in the methodology and philosophy of operations research.
Prerequisite: Consent of instructor.

3:3:0

5337 Incineration
An overall view of the incineration principles, equipment and facility design, basic concepts, stoichiometric and thermodynamic considerations for incinerators, air pollution control equipment and economic considerations.

3:3:0

5338 Solid Waste Management
A study of solid waste collection, transfer and disposal systems. Investigation of the reclamation of resources by multiple use, reuse and improvement of existing sources to meet quality requirements.

5341 Mass-Transfer Operations 3:3:0
The principles of diffusion and mass transfer are considered. The study of gas-liquid operations includes humidification and design of equipment. Solid-fluid studies include absorption, ion exchange, drying and leaching operations. Less conventional mass-transfer operations are also considered.

5342 Reactor Design for Environmental Systems 3:3:0
Development of the fundamentals for the rate of chemical reactions and biological reactions in homogeneous and heterogeneous systems. Analysis of ideal chemical reactors and their design with application to environmental reactions in the air, water and soil. An introduction to the basic concepts of mathematics modeling. The subject matter is directed toward chemical and petroleum engineering design and operation. Development of models which form the framework of a quantitative and scientific approach to technical problems will be followed by analytical and/or numerical solutions to optimize output and profitability.

5343 Industrial Waste Treatment 3:3:0
Procedures for analysis of the industrial waste problem, methods of collecting experimental data and process design for required treatment. Case studies and special laboratory problems for translating experimental data to prototype design. May be repeated for credit when the subject matter varies.

5344 Process Modeling 3:3:0
An introduction on the basic concepts of mathematical modeling. The subject matter is directed toward chemical engineering design and operation. Development of steady-state/dynamic models is emphasized and followed by numerical solutions of these technical problems.

5345 Reactor Design I 3:3:0
Basic principles of reactor design are presented. The primary goal is the successful design of chemical reactors. Major reactor types are treated, giving particular attention to their performance capabilities.

5346 Optimization Techniques 3:3:0
Analytical methods of constrained and unconstrained optimization. Geometric programming; linear programming. One-dimensional search techniques. Multivariable search techniques. Dynamic programming. Variational methods.

5347 Manufacturing Analysis 3:3:0
The course is designed to provide the background analysis required to understand manufacturing operations and to predict manufacturing behavior. It includes material behavior, metal cutting, metal forming, new and unconventional cutting and forming techniques, machine tool vibration and manufacturing cost optimization.

5348 Advanced Air Pollution Control 3:3:0
Air pollution control and design principles; VOC incineration; gas absorption; air pollution and atmospheric dispersion modeling; particulate matter; cyclones, electrostatic precipitators; fabric filters and scrubbers; control of nitrogen oxides and sulfur oxides.

5349 Properties of Gases and Liquids 3:3:0
Properties of gases and liquids. Major physical, transport and thermodynamic properties of gases and liquids. Pure components and mixtures. Theory, correlation and estimation methods covered.

5350 Unit Operations of Environmental Engineering 3:3:0
Theory of fluid and slurry movement under gravity and pressure systems, mixing processes, coagulation and flocculation of chemical treatment, separatory processes including flotation and sedimentation, and gas transfer and absorption of the biological systems. Selected laboratory assignments for model studies of these unit operations.

5351 Electric Power Systems Analysis I 3:3:0
A three-semester sequence, selected from: symmetrical components, impedance and fault-current calculations, load-flow studies, economic operation, stability and control, system modeling, non-fossil fuel energy conversion. Both analytical and digital-computer methods may be employed as appropriate.

5360 Introduction to VLSI Design 3:3:0
Study of the principles of basic microchip design. Use of several CAD tools, with hands-on experience in implementing Very Large Scale Integration (VLSI) circuits. Detailed study and computer simulation of MOS-capacitance models.

5361 Computer Hardware Design Languages 3:3:0
A CAD method of design of digital hardware using Computer Hardware Languages (CHDLs). Implementation of combinational logic units, microprocessors and microprogrammed processors.

5362 Fault Diagnosis & Fault Tolerant Design 3:3:0
Study of several test generation algorithms for combinational circuits such as Boolean Difference, D, PODEM, and FAN Algorithms. Test generation techniques for RAMS and microprocessors. Various methods for Design for testability and Fault Tolerant Design.

5363 Administrative Control Systems 3:3:0
Problems affecting the engineer in design, analysis and control of information systems.

3:3:0

5364 Digital Hardware Design
Problem formulation, dependency notation, programmable combinational circuits, designing for maintainability, algorithmic state machines.
Prerequisite: Logical design, or consent of instructor.

3:3:0

5366 Advanced Engineering Economy
Special economic analyses based on risk, uncertainty and other probabilistic considerations. Bayesian attacks, influence of perfect information, competitive decisions and decisions under pressure.

3:3:0

5369 Engineering Management
Transition from engineering to management, decision making responsibilities — a comparison; planning, organizing and staffing in a technical environment, technical project management, team leadership, appraising engineers.

3:3:0

5380 Structural Timber Design
Characteristics of wood as a structural material. Use of standard specifications in the design of connections, beams, and columns. May be repeated for credit when the subject matter varies.
Prerequisite: CE 334

3:3:0

5381 Structural Masonry Design
The design of load-bearing masonry. Specifications for reinforced masonry construction. Building code requirements. May be repeated for credit when the subject matter varies.
Prerequisite: CE 334

3:3:0

5382 Structural Dynamics
Behavior of structures subjected to dynamic loads. Design of structures to resist earthquake and wind forces. May be repeated for credit when the subject matter varies.
Prerequisite: CE 334.

3:3:0

5387 Special Topics
The course is designed to meet special needs of students. Each topic is offered on an irregular schedule as the demand requires. Sample topics include: (1) Kinetic theory of gases; (2) Transients in compressible flow; (3) Non-linear vibrations; (4) Protective construction; (5) Transients in engineering systems; (6) Stagewise mass transfer; (7) Nuclear engineering; (8) Hybrid and analog computers; (9) Adaptive control; (10) Optimization techniques; (11) Sampling techniques.

3:3:0

5390 Special Topics
The course is designed to meet special needs of students. Each topic is offered on an irregular schedule as the demand requires. Sample topics include: (1) Kinetic theory of gases; (2) Transients in compressible flow; (3) Non-linear vibrations; (4) Protective construction; (5) Transients in engineering systems; (6) Stagewise mass transfer; (7) Nuclear engineering; (8) Hybrid and analog computers (9) Adaptive control; (10) Optimization techniques; (11) Sampling techniques.

1:1:0

611 Professional Seminar
Advanced topics suitable for research along with research procedures will be discussed. Field study organization and content together with doctoral research problems and progress will be presented. Topics will vary each semester and course may be repeated for credit. Registration and completion for three semesters is required of all doctoral candidates.

3:A:0

631 Design Projects
May be repeated for credit when the subject matter varies.
Prerequisite: Admission to candidacy.

3:3:0

6311 Optimal Control of Power Systems
Addresses the issue of economic operation of power systems by application of control theory and the digital computers with emphasis on computer algorithms.
Prerequisite: Proficiency in computer programming, undergraduate power course.

3:3:0

6313 Digital Filters
Introduction to digital filtering. Recursive, non-recursive filters and their design. Butterworth, chebysbev filters.
Prerequisite: Proficiency in computer programming.

3:3:0

6314 Computer Control and Instrumentation
Basic Instrumentation principles. Signal acquisition and conditioning. Computer control using digital signal processing techniques in time and frequency domains. Programming project assignments involving implementation of basic instrumentation and computer control methods.

3:3:0

632 Justification of Engineering Projects
The preparation of proposals for advanced engineering work. The student will be given individual assistance in preparing a proposal for his field study.
Prerequisite: Approval of advisory committee.

6339 Hazardous Waste Management **3:3:0**
The design, operation and applicability of standard destruction and detoxification technologies will be presented. The various types of incineration, thermal, biological, physical and chemical treatment methods will be included, as well as the technologies now in the later stages of research and development. Emphasis will be on applicability and functional design as opposed to detailed design.

6340 Distillation **3:3:0**
Material and energy-balance relationships are reviewed for multicomponent fractionation equipment and for batch stills. Various plate designs are presented from the standpoint of two-phase hydraulics and mass-transfer efficiency.

6342 Design Principles of Equilibrium Stages **3:3:0**
Thermodynamics of fluid-phase equilibria is reviewed with emphasis on the prediction and calculation of fluid-phase densities, enthalpies, fugacities and activities. Rigorous multicomponent-multistage methods are developed to design problems in mass transfer operations with emphasis on absorption, extraction, and distillation. Computer aided design is emphasized.

6343 Reactor Design II **3:3:0**
Emphasis is placed on complex reactor design. Attention is devoted to chemical kinetics and catalysis as well as to the engineering aspects of both homogeneous and heterogeneous reactors. Mixing problems are discussed in terms of residence time distribution. The importance of temperature effects is stressed.
Prerequisite: Egr 5345 or equivalent.

6348 CAD Applications **3:3:0**
Advanced studies in computer aided design. Discipline-specific applications are provided which use the drawing analysis interface, variational geometry and other applications software packages.
Prerequisite: Egr 539.

6349 Engineering Applications of AI/Expert Systems **3:3:0**
An in-depth study of the effective utilization of Artificial Intelligence/Expert Systems as applied to engineering problems. Projects assigned will involve the design and development of software systems to solve discipline-specific problems using available IE languages and expert system shells.
Prerequisite: Egr 5347.

6359 Computer Methods in Statistical Quality Control
Methods of dealing with Statistical Quality Control problems such as control charts, test, tests of hypothesis, analysis of variance, regression analysis and design of experiments will be employed using one or more software packages. Emphasis will be placed on problem definition, model selection and interpretation of output for decision making and process improvements.
Prerequisite: A course in probability and statistics

6361 Solar Energy I **3:3:0**
Origin, nature and availability. Heat transfer considerations. Plate collectors, energy storage and thermal performance are discussed. Applications and experimentation are covered.
Prerequisite: Egr 537 or equivalent.

6364 Microcomputer Based Design **3:3:0**
Registers and data manipulation, computer organization, memory, input-output, algorithmic processes. Design Application.
Prerequisite: Logical design, or consent of instructor.

6366 Digital Signal Processing **3:3:0**
Study of various digital signal processing techniques in time and in frequency domains. Preprocessing, windowing, correlation techniques, convolution, DFT and FFT. Signal encoding schemes, detection schemes and digital filters. Programming assignments to implement several DSP tools.

6368 Artificial Neural Networks & Fuzzy Logic **3:3:0**
Study of various Artificial Neural Network architectures for real-world applications. Massive parallel computation, fault tolerance and adaptation characteristics. Emphasis on computer simulation of ANN-architectures and their applications.

6369 Computer Methods of Engineering Optimization **3:3:0**
Formulation, solution and implementation of optimization models such as linear programming, dynamic programming, integer programming, quadratic programming, convex programming, geometric programming and unconstrained optimization for analyzing complex systems problems in industry. One or more software packages will be used to execute the algorithms presented throughout the course.
Prerequisite: A graduate course in operations research.

6387 Hydraulics of Environmental Systems **3:3:0**
Hydraulic design of municipal utilities including storm water and waste water collections systems, water distribution networks and treatment plant facilities.

6388 Computer Methods of Engineering Project Management 3:3:0
Principles governing the effective and efficient management of engineering projects including the application of comprehensive planning, scheduling and cost estimation procedures. Utilization of various computer methods and systems will be emphasized.

6389 Computer-Aided Software Engineering 3:3:0
Analysis and utilization of computer software to solve engineering design problems. Applications on the CAD/CAG and various other systems will be emphasized.

661 Engineering Practice 6:A:0
An internship period under personal supervision. Approval must be obtained from the student's graduate committee. Usually, a formal proposal will be required. May be taken for either six or 12 hours credit per semester. Must be repeated for credit until field study is completed. Total credit: six semester hours per section.

662 Engineering Practice 6:A:0
An internship period under personal supervision. Approval must be obtained from the student's graduate committee. Usually, a formal proposal will be required. May be taken for either six or 12 hours credit per semester. Must be repeated for credit until field study is completed. Total credit: six semester hours per section.

669A-669B Thesis 6:A:0
Prerequisite: Approval of graduate advisor.

The following courses may be taken for graduate credit with augmented requirements, subject to approval by the departmental graduate advisor

Civil Engineering Courses (CE)

411 Seminar 1:1:0
Discussion of ethical, professional and technical topics related to the practice of civil engineering. Presentation of oral and written reports.
Prerequisite: Senior standing.

420 Photogrammetry and Mapping 2:0:6
Principles of aerial photography applied to map making, route locations and ground control. Introduction to use of photogrammetry equipment, including stereoscopes and plotters.
Prerequisite: CE 220

4212 Civil Engineering Systems Design Project 2:0:6
Planning, design, and analysis of a civil engineering system or project; an integrated and realistic group project is utilized which involves numerous major aspects of the civil engineering profession. Presentation of oral and written reports.
Prerequisite: CE 337, CE 339.
Corequisites: CE 438, CE 439.

4290 Civil Engineering Systems II 2:2:0
Principles of system analysis utilized for solving civil engineering problems. Application of probability and statistics, numerical methods, linear programming, dynamic programming, optimization, finite elements and finite differences to the engineering design process.
Prerequisite: CE 3290 or Statistics.
Corequisite: CE 334, CE 337, CE 339.

430 Indeterminate Structures 3:3:0
Basic principles of structural analysis and design based upon the requirements of equilibrium and continuity. Matrix methods and the application of strain energy, slope deflection and moment distribution procedures for the analysis of frames, trusses and beams. Digital computer methods utilized. Course title and description may vary when taught as a CE elective.
Prerequisite: CE 334.

431 Hydraulics II 3:3:0
Continuation of CE 335-Hydraulics I emphasizing practical applications of basic fluid mechanics principles in fluid measurement, machinery, closed conduit flow, open channel flow and hydraulic transients. Presentation of oral and written reports.
Prerequisite: CE 335.

4310 Soil-Structure Interaction **3:3:0**
Analysis of the mechanical behavior of soil-structure systems under the effect of static and dynamic loading, impact and stress wave propagation. Design applications to structures supported by shallow and deep substructures, and underground structures. Computer techniques are employed.Course title and description may vary when taught as a CE elective.
Prerequisite: CE 434.

432 Management, Planning, Scheduling, and Estimating **3:3:0**
Principles governing the effective and efficient management of engineering projects including the application of comprehensive planning, scheduling, and cost estimation procedures. Presentation of oral and written design reports.
Prerequisite: Senior Standing.

433 Environmental Health Engineering **3:3:0**
Problems of public health in rural, urban and industrial centers with water, housing, heating, cooling, ventilation, milk, food, insects and rodents. Biostatistics and public health laws, ordinances and regulations.
Prerequisite: Bio 243 or CE 331.

434 Foundation Engineering **3:2:3**
The practice of geotechnical engineering: subsurface explorations; geotechnical analysis and design of shallow footings, deep foundations and retaining structures; stability of earth slopes and soil improvement.
Prerequisite: CE 339.
Corequisite: CE 438.

435 Hydraulic Design of Municipal Utilities **3:3:0**
Hydraulic design of municipal utilities including storm water and waste water collection systems, water distribution networks, and treatment plant facilities. Course title and description may vary when taught as a CE elective.
Prerequisite: CE 337.

437 Transportation Engineering **3:3:0**
Design of highway pavements. History and development of transportation facilities. Drainage requirements. Fundamentals of highway location, design, construction and maintenance. Course title and description may vary when taught as a CE elective.
Prerequisite: Senior standing.

