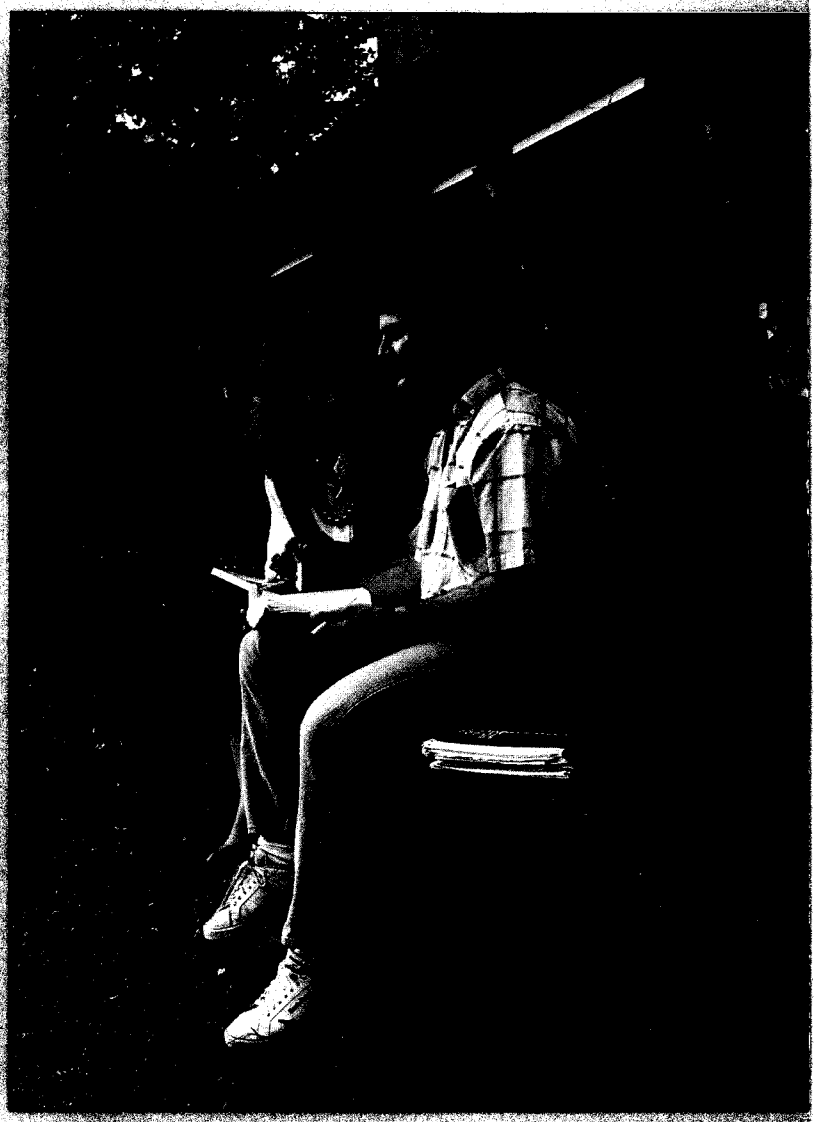
CREATE YOUR FUTURE



LAMAR UNIVERSITY · BEAUMONT

GRADUATE CATALOG 1987-1988

LAMAR UNIVERSITY

COLLEGE OF GRADUATE STUDIES

1987-88 • Bulletin • Volume 36 Number 2

Seventeenth annual catalog issued with announcements for 1987-88.

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, 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, Personnel, and Student Services.

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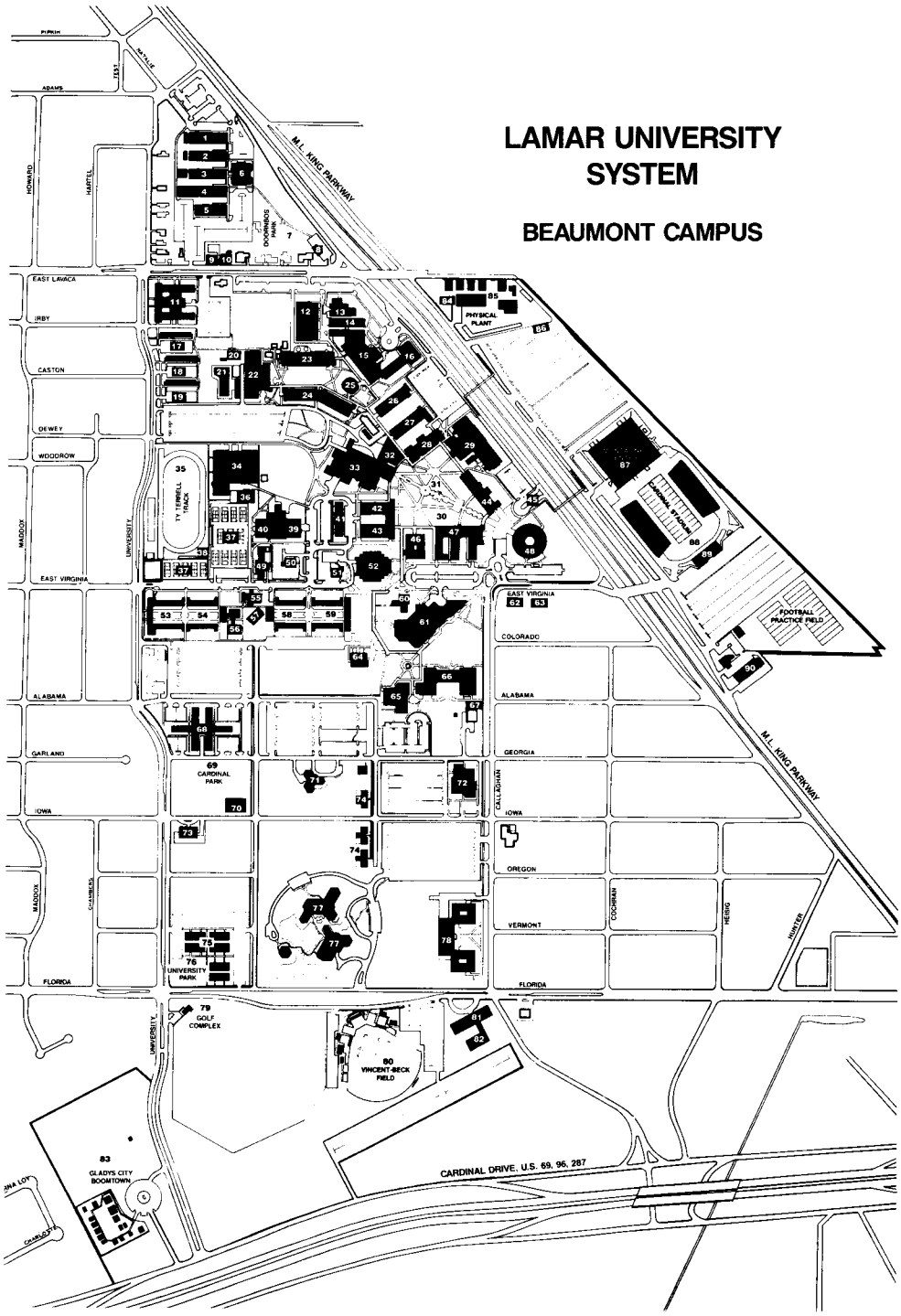
LAMAR UNIVERSITY
SYSTEM
BEAUMONT CAMPUS
M.L. KING PARKWAY
PHYSICAL PLANT
DOORNBOS PARK
TY TERRELL TRACK
CARDINAL STADIUM
FOOTBALL PRACTICE FIELD
CARDINAL PARK
UNIVERSITY PARK
GOLF COMPLEX
VINCENT-BECK FIELD
GLADYS CITY BOOMTOWN
CARDINAL DRIVE, U.S. 69, 96, 287
PIPKIN
ADAMS
HOWARD
HARTEL
TEXT
MAYLLE
EAST LAVACA
IRBY
CASTON
DEWEY
WOODROW
MADDOX
UNIVERSITY
EAST VIRGINIA
COLORADO
ALABAMA
GARLAND
GEORGIA
IOWA
CALLAGHAN
OREGON
VERMONT
COCHRAN
HEBERT
HUNTER
FLORIDA
CHAMBERS

LEGEND TO MAP OF LAMAR UNIVERSITY · BEAUMONT

REGISTER OF OFFICES

1987-88 Calendar

Published dates in this calendar are subject to revision by published notice from the Office of the Associate Vice President for Academic Affairs.