438 Reinforced Concrete Design **3:2:3**
The design of structural concrete members based upon working stress and strength design methods. Study of standard specifications. Introduction to prestressed concrete.
Prerequisite: CE 334.

439 Structural Steel Design **3:2:3**
The design of buildings and bridge components according to standard specifications. Application of load and resistance factor and allowable stress design methods. Introduction to plastic design of steel structures.
Prerequisite: CE 334.

Electrical Engineering Courses (EE)

4302 Communication Theory **3:3:0**
Principles of modulation; random signal theory and network analysis; basic information theory; analysis of noise. One hour design content.
Prerequisite: EE 332.

4304 Advanced Topics **3:3:0**
Topics are selected on the basis of the needs of an adequate number of students. May be repeated for credit when topics vary.
Prerequisite: EE 331, 431.

4306 Minicomputers **3:3:0**
Introduction to assembly language programming and small computer organization. 1-1/2 hours design content.
Prerequisite: EE/CS 3305.

4307 Microcomputers **3:3:0**
Microcomputer organization, peripheral devices, systems software for small computers. 1-1/2 hours design content.
Prerequisite: EE 4306 or CS 3302.

4309 Electric Power Systems **3:3:0**
An introduction to electric power system analysis. Transmission line calculations, system operation, short circuit computations. One hour design content.
Prerequisite: EE 336, 337.

3:3:0

432 Electronics III
Analog systems with semiconductor elements. Frequency response, feedback and feed forward amplifier design, power electronic devices with regulated power supplies. Two hours design content.
Prerequisite: EE 431.

3:3:0

436 Control Engineering
Transfer functions; state variables; time response; frequency response and stability.
Prerequisite: EE 332, 3301.

3:3:0

438 Instrumentation
Unified methods for the design of signal conditioning circuits between sensors and computers. Accepted practice for sensor based microprocessor and minicomputer data acquisition and processing systems. Instrumentation amplifier circuits. Two hours design content.
Prerequisite: EE 333, 305.

3:3:0

439 Computer Aided Design
An introduction to computer aided design and experience with design software. A realistic programming project concerning design will be assigned. Intensive programming efforts and fluency in Fortran, C, or Pascal will be required.
Prerequisite: Junior standing.

Industrial Engineering Courses (IE)

3:3:0

431 Computer Applications in Industrial Engineering
Computer Aided Manufacturing—Design problems in the areas of computer numerical control, robotics and computer vision are presented. Manufacturing Control Systems are discussed as they relate to a Computer Integrated Manufacturing (CIM) environment.
Prerequisite: BASIC programming, IE 222 or equivalent, and Senior standing.

4303G Financial Analysis and Design
A comprehensive analysis of accounting and financial reports, inventory control records, depreciation and income taxes and capital budgeting. Design of financial systems under risk and uncertainty. Computer modeling financial systems.
Prerequisite: A course in Engineering Economy.

3:3:0

4315 Organization and Management
The theory of organization and management. How the executive functions to achieve the organization's goals.
Prerequisite: Junior standing.

3:3:0

432 Statistical Decision Making for Engineers
Analysis of data to help the engineer/executive make decisions. Evaluation of performance claims.
Mth 3370 or IE 332 and Mth 3301. Junior standing in engineering.

3:3:0

434 Materials Science and Manufacturing Processes
Basic principles underlying the behavior of engineering materials and methods of processing these materials.
Prerequisite: IE 222, Chm 141 or equivalent.

3:3:0

435 Production and Inventory Control
Techniques for planning and controlling production and inventories. Modern materials requirements planning.
Prerequisite: Mth 3370 or IE 332, IE 330.

3:3:0

4351 Production and Inventory Systems
The design and operation of systems for managing production and inventories.
Not open to students majoring in engineering.
Prerequisite: Mth 234, CS 131.

3:3:0

437 Operations Research
An introduction to the construction of mathematical models of organizational systems to aid executives in making decisions.
Prerequisite: Mth 3370, Egr 223 and IE 3303.

4321G Engineering Data Analysis
Application of probability and statistics to engineering problems, used collection and presentation of engineering data. Fundamentals of the most commonly used discrete and continuous probability density functions and their engineering applications.

Mathematics Courses (Mth)

4202 Partial Differential Equations 2:2:0
Fourier series. Solution of boundary value problems including the heat equation, the wave equation, and the potential equation.
Prerequisite: Mth 241, and Mth 3301 or Mth 331.

431 Complex Variables 3:3:0
Complex numbers, analytic functions, complex line integrals, Cauchy integral formula and applications.
Prerequisite: Mth 241

4315 Numerical Analysis 3:3:0
Algorithms for solving linear and non-linear equations and systems thereof. Interpolating polynomials, finite difference approximations of derivatives, techniques of numerical integration. One-step and multi-step methods for solving ordinary differential equations and systems thereof.
Prerequisite: Mth 241 or Mth 331, and CS 1411, or its equivalent.

4316 Linear Programming 3:3:0
Theory, development and computational aspects of the simplex method; convexity; degeneracy problems; revised simplex method; transportation problems, network flow problems; industrial applications.
Prerequisite: Mth 149, Mth 233 and CS 1411.

4321 Regression Analysis 3:3:0
The simple linear model and the principle of least squares. Inference about slope parameter, prediction of future values, model checking, polynomial regression, multiple regression analysis, regression using matrix algebra.
Prerequisite: Mth 3370 or 438, and Mth 233.

4322 Analysis of Variance 3:3:0
Single sample inference, two sample inference, single factor analysis of variance, multiple comparison in ANOVA, multi-factor analysis of variance, 2p factorial experiment.
Prerequisite: Mth 3370 or 438.

433 Linear Algebra II 3:3:0
Vector-spaces, linear transformations, matrices, determinants, Eigenvalues, Eigenvectors, canonical forms, bilinear mappings and quadratic forms.
Prerequisite: Mth 149 and 233.

437 Mathematical Theory of Probability 3:0:0
Calculus-based introduction to formal probability theory. Basic probability theory, independence and dependence, mean and variance, random variables, expectation, sums of independent random variables, central limit theorem.
Prerequisite: Mth 241 and 3370.

438 Theory of Statistical Inference 3:3:0
A formal introduction to statistical inference, sampling theory, general principles of statistical inference goodness of pit test, regression and correlation, analysis of variance.
Prerequisite: Mth 3370.

Mechanical Engineering Courses (ME)

4311 Controls Engineering 3:3:0
The theory of integrated automatic controls systems with application to combustion, temperature, pressure, flow and humidity control. Industrial control systems are considered.
Prerequisite: ME 331 and ME 334.

4312 Gas Dynamics 3:3:0
Fundamentals of one-dimensional compressible flow. An introduction to multidimensional wave phenomena with various applications.
Prerequisite: ME 4313 or concurrent.

4313 Thermal Systems Design 3:3:0
Heat transfer study with emphasis on heat exchanger design, optimization of energy exchange, economics and design feasibility.
Prerequisite: ME 331, 334, 338.

4315 Thermodynamics III 3:3:0
Topics in applied thermodynamics selected from any of the following: Psychrometrics, combustion, equilibrium reactions, compressible flow, thermodynamic machinery and optimization of power plant and utility systems using availability analysis and/or linear programming. May be repeated for credit with consent of instructor.
Prerequisite: ME 334, ME 338; ME 4313 or concurrent.

4316 Engineering Design Project 3:1:6
Student research projects are planned, scheduled, designed and evaluated. Experience is gained in the execution of an engineering project and a formal technical report is required.
Prerequisite: ME 421, 4313 or concurrent with either one.

4317 Engineering Analysis II 3:3:0
A continuation of ME 334 with emphasis on computer techniques in solving engineering problems.
Prerequisite: ME 334.

432 Mechanical Vibrations 3:3:0
The theory of vibrating systems, including kinematics or vibrations, harmonic and non-harmonic, single and multiple degrees of freedom; free and forced vibrations, with and without damping. Applications to crank and slider, rotating machinery, balancing, vibration isolation and absorption, and instrumentation.
Prerequisite: ME 332, ME 334 and Senior standing.

434 Internal Combustion Engines 3:2:3
The principles of design and analysis of various types of internal combustion engines.
Prerequisite: ME 331 and ME 338.

435 Turbomachinery 3:3:0
Flow problems encountered in the design of water, gas and steam turbines, centrifugal and axial-flow pumps and compressors.
Prerequisite: ME 3311 and ME 338.

438 Environmental Systems Engineering 3:2:3
Design of refrigeration and air-conditioning systems including selection of mechanical equipment, controls, piping and duct layout.
Prerequisite: ME 331 and ME 338.

Department of Computer Science

The Department of Computer Science offers a program of study leading to the Master of Science degree in Computer Science. Both thesis and non-thesis options are available.

The objective of the master's degree is to produce professional computer scientists capable of contributing technically to the basic core areas of computer science as well as to application areas. A mixture of course, laboratory and research work in the program is designed to place graduates at the forefront of technical excellence.

Research

The department has a broad-based research program. Current faculty research interests include parallel and distributed processing, artificial intelligence, data and knowledge bases, computational complexity, visual languages and image processing, operating systems and graphics.

Facilities to support these activities include a VAX Cluster (three micro VAX 3300s and a VAX 6310), a DEC 5100 system configuration with six DEC Window terminals, an experimental transputer system and a number of modern workstations. Additional support is provided with access to Internet through SESQUINET to Rice University. The national high performance computing centers at Cornell University and the University of Pittsburgh provide access to supercomputers such as the CRAY, CM2 and clusters of workstations.

The department enjoys a friendly working relationship with local and national companies. The department's Industrial Advisory Council is composed of representatives from regional/state industries and high-tech firms.

Admission to the Graduate Program

Students seeking admission to this program must meet all general requirements of the College of Graduate studies as listed in the Bulletin of the College. Additional requirements are as follows:

1. In most cases, a student must have a minimum combined score of 1000 on the Verbal and Quantitative sections of the GRE and a minimum grade point average of 3.0 on the last 60 hours of undergraduate course work.
2. A ranking in the 34th percentile of the verbal portion of the GRE; for applicants whose native language is not English, a TOEFL score of at least 550 also is required;
3. Completion of a sufficient amount of prior work in the field of computer science including courses such as CS 2313, CS 3303 or CIS 335, CS 3306, CIS 331 or CS/EE 3305, CS 4302, CIS 434 and CS 4307 or CS 3302 or equivalents; undergraduate and graduate leveling sequences are available (CS 5341 and CS 5342 have been designed for students who satisfy conditions 1 and 2 but are deficient in computer science course background);
4. Students with minor deficiencies may be admitted to the program if these deficiencies can be removed within approximately one long semester. However, major deficiencies must be removed before a student is admitted to the degree program; and
5. At least 15 hours of mathematics including differential and integral calculus, discrete mathematics and two other courses selected from statistics, linear algebra, abstract algebra, numerical analysis and differential equations.

Students not satisfying both conditions 1 and 2 will not be admitted to the computer science program nor will they be allowed to enroll in graduate computer science courses. Those students who satisfy both conditions 1 and 2 but who are deficient in other areas may be provisionally admitted to the program and may enroll in graduate-level courses.

Admission to Candidacy

After removal of all deficiencies and upon completion of an additional 12 hours of graduate credit, the student is required to submit a formal degree plan to the computer science graduate adviser and the dean of the Graduate School. Failure to fulfill this requirement may prevent the student from enrolling the following semester.

Admission to candidacy is granted by the dean of the Graduate School after the degree plan has been approved.

Degree Requirements

A. Core Course Requirement (6 courses; 16 semester hours)

Students in the masters program in Computer Science are required to establish competence in several areas considered basic to the field of Computer Science. At least 28 hours of graduate work in computer science, including the thesis or project, are required for a masters degree in Computer Science. The degree includes two specialization areas in computing (6 to 9 hours per specialization) chosen by the student together with the academic adviser. (Specialization Areas are listed below. One of these areas of specialization may be an area of computer applications outside of the department. In order to qualify for the master's degree, the student must earn a grade of B or better in each of the core courses. The Core Requirement consists of the indicated number of courses in each field listed below.

Number of Courses	Area of Computer Science	Courses
1	Graduate Seminar	CS 5100
1	Analysis of Algorithms	CS 5313
1	Operating Systems	CS 5302
1	Distributed Systems	CS 5328
2	Languages & Computation Theory	CS 5319 and CS 5320 and CS 5330

B. Option I (Thesis)
   1. Completion of the core requirements.
   2. Completion of two areas of computer specialization. Specializations outside of the area of computer science are chosen by the student under the guidance of the student adviser from the restricted list of courses at the end of the computer science course listings in the catalog. At least a "B" (3.0) average must be maintained in the specialization areas. One "C" is permitted in these areas combined if it is balanced by an "A" in one other graduate level course.
   3. Completion of CS 669A and 669B and submission of an acceptable thesis.
   4. Completion of a total of 34 graduate semester hours.
   5. Successful oral defense of the thesis. If failure occurs, the defense may be repeated. A second failure will cause the student to be dropped from the degree program in Computer Science.

C. Option II (Non-thesis)
   1. Completion of the core requirement.
   2. Completion of two areas of computer specialization. Specializations outside of the area of computer science are chosen by the student under the guidance of the student adviser from the restricted list of courses at the end of the course listings in the catalog. At least a "B" (3.0) average must be maintained in the specialization areas. One "C" is permitted in these areas combined if it is balanced by an "A" in one other graduate level course.
   3. All non-thesis students must take and satisfactorily complete CS 5369. This course consists primarily of a significant research project and the submission of a written professional report.
   4. Completion of a total of 37 hours in graduate level courses.
   5. Successful completion of an eight hour comprehensive examination, which may be written, oral, or a combination of both upon determination of the Computer Science faculty. This comprehensive exam will cover the four core areas and will also include a programming component. Materials to help the student prepare for the comprehensive examination will be posted in the departmental office at least one month prior to the scheduled testing time. Failure to pass this examination in two attempts will result in the student being dropped from the degree program in Computer Science. Additionally a separate programming component of the comprehensive examination must be passed.

COMPUTER SCIENCE SPECIALIZATION AREAS:

Area	Courses
Artificial Intelligence	CIS 435G, CIS 437G, CS 5312, CS 5318
Graphics	CIS 433G, CS 4319G, CS 5335, CS 5339
Simulation/Modeling	CS 4309G, CS 5336, CS 5402
Software Engineering	CIS 441G, CS 5331
Database	CIS 434G, CS 5331, CS 5332, CS 5333
Architecture/Algorithms	CS 4310G, CS 5310, CS 5350

Graduate Record Exam (GRE) – Advanced Computer Science Section:

Students are expected to submit scores from the advanced Computer Science section of the Graduate Record Examination during their last semester of course work toward the degree.

Course Credit for 400G classes

No more than 6 hours of senior-level courses may be included in the CS graduate degree program; if a student wishes to include such courses in the degree plan, prior approval of the department must be obtained. CS 5341 and CS 5342 may not be included.

Academic Standards

If a student's GPA on all graduate and/or deficiency courses falls below 3.0, the student will be placed on probation the following semester. Students who cannot raise their GPA above 3.0 during that semester will be dropped from the program.

Graduate Faculty

Associate Professor John B. Harvill
Computer architecture, microcomputer systems, database systems, programming languages, computer science education

Assistant Professor Peggy Israel
Neural networks, parallel processing, genetic algorithms, optimization

Professor Hikyoo Koh
Artificial intelligence, software testing, language translation, computational complexity analysis

Assistant Professor Lawrence Osborne
Parallel processing, operating systems, distributive systems, algorithms

Regents' Professor David Read
Computer networks, operating systems, natural language processing

Assistant Professor Wen-Ran Zhang
Computer engineering, cooperative distributed artificial intelligence

Assistant Professor Qi Zheng
Theoretical computer science, graph theory, parallel processing, computer architecture

Computer Science (CS) 400G Courses

4302G Introduction to Operating Systems **3:3:0**
To introduce the major concept areas of operating systems principles; develop an understanding of the organization and architecture of computer systems at the register-transfer and programming levels of system description and the inter-relationships between the operating system and the architecture of computer systems.
Prerequisite: (CS 3303 or CIS 335), CS 2313, and MTH 233.

4307G Compiler Writing **3:3:0**
Formal definition of programming languages, including specifications of syntax, semantics, statements and notations used in the construction of compilers, structure of transistors and compilers.
Prerequisite: CS 2313 and (CS 3303 OR CIS 335).

4309G Introduction to Simulation Techniques **3:3:0**
Modeling of business and scientific discrete-event processes. Random number generation techniques, Monte-Carlo simulation, discrete-event and unit time advance algorithms, queuing theory and stochastic models. Introduction to systems simulation and industrial dynamics. Programming assignments in FORTRAN and other programming languages for simulation (GPSS, SIMSCRIPT, SIMULA).
Prerequisite: CS 3303 or CIS 335.

4310G Introduction to Computer Architecture **3:3:0**
The macro structure and instruction set of computer systems. Survey of characteristic architectures of central processors and systems. Topics selected from mini-micro-mainframe and highly parallel computers. Microprogrammed control, I/O control, associative memories, characteristics of storage devices, paging, multi-processors, terminals.
Prerequisite: CS/EE 3305.

4319G Computer Graphics **3:3:0**
Basic principles for the design, use and understanding of graphics systems. Design and implementation of graphics software packages, applications and algorithms for creating and manipulating graphics displays.
Prerequisite: (CS 3303 or CIS 335), MTH 149, and MTH 233.

Computer and Information Sciences (CIS) 400G Courses

432G Data Communications and Computer Networks **3:3:0**
Study of problems and limitations associated with interconnecting computers by communication networks. OSI reference model, architecture of circuits, message and packet switching networks, network topology, routing, flow control, capacity assignment, protocols, coding and multiplexing.
Prerequisite: CIS 331 or CS/EE 3305.

433G Multi-media Processing **3:3:0**
Television style viewing and sound interfacing to computer systems. Software and architectural interconnection requirements of digital interactive video and audio technology. Graphical user interface (X-windows). Definition, examples, application, review of major implementations and architecture of hypertext systems. Voice technology: synthesis, recognition and response. Student projects.
Prerequisite: CS 2313 and CS 3303.

434G Database Design **3:3:0**
Logical and physical database system organization, logical models, design issues, secondary storage considerations. Design issues emphasizing the normal decomposition theory of the n-ary relational data model, the RM/T model and an introduction to logical implementations of databases.
Prerequisite: CS 3303 and CIS 241.

435G Applications of Expert Systems **3:3:0**
Theory and programming of expert systems. Introduction to expert systems. Introduction to a particular expert system, pattern matching, control techniques, efficiency in rule-based language and expert system examples. A student term project is assigned.
Prerequisite: CS 3303.

437G Introduction to Artificial Intelligence **3:3:0**
Introduction to concepts and ideas in artificial intelligence. Topics include search techniques, knowledge representation, control strategies and advanced problem-solving architecture. Programming in LISP and PROLOG.
Prerequisite: CS 3303.

441G Software Engineering **3:3:0**
Systems analysis, software requirements analysis and definition, specification techniques, software design methodologies, performance measurement, validation and verification and quality assurance techniques. Programming in Ada.
Prerequisite: CS 3303.

Computer Science 500 and 600 Courses

5100 Graduate Seminar **1:1:0**
Topics include the scientific method and research process, library utilization and components and organization of various types of research papers. Writing exercises on the latter topics. Preparation, formal written report and presentation on a research topic.
Prerequisite: Admission to the M.S. program in Computer Science. Pass/NoPass only.

5202 Teaching of Computer Science **2:2:0**
An examination of the philosophies and techniques of teaching computer science at the college and university level. Required of all computer science teaching assistants. May be repeated for credit. Does not carry credit for a graduate major in computer science.

5301 The Design of Computer-Assisted Instruction Systems **3:3:0**
Design and development of computer-assisted instruction systems and languages. Topics include design and implementation of test generation systems, authoring tools and intelligent tutoring systems.
Prerequisite: CS 3324 or equivalent.

5302 Advanced Topics in Operating System **3:3:0**
Current research issues and advanced topics involving both the principles and pragmatics of operating systems specification, design and implementation. Study of concurrent processes, support structures for modular programming, resource allocation and protection, telecommunications, networks and distributed processing.
Prerequisite: CS 4302 or equivalent.

5310 Advanced Topics in Computer Architecture **3:3:0**
Advanced topics in computer architecture such as RISC vs CISC, pipelined processors, vector processors, HDLs, language directed architectures and neural nets.
Prerequisite: CS 4310 or equivalent.

5311 Advanced Topics in Database Design **3:3:0**
Data models, distributed databases, special databases, statistical databases, database machines, knowledge bases, database design theory and self-documenting databases.
Prerequisite: CS 4304G and CS 5328 or equivalent.

5312 Advanced Topics in Artificial Intelligence **3:3:0**
Topics include, but are not limited to, knowledge representation, distributed cooperative AI, intelligent tutoring systems and semantic representation in natural language processing.
Prerequisite: CIS 435G or CIS 437G or equivalent.

5313 Analysis of Algorithms **3:3:3**
Topics on what can and cannot be proven about computational complexity including algorithm design methodologies.
Prerequisite: CS 3302 or CS 4307 or equivalent.

5318 Design and Implementation of Expert Systems **3:3:0**
Problems in knowledge acquisition, knowledge representation issues, representation of meta-knowledge, use of statistical measures to limit search of the knowledge base, and knowledge verification.
Prerequisite: CIS 435G or CIS 437G or equivalent.

5319 Advanced Topics in Compiler Construction **3:3:0**
An introduction to the major methods used in compiler implementation. The parsing methods of LL(k) and LR(k) are covered as well as finite state methods for lexical analysis, symbol table construction, internal forms for a program, run time storage management for block structured languages and an introduction to code optimization.
Prerequisite: CS 4307 or CS 3302 or equivalent.

5320 Formal Methods in Programming Languages **3:3:0**
Data and control abstractions are considered. Advanced control constructs including backtracking and non-determinism are covered. The affects of formal methods for program description are explained. The major methods for proving programs correct are described.
Prerequisite: CS 4307 or CS 3302 or equivalent.

5328 Computer Communication Networks and Distributed Processing **3:3:0**
A study of networks of interacting computers. The problems, rationales and possible solutions for distributed databases will be examined. Major national and international protocols including SNA, S.21 and X.25 will be presented.
Prerequisite: (CIS 331 or CS/EE 3305), CS 3306, and CS 4302 or equivalent.

5330 Advanced Topics in the Theory of Computation **3:3:0**
A survey of formal models for computation. Includes Turing Machines, partial recursive functions, recursive and recursively enumerable sets, and the recursive theorem, abstract complexity theory, program schemes and concrete complexity.
Prerequisite: CS 3302 or CS 4307 or equivalent.

5331 Advanced Software Engineering **3:3:0**
Topics not limited to software development methodology, verification and reliability, software quality assurance and productivity, software engineering economics, models and metrics for software management and engineering, human performance engineering and software configuration management and control. Prerequisite: CIS 441G or equivalent.

5332 Object Oriented Database Management Systems **3:3:0**
Introduction to object oriented databases. Topics including introduction to object oriented programming via SMALLTALK, the object-oriented data model, interface for defining and manipulating object oriented databases and other databases. Semantics and changes to the schema, query model, authorization model, architecture and implementation issues. Survey of current object oriented database systems: Versant, ORION, Gemstone, ONTOS, 02, and POSTGRES.
Prerequisite: CIS 434G and CS 5328 or equivalent.

5333 Distributed Computer Systems **3:3:0**
Design of local area networks and multiple network systems, data bases, programming languages and operating systems for distributed systems, fault-tolerance, simulation and modeling of distributed systems.
Prerequisite: CS 5328 and CIS 434G or equivalent.

5335 Advanced Topics in Computer Graphics **3:3:0**
The course focuses on topics current to the field and includes, but is not limited to, areas such as design and construction of computer graphics systems both software and hardware, the theory and use of color and shading and algorithms for solid object modeling.
Prerequisite: CS 4319G or CIS 433G or equivalent.

5336 Advanced Simulation and Modeling **3:3:0**
Current topics in both simulation methodology and applications. Distributed simulation, simulation support tools, object oriented simulation and artificial intelligence and simulation.
Prerequisite: CS 4309G, (MTH 234 or MTH 3370), and MTH 149 or equivalent.

5339 Visual Languages **3:3:0**
Languages for indexing and retrieving images such a motion pictures, satellites, video images, etc. Iconic representation, pattern matching algorithms, visualization of images, object oriented databases, semantic data modeling, icon systems query processing, image compression and architecture for query processing.
Prerequisite: (CS 4319G or CIS 433G) and CS 5328 or equivalent.

5340 Special Topics **3:3:0**
Special topics in all areas of Computer Science with emphasis on topics not covered in other courses. May be repeated for credit when topics vary.
Prerequisite: consent of department chair.

5341 Problem Solving in High-Level Language/Data Structures **3:3:0**
Algorithms, pseudocode, structured techniques of problem solving and program design using high-level programming languages. Data sorting and searching techniques, data structures in programming languages and recursion versus iteration.
Prerequisite: A first programming language, MTH 1345, and MTH 234 or MTH 3370. Leveling course not for graduate credit in MSCS degree.

5342 System Design and Programming **3:3:0**
Principles of computer systems analysis and design, system hardware and software characteristics. Data representation and programming in assembly language. Computer storage structures, storage allocation and management. Design of typical system programs such as assemblers, compilers and operating systems, addressing techniques and core management, file system design and management.
Prerequisite: CS 5341. Leveling course not for graduate credit in MSCS degree.

5350 Parallel Programming and Algorithms 3:3:0
Taxonomy of parallel computers, shared-memory vs. message-passing architectures, theoretical models, parallel algorithm design strategies, parallel data structures, automatic parallelization of sequential programs, communication, synchronization and granularity.
Prerequisite: CS 5313 or equivalent.

5369 Graduate Project 3:3:0
Independent study and research of a specific problem in a field of computer science or its application. A report is required defining the problem and developing a solution. The work may be supervised by any member of the graduate faculty.
Prerequisite: 10 hours of graduate computer science credit including CS 5100 with grades of A or B; prior approval of written plan by the faculty supervisor and by the computer science department chair. May not be repeated for credit.

5402 Pattern Recognition and Image Processing 4:3:3
Principles and pragmatics of pattern recognition, digital image processing and analysis. Statistical pattern recognition: complete vs. incomplete approach (via supervised vs. unsupervised learning). Structural pattern recognition. Image processing: image acquisition and digitization, making decisions based upon the available features. Image segmentation (by clustering, textured images, range images and multispectral images) and registration.
Prerequisite: CS 4309G and MTH 234 or equivalent.

669A-669B Thesis 3:3:0
Independent research of a specific problem in a field of computer science. The work will be supervised by a member of the graduate faculty of the Computer Science Department. To be scheduled only with the consent of the department. 6 hours credit required. No credit assigned until thesis has been completed and filed with the graduate dean. Continuous enrollment required once work on thesis has begun.
Prerequisite: Consent of Department Chair.

OTHER ACCEPTED GRADUATE COURSES

The following list of 4000G and graduate level engineering, business, psychology and English courses may be taken for graduate credit, for satisfying the specialization area requirements, subject to the approval by the graduate advisor. Course descriptions may be found in the Catalog of Lamar University, or in this Catalog.

4000G Courses

CIS	434G	Database Design
CIS	437G	Introduction to Artificial Intelligence
CS	4319G	Computer Graphics
CS	4310G	Computer Architecture
CIS	435G	Applications of Expert Systems
CIS	441G	Software Engineering
CS	4309G	Introduction to Simulation Techniques
CIS	433G	Multi-media Processing
Mth	4315G	Numerical Analysis
Mth	4317G	Math. Theory of Probability
Mth	433G	Linear Algebra II
Mth	4316G	Linear Programming
Mth	4322G	Analysis of Variance
Mth	438G	Theory of Statistical Inference
EE	4302G	Communication Theory
EE	4307G	Microcomputers
EE	4301G	Computer Architecture
EE	4306G	Minicomputers
EE	4308G	Automata Theory
IE	430G	Quality Assurance and Control
IE	437G	Operations Research
Psy	435G	Leadership and Group Dynamics
Psy	436G	Learning
Eng	433G	Psycholinguistics
Eng	434G	Introduction to Linguistics

GRADUATE COURSES

Mth	5503	Modeling Theory
Mth	5315	Finite Element Analysis
Mth	5310	Numerical Analysis
Mth	5326	Topics in Probability and Statistics
Egr	5303	Regression Analysis
Egr	5305	Reliability
Egr	5319	Design of Experiments
Egr	5321	Quality Control Systems
Egr	5332	Operations Research II
Egr	5346	Optimization Techniques
Egr	6348	CAD Applications
Egr	5304	Nonlinear Programming
Egr	5316	Operations Research I
Egr	539	CAD/CAG
Egr	5325	Information Theory
Egr	5336	Operations Research III
Egr	5364	Digital Hardware Design
Egr	6364	Microcomputer Based Design
Acc	530	Financial Accounting: Concepts and Procedures
BLW	530	The Legal Environment of Business
Mgt	531	Operations Management and Information Systems
OAS	530	Administrative Communications
Fin	530	Foundations of Finance
BAc	531	Advanced Statistical Theory and Analysis for Business
Eco	530	Foundations of Economics
Mgt	530	Foundations of Management
Mgt	535	Management of Technology Transfer
Mkt	530	Marketing Concepts
Bac	533	Business Forecasting
Psy	5321	Advanced Industrial Psychology I
PSY	5322	Advanced Industrial Psychology II

Department of Mathematics

The Department of Mathematics offers a program of study leading to the Master of Science degree in Mathematics. It is designed to train students either for a professionally oriented career in industry or in government, for further graduate work in mathematics or to provide depth and breadth in Mathematics Education.

Opportunities in the areas listed above, for students with a Master of Science in Mathematics, are numerous. Such opportunities exist in all areas of applied mathematics including computer science, statistics, operations research, numerical analysis, mathematical physics, administration/management science, engineering, secondary and elementary school teaching. These supporting areas are just a sample of excellent job opportunities for the graduate.

The department spends considerable time advising students in the Master's program. Once a student is admitted, the student's advisor will individually tailor the student's program to meet the needs of the supporting areas mentioned above or other areas of interest to the student. Consequently, students with a Bachelor's degree in Mathematics, Computer Science, Engineering, any of the sciences or Secondary Education will find appropriate opportunities in this M.S. program. Students will find a wide variety of courses listed in the program to make the above supporting areas available to them.

Those seeking admission to this program must satisfy the requirements as indicated below:

Admission to the Program

In order to be admitted to the Graduate Degree Program, a student must

1. Meet the general requirements as set forth in this catalog for admission to the College of Graduate Studies.

2. Successfully complete 27 semester hours of undergraduate mathematics including courses equivalent or comparable to the following: linear algebra, differential equations, advanced calculus, modern algebra and statistics.

Final approval as to what course work is acceptable toward admission to the graduate degree program lies with the graduate advisor and the department head. A student may be admitted conditionally to the graduate degree program, but is required to remove any deficiencies in undergraduate mathematics.