Fall Semester-1987

AUGUST

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
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16	17	18	19	20	21	22
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30	31					

SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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20	21	22	23	24	25	26
27	28	29	30	31		

August 1987

20 International Student Orientation
21 Orientation – New Students
23 Dormitories open at 1 p.m.
Dining Halls open at 4:30 p.m.
24 Registration begins
25 Registration
27 Classes begin
Schedule revisions – late registration
28 Last day for schedule revisions and/or late registration

September

7 Labor Day – no classes
14 Twelfth Class Day

October

9 Last day to drop or withdraw without penalty
Last day to petition for no grade
13 Last day to apply for December graduation
Last day to pay for diploma; cap and gown

November

2– December 9 – period for oral examination/thesis defense
5 Comprehensive written examinations
13 Last day to drop or withdraw
19 First copy of thesis due in Graduate College
16-20 Thanksgiving recess begins at 10 p.m.
Dining halls close at 6 p.m.
Dormitories close at 10 p.m.
29 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.
30 Classes resume at 8 a.m.

December

9 End oral examination period
Final copies of thesis due in Graduate College
Deadline for payment of thesis binding fee
9-15 Final examinations
16 Dining halls close at 10 a.m.
Dormitories close at 12 noon
17 Grades for graduating students due 8:30 a.m.
All grades due 4 p.m.
19 Commencement

Spring Semester-1988

JANUARY

S	M	T	W	T	F	S
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31						

FEBRUARY

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28	29					

MARCH

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27	28	29	30	31		

APRIL

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MAY

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22	23	24	25	26	27	28
29	30	31				

January 1988

7 International Student Orientation
8 Orientation—New students
10 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.
11 Registration begins
12 Registration
14 Classes begin
Schedule revisions – late registration
15 Last day for schedule revisions and/or late registration
29 Twelfth Class Day

February

25 Last day to drop or withdraw without penalty
25 Last day to petition for no grade
26 Last day to apply for May graduation
Last day to pay for diploma; cap and gown

March

11 Spring recess begins at 5 p.m.
Dining halls and dormitories close at 6 p.m.
20 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.
21 Classes resume at 8 a.m.

April

1 Good Friday
4– May 6—period for oral examination/thesis defense
7 Comprehensive written examinations
12 Last day to drop or withdraw
14 First copy of thesis due in Graduate College
18-22 Early registration for Fall semester

May

4 Final copies of thesis due in Graduate College
Deadline for payment of thesis binding fee
4-10 Final examinations
6 End oral examination period
11 Dining halls close at 10 a.m.
Dormitories close at 12 noon
12 Grades for graduating students due 8:30 a.m.
All grades due 4 p.m.
14 Commencement

Summer Session-1988
First Term

JUNE

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May

26 International Student Orientation
29 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.
30 Registration
31 Classes begin – schedule revisions and/or late registration

June

1 Last day for schedule revisions and/or late registration
6 Fourth Class Day
13 Last day to drop or withdraw without penalty
Last day to petition for no grade
14-16 Orientation – Session I
23 Comprehensive written examinations (except College of Business)
27 Comprehensive examinations (College of Business only)
Last day to apply for August graduation
Last day to pay for diploma; cap and gown
Last day to drop or withdraw
27-July 29–period for oral examination/thesis defense

July

6 Last class day
7 All grades due by 4 p.m.

Summer Session-1988
Second Term

JULY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
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24	25	26	27	28	29	30
31						

AUGUST

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7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

July

6 Registration
7 Classes begin – schedule revisions and/or late registration
11 Last day for schedule revisions and/or late registration
13 Fourth Class Day
First copy of thesis due in Graduate College
16-18 Orientation – Session II
20 Last day to drop or withdraw without penalty
Last day to petition for no grade
28 Comprehensive written examination (except College of Business)
29 End oral examination period

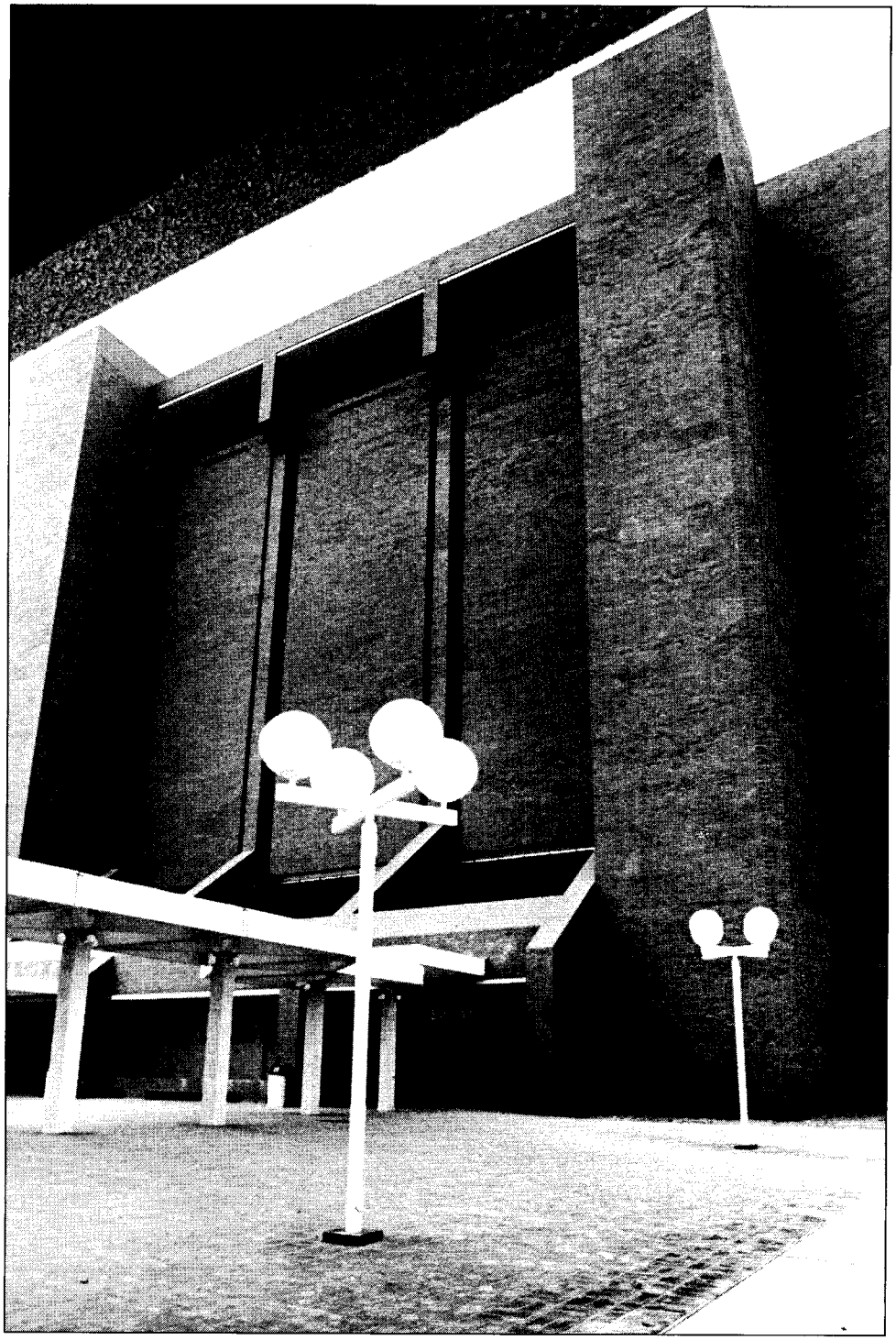
August

2-4 Orientation – Session III
3 Last day to drop or withdraw
Final copies of thesis due in Graduate College
Deadline for payment of thesis binding fee
11 Last class day
Dining halls and dormitories close at 6 p.m.
12 All grades due 8:30 a.m.
13 Commencement

Summer 1988 class schedule is subject to change.

Table of Contents

Director of Graduate Studies: Howell H. Gwin Jr.
Editor: Louise L. Wood
Art Director: Sherrie Booker Branick
Cover Photography by Jan Johnson
Photography With Text by Jan Johnson, Pete Churton and Roger Clem



The 8-story Mary and John Gray Library stands as a focal point of both the learning experiences and the landscape of Lamar University-Beaumont.

General Information

Location

The central campus of Lamar University, a state-supported institution, is located in Beaumont, Texas, one of the world's largest petrochemical centers. Beaumont is one of the fastest growing and most progressive cities in the Sunbelt. The city offers private and public schools, churches, museums, shopping districts and a wide range of leisure-time activities to serve the metropolis of 130,000. 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.

Other campuses of the Lamar University System are in Orange and Port Arthur.

History

Lamar University originated on March 8, 1923, when the South Park School District in Beaumont authorized its superintendent to proceed with plans to open "a Junior College of the first class." On September 17, South Park Junior College opened with 125 students and a faculty of fourteen. Located on the third floor of the South Park High School building, the college shared the library and athletic facilities with the high school. In 1932, separate facilities were provided and the name of the institution was changed to Lamar College.

On June 8, 1942, as a result of a public campaign, a new campus was purchased and classes were held for the first time on the present day campus in Beaumont. Following World War II, the College grew to 1,079, and a bill to make Lamar University a state-supported senior college was introduced in the House of Representatives. The legislature approved the Lamar bill (House Bill-52) on June 4, 1949, creating Lamar State College of Technology effective September 1, 1951. Lamar was the first junior college in Texas to become a four-year state-supported college. Uniquely, Lamar retained much of its traditional community college mission, particularly in vocational programs, while continuing to grow with strong programs in engineering, sciences, business, and education.

In 1962, a graduate school was established offering Master's degrees in several fields. The Doctorate in Engineering was established in 1971. In the same year, House Bill-590 became law changing the institution's status to university. Lamar State College of Technology, with an enrollment of 10,874, officially became Lamar University on August 23, 1971.

In 1969, an extension center was opened in Orange and in 1975 the long-standing private Port Arthur College became Lamar University at Port Arthur. The Lamar University System, of which Lamar University-Beaumont is the primary component, was established by the 68th Session of the Texas Legislature with the passage of SB-620, which took effect in August 1983.

Since Lamar University-Beaumont first opened in 1923, it has achieved a unique position in the community of higher education with its traditional academic degree programs, including graduate and baccalaureate curricula, offered alongside one- and two-year degree programs and certification programs in vocational-technical fields. Diplomas and certificate programs are offered in fifteen areas of training. Degrees are offered in more than 100 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 University. The Board of Regents delegates the direction of University affairs to the chancellor, presidents, campus administrative officers and faculty.

Accreditation and Approval

Lamar is accredited by, or a candidate for accreditation by, the Commission on Colleges of the Southern Association of Colleges and Schools and is approved by the Texas Education Agency. The College of Graduate Studies is a member of the Council of Graduate Schools in the United States.

Several departments and programs have been accredited by professional agencies. In the College of Engineering, the programs in Chemical, Civil, Electrical, Industrial and Mechanical Engineering are accredited by the Accreditation Board for Engineering and Technology. The undergraduate and graduate programs of the College of Business are accredited by the American Assembly for Collegiate Schools of Business.

In the College of Health and Behavioral Sciences, Dental Hygiene is accredited by the American Dental Association; Radiologic Technology, Respiratory Technology and Respiratory Therapy by the American Medical Association; and Nursing by the National League for Nursing.

Other accreditations include the Department of Chemistry by the American Chemical Society; Department of Music by the National Association of Schools of Music; and the College Education by the National Council for the Accreditation of Teacher Education; and Council on Social Work Education; and programs in Speech Pathology by the American Speech-Language-Hearing Association and in Deaf Education by the Council for Education of the Deaf.

The University also is 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 and has a fully computerized system that provides open access to 800,000 volumes. Seating accommodates 1,200 students and faculty.

The first floor service areas include circulation, reference, media, 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 and eighth floors offer expansion space for the future, but are presently shared with other University services. Library special collections and a lecture room share the seventh floor with the Lamar System Administration and Media Services. The spacious and elegant eighth 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 strong 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 a director who serves as the chairman of the faculty research committee. All state-financed research projects are awarded through the research committee.

Computer Center

The University Computer Center is responsible for providing the computing services required by the academic, administrative and research communities of the University.

The Computer center has a Dual Honeywell DPS8/49 computer with 1536K words of 36 bit MOS memory and approximately 1.1 billion characters of on-line disk storage. The

system supports one card reader, one card punch, two line printers and three tape drives at the main site. Over ninety terminals are available for interactive computer use. Extensive communication equipment can connect up to 53 synchronous and 134 asynchronous terminals to the computer concurrently. A remote job entry station which has one card reader and one printer is located in the Beeson Technical Arts Building.

Academic computing work, particularly by students in Computer Science courses, accounts for a large portion of the Computer Center's computer usage. Each student is responsible for preparing his or her own program. Most student programs are usually processed within thirty minutes. Keypunches are available for punching cards. All jobs are automatically scheduled by the computer which considers computing time and storage requirements as well as other factors.

Counseling and Testing Center

Lamar University maintains a Counseling Center located in 116 Wimberly Student Services Building that offers a full range of services to students. In this central resource location, professional staff are available to provide educational, diagnostic and career testing; instruction for and access to individual computer-assisted career exploration; educational, personal, social, career counseling; and assessment and referral to student development programs including those of Special Services and Learning Skills.

The center is staffed with a licensed psychologist and licensed and certified counselors to assist in the resolution of student problems and questions. The Counseling Center does not address problems of a long-term therapeutic nature. Students encountering difficulties are encouraged to consult the office on a no-charge basis. All contacts are confidential.

In order to assist students in making decisions concerning choices of majors and careers, the Counseling Center maintains two computerized career information systems, SIGI, and Discover, as well as a career library.

The Center coordinates testing required by Lamar University and provides individual testing services for students. These services include the administration and interpretation of career interest and personality tests.

The office also acts as a national test center for administration of Graduate Record Examination, Law School Admission Test, Graduate Management Admission Test, Scholastic Aptitude Test (SAT), American College Testing Program (ACT), College Level Examination Program (CLEP), General Educational Development Test (High School Equivalency Test), the Miller Analogies Test, and the Pre-Professional Skills Test. Information and application forms concerning these tests may be obtained from the Counseling Center.

Placement Center

The Placement Center is a centralized operation responsible for placement activities for all colleges of the university. The placement services are available free of cost to students, faculty, staff and all former students. The center keeps updated information in career fields and job areas, employers and the kind of employees being sought.

Interviews are scheduled regularly with companies, governmental agencies, schools and other employers.

The center also offers seminars pertaining to job search techniques, interviews, resume writing and job availability. The Placement Center is located in Room 102 of the Galloway Business Building.

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 of 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 Student Aid.

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 head 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 deduce their academic load in relation to their teaching assignment (the combined teaching and course load may not exceed fifteen 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 section of this catalog or may be obtained from the Director of Certification in the College of Education.

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 are paid in full. 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 and will be accepted subject to final payment.

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 Dean of Records and Registrar 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 Thesis/Dissertation Abstracts

The Graduate Council requires that thesis and dissertation abstracts be published by University Microfilms. Fees for this service are $30 for a master's thesis and $40 for a doctoral dissertation. If copyrighting is desired, an additional fee of $20 is charged.

Refund of Fees

Any student officially withdrawing 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

Prior to the first class day, 100 per cent.
During the first five class days, 80 per cent.
During the second week of classes, 70 per cent.
During the third week of classes, 50 per cent.
During the fourth week of classes, 25 per cent.
After the fourth week of classes, none.

Summer Session

Prior to the first class day, 100 per cent.
During the first, second or third class day, 80 per cent.
During the fourth, fifth or sixth class day, 50 per cent.
Seventh class day and thereafter, none.

Questions regarding refunds should be addressed to the Finance Office.

Summary of Fees

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

Fall 1987

No. of Semester Hours	Tuition		Student Service Fee	General Use Fee	Setzer Center Fee	Health Center Fee	Total Charge	
	Texas Resident	Non-Texas Resident*					Texas Resident	Non-Texas Resident
1	$100	$ 120	$26	$20	$20	$ 5	$171	$ 191
2	100	240	33	20	20	5	178	318
3	100	360	40	20	20	5	185	445
4	100	480	47	24	20	5	196	576
5	100	600	54	30	20	5	209	709
6	100	720	61	36	20	6	223	843
7	112	840	68	42	20	7	249	977
8	128	960	75	48	20	8	279	1,111
9	144	1,080	75	54	20	9	302	1,238
10	160	1,200	75	60	20	10	325	1,365
11	176	1,320	75	66	20	11	348	1,492
12	192	1,440	75	72	20	12	371	1,619
13	208	1,560	75	78	20	13	394	1,746
14	224	1,680	75	84	20	14	417	1,873
15	240	1,800	75	90	20	15	440	2,000
16	256	1,920	75	90	20	15	456	2,120
17	272	2,040	75	90	20	15	472	2,240
18	288	2,160	75	90	20	15	488	2,360
19	304	2,280	75	90	20	15	504	2,480
20	320	2,400	75	90	20	15	520	2,600

Summer 1988

1	$ 50	$ 120	$26	$20	$10	$ 5	$111	$181
2	50	240	33	20	10	5	118	308
3	50	360	37	20	10	5	122	432
4	50	480	37	24	10	5	126	556
5	60	600	37	30	10	5	142	682
6	72	720	37	36	10	6	161	809
7	84	840	37	42	10	7	180	936
8	96	960	37	48	10	8	199	1,063
9	108	1,080	37	54	10	9	218	1,190
10	120	1,200	37	60	10	10	237	1,317

*Non-resident tuition will by revised each January for the following academic year (Sept.-Aug.)