Admission to Candidacy

In order to be admitted to candidacy a student must

1. Successfully complete 12 semester hours of approved graduate work in mathematics.
2. Remove all deficiencies in mathematics designated by the Graduate Advisor and the Department Chair.
3. Satisfy the general Admission to Candidacy requirements as set forth in this catalog.

Completion of the Program

In order to complete the M.S. program a student must

1. Take the Advanced Mathematics section of the Graduate Record Examination and have the score reported to the Graduate Advisor.
2. Complete one of the two following programs:
   a. Complete at least 24 hours of graduate course work, write a thesis acceptable to the student's graduate committee, and satisfactorily defend the thesis orally before the graduate committee.
   b. Complete at least 36 hours of graduate course work and satisfactorily complete an examination over the course work before the student's graduate committee.
3. Include at least three courses from among the following:

Mth	531	Theory of Functions of Real Variables
Mth	532	Modern Algebra
Mth	534	Topology
Mth	5311	Complex Variables **or** 431G Complex Variables

Graduate Faculty

Assistant Professor B. Joanne Baker
Topology, analysis
Associate Professor Paul Chiou
Statistics, reliability theory
Associate Professor Michael A. Laidacker
Topology, applied mathematics
Assistant Professor Mohsen Maesumi
Numerical analysis, applied mathematics
Associate Professor Alec Matheson
Functional and numerical analysis
Assistant Professor Andreev V. Valentin
Complex analysis

Mathematics Courses (Mth)

531 Theory of Functions of Real Variables 3:3:0
Analytical functions, pathological functions, set functions, Riemann integral, measure theory, Lebesque integral, Reimann-Stieltjes and Lebesque-Stieltjes integral.
Prerequisite: Graduate standing and Mathematics 338.

532 Modern Algebra 3:3:0
Groups, rings and the theory of fields. The theory of fields includes the study of subfields, prime fields, algebraic fields extensions and Galois fields.
Prerequisite: Graduate standing and Mathematics 335 or its equivalent.

534 Topology 3:3:0
Topological spaces, metric spaces, compact spaces, embedding, Urysohn's lemma and homotopy.
Prerequisite: Graduate standing and Mathematics 338.

535 Introduction to Advanced Analysis 3:3:0
The Riemann mapping theorem, prime number theorem, functions of finite order, Turan's proof of Fabry gap theorem, other topics as time permits.
Prerequisite: Graduate standing and Mathematics 431.

537 Methods of Applied Mathematics 3:3:0
The Dirichlet problem, solution of boundary value problems, the Bergman Kernel function, method of the minimum integral, applications of conformal mapping.
Prerequisite: Graduate standing and Mathematics 431.

538 Fourier Series 3:3:0
Expansion of functions in Fourier series, orthogonal sets of functions, orthnormality. Fourier integrals. Applications.
Prerequisite: Graduate standing and Mathematics 331 or 3301.

5301 Operational Mathematics 3:3:0
Ordinary differential equations, the Laplace Transform, elementary properties; Inverse Transforms, applications of the Laplace Transform to ordinary differential equations.
Prerequisite: Graduate standing and Mathematics 331 or 3301.

5303 Modeling Theory 3:3:0
Study of techniques of building and applying mathematical models. Applications in biology, ecology, economics and sociology.
Prerequisite: Graduate standing and Mathematics 331 or 3301.

5304 Functional Analysis 3:3:0
Study of linear topological spaces, convexity, Hilbert spaces, Banach spaces, applications.
Prerequisite: Graduate standing and Mathematics 338.

5310 Numerical Analysis 3:3:0
Solutions of ordinary and partial differential equations, approximation of functions, quadrature, and splines.
Prerequisite: Graduate standing, Mathematics 4315 or its equivalent, and some knowledge of computer programming.

5311 Complex Variables 3:3:0
Conformal mapping and analytic continuation, calculus or residues, and applications.
Prerequisite: Graduate standing and Mathematics 431 or its equivalent.

5315 Finite Element Analysis 3:3:0
Application of the finite element method to steady-state and time-dependent problems and to the theory of elasticity. Radial and axisymmetric field problems. Higher-order elements.
Prerequisite: Graduate standing, Mathematics 331 or 3301, and some knowledge of computer programming.

5325 Numerical Linear Algebra 3:3:0
Numerical Solution of linear systems; direct and interactive techniques including LU and Cholesky decompositions. Algebraic eigenvalue problems, Householders reflectors, Givens rotations and the QR method.
Prerequisite: Mathematics 233, Programming language.

5326 Topics in Probability and Statistics 3:3:0
Topics include Markov Chains, Stochastic processes, Stochastic Differential Equations, Sampling Theory.
Prerequisite: Graduate standing and consent of instructor.

5327 Computer-Assisted Mathematical Problem Solving III **3:3:0**
Computers will be utilized to solve advanced numerical problems. Topics will be selected from finite elements analysis, numerical linear algebra, fluid and heat flow, shock waves, turbulence, strange attractors, solutions of PDE's, and models of chaos.
Prerequisite: Mth 4345 or equivalent; consent of instructor.

5328 History of Mathematics **3:3:0**
Historical origin and development of mathematical concepts. The lives and achievements of great mathematicians.
Prerequisite: Graduate standing and Mathematics 335 or 338.

5330 Enrichment Topics in Mathematics **3:3:0**
A potpourri of important mathematical ideas not normally covered in other courses.
Prerequisite: Graduate standing and Mathematics 335 or 338.

5331 Special Topics **3:3:0**
Advanced topics in mathematics to suit the needs of individual students. Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing and consent of instructor.

5332 Topics in Geometry **3:3:0**
Topics include Differential Geometry, Algebraic Topology, Homotopy Theory, Non-Euclidean Geometry and Advanced Euclidean Geometry.
Prerequisite: Graduate standing and consent of instructor.

5333 Topics in Number Theory **3:3:0**
Topics include Prime Number Theory, Irrational Number Theory, Analytic Number Theory, Diophantine Equations and Algebraic Number Theory.
Prerequisites: Graduate standing and consent of instructor.

5334 Seminar in Problem Solving **3:3:0**
Methodology of problem solving, extreme cases, similarity, continuity, generalizations and transformations.
Prerequisite: Graduate standing and Mathematics 335 or 338.

5335 Topics in Mathematics **3:3:0**
Topics include Mathematical Logic, Group Theory, Field Theory, Approximation and Interpolation, Game Theory and Calculus of Variations.
Prerequisite: Graduate standing and consent of instructor.

669A-669B Thesis **6:A:0**
Prerequisite: Approval of graduate advisor.

The following 400 level mathematics courses may be taken for graduate credit when course requirements are augmented, subject to approval by the graduate advisor in the degree program.

4202 Partial Differential Equations **2:2:0**
Fourier series. Solution of boundary value problems including the heat equation, the wave equation, and the potential equation.
Prerequisite: Mth 241, and Mth 3301 or Mth 331.

4203 Vector Analysis **2:2:0**
Vector algebra, vector calculus of three dimensional vector fields (gradients, curl, divergence Laplacian) Green's, Gauss' and Stokes' theorems.
Prerequisite: Mth 241

431 Complex Variables **3:3:0**
Complex numbers, analytic functions, complex line integrals, Cauchy integral formula and applications.
Prerequisite: Mth 241.

4315 Numerical Analysis **3:3:0**
Algorithms for solving linear and non-linear equations and systems thereof. Interpolating polynomials, finite difference approximations of derivatives, techniques of numerical integration. One-step and multistep methods for solving ordinary differential equations and systems thereof.
Prerequisite: Mth 241 or Mth 331, and CS 1411, or its equivalent.

4316 Linear Programming **3:3:0**
Theory, development and computational aspects of the simplex method; convexity; degeneracy problems; revised simplex method; transportation problems, network flow problems; industrial applications.
Prerequisite: Mth 149, Mth 233 and CS 1411.

433 Linear Algebra II 3:3:0
Vector-spaces, linear transformation, matrices, determinants, Eigenvalues, Eigenvectors, canonical forms, bilinear mappings and quadric forms.
Prerequisite: Mth 149 and 233.

438 Theory of Statistical Inference 3:3:0
A formal introduction to statistical inference, sampling theory, general principles of statistical inference, goodness of fit test, regression and correlation, analysis of variance.
Prerequisite: Mth 3370.

The following 500 level engineering courses are also applicable to the Master of Science degree in Mathematics when approved by the departmental graduate advisor.

Egr 5303 Regression Analysis
Egr 5305 Reliability
Egr 5316 Operations Research
Egr 5319 Design of Experiments

College of Fine Arts and Communication

The College of Fine Arts and Communication offers graduate programs of study leading to the Master of Science degree in Speech with majors in public address, speech-language-pathology or audiology; a Master of Science degree in Deaf Education, a Master of Music degree, a Master of Music Education degree, and a Doctor of Education in Deaf Education degree. The college also supports some Master of Education degrees with courses from the Department of Art. Persons seeking admissions to these programs must meet the requirements specified by the College of Graduate Studies and the individual department. Admission to a degree program is not an admission to candidacy. Each master's degree program is designed to help students deepen and expand their knowledge and provide them with the opportunity to develop skills and concepts which may be applied to the professional objectives associated with their fields of study. The Doctor of Education in Deaf Education degree program is designed to prepare professionals to serve in leadership positions in the administration of schools and service programs for the deaf/hearing impaired and/or as faculty for universities with Deaf Education training programs.

Department of Art

The Department of Art offers a Master of Arts in Visual Arts. Two tracks are available in either art history or one of eight studio art areas. Either track is a preparatory degree program designed to prepare students for admission to terminal degree plans in either Art History or Studio Art. Also, this degree will significantly strengthen the professional qualifications of art teachers already in schools and expand cultural/aesthetic appreciation of art.

Students seeking admission to the art program must meet the general requirements for admission outlined in this bulletin. Undergraduate course work may be required if applicant has not earned a Bachelor of Fine Arts degree and the entrance portfolio does not reflect a quality adequate for graduate study.

Special Requirements:

Candidates for the Master of Arts degree in Studio Art must submit a slide portfolio to the Department of Art which displays their competency in the media they intend to pursue for the degree. Students pursuing a degree in Art History must submit their undergraduate GPA, a term paper written while pursuing a Bachelor degree, or some other indication of writing ability. A graduate faculty committee will review applications and portfolios. Applicants will be accepted according to the quality and maturity of work. Applicants must also, submit three letters of recommendation from undergraduate professors and a letter of intent stating professional objectives.

Degree Requirements:

Track One:

The Master of Arts Degree in Studio requires 36 semester hours, including 15 hours in the area of specialization, 9 hours of core courses, 6 hours of electives, and 6 hours in thesis. Specialization may be in Ceramics, Drawing, Painting, Photography, Printmaking, Sculpture or Visual Media. A core program for studio arts will be comprised of 3 hours of Art History, 3 hours of Seminar in Art History (5318) and 3 hours of Current Issues and Trends (5301).

Track Two:

The Master of Arts Degree in Art History requires 36 semester hours, including 15 hours in art history, 9 hours of core courses, 6 hours of electives and 6 hours in thesis. The specialization in art history will require alternative curriculum studies. Methodology of Art History (Art 5308), a foreign language readings exam and three hours of survey of the literature of a foreign language will be required. Also, electives in the art history curriculum may be in literature, philosophy or history at 400 level and above.

Graduate Faculty

Associate Professor Lynne Lokensgard
Art History
Associate Professor Phil Fitzpatrick
Visual Media
Associate Professor Robert G. O'Neill
Studio
Professor Jerry Newman
Studio
Associate Professor Meredith Jack
Studio
Walles Chair/Professor Keith Carter
Visual and Performing Arts

Art Courses

The Department of Art offers the following graduate courses in support of the Master of Education degree programs in Elementary Education and Supervision.

5301 **Issues and Trends of Contemporary Art** **3:3:0**
A paradigm study of current values, practices and beliefs of the art profession. Exploration of the origins and directions of artistic thought in the 20th century with emphasis on the interaction between the artist and society, the effects of that contact on artistic expression and the nature of the imagery that results from that contact.

5305 **Problems in Photography** **3:3:0**
Advanced research in photographic technique and photography as an art medium. May be repeated for credit.

5308 **Methodology in Art History** **3:3:0**
Introduction to methods of art historical research. Special research projects will be required.

5318 **Seminar in Art History, Art Criticism and Aesthetics** **3:3:0**
Topical research in a variety of subjects from the areas of Art History, Criticism and Aesthetics. May be repeated for credit.

5323 **Problems in Visual Media** **3:3:0**
Experimental research in the uses of computers as image making tools. Development of personal imagery through electronic media. May be repeated for credit.

5325 **Problems in Drawing** **3:3:0**
Independent directed study of drawing. May be repeated for credit.

5326 **Problems in Painting** **3:3:0**
Directed independent research leading to the development of a personal direction and statement within painting. May be repeated for credit.

5328 **Study in Late 19th Century Art in France** **3:3:0**
Emphasis will be placed on Symbolism and related styles. A special research project or paper will be required.

5338 **Study in Renaissance Art History** **3:3:0**
A study of 15th and 16th century art in the western world. A special research project or paper will be required.

5348 **Study in 19th and 20th Century Art** **3:3:0**
The foundations of abstraction in European art from NeoClassicism through Surrealism. A special research project or paper will be required.

5358 **Graduate Study in American Art** **3:3:0**
The development of painting, sculpture and architecture in the United States from colonial times to the present. A special research project or paper will be required.

5365 **Problems in Printmaking** **3:3:0**
Independent research and experiment in methods of printmaking. May be repeated for credit.

5368 Study in Contemporary Art 3:3:0
A historical and critical analysis of painting, sculpture and architecture in Europe and the Americas from 1900 to the present. A special research project or paper will be required.

5378 Study in Primitive Art 3:3:0
A study of the development and nature of primitive art. A special research project or paper will be required.

5385 Problems in Sculpture 3:3:0
Independent research and experimentation towards the development of a personal direction and statement in sculpture. May be repeated for credit.

5386 Problems in Ceramics 3:3:0
Independent research and experimentation with technical and aesthetic issues in ceramics. May be repeated for credit.

5388 Study in Modern Architecture and Sculpture 3:3:0
The development and evolution of modern architecture and sculpture from the late 19th century to the present. A special research project or paper will be required.

5395 Graduate Studio Art 3:3:0
Individual study at the graduate level of a specific area within the visual arts field. May be repeated for credit when the subject varies.

5398 Study in the History of Photography 3:3:0
The development and evolution of photography from its invention in 1839 to the present. A special research project or paper will be required.

669A-669B Thesis

Department of Communication

The Department of Communication offers a Master of Science degree in Speech, a Master of Science degree in Deaf Education and a Doctor of Education in Deaf Education degree. The Master of Science degree in Speech encompasses the major fields of Public Address or Audiology/Speech Language Pathology. Students seeking admission to the public address program must meet the general requirements for admission outlined in this catalog. Students who desire entrance to graduate study in Audiology, Deaf Education or Speech-Language Pathology must obtain a GRE verbal/quantitative minimum score total of 950 with neither verbal nor quantitative scores being less than 425.

Doctor of Education in Deaf Education

Entrance to graduate study for the Doctor of Education in Deaf Education degree requires that an applicant has completed a master's degree in Deaf Education or an appropriate cognate field of study, e.g. speech-language pathology, audiology, linguistics, special education, psychology, counseling, etc.; or provisional admission may be obtained requiring a deficiency program of study prior to beginning the doctoral program. Admission also requires a minimum of three years professional experience with hearing-impaired/deaf individuals and a GRE verbal/quantitative minimum score of 1100 with a minimum score of 500 for each subtest.