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.

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: Fall Semester, $15; Spring Semester, $10; Summer Session I, $6; Summer Session II, $4. Only one registration is required during an academic year, and a student's parking fee is honored until the end of Summer Session II.

Health and Accident Insurance

Health and accident insurance coverage is available at registration for students carrying nine or more semester hours. The fee is estimated at $56. This or similar insurance is required of all international students.

Miscellaneous Fees

Thesis binding (each copy)	$ 8.50
Microfilming (Master's)	30.00
Microfilming (Doctor's)	40.00
Master's Diploma	12.00
Cap, Gown and Hood Rental (Master's)	25.00
Cap, Gown and Hood Rental (Doctor's)	27.50
Returned Checks	10.00
Reentry Fee	5.00
Transcript Fee	2.00

Returned Check Fees

Checks written in payment of registration fees and returned to the University due to insufficient funds will result in a $10 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 $10.

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

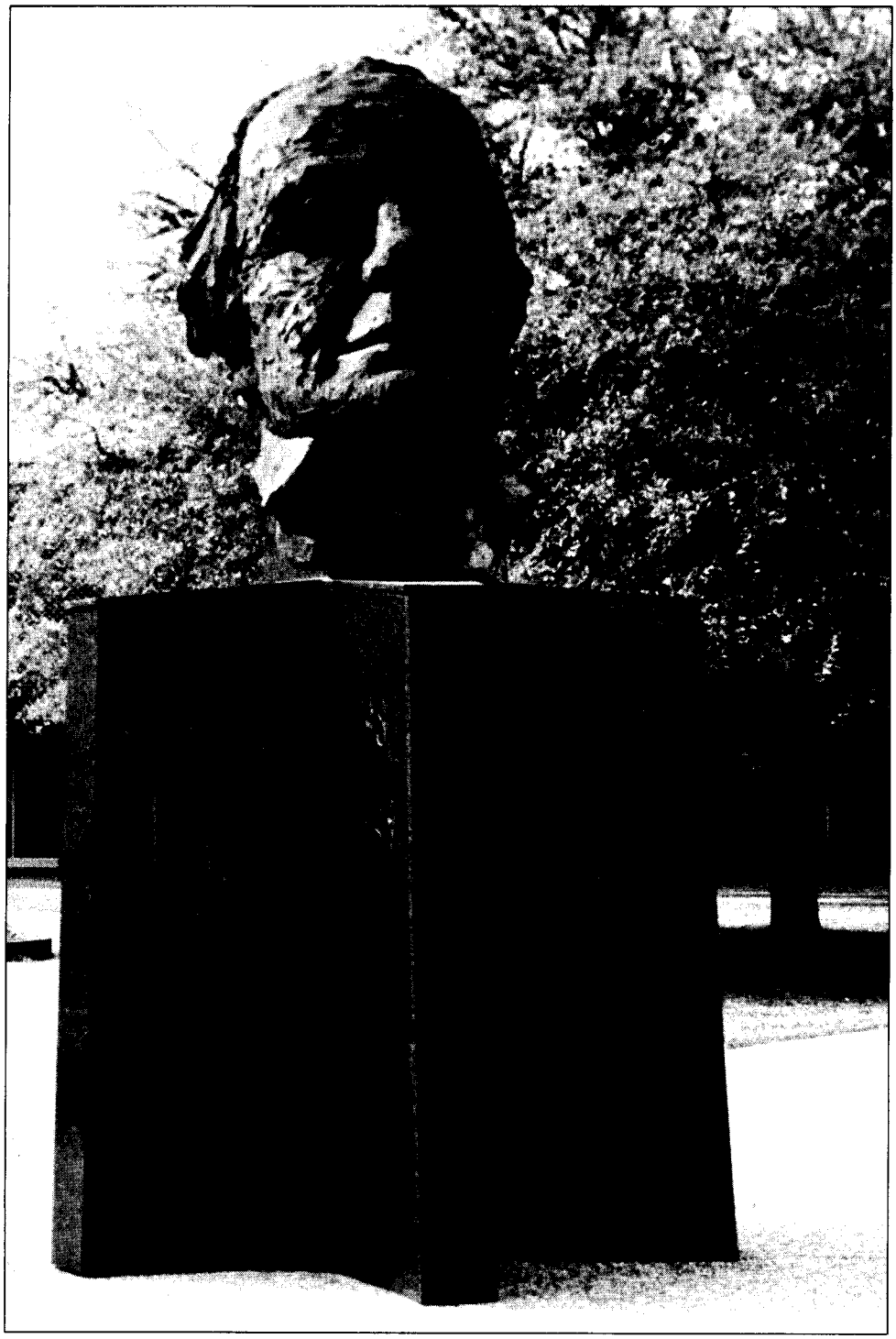
A matriculation fee of $15 will be incurred by students who withdraw prior to the first day of class. This $15 fee will be deducted from refunds.

Student 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.



Lamar honors Mirabeau B. Lamar, second president of the Republic of Texas and Father of Public Education in Texas, whose sculpture adorns the Quadrangle.

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 head of the student's major field. All such changes are initiated by the completion of the proper form available in the department head'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 head, 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 fifteen 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. Students wishing a drop after the official drop date may review the issue with the dean of the college in which the course is offered.

Withdrawals

Students who wish to withdraw during a semester or summer term should fill out a Withdrawal Petition in triplicate in the office of their department head. Students must clear all financial obligations and return all uniforms, books, laboratory equipment and other materials to the point of original issue. Copies of the withdrawal form signed by the department head and the director of library services are presented to the Office of Records by the student.

The Finance Office, on application before the end of the semester or Summer Session, will return such fees as are returnable according to the schedule shown under the "fees" section of the catalog. If a withdrawal is made before the end of the sixth week (second week of a summer term) or if the student is passing at the time of withdrawal after the sixth week, a grade of "W" is issued for each course affected. A grade of "F" is issued for all courses not being passed at the time of withdrawal after the penalty-free period.

A student may not withdraw within 15 class days of the beginning of final examinations or five days before the end of a summer term. A student who leaves without withdrawing officially will receive a grade of "F" in all courses and forfeit all returnable fees. Students wishing to withdraw after the official withdrawal date may review the issue with the Dean.

Enforced Withdrawal Due to Illness

The director of the Health Center and the vice president for student affairs, 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 hour 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.

Official Summons

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

Discipline

It is assumed any student eligible for admission to the University is familiar enough with the ordinary rules of conduct for ladies and gentlemen to need no definite discipline regulations. The University reserves the right to place on disciplinary probation or to dismiss any student at any time for sufficient cause.

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 Conduct Code are available in the office of Student Development.

Penalty for False Statements

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 whom 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 Regulations

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

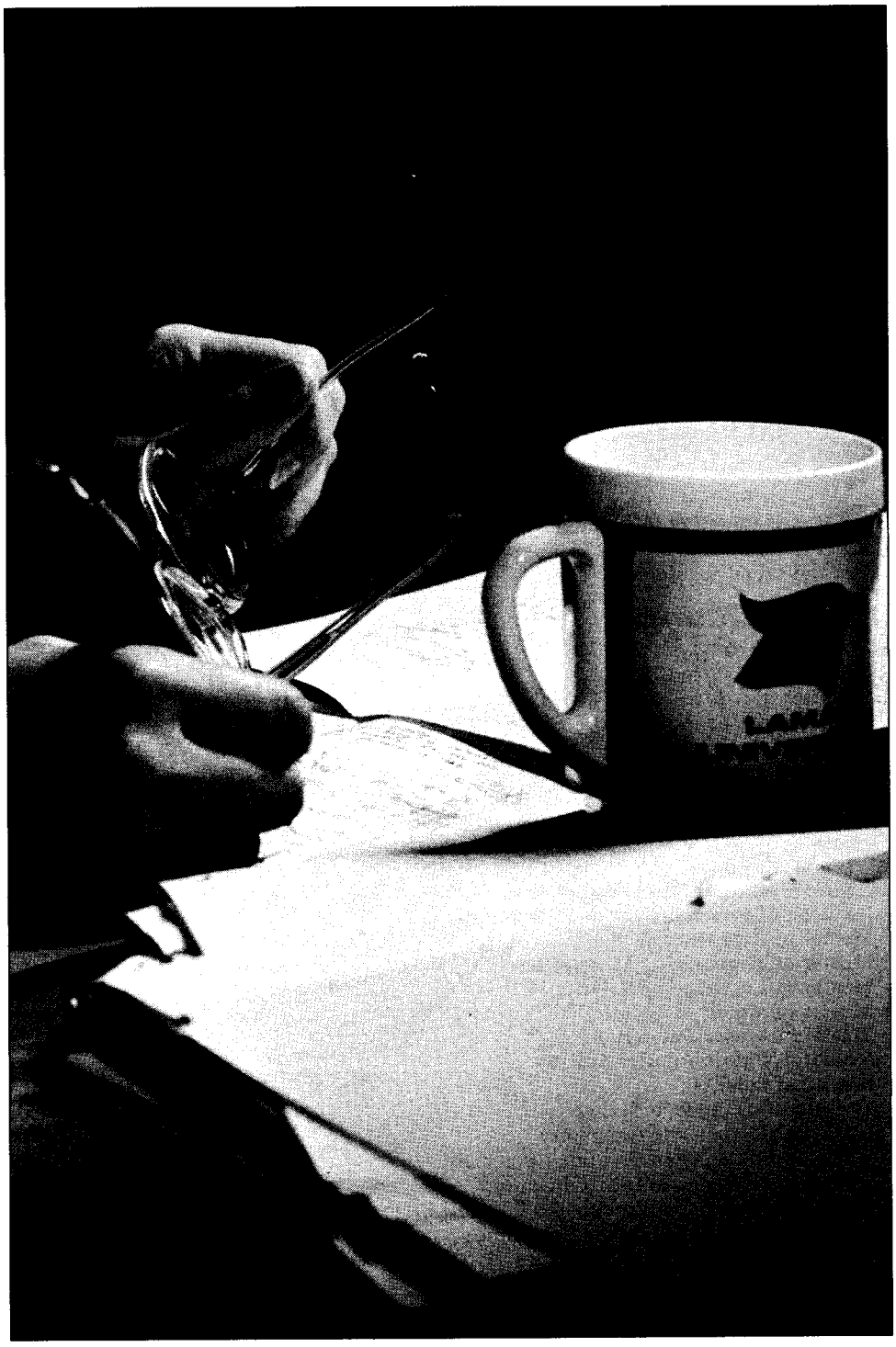
In accordance with the Texas Education Code 51.911, a student who is absent from classes in observance of a religious holy day will be permitted to take an examination or complete an assignment scheduled for that day at a time specified by the instructor if, not

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 places of worship are 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 Vice President for Student and University Affairs. Students may be required to present to the Vice President for Student and University Affairs a written statement documenting that such absence qualifies under the terms of a religious holy day.



The College of Graduate Studies seeks to advance knowledge, intensify specialization, develop research skill and promote independent thought.

The College of Graduate Studies

History

The College of Graduate Studies was instituted in the 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, 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 for 1974. In 1975, master's degrees in music, music education and home economics were initiated, and the Master of Engineering Management degree was begun in 1983. A Master of Science in Computer Science was added in 1984.

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 Political Science

Master of Business Administration

Master of Education
- Master of Education in Elementary Education
- Master of Education in Guidance and Counseling
- Master of Education in Secondary Education
- Master of Education in Special Education
- Master of Education in Supervision
- Master of Education in School 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 Health and Physical Education
- Master of Science in Home Economics
- Master of Science in Mathematics
- Master of Science in Psychology
- Master of Science in Speech (Theater, Speech Pathology/Audiology, Public Address)

Doctor of Engineering

Enrollment

Admission to a Degree Program

1. For admission to a degree program the applicant must meet the following minimum standards and have submitted the following credentials to the office of Admissions and Records at least 30 days before registration.
   A. An applicant must hold a bachelor's degree from an institution approved by a recognized accrediting agency.
   B. An official transcript sent directly from each college previously attended.
   C. Scores on the aptitude section of the Graduate Record Examination (GRE) are sent directly to the Office of Admissions Services by the Educational Testing Service. The Lamar Testing and Counselling Center, located in the Wimberly Student Affairs Building, administers the GRE. Application forms and information about the GRE are available at this center. Applicants for the Master of Business Administration are not required to take the GRE, but must take the Graduate Management Admission Test. (See the College of Business section of this Bulletin for specific requirements).

      NOTE: GRE, GMAT, or NTE scores more than five years old will be accepted only by special permission of the Graduate Dean/Director.
   D. Applicants for the Doctor of Engineering degree should write a letter to the Dean of the College of Engineering. This letter should include information about the applicant, engineering experience, present employment and chief interests. Applicants also should indicate what type of work they would like to undertake for their field study.
   E. An application for admission sent to the Office of Admissions and Records.
   F. The applicant's undergraduate grade point average and GRE scores must be above the minimum standards established by the College of Graduate Studies. For all students, except those wishing to pursue the Master of Business Administration degree, **one** of the following requirements for admission must be met:
      (1) A minimum undergraduate grade point average of 2.5 on a four point scale (overall *OR* on the last 60 hours of undergraduate course work) and a minimum score of 400 on the Verbal and on the Quantitative section of the Graduate Record Examination. A total of 800 on these two sections is also required.
      NOTE: In academic year 1988-1989 a total of at least 850 on Verbal plus Quantitative will be required and in academic year 1989-1990 the minimum total will be increased to 900.
      (2) A grade point average lower than 2.5 (overall *OR* on the last 60 hours of undergraduate course work) and 540 on an appropriate section of the GRE as listed below. Students must also have a minimum of 400 on the other section (Verbal or Quantitative) of the GRE as noted above. Departmental requirements are as follows:

540 in Either V or Q	**540 in V**	**540 in Q**
Biology	English	Audiology
Education	History	Chemistry
HPE	Speech	Engineering
Home Economics	Speech Pathology	Mathematics
Music		Computer Science
Political Science		
Psychology		
Public Administration		

      (3) A minimum overall grade point average of 2.5 on a four point scale and a score at or above the 25th percentile on the appropriate Advanced Test of

the GRE; appropriate test will be determined by the department in which the graduate program is offered. In the case of students applying to the College of Education, a score at or above the 25th percentile on the appropriate Area Exam of the National Teachers Examination. Students admitted under this option must submit GRE aptitude scores before admission.

(4) The Graduate Council has approved higher standards for admission to some programs. These are stated in the particular departmental section of this Bulletin.

2. Students wishing to pursue the Master of Business Administration degree should refer to the College of Business section of the bulletin for specific requirements.
3. Admission applications from international students are evaluated on an individual basis after the following material has been received:
   A. An official transcript from each college previously attended. Complete and official English translations must be furnished along with the certified copies of the transcripts.
   B. Scores on the aptitude section of the GRE and scores on the Test of English as a Foreign Language, (TOEFL), must be submitted. All international students whose native language is not English are expected to score 500 or above on the TOEFL (550 for admission to the Master of Arts in English) and over 1100 on the aptitude section of the GRE. The application form, test scores, financial statement and complete educational records for international students must be on file by the dates indicated: term beginning in August, by June 15; January, by November 1; June by March 15.
   C. An original statement of financial resources. The University provides a form for this purpose. Other forms will not be accepted.
4. Any other applicant whose native language is not English and who attended foreign secondary schools, colleges, or universities must submit TOEFL scores of 500 or above in addition to the requirements stated above. Individual departments may require higher scores.
5. International students who are assigned to ESL courses must be enrolled in ESL courses every semester or term until they receive a grade of "S". Students will not be admitted to candidacy or allowed to graduate until this requirement has been completed.
6. Students who wish to pursue graduate work in an area for which they have not had the prerequisites will be required to make up deficiencies as required by the major department. In general, the student is required to have a minimum of 24 semester hours (12 on the junior-senior level) of undergraduate work in the subject chosen as the graduate major. For a graduate minor, 12 semester hours of undergraduate work are required.
7. Admission to the College of Graduate Studies does not imply candidacy for a degree.
8. The Director of Admissions Services will notify the applicant of admission to the College of Graduate Studies. All transcripts, certificates, etc. become the property of Lamar University and are not returnable.
9. The admission requirements stated above are minimum requirements for admission to the College of Graduate Studies. Applicants must also have the approval of the department in which the degree program is offered, and must meet the specific requirements of that department. Prospective students should consult the college/department section of this Bulletin for those requirements.