Deaf persons who must rely primarily upon a visual-verbal system of communication, who are congenitally or prelingually deaf and/or who have a severe hearing loss across the speech frequencies for the better ear may substitute a performance IQ score of 115 in lieu of the GRE requirement for either Master's or Doctoral degree admission.

Specializations in Public Address

The program of public address offers the benefits of a small program during graduate study. Small student faculty ratios allow a maximum of personal involvement and individual guidance. Small classes allow a maximum of flexibility in program design for greater specialization and expertise during degree training. For information, contact Dr. Olen T. Pederson, Box 10076 Lamar University, Beaumont, TX 77710.

Specializations in Speech Pathology/Audiology/Deaf Education

The graduate program in Deaf Education is accredited by the Council on Education of the Deaf and the Speech Pathology and Audiology programs are accredited by the American Speech, Language and Hearing Association. These programs and Lamar's Speech and Hearing Center have been designated as comprising one of several strategic areas in the University designed to become a center of national prominence.

The candidate for the Master of Science degree in any one of the above areas of specialization must meet all the the college of Graduate Studies general degree requirements as listed in this catalog. The candidate must complete a minimum of 36 semester hours, which may include six semester hours of electives, and obtain a minimum of 250 supervised clock hours of clinical experience. Majors in Speech Language Pathology or Audiology must obtain a total of at least 375 clock hours of clinical experience combining graduate and undergraduate work. A thesis program is available with approval of the Communication Disorders faculty which may be substituted for the six hours of electives.

Students who have completed their Bachelor's degree at Lamar in one of the above areas will have completed the undergraduate core curriculum and are prepared to initiate the graduate program if they meet the minimum entrance requirements of the Department and College of Graduate Studies. Other student's undergraduate preparation will be reviewed by a committee of the graduate faculty of the Communication Disorders Program. Students admitted to the graduate program with specific curricular deficiencies will be expected to remove the deficiencies before being admitted to candidacy. The criteria for student/faculty ratios as established by the American Speech, Language and Hearing Association limit the graduate admissions available but individual decisions for admission will be made based on: (1) student appointment available; (2) the student's undergraduate GPA; (3) the student's GRE scores; (4) the student's undergraduate curricular preparation; and (5) the student's letters of recommendation.

Students completing the graduate programs in Speech Pathology or Audiology will be eligible for membership in the American Speech, Language and Hearing Association and will have completed the academic and supervised clinical practicum requirements for the Certificate of Clinical Competence (CCC). These students also will have completed the academic and clinical requirements for licensure in Audiology or Speech Pathology in Texas and for other states requiring licensure. A student wishing to practice Audiology or Speech Pathology in the public schools does not have to complete additional requirements as the Texas Education Agency in 1984 determined professional licensure to be the credential of choice.

Students completing the Deaf Education graduate program will be eligible for national certification in Deaf Education (CED) but certification by the Texas Education Agency to teach as a deaf educator in the public schools may require additional curricular preparation. Student teaching (a requirement for teacher certification in Texas) may be completed during the period of study but may not be taken for graduate credit or counted as part of the master's degree curriculum.

Students who wish to pursue professional credentials in two of the three professional areas to develop dual-certification credentials may do so with the approval of the Head of the Communications Department and the Director of Communication Disorders. This combined program of study will lead either to dual ASHA CCC credentials and state licensure in Speech Pathology and Audiology or will lead to ASHA certification and state licensure in either speech pathology or audiology and CED certification and Texas Education Agency certification in Deaf Education. Completion of these programs

requires an extended amount of graduate study in order to meet both the academic and clinical training requirements. Students frequently complete Two Master's degrees as they pursue dual certification.

Students interested in obtaining information about the Communication Disorders programs should contact Dr. Olen Pederson, Box 10076 Lamar Station, Beaumont, TX 77710 (409) 880-8170.

Professional Certification Requirements of the American Speech, Language and Hearing Association (including Undergraduate Work)

The Certificate of Clinical Competence in Speech Pathology or Audiology requires the completion of 75 semester hours of academics including 27 hours in professional basics and 42 hours in the management of disorders of communication. Of these 42 hours, 36 hours must be in courses in either Speech Pathology or Audiology, 30 must be graduate hours, and **six** hours must be in courses acceptable toward a graduate degree. Thesis hours may not be included. Certification also requires 375 hours of clinical practicum verified by a CCC supervisor.

Beginning Jan. 1, 1994, all graduate coursework and clinical practica must be obtained from an ASHA ESB accredited institution in the professional area of specialization. The audiology or speech-language pathology graduate student at Lamar University should consider that it may be necessary to complete academic hours beyond the usual total of hours for the Master's degree to complete their professional preparation.

Graduate Faculty

Associate Professor Jean Andrews
Deaf education
Associate Professor Mary Alice Baker
Speech communications
Assistant Professor James Bethel
Communication
Associate Professor Randolph Deal
Deaf education, speech pathology
Instructor Patricia DeLuke
Speech pathology
Instructor Mary Dobson
Speech pathology
Assistant Professor Thomas C. Franklin
Audiology
Instructor Ramon Gonzales
Deaf education
Assistant Professor Gabriel Martin
Deaf education
Professor Robert D. Moulton
Deaf education, speech pathology
Professor Olen T. Pederson
Audiology, speech pathology
Clinical Instructor Annette Powell
Speech pathology
Associate Professor Lane Roth
Communication
Assistant Professor Marshall M. Smith
Audiology
Associate Professor Howard F. Wilson
Speech pathology

Speech Courses

530 Neurology — 3:3:A
Anatomy, physiology and neurobiology of the human nervous system.

5301 Aphasia and Neurogenic Disorders — 3:3:0
Theory and treatment for organic speech disorders of neurologic origin.

5302 Stuttering — 3:3:0
Nature, evaluation and treatment of fluency disorders.

5303 Voice Disorders — 3:3:0
Functional and organic voice disorders, diagnosis and treatment.

5304 Communication Disorders of the Severely Handicapped 3:3:0
Nature, evaluation and treatment of speech and language disorders of the severely impaired.

5305 Diagnostics and Counseling 3:3:0
Evaluation and counseling procedures in communication disorders.

5306 Children's Language Disorders 3:3:0
Assessment and intervention procedures for preschool and school age children with language disorders.

5307 Articulation Disorders 3:3:0
Nature, evaluation and treatment of articulation disorders.

5308 Communication Disorders and the Aging Process 3:0:10
The normal process of aging and the associated problems including speech, hearing and language disorders.

5309 Advanced Clinical Practice 3:3:0
Advanced diagnostics and therapy. May be repeated for credit, and must be taken each semester.

531 Advanced Public Relations 3:3:0
Theory, research and contemporary problems in corporate or institutional communication relations.

5311 Instructional Methods in Education of Deaf Children 3:3:A

5312 Sign Language IV
Advanced sign language including American Sign Language (ASL) and interpreting.

5313 Speech Development in the Hearing Impaired 3:3:0
Speech for the young hearing handicapped, home training and therapy plans.

5316 Language for the Deaf 3:3:0
Language development theory applied to the hearing impaired.

5317 Advanced Language for the Deaf 3:3:0
Language development and correction in the older deaf child and adult.

5318 Special Audiometric Tests 3:3:0
Test batteries for peripheral vs. central site of lesion, non-organicity, electrophysiological assessment.

5319 Bone Conduction and Masking 3:3:0
Test procedures for determining individual ear status, includes impedance audiometry.

5320 Pediatric Audiology 3:3:0
Hearing evaluation in the young patient, method and theory.

532 Small Group Processes 3:3:0
Theory, research, and analysis of contemporary problems in group relations, structure, and communication.

5322 Medical Audiology 3:3:A
Study of otologic pathology and influence upon auditory/vestibular systems.

5323 Electrophysical Assessment of Hearing 3:3:0
Current electrophysiological auditory assessment; includes theory, instrument. Techniques and procedures.

5324 Advanced Hearing Aids 3:2:3
Pros and cons of amplification theory and practicum.

5325 Advanced Directing
Theory and problems in directing plays of different periods and styles including musical comedy.
Prerequisite: The 335 or equivalent. 3:3:0

5326 Psychology of Deafness 3:3:0
Psychological, emotional and social impact of deafness.

5327 Advanced Auditory Rehabilitation 3:3:0
Speech reading, auditory training, amplification and counseling for the aurally impaired.

5328 The Multihandicapped With Hearing Disorders 3:3:0
Prevalence, demographics and etiologies of hearing disorders with other handicaps (blindness, motor, emotional, mental or orthopedic). Includes methods, curricula and materials for assistance.

5329 Law and Deafness 3:3:0
Legislative and judicial decisions that influence educational programs for the hearing impaired/deaf.

533 Organizational Communication 3:3:0
Theory, research, and problems in the application of communication processes and systems in organizations.

5331 Organizational Communication 3:3:0
Application of theory through field analysis of communication processes and systems.

5340 Studies in Modern Theater
Trends in theater production, theory, practice and techniques from Adolph Appia to the present.
Prerequisite: The 233 or equivalent.

534 Message Analysis **3:3:0**
Analysis, interpretation, and design of individual and group messages particularly in business settings.

5341 Seminar in Oral Interpretation **3:3:0**
History and contributions of oral interpretation to the field of communication, literary analysis, rhetorical principles and performance skills.

5346 Dramatic Criticism **3:3:0**
Theories and criteria of dramatics from Classical Greek period to the present.

535 Individual Study **3:A:0.**
Independent study of special problems in disorders of communication. May be repeated once for credit.

536 Communication Theory **3:3:0**
Study of a human communication processes to include psychological, sociological, linguistic and speech communication models and theories.

5350 Individual Study **3:A:0**
Independent study of special problems in speech under faculty guidance.

5350 Theater Individual Study **3:A:0**
Independent study of special problems in theater under faculty guidance.

669A-669B Thesis **6:A:0**
Prerequisite: Approval of graduate advisor.

The following courses may be taken for graduate credit with augmented requirements, subject to approval by the departmental graduate advisor.

Communication Courses (Com)

430 Communication Problems and Projects **3:3:3**
Problems analyzed and evaluated under individual guidance of faculty. Course may be repeated for credit two times. Consent of faculty member required prior to registration.

431 Laws and Ethics of the Mass Media **3:3:0**
A study of the responsibilities of the media, including ethical responsibilities to news sources, persons in the news, readers and employers and legal rights and restrictions.
Prerequisite: Com 131, 231 and 234 with a grade of "C" or higher.

432 History and Principles of American Journalism **3:3:0**
The growth of modern newspapers, with emphasis on important persons in American journalism and the influence of their publications on the history of the United States.

433 Mass Communication and Society **3:3:0**
Analysis of impact of mass communication on society.

438 Broadcast News
Study and practice in developing news for broadcasting. Various types of news material, including the documentary, its procurement and presentation.
Prerequisite: Com 133, 338, and 339 with a grade of "C" or higher.

4383 Print Advertising **3:2:3**
A study of advertising, including copy writing, type selection, layout and design for print media.
Prerequisite: Com 131 and 133 with a grade of "C" or higher.

4391 Advanced Television Production
Seeks to develop professional competence in television production of news, commercials, documentaries and special programs.
Prerequisite: Com 338 and 339 with a grade of "C" or higher.

Speech Courses (Spc)

430 Problems and Projects in Communication Disorders **3:A:0**
These problems are discussed and analyzed through discussion and research. Each student elects a project or problem on which he/she does extensive research and presents a report to the department faculty.

4301 Fluency, Voice, and Organic Disorders **3:3:0**
Advanced speech pathology: introduction to specific communication disorders, diagnostic procedures and therapy programs.

4302 Advanced Audiology **3:3:0**
Hearing evaluation procedures, clinical evaluation techniques and instrumentation.

3:0:9

4303 Clinical Practicum
Introduction to clinical practice in speech pathology, audiology and deaf education. This course may be repeated for clinic clock hours accumulation.

3:3:0

4305 Sign Language III
Expanded American Sign Language for the Deaf.

3:3:0

4306 Literacy and Deafness
Theoretical acquisition of reading and writing for deaf/hearing impaired children. Includes approaches/techniques of assistance.

3:3:0

432 Public Relations
Theory, principles, and practice of public relations.
Prerequisite: Com 13, 133, 234 and 338 or permission of instructor.

3:3:0

4324 Non Verbal Communication
Theory, research, analysis and practice in non verbal communication.

3:3:0

4326 Cognition/Socialization and Deafness
Cognitive, linguistic and social development of deaf individuals from infancy to adulthood.

3:3:0

33 Organizational Communication
Theory, principles, and practice of communication within organizations.
Prerequisite: Spc 232 and 334 or instructor's permission.

3:3:0

434 Persuasion
The psychological and emotional principles involved in influencing individuals and groups. An analysis and practice with the speech devices and techniques in effectively motivating audience reaction.
Prerequisite: Spc 131 and 238 or instructor's permission.

3:3:0

4341 Advanced Interviewing
Study of modern communication and related research as applied in business and professional interviews.

3:3:0

4381 Rhetoric of Social Movements
Analysis of the rhetoric of selected social movements in American history.

3:3:0

439 Rhetoric and Public Address
A study and analysis of some of the world's great speeches with application of the principles to original speeches of special types.

Department of Music and Theatre

The Department of Music offers the following graduate degrees: the Master of Music in Performance, the Master of Music Education, and the Master of Science in Theatre. The Music degrees are designed to help performers and music educators improve skills and develop new concepts which may be applied to their particular fields of endeavor. Persons seeking admission to these degree programs must meet the general requirements for admission which are outlined elsewhere in this catalog. Generally, an applicant must also hold a bachelor's degree in music.

Students who did not graduate from Lamar University must take a music theory placement examination. Applicants for the graduate degree in performance must audition for the major professor.

The Master of Science in Theatre is designed to help performers and technicians increase their skills and study new concepts in their perspective specialization. Persons seeking admission to this degree must meet the general admission requirements as outlined elsewhere in this catalog. It is necessary for an applicant to hold a bachelor's degree in theatre or a compatible field.

Degree Requirements

Candidates for master's degrees in music must meet all general degree requirements of the College of Graduate Studies as listed elsewhere in this catalog. The Master of Music in Performance requires 30 semester hours, including 12 hours in the applied major, six in music literature, six in music theory, and six in music education. In addition, a public recital and research paper or lecture recital are required. Voice majors

must show proficiency (to be determined by the Department of Music) in German, French and Italian diction prior to entering this degree program.

The Master of Music Education degree requires 36 semester hours, including 18 in music education, six in music literature, six in music theory, and six in thesis. Two additional courses in music education may be substituted for the thesis, and six hours of applied music may replace two music education courses.

All degree candidates must take MEd 532 (Seminar in Special Problems) and pass a final oral examination before a degree can be granted. The director of graduate music studies will serve as the general advisor of all graduate students in music. A committee of three graduate faculty members will also serve in an advisory capacity and administer the final oral examination.

Candidates for master's degree in Theatre must meet all general degree requirements in the College of Graduate Studies as listed elsewhere in this catalog. The Master of Science in Theatre requires 36 semester hours, including 18 hours in the specialized area (performance or production), 12 hours in practical individual studies and 6 hours in a related elective (music, dance or art). Six hours of thesis may be substituted for the 6 semester hours of fine arts electives. All four hundred level theatre classes are eligible for graduate studies.

All degree candidates must pass a final oral examination before a degree can be granted. The director of graduate theatre studies will serve as general advisor of all graduate theatre students. A committee of three faculty members will also serve in an advisory capacity and administer the final oral examination.