Post Baccalaureate Admission

1. Students who wish to take graduate courses but do not intend to work toward a particular graduate degree or who have not met all requirements for admission to the College of Graduate Studies, may be admitted as Post Baccalaureate students to one of the undergraduate colleges under the following conditions:

A. The applicant must hold a bachelor's degree.
B. The applicant must submit an application for admission to the Post Baccalaureate program.
C. The applicant must submit an official transcript from each college previously attended.
D. The applicant must be approved for admission by the Dean of Admissions.

2. International students will not be admitted to the Post Baccalaureate Program.
3. If application for admission to a graduate degree program is received in a subsequent semester and requirements for admission to the College of Graduate Studies are completed, a maximum of six semester hours completed before full admission may be counted for degree credit with the approval of the department and the Graduate Dean.
4. Post Baccalaureate students who have successfully completed six or more hours of graduate course work and who do not meet the minimum admission requirements for the College of Graduate Studies may petition for admission following the procedure given below for the Graduate Admissions Appeals Committee. If admission is then granted by the College of Graduate Studies, the student may receive degree credit for six hours or for the number of hours completed at the end of the semester in which the student exceeds six hours.
5. Post baccalaureate students are not permitted to enroll in business courses for graduate credit without the prior consent of the Coordinator of Graduate Studies, College of Business.

Graduate Admissions Appeals Committee Procedures

1. Purpose and Composition
   A. The Graduate Admissions Appeals Committee shall consider appeals by students who have been denied admission to the College of Graduate Studies by the Office of Admissions Services.
   B. The Committee is composed of seven members of the Graduate Faculty appointed by the Dean of the College of Graduate Studies in September of each academic year. Each academic College having graduate programs shall have one representative, except that Arts and Sciences shall have one from the Arts division and one from the Sciences division. Five members, not including the Chairman, shall constitute a quorum.
   C. The Committee shall meet on the second Wednesday in October and on the first Wednesday in March; special meetings may be called by the Graduate Dean if necessary.
2. Appeals Procedure
   A. Before filing an appeal, the student shall consult with the Director of Admissions Services and with the Dean/Director of the College of Graduate Studies.
   B. The student must request a hearing in writing from the Dean/Director of the College at least two weeks before the Committee's scheduled meeting date. This request shall state the grounds upon which the appeal is based. The student may also furnish other pertinent material (letters, statements, etc.) for inclusion in the appeals file. Such material must be provided at least one week prior to the scheduled meeting.
   C. The Dean/Director will notify the Committee Chairman of the pending appeal(s) and the Chairman will arrange a time and place for the meeting. The Dean/Director will then inform the student(s).
   D. The Dean/Director will forward copies of the appellant's academic records and other supporting documentation to the Chairman who will distribute the material to the Committee members at least 3 working days before the scheduled meeting.
   E. The appellant may appear before the Committee to make a statement and to answer such questions as may be posed by the Committee members. The appellant may be accompanied by counsel or by witnesses to speak in the appellant's

behalf. However, the appellant shall notify the Dean/Director of such participation at least 24 hours before the meeting.

F. The hearing shall be open to any interested parties. Following a full hearing, the Committee will meet in closed session to formulate its recommendations. Recommendations will be by majority vote with the Chairman voting only in case of a tie. The appellant shall be immediately informed of the Committee's recommendation.

G. A written recommendation and the reasons for such recommendation on each case will be forwarded to the Dean of the College within two working days. The Dean will make the final decision on the disposition of each case and will inform the student in writing one week after the hearing.

H. All relevant materials will be available to the appellant through the Dean of the College, and will be maintained in the Graduate Office for one year. These materials will not be available for public inspection except with the written permission of the student involved.

I. Copies of the Admissions Appeal Committee procedures and policies will be available in the Office of the Dean of the Graduate College, the Director of Admission Services, and the office of each academic dean.

Registration

1. A student who has been admitted to the College of Graduate Studies may register in August or January for the long sessions, or in June or July for the summer terms.
2. Graduate students who have completed all course work, but are working on their thesis, must register for 669A or 669B (Thesis) if they wish to obtain professional assistance from a faculty member.

College of Graduate Studies Regulations

NOTE: All graduate students are expected to be familiar with the rules and requirements of the College of Graduate Studies and of their particular graduate program.

1. All course work applied toward a given degree, except the Doctor of Engineering, must be completed within a period of six years. This time limit applies to all work on the graduate level, including any work transferred from another institution. Time spent on active military service will not be included in the six-year limit.
2. No graduate student is permitted to take more than 15 semester hours of class work during one semester of the long term nor more than 6 semester hours of class work during the summer term of 5 weeks. A graduate student is permitted to take seven semester hours in a summer term if one course has a lab. A full-time graduate student is defined as a student taking nine semester hours of graduate work, or enrolled in **both** 669A and 669B thesis during the same semester, **or** enrolled in Egr 662. Students taking 4-5 hours of graduate work per semester will be considered half-time graduate students; students taking 6-8 hours of graduate work will be considered three-quarter time graduate students.
3. With the approval of the head of the major department and the Graduate Dean, an undergraduate student within 12 semester hours of graduation may take a maximum of six semester hours of graduate courses to be applied toward the master's degree, provided the total academic load does not exceed 15 semester hours.
4. With the approval of the head of the major department and the Graduate Dean, a student may transfer up to six semester hours of graduate work completed at another institution. The student must have received grades of A, B, or S. S is defined as equivalent to an A or B, and acceptable for graduate credit at the institution where the work was taken.
5. Over fifty percent of the total credit hours required for a degree must be taken on the Beaumont campus of Lamar University.

6. A maximum of six semester hours of work done in institutes may be approved for graduate credit on a degree program.
7. 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 master's degree is sought.
8. A student may be required to drop a course or to withdraw from the University temporarily or permanently for any of the following reasons:
   a. Academic work below the standard specified by the Graduate Council.
   b. Academic dishonesty or misconduct on the part of the student.
9. The grading system for graduate students in A, B, C, D, F, I, S, U, Drop and Withdrawal. Graduate credit is allowed only for grades A, B, C and S. Failing grades for graduate students are D, F, and U. An overall grade point average of B (3.0) on all graduate work attempted is required for graduation; however, a thesis grade may not be averaged with course grades to provide the required 3.0 average. Incomplete work must be finished during the next long semester, or the Office of Admissions and Records will change the grade of I to the grade of F. Under unusual circumstances, the student may apply for an extension through the instructor. The extension may be granted by the Dean of the College of Graduate Studies.
10. A department may impose academic requirements for its majors in addition to the minimum university grade point standard with the approval of the Dean of the College of Graduate Studies.
11. Faculty members above the rank of Instructor will not be permitted to work toward a graduate degree at Lamar University.
12. Resignation from the College of Graduate Studies should be made in writing to the Dean of the College of Graduate Studies.
13. The University reserves the right to change any of its rules, regulations or course requirements without notice.

Probation/Suspension Regulations

1. Grade point averages for graduate students are computed using all work taken for graduate credit at Lamar University, except 669 thesis courses. Transfer work applied toward a graduate degree is also used in computing grade point averages.
2. a. When a graduate student with regular admission status falls below a 3.0 (B) average, the student is placed on academic probation. The student will be removed from probation only when all grade point deficiencies are removed.
   b. Students who are on probation are not allowed to drop a course or to withdraw from school without written permission of the Graduate Dean/Director. Students on probation may not be admitted to candidacy or take comprehensive written or oral examinations.
   c. No student who has any grade point deficiency (i.e., has less than a 3.0 average on all graduate work taken) may apply for graduation.
   d. Students with a grade point deficiency of more than six grade points at the end of the Fall or Spring semester will be suspended for the following semester. Suspension for the Fall semester may be removed if the student reduces the deficiency to six or less during the summer program.
   e. The first academic suspension shall be for one long semester and the second suspension for two long semesters. Readmission will not be permitted after the third suspension.
   f. Students suspended under this provision may be admitted to another department after they have completed their suspension, provided that they meet the prescribed standards and are accepted through the normal admission procedure.
   g. A department may require its majors to meet additional standards with regard to probation, suspension, and dismissal from its program. These may be found in the appropriate departmental section of this catalog.

3. a. Post baccalaureate students taking graduate course work are not subject to these regulations until they have been fully admitted to the College of Graduate Studies and to a degree program.
   b. Students with a grade point deficiency of six grade points or less may be admitted to a degree program upon the recommendation of the department to which they are applying, but will be placed on probation by the Graduate College until the deficiency is completely removed.
   c. Students with deficiency of more than six grade points may be admitted to a degree program, but will be suspended for the next long semester if the deficiency is not reduced to 6 or less at the end of the semester during which they were admitted.

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 9 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 as follows: a minimum of 18 semester hours in 500 level engineering courses, including six semester hours in thesis; a minimum of nine semester hours in a combination of science and mathematics and three additional semester hours.

Master of Music (Performance)

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work: twelve hours in the Applied Major, six in Music Literature, 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: eighteen 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 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. Satisfactorily pass candidacy examinations as required by the student's doctoral committee.
3. Complete a field study, normally 30 semester hours, involving some technological innovation.
4. Submit and defend a formal engineering report on the field study.

Admission to Candidacy

Master's Degree

1. Prior to the time a graduate student is admitted to candidacy, the head of the major department or a person designated by the head acts as the student's adviser.
2. A student must be admitted to candidacy after completing one-half of the coursework (excluding thesis) and after removing all undergraduate deficiencies. No student with a grade point deficiency may be admitted to candidacy.
3. The individual student is responsible for applying for Admission to Candidacy in the office of the head of the major department or college graduate coordinator.
4. A departmental recommendation containing the applicant's degree plan and permanent graduate committee is then submitted to the Dean of the College of Graduate Studies. If approved, the student is admitted to candidacy.
5. The graduate advisory committee will include a member of the graduate faculty designated as the supervising professor, chairman, or major professor, and two other members of the graduate faculty. The graduate advisory committee will assist in planning the remainder of the student's program, including revision of the degree plan or program of study, thesis title and thesis approval, type of research problem, and administration and evaluation of the final comprehensive examination. The Graduate Dean has the option of appointing additional members to an advisory committee.
6. Students must be admitted to candidacy before beginning their last 9 hours of coursework, and will not be allowed to graduate at the end of the semester or term in which they are admitted to candidacy. Exceptions will be made only in the case of fulltime graduate students who have taken a maximum load each semester they have attended Lamar. Such students must apply for candidacy before the 12th class day of the semester in which they intend to graduate.
7. Advanced Graduate Record Examination scores may be required by individual departments.
8. Candidacy examinations are required by the Departments of Psychology and Biology.

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 examinations.
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.

Advisory Committees

As noted above, members of advisory committees are appointed by the Graduate Dean 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 supervising professor and one other committee member. Should the supervising professor and/or another committee member not ap-

prove 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. Writing 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 graduation. 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. 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.
3. 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.

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

Fall Term	First Thursday in November
Spring Term	First Thursday in April
Summer I	Fourth Thursday in June
Summer II	Fourth Thursday in July

NOTE: The College of Business will give written examinations only once in the summer: on the last Monday of Summer I. If this date conflicts with the July 4 holiday, the examination will be given on the last Monday in June.

5. All oral examinations will be scheduled as follows:

Fall Term	First Monday in November through the first Friday in December
Spring Term	First Monday in April through the first Friday in May
Summer Term	Last Monday in June through the last Friday in July

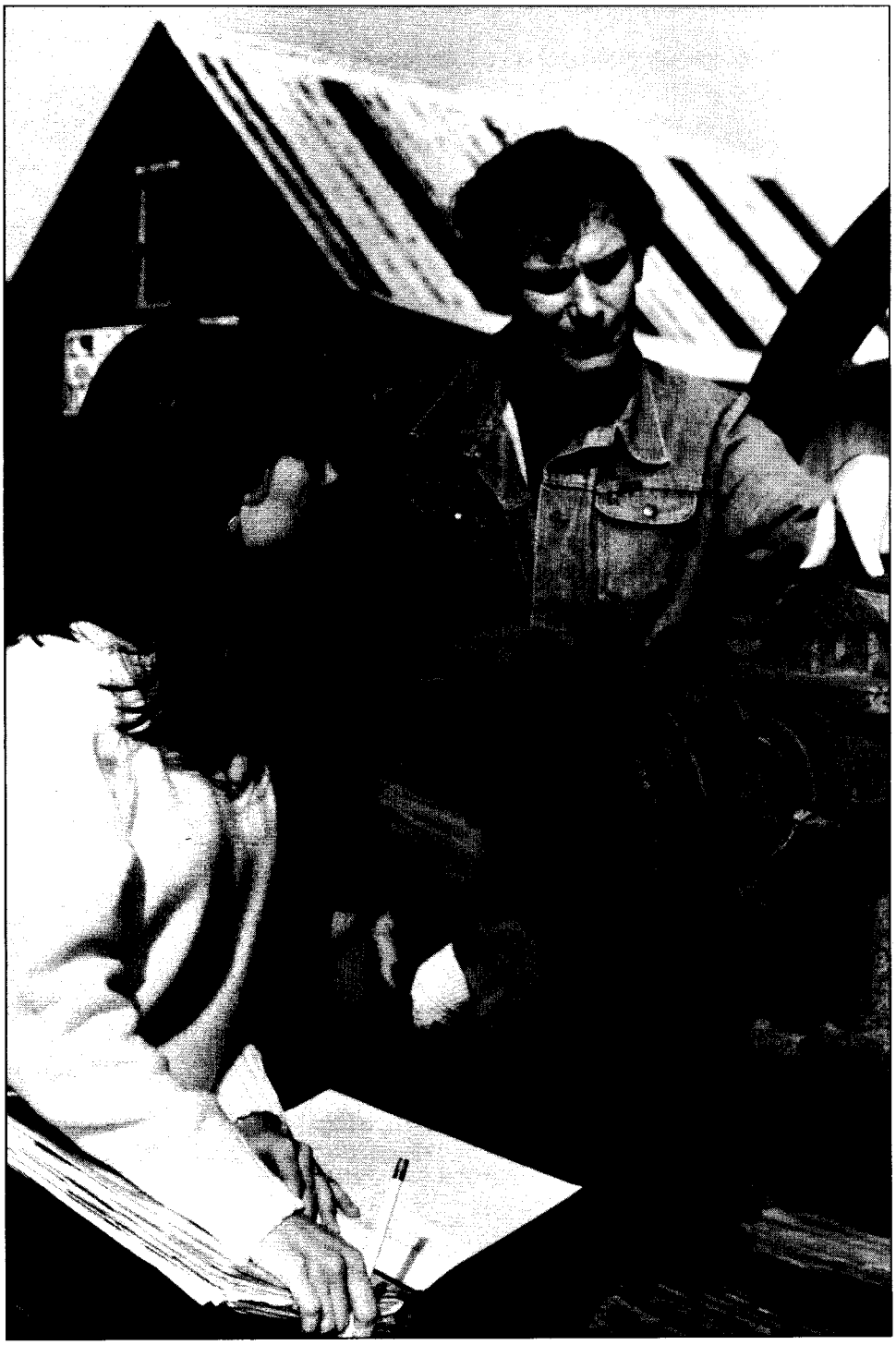
6. Failure to pass a comprehensive examination in three attempts will result in a student being permanently suspended from that degree program. The examination may be taken only once each term; Summer is considered to be one term. Students suspended under this provision may be admitted to another degree 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 Lamar University.

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 at least four weeks before the scheduled date of graduation.



With vintage drilling gear, the director of Lamar's Gladys City boomtown museum makes early days of the oil industry come alive for a student of history.

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; 3) remove any deficiencies as provided in the section on admission; 4) score a total of 950 (Verbal plus Quantitive Sections) on the Graduate Record Examination, or if V + Q score falls between 720 and 949, receive a majority vote of the biology graduate faculty.

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. Thirty-three hours of graduate credit which may include a maximum of 16 semester hours in approved 400G level courses with augmented requirements. All course work will be in biology. Exceptions must be approved by major advisor and head of department.
2. Submit a written proposal for the thesis. After the thesis proposal is written, but before actual research is begun, take an oral examination before the biology graduate faculty over general biological concepts and on the experimental design of the proposed thesis and related disciplines. Weaknesses shown by this examination will result in recommended remedial formal course work or informal study, and a second exam will be held over these areas. Failure of the second exam results in rejection. The preliminary examination must be completed within the first two years of graduate study.
3. For their professional development, students will enroll in Bio 511 Graduate Seminar each long session they are enrolled. The first two semesters of enrollment will be for a grade; in subsequent semesters of enrollment, students will receive a NG (No Grade). Only in extenuating circumstances will exceptions be granted by the Biology graduate faculty.

Graduate Faculty

Associate Professor David L. Bechler
Animal behavior, ichthyology
Assistant Professor Wayne W. Carley
Physiology
Assistant Professor Michael W. Haiduk
Genetics, mammology
Professor Richard C. Harrel
Limnology, ecology, invertebrate zoology
Assistant Professor Madelyn D. Hunt
Medical microbiology, epidemiology
Associate Professor Phillip Malnassy
Botany, plant physiology
Professor J. Leon McGraw, Jr.
Cellular biology, invertebrate zoology
Professor Jed J. Ramsey
Ornithology, comparative physiology
Associate Professor William C. Runnels
Algology, marine biology
Assistant 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. May be repeated for credit.