Graduate Faculty

Associate Professor L. Randolph Babin
Choral music education
Associate Professor Robert Culbertson
Brass and music education
Associate Professor Wayne Dyess
Brass and music education
Associate Professor Barry W. Johnson
Brass and music education
Professor John R. LeBlanc
Voice and choral
Associate Professor Barbara Mathis
Voice
Associate Professor Raul S. Ornelas
Brass and music education
Professor James M. Simmons
Woodwinds and music education

Applied Music (AM)

521, 522, 523, 524, 525 Graduate Applied Music **2:2:0**
For music education majors only. Graduate applied music in any instrument category, including composition. No more than six hours may be applied toward graduation in the music education degree.

541, 542, 543, 544, 545 Graduate Applied Music **4:4:0**
Graduate applied music in any instrument category, including composition. No more than 12 hours may be applied toward graduation in the Master of Music degree.

Music Education (MEd)

521 Seminar in Music Education **2:15:20**
Research dealing with special problems related to field work for professional music teachers. Course may be repeated for credit. Class: 15 clock hours. Laboratory: 20 clock hours.

530 Advanced Instrumental Organization and Administration **3:3:0**
Organization and administration of public school bands and orchestras, with emphasis on rehearsal methods and techniques, library systems, program building, publicity procedures, contest preparation, techniques of class instruction and budget.

531 **Advanced Choral Organization and Administration** **3:3:0**
Philosophy, organization and administration of vocal music programs at the public school level; emphasis similar to MEd 530.

532 **Seminar in Special Problems** **3:3:0**
Research problems of special interest to students whose major emphasis is on the graduate field of music. Research paper required.

533 **Basic Concepts in Music Education** **3:3:0**
The historical, philosophical and psychological bases of music education.

534 **Supervision of Music** **3:3:0**
Supervision of public school music programs, with emphasis on leadership, instruction, public relations and problems in scheduling and finance.

535 **Advanced Materials and Methods in Elementary Music** **3:3:0**
Study of current trends, methods and materials in teaching elementary school music, with emphasis on individual study and presentations.

536 **Advanced Choral Conducting** **3:3:0**
Development of technical facility in conducting choral music, with emphasis on complex interpretive elements and problems of the choral conductor.

537 **Advanced Instrumental Conducting** **3:3:0**
Advanced interpretive problems and rehearsal techniques related to the conducting of various types of band and orchestral music.

538 **Advanced Instrumental Methods** **3:3:0**
The principles and techniques of teaching instrumental music.

539 **Advanced Vocal Methods** **3:3:0**
The principles and techniques of teaching vocal music.

5310 **Microcomputer Applications in Music** **3:3:0**
A study of microcomputers and music-related software, especially in the area of computer-assisted marching band charting and administrative duties.

Music Literature (MLt)

531 **Instrumental Literature** **3:3:0**
Survey of music for large instrumental ensembles, chamber music and music for solo instruments. Emphasis on the concerto and symphony, the string quartet and sonata literature, with special attention to the needs and interests of students enrolled.

532 **Keyboard Literature** **3:3:0**
Survey of keyboard literature from the pre-piano period to the present, including study of the piano sonata and other characteristic forms. Emphasis on performing, listening and analysis.

533 **Choral Literature** **3:3:0**
The literature, performance practices and history of choral music, including a study of representative works from various countries.

536 **Survey of the Baroque Era** **3:3:0**
Comprehensive study of the period, beginning with the transition to Baroque, c. 1580, and ending c. 1750. Emphasis on advances in musical form, stylistic developments and performance practices.

537 **Survey of the Classic Era** **3:3:0**
Comprehensive study of the period, beginning with the transition to classicism, c. 1730, and ending c. 1827. Emphasis on advances in the musical form, stylistic developments and performance practices.

538 **Survey of the Romantic Era** **3:3:0**
Comprehensive study of the period, beginning with the transition to Romanticism, c. 1815, and ending c. 1910. Emphasis on advances in musical form, stylistic developments and performance practices.

539 **Twentieth Century Music** **3:3:0**
A survey of major composers and schools of composition from Debussy to the present.

Music Theory (MTy)

532 **Advanced Band Arranging** **3:3:0**
Advanced techniques in arranging music for various types of bands, and study of models by masters of band arranging.

533 Advanced Counterpoint **3:3:0**
Application, through analysis and creative writing, of contrapuntal techniques in larger forms such as canon and fugue.

534 Advanced Orchestration **3:3:0**
Techniques of scoring for various types of orchestras, and study of models by masters of orchestration.

535 Twentieth Century Harmony **3:3:0**
The analysis and writing of music based on twentieth century harmonic techniques and devices.

536 Pedagogy of Theory **3:3:0**
The principles and techniques of teaching the various branches of music theory, including principles of learning, history of theory, critical study of appropriate texts and supervised teaching of music theory classes.

537 Analytical Techniques **3:3:0**
Traditional and contemporary approaches to the visual and aural analyses of music from all periods.

Music (Mus)

530 Special Projects in Music Education **3:A:0**
Individual projects for students with specialized needs in the music education area.
Prerequisite: Consent of Department Chair.

531 Special Projects in Music Literature **3:A:0**
Individual projects for students with specialized needs in the music literature area.
Prerequisite: Consent of Department Chair.

532 Special Projects in Music Theory **3:A:0**
Individual projects for students with specialized needs in the music theory area.
Prerequisite: Consent of Department Chair.

669A-669B Thesis
Prerequisite: Approval of graduate advisor.

Theatre Courses (The)

430/430G Theatre Management/Production Management **3:3:0**
A split course with half of the semester working on the business side of managing a theatrical house and the other half of the semester learning the principles of managing a theatrical production.
Recommended: The 4371.

431/431G Problems and Projects in the Theatre **3:A:0**
Individualized instruction or supervised projects in the various areas of the theatre. May be performance or technically oriented. May be repeated up to three times for credit.

432/432G Advanced Design for the Theatre
Focus on the application of technical aspects of the production within a creative problem-solving format.
Prerequisite: The 332.

433/433G Advanced Scenic Construction **3:3:0**
An advanced stagecraft course with lecture emphasis. Advanced study of construction and shop techniques including furniture work and specialty joinery. Exploration of the use of a wide variety of building materials including plastics, metal and specialty fabrics.
Prerequisite: The 132/232.

434/434G Media Performance **3:3:0**
A course for those interested in on camera and off camera work. Half of the semester will focus on the off camera technology and on-camera performance techniques.
Prerequisite: The 137.

435/435G Costume Design **3:2:3**
Study of the costume designers role in the creative process and the principles of design through historical accuracy.
Prerequisite: The 231.

4360/4360G Musical Comedy Performance **2:0:6**
A laboratory course providing practical experience in the production of a musical comedy. Open by audition or consent of the instructor to students from all departments who are interested in acting or being technically involved in the production. May be repeated twice for credit.

3:3:0

437/437G Acting IV
Period styles of acting for the theatre. A historical perspective of the acting styles of the major time periods of theatrical performance. Performance-oriented.
Prerequisite: 137/237/337.

4371/4371G Directing Theatre Activities
A "how-to" course on the organizing and producing of a variety of theatrical activities. Covering areas of fundraising, publicity, promotion, script and production requirements, the course is recommended for anyone who will work in schools, community organizations and theatres in an administrative capacity.

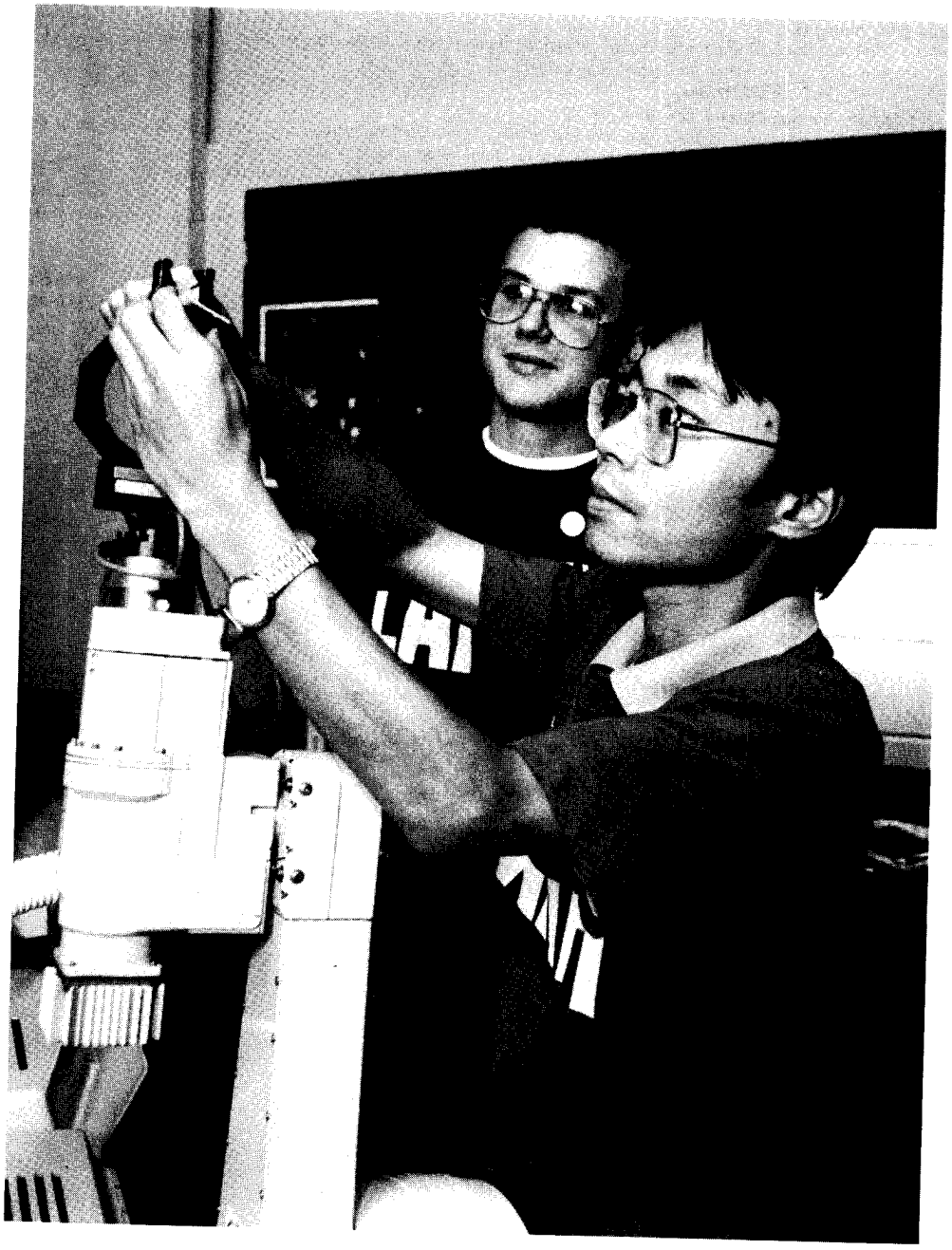
3:3:3

438/438G Advanced Directing
Application of the principles and practices of play directing for the upper level theatre major. Production work is required outside of class.
Prerequisite: The 338.

3:2:3

439/439G Summer Repertory Theatre
Participation in the summer production either on stage or technically, enabling the student to work in a variety of formats before entering the professional world. May be repeated twice for credit.

5350 Theatre Individual Study
Individual study of special problems in theatre under faculty guidance.



Graduate students learn to design, program and operate robots in an engineering laboratory.

Directory of Personnel 1994-96

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Michael R. Ramsey, *Chair* ..... *Beaumont*
Lanny C. Haynes, *Vice Chair* ..... *Vidor*
MaDeline Kaye Savoy, *Secretary* ..... *Port Arthur*
Patricia Adams ..... *Beaumont*
David Beck ..... *Houston*
Robert S. Jones ..... *Austin*
Mona Plunk ..... *Silsbee*
Grady Prestage ..... *Missouri City*
Wayne Reaud ..... *Beaumont*

Administration

James A. (Dolph) Norton, *Ph.D., Interim Chancellor*
William C. Nylin, *Ph.D., Vice Chancellor for Academic Affairs*
Rex L. Cottle, *Ph.D., President, Lamar University-Beaumont*
W. Sam Monroe, *L.L.D., President, Lamar University-Port Arthur*
Steve Maradian, *Ed.D., President, Lamar University-Orange*
George E. McLaughlin, *Ed.D., President, John Gray Institute*
Kenneth E. Shipper, *Ph.D., Interim President, Lamar University Institute of Technology*
W. Brock Brentlinger, *Ph.D., Assistant to President Cottle*
Susan K. Tellier, *M.B.A., Vice President for Finance and Operations*
Joseph D. Deshotel, *J.D., Vice President for Administration and Counsel*
J. Earl Brickhouse, *B.S., Executive Director for Public Affairs*
Beheruz N. Sethna, *Ph.D., Interim Executive Vice President for Academic and Student Affairs*
Joseph K. Kavanaugh, *Ph.D., Associate Vice President and Dean of Students*
Kevin Smith, *Ph.D., Interim Associate Vice President for Academic Affairs*

Council of Deans

Blanchard, Kendall A., *Ph.D., Dean, College of Arts and Sciences*
Ensign, Gary C., *Ph.D., Director of Public Services and Continuing Education*
McAdams, LeBland, *Ph.D., Dean, College of Education and Human Development*
McCord, S. Joe, *Ph.D., Director of Library Services*
Moulton, Robert, *Ph.D., Associate Vice President for Research and Dean of Graduate Studies*
Rode, Elmer G., Jr., *M.Ed., Dean of Records and Registrar*
Simmons, James M., *Ed.D., Dean, College of Fine Arts and Communication*
Swerdlow, Robert A., *Ph.D., Interim Dean, College of Business*
Young, Fred M., *Ph.D., Dean, College of Engineering*

The Graduate Council

Moulton, Robert D., *Professor of Communication Disorders and Associate Vice President for Research and Dean of Graduate Studies*
Price, Donald I., *Professor of Economics*
Watts, Doyle, *Professor of Educational Psychology and Chair, Department of Professional Pedagogy*
Ho, Tho-Ching, *Associate Professor of Chemical Engineering*
Walker, James L., Jr., *Professor of Psychology and Interim Chair, Department of Psychology*
Hansen, Keith C., *Professor of Chemistry*
Deal, Randolph, *Director of Speech and Hearing*

The Graduate Faculty 1994-96

The following list reflects the status of the graduate faculty of Lamar University as of Fall, 1993. The date following each name is the academic year of first service to the University and does not necessarily imply continuous service since that time.

Akers, Hugh A., *1977, Professor of Chemistry*
B.S., University of California at Riverside; PhD., University of California at Berkeley

Allen, Charles L., *1979, Professor of Economics*
B.A., East Texas State University; M.A., Ph.D., University of Arkansas

Anderson, Adrian N., *1967, Professor of History*
B.S., M.A., Ph.D., Texas Tech University

Andreev, Valentin V., *1990, Assistant Professor of Mathematics*
B.M., M.M., University of Sofia; Ph.D., University of Michigan

Andrews, Jean, *1988, Associate Professor of Deaf Education*
B.A., Catholic University; M.Ed., Western Maryland College; PhD., University of Illinois

Babin, L. Randolph, *1968, Associate Professor of Music*
B.M.Ed., M.M.Ed., Ph.D., Louisiana State University

Baker, B. Joanne, *1981, Assistant Professor of Mathematics*
B.A., Lamar University; M.A., Ph.D., University of Texas

Baker, Christopher, *1976, Professor of English and Director of Freshman English*
B.A., St. Lawrence University; M.A., Ph.D., University of North Carolina

Baker, Mary Alice, *1969, Associate Professor of Communication*
B.S., M.A., University of Oklahoma; Ph.D., Purdue University

Bandyopadhyay, Soumava, *1992, Assistant Professor of Marketing*
B.S., Jadavpur University; M.S., Ph.D., University of Alabama

Barnes, Cynthia, *1982, Professor of Office Administration*
B.S., Howard Payne University; M.Ed., Texas Tech University; Ed.D., North Texas State University

Barton, Joel E. III, *1987, Associate Professor of Health, Kinesiology and Dance*
B.S., M.Ed., Ph.D., Texas A&M University

Bean, Wendell C., *1968, Professor of Electrical Engineering*
B.A., B.S., Lamar University; M.S., Ph.D., University of Pittsburgh; Registered Professional Engineer

Bechler, David L., *1981, Associate Professor of Biology*
B.A., Indiana University; M.S., Northeast Louisiana University; Ph.D., Saint Louis University

Bethel, James, *1987, Associate Professor of Communication*
B.A., University of Tulsa; M.A., Ph.D., University of Oklahoma

Bianchi, Thomas S., *1990, Assistant Professor of Biology*
B.A., Dowling College; M.A., State University of New York - Stony Brook; Ph.D., University of Maryland

Blackwell, E. Harold, *1990, Professor of Kinesiology and Chair, Department of Health, Kinesiology and Dance*
B.S.E., Delta State University; M.Ed., Memphis State University; Ed.D., University of Southern Mississippi

Boatwright, Douglas, *1986, Associate Professor of Health, Kinesiology and Dance and Director of Graduate Programs*
B.S., University of Alabama at Birmingham; M.S., Ph.D., Louisiana State University

Bost, David L., *1949, Professor of Educational Foundations*
B.A., Hardin-Simmons University; M.J., University of Texas; Ph.D., East Texas State University; Licensed Psychologist

Briggs, Kenneth R., *1966, Regents' Professor of Education Psychology*
B.S., M.Ed., Ed.D., North Texas State University

Brust, Melvin F., *1978, Professor of Management and Finance*
B.S.E.E., M.S.E.E., University of Texas; Ph.D., North Texas State University; Registered Professional Engineer.

Buonora, Paul, *1990, Assistant Professor of Chemistry*
B.S., M.S., Indiana University of Pennsylvania; Ph.D., University of Virginia

Burke, Charles M., *1970, Professor of School Curriculum; Director of Admissions and Advising, Department of Professional Pedagogy*
B.A. Southeastern Louisiana University; M.Ed., Louisiana State University; Ed.D., University of Southern Mississippi

Carley, Wayne W., *1983, Professor of Biology*
B.S., M.A., Ph.D., University of California

Carroll, John M., *1972, Professor of History*
A.B., Brown University; M.A., Providence College; Ph.D., University of Kentucky

Carter, Keith D., *1989, Walles Chair Visiting Professor and Instructor of Art*
B.B.A., Lamar University

Castle, David S., *1985, Associate Professor of Political Science*
B.A., M.A., Marshall University; Ph.D., University of Rochester

Cavaliere, Frank, *1985, Associate Professor of Business Law*
B.A., Brooklyn College; B.B.A., Lamar University; J.D., University of Texas-Austin

Chen, Daniel H., *1982, Associate Professor of Chemical Engineering*
B.S., National Cheng-Kung University; M.S., National Taiwan University; Ph.D., Oklahoma State University

Chiou, Paul, *1988, Associate Professor of Mathematics*
B.Sc., National Chung Hsing University; M.A., Ph.D., University of Texas at Arlington

Choi, Jai-Young, *1982, Professor of Economics*
B.A., Yonsei University; M.A., University of Kansas; Ph.D., University of Oklahoma

Chu, Hsing Wei, *1979, Associate Professor in the Department of Industrial Engineering*
B.D. Tunghai University; M.S., Asian Institute of Technology; Ph.D., University of Texas

Cocke, David L., *1989, Jack M. Gill Professor of Chemistry*
B.S., University of Texas; M.S., Lamar University; Ph.D., Texas A&M University

Colapret, John A., *1991, Assistant Professor of Chemistry*
B.A., Austin College; M.A., Ph.D., University of Texas-Austin

Cooper, Mark J., *1984, Associate Professor of Early Childhood*
B.S.E., M.S.E., Henderson State University; Ph.D., Georgia State University

Corder, Paul R., *1987, Associate Professor of Mechanical Engineering*
B.S., M.S., Ph.D., Texas A&M University; Registered Professional Engineer

Crowder, Vernon Roy, *1967, Professor of Health, Kinesiology and Dance*
B.S., Lamar University; M.S., Ph.D., Louisiana State University

Culbertson, Robert, *1974, Associate Professor of Music and Chair, Department of Music*
B.M., M.M., Northern Illinois University; D.M.A. University of Texas at Austin

Daigrepont, Lloyd M., *1981, Associate Professor of English*
B.A., M.A., Ph.D., Louisiana State University

Daniali, Saeed, *1981, Associate Professor of Civil Engineering*
B.S., Tehran Polytechnique; M.S. School of Engineering of Strasbourg; Ph.D., University of Lille; Registered Professional Engineer

Darsey, Nancy S., *1955, Professor of Office Administration and Chair, Department of Administrative Services*
B.B.A., M.B.A., Texas Tech University; Ph.D., Louisiana State University

Deal, Randolph E., *1990, Associate Professor of Communication and Director of Speech and Hearing Clinic*
B.A., Oklahoma State University; M.C.D., Ph.D., University of Oklahoma

DeLuke, Patricia, *1992, Instructor of Speech-Language Pathology*
B.S., M.S., Texas Woman's University

Dobson, Mary E., *1990, Instructor of Speech-Language Pathology*
B.S., Northeastern State University; M.S. University of Oklahoma

Drapeau, Richard A., *1983, Associate Professor of Business Statistics*
B.S., Arizona State University; M.B.A., Lamar University Ph.D., Texas A&M University

Droddy, Frances, *1980, Instructor of Home Economics and Director, Early Childhood Development Center*
B.S., Northwestern Louisiana State University; M.S., Lamar University; Ph.D., Texas Woman's University

Drury, Bruce R., *1971, Professor of Political Science*
B.A., M.A., University of Nebraska; Ph.D., University of Florida

DuBose, Elbert T., Jr., *1974, Associate Professor of Political Science*
B.A., Southwest Texas State University; M.A., Texas Tech University; Ph.D., University of Oklahoma

Dyess, Wayne, *1977, Associate Professor of Music*
B.M., Stephen F. Austin University; M.M. Catholic University of America; Ed.D University of Houston

Elliff, Connie, *1976, Assistant Professor of Home Economics*
B.S., Southwest Texas State University; M.S., Kansas State University; Ph.D., Texas A&M University; Registered Dietitian

Esser, James K., *1976, Professor of Psychology*
B.S., University of Iowa; Ph.D., Indiana University

Fitzpatrick, Oney D., Jr., *Assistant Professor Psychology*
B.A., College of Wooster; M.A., University of Dayton; Ph.D., University of Houston

Fitzpatrick, Phil, *1977, Associate Professor of Art*
B.F.A., M.F.A., Auburn University

Ford, Allan M., *1993, Research Professor in Chemical Engineering and Director of the Gulf Coast Hazardous Substance Research Center*
B.S., Iowa State University; Ph.D., Kansas State University

Franklin, Thomas Claiborn, *1992, Assistant Professor of Audiology*
B.A., Auburn University at Montgomery; M.C.D., Auburn University; Ph.D., Florida State University

Fritze, Ronald H., *1984, Associate Professor of History*
B.A., Concordia College; M.A., M.L.S., Louisiana State University; Ph.D., University of Cambridge

Gates, David G., *1963, Professor of Industrial Engineering*
B.S., M.S., University of Arkansas; Ph.D., Oklahoma State University; Registered Professional Engineer

Georgas, Marilyn D., *1962, Professor of English*
B.A., Sam Houston State University; M.A., Lamar University; Ph.D., University of Texas

Gilman, Kurt A., *1986, Assistant Professor of Music*
B.M., Eastman School of Music; M.M., Texas Tech University; D.M.A., University of Texas-Austin

Godkin, Roy Lynn, *1981, Professor of Management and Chair, Department of Management and Marketing*
A.B., Bethany Nazarene College; M.B.E., Nazarene Theological Seminary; M.A., Sangamon State University; Ph.D., North Texas State University

Gonzales, Ramon, *1988, Instructor of Deaf Education*
B.S., M.S., Lamar University

Goulas, Fara M., *1975, Assistant Professor of Special Education and Reading*
B.A., Lamar University; M.A., University of Colorado; Ed.D., McNeese State University

Gwin, Howell H., Jr., *1962, Professor of History*
B.A., M.A., Ph.D., Mississippi State University

Gwynn, Robert S., *1976, Professor of English*
A.B., Davidson College; M.A., M.F.A., University of Arkansas

Haiduk, Michael W., *1983, Associate Professor of Biology*
B.S., M.S., Texas A&M University; Ph.D., Texas Tech University

Hansen, Keith C., *1967, Professor of Chemistry*
B.S., Lamar University; Ph.D., Tulane University

Hargrove, W. Richard, *1964, Professor of Educational Psychology*
B.S., M.Ed., North Texas State University; Ed.D., George Peabody College for Teachers

Harrel, Richard C., *1966, Professor of Biology*
B.S., East Central State College; M.S. Ed., University of Georgia; Ph.D., Oklahoma State University

Harvill, John B., *1984, Associate Professor of Computer Science*
B.A., M.A., North Texas State University; Ph.D., Southern Methodist University

Hawkins, Charles F., *1966, Regents' Professor of Economics; and Chair, Department of Economics and Finance*
B.A., Lamar University; M.A., Ph.D., Louisiana State University

Henry, Lula J., *1987, Associate Professor of Reading*
B.S.Ed., Paul Quinn College; M.S.Ed., Arkansas State University; Ed.D., University of Missouri-Columbia

Hinchey, Jane O., *1968, Associate Professor of Home Economics and Chair, Department of Home Economics*
B.S., Winthrop College; M.S. University of Tennessee; Ph.D., Texas Woman's University

Ho, Tho-Ching, *1982, Associate Professor of Chemical Engineering*
B.S., National Taiwan University; M.S., Ph.D., Kansas State University

Holt, V. Raye, *1975, Professor of Health, Kinesiology and Dance*
B.S., Georgia State College for Women; M.S., Baylor University; Ed.D., University of Tennessee

Holtz, Rolf F., *1989, Assistant Professor of Psychology*
B.A., University of Washington; M.S.Ed., Ph.D., University of Southern California

Hopper, Jack R., *1969, Professor of Chemical Engineering and Chair, Department of Chemical Engineering*
B.S., Texas A&M University; M.Ch.E., University of Delaware; Ph.D., Louisiana State University; Registered Professional Engineer

Howard, Jack L., *1992, Assistant Professor of Management*
B.S., M.A., Ph.D., University of Illinois

Hunt, Madelyn D., *1984, Associate Professor of Biology*
B.S., Lamar University; M.P.H., Dr.P.H., University of Texas School of Public Health, Registered Medical Technologist (A.S.C.P.)

Idoux, John P., *1983, Professor of Chemistry*
B.A., University of St. Thomas; M.S., Ph.D., Texas A&M University

Isaac, Paul E., *1960, Regents' Professor of History*
B.A., Pepperdine College; M.A., Ph.D., University of Texas

Israel, Peggy, *1993, Assistant Professor of Computer Science*
B.S., University of Southwestern Louisiana; Ph.D., Tulane University

Jack, Meredith M., *1977, Associate Professor of Art*
B.F.A., University of Kansas; M.F.S., Temple University

Johnson, Barry W., *1983, Associate Professor of Music*
B.M.E., M.A., Sam Houston State University; Ed.D., University of Houston

Jolly, Sonny, *1971, Professor of Health and Kinesiology*
B.S., M.S., Lamar University; M.Ed., Stephen F. Austin State University; Ed.D., North Texas State University

Jones, Richard W., *1975, Professor of Accounting and Chair, Department of Accounting*
B.S.C., Texas Christian University; M.A., University of Alabama; PhD., University of Arkansas; Certified Public Accountant

Jordan, Donald L., *1979, Associate Professor of Information Systems*
B.S., East Texas Baptist College; B.S., Lamar University; M.S., Air Force Institute of Technology; PhD., University of Houston

Karlin, Andrea, *1981, Associate Professor of Reading*
B.A., Hunter College; M.A., Ph.D., University of New Mexico

Kelley, Gregory G., *1993, Assistant Professor of English*
B.A., Florida State University; M.A., Ph.D., Emory University

King, Larry J., *1991, Assistant Professor of Communication*
B.A., M.A., Bethany Nazarene College; Ph.D., University of Oklahoma

Koehn, Enno, *1984, Professor of Civil Engineering and Chair, Department of Civil Engineering*
B.C.E., City University of New York; M.S., Columbia University; Ph.D, Wayne State University; Registered Professional Engineer

Koh, Hikyoo, *1981, Professor of Computer Science*
B.A., Young-Nam; M.S., University of Hawaii; Ph.D., University of Pittsburgh

Laidacker, Michael A., *1967, Associate Professor of Mathematics*
B.S., M.S., Lamar University; Ph.D., University of Houston

Lane, James E., *1967, Associate Professor of Special Education; Director, Professional Services*
B.A., Abilene Christian University; M.Ed., Lamar University; Ed.D., North Texas State University

LeBlanc, John R., *1971, Professor of Music and Department Director of Graduate Studies*
B.M.Ed., McNeese State University; M.S.M., Southwestern Baptist Theological Seminary; M.M., Louisiana State University; Ph.D., University of Southern Mississippi

Lee, Huei, *1991, Assistant Professor of Marketing*
B.A. in Law, Fu Jen Catholic University; M.B.A., Eastern New Mexico University; Ph.D., Georgia State University

Lee, Sun Chai, *1992, Assistant Professor of Civil Engineering*
B.S., M.S., University of Southwestern Louisiana; Ph.D., West Virginia University

Li, Ku-Yen, *1978, Professor of Chemical Engineering*
B.S., M.S., Cheng Kung University; Ph.D., Mississippi State University; Registered Professional Engineer

Lindoerfer, Joanne, *1980, Associate Professor of Psychology*
B.S., Loyola University, Chicago; M.S., Ph.D., University of Texas

Loges, Max, *1991, Assistant Professor of English*
B.A., Northwestern Oklahoma State University; M.Div., Southwestern Baptist Theological Seminary; M.A., Fort Hays State University; Ph.D., Oklahoma State University

Lokensgard, Lynne, *1973, Associate Professor of Art*
B.A., M.A., University of Minnesota; Ph.D., University of Kansas

Lowrey, Mildred A., *1974, Professor of Health, Kinesiology and Dance and Academic Director*
B.S., Howard College; M.S., Alabama College; PhD., Florida State University

Maesumi, Mohsen, *1991, Assistant Professor of Mathematics*
B.A., Princeton University; M.S., Yale University; Ph.D., New York University

Mantz, Peter A., *1983, Associate Professor in the Department of Civil Engineering*
B.S., Newcastle University; M.S., Southampton University; Ph.D., London University; Chartered Engineer (U.K.)

Markwood, Christopher L., *1993, Assistant Professor of Political Science*
B.S., Southwest Baptist University; M.A., Ph.D., University of Missouri-Columbia

Marriott, Richard G., *1976, Professor of Psychology and Chair, Department of Psychology*
B.S., Weber State College; M.A., Ph.D., University of New Mexico

Martin, Gabriel A., *1989, Assistant Professor of Communication*
B.S., M.S., Lamar University; Ed.D., University of Southern Mississippi

Matheson, Alec L., *1983, Associate Professor of Mathematics*
B.S., University of Washington; Ph.D., University of Illinois

Mathis, Barbara Thomas, *1990, Associate Professor of Music*
B.M., M.M., North Texas State University; Ph.D., University of North Texas

Maxum, Bernard J., *1992, Professor of Electrical Engineering and Chair, Department of Electrical Engineering*
B.S., University of Washington; M.S., University of Southern California; Ph.D., University of California, Berkeley; Registered Professional Engineer

McAdams, LeBland, *1967, Professor of Home Economics and Dean, College of Education and Human Development*
B.S., Sam Houston State University; M.Ed., University of Houston; PhD., Texas Woman's University

McCaskill, Ed, *1987, Associate Professor of Science Education*
B.S., M.Ed., Sam Houston State University; Ed.D., East Texas State University

Mei, Harry T., *1960, Professor of Mechanical Engineering*
B.S., National Taiwan University; M.S., Ph.D., University of Texas; Registered Professional Engineer

Montano, Carl B., *1981, Professor of Economics*
B.S., M.S., University of the Philippines; Ph.D., Michigan State University

Morgan, William E., *1972, Professor of Civil Engineering*
B.S., U.S. Naval Academy; B.S., U.S. Naval Post Graduate School; M.S., University of Alaska; Ph.D., University of Texas; Registered Professional Engineer

Moss, Jimmy D., *1986, Associate Professor of Finance*
B.S., M.B.A., D.B.A., Mississippi State University

Moulton, Robert D., *1974, Regents' Professor of Communication Disorders and Associate Vice President for Research and Dean of Graduate Studies*
B.S., M.S., University of Utah; Ph.D., Michigan State University

Newman, Jerry A., *1962, Regents' Professor of Art*
B.F.A., University of Texas; M.F.A., University of Southern California

Nguyen, Vinh D., *1992, Assistant Professor of Mechanical Engineering*
B.S., M.S., Ph.D., Virginia Polytechnic Institute and State University

Nordgren, Joseph E., *1990, Assistant Professor of English*
B.A., University of Minnesota; M.A., Ph.D., Florida State University

Ogilvie, Clint, *1991, Associate Professor of Educational Leadership*
B.S., North Texas State University; M.Ed., North Texas State University; Ed.D., East Texas State University

Ornelas, Raul Sosa, *1972, Associate Professor of Music*
B.M., University of Texas; M.M.Ed., McNeese State University; D.M.A., University of Southern Mississippi

Ortego, James Dale, *1968, Regents' Professor of Chemistry and Chair, Department of Chemistry*
B.S., University of Southwestern Louisiana; Ph.D., Louisiana State University

Orth, Nilus J., *1991, Assistant Professor in the Department of Mechanical Engineering*
B.S., University of Kansas; M.S., University of Kansas; Ph.D., University of Kansas

Osborne, Lawrence, *1990 Assistant Professor of Computer Science and Chair, Department of Computer Science*
B.S., Southeast Missouri State University; M.A., M.S., Ph.D., University of Missouri - Rolla

Pederson, Olen T., *1975, Professor of Audiology and Chair, Department of Communication*
B.S., University of Houston; M.S., East Texas State University; Ph.D., University of Oklahoma

Pemberton, Amy, *1984, Assistant Professor of Home Economics*
B.S., Lamar University; M.S., Lamar University; Ph.D., University of Texas School of Public Health-Houston; Registered Dietitian

Peruničić-Draženović, Branislava, *1993, Professor of Electrical Engineering*
Candidate of Technical Sciences, Institute of Automatics and Telemechanics of the USSR Academy of Sciences; Ph.D., Sarajevo University

Placette, Adonia D., *1985, Assistant Professor of Theater*
B.S., M.S., Lamar University; Ph.D., Texas Tech University

Powell, Annette, *1990, Instructor of Communication*
B.S., M.S., Lamar University

Price, Donald I., *1983, Professor of Economics*
B.A., Hendrix College; M.A., Ph.D., University of Arkansas

Price, R. Victoria, *1972, Professor of Modern Languages*
B.A., Tift College; M.A., M.Ed., Lamar University; M.A., Ph.D., Rice University

Priest, Dale G., *1986, Associate Professor of English*
B.A., Lamar University; M.A., Ph.D., Rice University

Powell, Annette, *1990, Instructor of Speech-Language Pathology*
B.S., M.S., Lamar University

Read, David, *1965, Regents' Professor of Computer Science*
B.S., Lamar University; M.S., North Texas State University; Ph.D., University of Houston

Reddy, G. N., *1990, Assistant Professor in the Department of Electrical Engineering*
B.E., NS Eng College; M.Sc.Eng., PSG Tech; M.S., Ph.D, IIT

Rice, Desmond V., *1987, Associate Professor of Reading and Educational Technology*
B.A., Avondale College, N.S.W., Australia; M.A., San Francisco State University; Ed.D., University of Southern California

Rogers, Bruce G., *1961, Professor of Civil Engineering*
B.S., University of Houston; M.S, Ph.D., University of Illinois; Registered Professional Engineer

Roller, Richard A., *1991, Assistant Professor of Biology*
B.S., University of Arkansas; M.S., Louisiana State University; Ph.D., Louisiana State University

Roth, Lane, *1978, Associate Professor of Communication*
B.A., New York University; M.A., Ph.D., Florida State University

Sanderson, James, *1989, Assistant Professor of English*
B.A., Southwest Texas State University; M.A., Southwest Texas State University; Ph.D., Oklahoma State University

Satterwhite, Marc T., *1990, Assistant Professor of Music*
B.M., Michigan State University; M.M., D.M., Indiana University

Saur, Pamela S., *1988, Assistant Professor of English*
B.A., University of Iowa; M.A., University of Iowa; M.Ed., University of Massachusetts; Ph.D., University of Iowa

Sen, Kabir C., *1993, Professor of Marketing*
B. Tech., Indian Institute of Technology; M.B.A., Cranfield School of Management; M.S., Ph.D., Washington University

Sethna, Beheruz N., *1989, Professor of Marketing and Information Systems Management and Interim Executive Vice President for Academic and Student Affairs*
Bachelor of Technology (honors); Indian Institute of Technology, Bombay; M.B.A., Indian Institute of Management, Ahmedabad; Master of Philosophy, Ph.D., Columbia University

Sheppeard, Sallye J., *1980, Associate Professor of English*
B.A., M.A., Texas Christian University; M.R.E., Brite Divinity School; Ph.D., Texas Woman's University

Shukla, Shyam S., *1985, Associate Professor of Chemistry*
M.Sc., University of Saskatchewan; Ph.D., Clarkson College of Technology

Simmons, James M., *1970, Professor of Music and Dean, College of Fine Arts and Communication*
B.S., Memphis State University; M.M., University of Houston; Ed.D., McNeese State University

Simon, William E., *1990, Professor of Mechanical Engineering and Chair, Department of Mechanical Engineering*
B.S., University of Southwestern Louisiana; M.S., University of Houston; Ph.D, University of Houston; Registered Professional Engineer

Smith, Kevin B., *1981, Professor of Sociology and Interim Associate Vice President for Academic Affairs*
B.S., Texas A&M University; M.A., Ph.D., Louisiana State University

Smith, Marshall M., *1989, Assistant Professor of Audiology*
B.S., Auburn University; M.S., Pennsylvania State University; Ph.D., Florida State University

Spradley, Larry W., *1972, Professor of Business Statistics*
B.A., Stephen F. Austin State University; M.Th., Southern Methodist University; M.S., Lamar University; Ph.D., Texas A&M University

Storey, John W., *1968, Regents' Professor of History and Chair, Department of History*
B.A., Lamar University; M.A., Baylor University; Ph.D., University of Kentucky

Sullivan, John T., *1984, Associate Professor of Biology*
A.B., Dartmouth College; Ph.D., Lehigh University

Summerlin, Charles T., *1973, Professor of English and Chair, Department of English and Foreign Languages*
B.A., Abilene Christian University; M.Ph., Ph.D., Yale University

Sutton, Walter A., *1963, Professor of History*
B.A., William Marsh Rice University; M.A., Ph.D., University of Texas

Swerdlow, Robert A., *1978, Professor of Marketing and Interim Dean, College of Business*
B.B.A., M.B.A., Lamar University; Ph.D., University of Arkansas

Thomas, James L., *1983, Associate Professor of Industrial and Mechanical Engineering and Director, CAD/CAM*
B.S.I.E., Oklahoma State University; M.S.I.E., Texas Technological College; Ph.D., Texas Tech University

Thompson, Bob, *1985, Professor of Educational Administration and Supervision and Chair, Department of Educational Leadership*
B.S., Abilene Christian University; M.Ed., Ph.D., East Texas State University

Tosirisuk, Phadhana, *1992, Assistant Professor of Industrial Engineering*
B.S., Chulalongkorn University; M.E., M.S., Lamar University; Ph.D., Pennsylvania State University

Trahan, Donald E., *1990, Adjunct Assistant Professor of Psychology*
B.S., Lamar University; M.S., Ph.D, North Texas State University

Tucker, Jerry R., *1971, Associate Professor of Educational Administration and Supervision*
B.S., The University of Texas; M.Ed., Trinity University; Ph.D., Texas A&M University

Utter, Glenn H., *1972, Professor of Political Science and Chair, Department of Political Science*
B.A., State University of New York at Binghamton; M.A., Ph.D., State University of New York at Buffalo

Valentin, Andreev V., *1990, Assistant Professor of Mathematics*
B.S., M.S., Sofia University; Ph.D, University of Michigan

Vanderleeuw, James M., *1988, Assistant Professor of Political Science*
B.A., Ramapo College; M.A., University of Nevada-Reno; Ph.D., University of New Orleans

Veuleman, Malcolm W., *1970, Professor of Accounting*
B.S., McNeese State University; M.B.A., Ph.D., University of Arkansas; Certified Public Accountant

Walker, James L., Jr., *1969, Professor of Psychology*
B.A., Baylor University; Ph.D., Texas Tech University

Warren, Michael E., *1966, Professor of Biology and Chair, Department of Biology*
B.A., M.A., Ph.D., University of Texas

Watt, Joseph T., Jr., *1965, Professor of Electrical Engineering*
B.A., B.S., William Marsh Rice University; M.S., Ph.D., University of Texas; Registered Professional Engineer

Watts, Doyle, *1985, Professor of Educational Psychology, and Chair, Department of Professional Pedagogy*
B.S., Abilene Christian University; M.S., Ed.D., Texas Tech University

Wellan, Doris M., *1988, Associate Professor of Marketing*
B.S., M.S., Louisiana State University; Ph.D., London School of Business, University of London

Westgate, James W., *1989, Assistant Professor of Geology*
B.S., College of William and Mary; M.S., University of Nebraska-Lincoln; M.S., Southwest Missouri State University; Ph.D., University of Texas-Austin

White, William F., *1982, Professor of Professional Pedagogy*
A.B., St. Bernard's College; Ed.M., University of Buffalo; Ph.D., SUNY

Whittle, John A., *1969, Professor of Chemistry*
B.S., University of Glasgow; Ph.D., Imperial College, University of London

Wills, Curtis E., *1971, Associate Professor of Counseling and Development*
B.S., M.Ed., Sam Houston State University; Ed.D., North Texas State University; Licensed Psychologist

Wilson, Howard F., *1987, Associate Professor of Speech-Language Pathology*
B.S., M.S., Florida State University; Ph.D., Ohio University

Wooster, Ralph A., *1955, Regents' Professor of History, Dean of Faculties and Associate Vice President for Academic and Student Affairs*
B.A., M.A., University of Houston; Ph.D., University of Texas

Wright, Stuart A., *1985, Associate Professor of Sociology*
M.A., M.A., University of Houston; Ph.D., University of Connecticut

Yaws, Carl L., *1975, Professor of Chemical Engineering*
B.S., Texas A&I University; M.S., Ph.D., University of Houston; Registered Professional Engineer

Yearwood, Stephenie, *1988, Assistant Professor of English*
B.A., Tulane University; M.A., Ph.D., University of Texas-Austin

Young, Fred M., *1978, Professor of Mechanical Engineering and Dean, College of Engineering*
B.S.M.E., M.S.M.E., Ph.D., Southern Methodist University; Registered Professional Engineer

Zaloom, Victor A., *1981, Professor of Industrial Engineering and Chair, Department of Industrial Engineering*
B.S.I.E., M.S.E., University of Florida; Ph.D. University of Houston; Registered Professional Engineer

Zhang, Wen-Ran, *1990, Assistant Professor of Computer Science*
B.S., Shanxi Mining Institute; M.S., Ph.D, University of South Carolina

Zheng, Qi, *1993, Assistant Professor of Computer Science*
B.S., Huazhong Institute of Technology; M.S., University of Minnesota; Ph.D., University of California, Santa Barbara

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Correspondence Directory

All correspondence should be directed to Lamar University Station, Beaumont, Texas 77710. Telephone numbers for all campus stations may be obtained through the central switchboard, Area Code 409/880-7011.

Academic Programs ..... Kevin Smith, Interim Associate Vice President, P.O. Box 10002

Academic and Student Affairs ..... Beheruz Sethna, Interim Executive Vice President

Administration ..... Joseph D. Deshotel, Vice President, P.O. Box 10006

Admissions ..... James Rush, Director, Academic Services, P.O. Box 10009

Applications/Information ..... Admissions Services, P.O. Box 10009

Athletics ..... Michael E. O'Brien, P.O. Box 10066

College of Arts & Sciences ..... Kendall A. Blanchard, Dean, P.O. Box 10058

College of Business ..... Robert Swerdlow, Interim Dean, P.O. Box 10059

College of Education and Human Development ..... LeBland McAdams, Dean, P.O. Box 10034

College of Engineering ..... Fred M. Young, Dean, P.O. Box 10057

College of Fine Arts & Communication ..... James M. Simmons, Dean, P.O. Box 10077

College of Graduate Studies ..... Robert D. Moulton, Associate Vice President for Research and Dean of Graduate Studies, P.O. Box 10004

Computer Services ..... Robert Bell, Director, P.O. Box 10020

Counseling/Testing ..... Coordinator, P.O. Box 10040

Development ..... Jerry Baldwin-LeBlanc, Director, P.O. Box 10568

Finance ..... Susan Tellier, Executive Vice President, P.O. Box 10003

Financial Aid ..... Ralynn Castete, Director, P.O. Box 10042

Graduate Admissions ..... Sandy Drane, Coordinator, P.O. Box 10009

International Students ..... Sharon Pate, Advisor, P.O. Box 10009

Library ..... S. Joe McCord, Director, P.O. Box 10021

Placement ..... Peter Schmidt, Director, P.O. Box 10012

President ..... Rex Cottle, President, P.O. Box 10001

Public Affairs ..... J. Earl Brickhouse, Executive Director, P.O. Box 10546

Public Services and Continuing Education ..... Gary Ensign, Director, P.O. Box 10008

Records & Registration ..... Elmer Rode, Dean, P.O. Box 10089

Student Services ..... Joseph Kavanaugh, Associate Vice President, P.O. Box 10006

Student Health ..... Delores Jones, Director, P.O. Box 10015

Student Housing ..... Robert Williams, Director, P.O. Box 10041

Teacher Certification ..... Charles Burke, Director, P.O. Box 10034

Tuition/Fees/Expenses ..... Brian Hurlburt, Director, P.O. Box 10003

Veterans Affairs ..... Darrell L. Fondren, Director, P.O. Box 10017

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LAMAR UNIVERSITY – BEAUMONT
College of Graduate Studies
Beaumont, Texas 77710