531 Seminars in Biological Sciences **3:3:0**
A resource area course for those seeking the M.Ed. degree and teaching at the elementary and junior high level. Topics include modern biological concepts and demonstration of how these concepts may be applied to various grade levels. Emphasis is placed on practical application in the classroom.

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 Mycology **4:3:3**
Isolation, cultivation and identification of fungi with special emphasis on those of economic importance.

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 Helminthology **4:3:3**
Biology of free-living and parasitic worms.
Prerequisite: Bio 346 or 441.

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

560 Field Biology **6:A:A**
Basic environmental relationships and natural history of plants, invertebrate and vertebrate animals. Laboratory includes extensive field trips for the study and collection of organisms in their natural habitat. Offered summers only.
Prerequisite: Bio 345. 20 hours credit in Biology and consent of instructor.

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 head. Course descriptions may be found in the Bulletin of Lamar University.

440 Ornithology
441 Parasitology
442 Entomology
443 Limnology
444 Vertebrate Natural History
445 Marine Biology
446 Ecology

447 Cellular Biology
449 Protistology
460 Field Biology
4302 Cellular Physiology
4303 Principles of Electron Microscopy
4304 Electron Microscope Techniques
4402 Taxonomy of Vascular Plants

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. 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 3.0 B 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. A reading knowledge of a modern foreign language (German, French or Russian) or competence in computer science.
5. Examination results on the chemistry section of the GRE must be submitted before graduation.

Graduate Faculty

Associate Professor Hugh A. Akers
Biochemistry
Professor Margaret D. Cameron
Organic chemistry
Associate Professor Kenneth L. Dorris
Physical chemistry
Professor Keith C. Hansen
Organic chemistry
Professor John P. Idoux
Organic chemistry
Professor J. Dale Ortego
Inorganic chemistry
Assistant 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 course 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.

Below is the list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.
411G Chemical Literature
412G Senior Seminar
430G Organic Polymers
433G Modern Physical
436G Inorganic
442G Biochemistry II
444G Qualitative Organic Analysis
446G Instrumental Methods of Analysis

Department of English and Foreign Languages

The graduate program of the Department of English and Foreign Languages offers opportunity for intensive study of languages 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 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: 18 in English, six in thesis and six in an approved minor. With the approval of the head of the Department of English, 12 semester hours of course work may be substituted for the thesis. At least 18 semester hours, including the thesis, must be in English courses numbered 500 or above. The minor must be approved by the head of the Department of English, or with the department head's approval, six additional hours in

English may be substituted for the minor. International students must score 550 on the TOEFL before admission.

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 twelve 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 head of the Department of English; 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 twelve 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 include English 4327G, 533, 539, and one course from either 535, 536, 537, 538, or 5311.

Graduate Faculty

Associate Professor Christopher P. Baker
English Renaissance

Professor Robert J. Barnes
British and Continental literature: 1840 to the present

Assistant Professor Lloyd M. Daigrepont
American literature before 1900

Assistant Professor Edwin W. Duncan
Old and Middle English, linguistics

Professor Marilyn D. Georgas
Renaissance and Victorian literature

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

Assistant Professor J. Mark Heumann
Technical writing, English Renaissance

Professor Kirkland C. Jones
Medieval and Renaissance literature

Associate Professor Annette E. Platt
Eighteenth century and Romantic British literature, English education

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

Assistant Professor Dale G. Priest
English Renaissance, Eighteenth century

Associate Professor R. Clay Reynolds
Modern American literature and American drama

Assistant Professor Sallye J. Sheppeard
Medieval and Renaissance literature and rhetoric

Professor Arney L. Strickland
Linguistics and English education

Associate Professor Charles T. Summerlin
American literature, literary criticism

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 Language and Literature **3:3:0**
Intensive study of the language 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 430G or 431G.

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.

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

Below is the approved list of 400 level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.

430 History of the English Language
432 Studies in Sixteenth Century Literature
434 Shakespeare
435 Studies in Seventeenth Century Literature
438 Studies in Eighteenth Century Literature
439 Studies in Romantic Literature
4311 Studies in Victorian Literature
4312 Studies in Language and Linguistics
4317 Contemporary Drama
4318 Contemporary Poetry
4319 Contemporary Fiction
4322 Russian Literature
4326 Expository Writing
4327 Bibliography and Methods of Research
4328 Early American Literature
4329 Modern American Literature
4333 Studies in a Particular Author
4334 Critical Studies in Literature
4336 Directed Studies in American Literature
4337 Directed Studies in British Literature
4345 Writing Seminar
4355 Editing Technical Communications

English as a Second Language

Below is the approved list of 400 level courses applicable to the ESL endorsement program; these courses may be taken for graduate credit with the approval of the appropriate graduate advisor.

431 The Teaching of English as a Second Language
432 Foundations in Teaching ESL
433 Psycholinguistics
434 Introduction to Linguistics

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

Professor William R. Pampe
Paleontology, meteorology, stratigraphy

Geology Courses

530 Survey of Earth Science **3:3:0**
A survey of earth materials and processes, earth history, astronomy and meteorology. Identification of mineral, rock and fossil specimens and cloud formations. Demonstrations of topographic, geologic and weather maps. Field trip required.

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.

5601 Institute in Earth Science **6:6:9**
Summer, in-service or other institute 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.

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

The degree of Master of Arts in History requires the completion of 30 semester hours of graduate work: 18 in history, six in thesis and six in an approved minor. At least 12 semester hours, exclusive of thesis, must be in history courses numbered 500 or above, and six of these must be in seminar courses. With the approval of the head of the Department of History, 12 semester hours of course work may be substituted for the thesis. In this latter program, at least 21 semester hours of course work must be in courses numbered 500 or above, and nine of these must be in seminar courses. The minor must be approved by the head of the Department of History; such approval will be given on the basis of the support the minor can give to the major. With the approval of the head of the Department of History, six additional hours in history may be substituted for the minor.

Graduate Faculty

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

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

Assistant Professor Ronald H. Fritze
Tudor-Stuart England

Professor Howell Holmes Gwin, Jr.
European history, ancient, classical and medieval

Professor Paul E. Isaac
United States history, recent, the West
Professor Howard Mackey
Modern European history, Great Britain
Professor R. Beeler Satterfield
United States history, middle period
Professor John W. Storey
United States history, urban, social and intellectual
Professor Walter A. Sutton
United States history, diplomatic
Professor Ralph A. Wooster
United States history, Civil War, the South

History Courses

530 Classical and European Historiography **3:3:0**
Prerequisite: Graduate standing.

531 American Historiography **3:3:0**
Prerequisite: Graduate standing.

532 Readings in American History **3:3:0**
Course may be repeated for a maximum of six semester hours credit when topic varies.
Prerequisite: Graduate standing.

533 Readings in European History Before 1815 **3:3:0**
Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

534 Readings in European History Since 1815 **3:3:0**
Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

535 Seminar in Texas History **3:3:0**
Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

536 Seminar in Southern History **3:3:0**
Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

537 Seminar in United States History **3:3:0**
Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

539 Seminar in the American West **3:3:0**
Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

5311 Seminar in European History **3:3:0**
Course may be repeated for a maximum of six semester hours credit when the topic varies.
Prerequisite: Graduate standing.

5312 Directed Readings in History **3:A:0**
Directed readings arranged with instructor in area of mutual interest. Will not apply to 500 level course requirement in program. Under limited and special circumstances, course may be repeated but only with specific approval of History Graduate Committee.

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

Below is the approved list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.
430G Era of the Renaissance and Reformation
431G The Old Regime
432G The French Revolution and Napoleon
433G Russian and Eastern Europe to 1860
434G Nineteenth Century Europe
435G Twentieth Century Europe
436G The American West
437G The Old South
438G The New South
4311G Colonial America

4312G The American Revolution
4313G The Age of Jackson
4314G The American Civil War
4315G Reconstruction and Industrialization: The United States from 1865 to 1898
4316G World Power and Reform: The United States from 1898 to 1920
4317G New Deal and World Leadership: The United States from 1920 to 1940
4318G Classical Civilization
4319G Medieval Civilization
4321G The Far East to 1800
4322G The Far East Since 1800
4323G Latin America to 1810
4324G Latin America since 1810
4325G Tudor and Stuart England
4326G Eighteenth Century England
4327G Victorian England
4328G Contemporary America: The United States Since 1940
4329G Modern European Intellectual History
4331G Russia Since 1860
4332G Afro-American History to 1865
4333G Afro-American History Since 1865
4334G Early National Period
4335G Topics in History
4336G Ancient Near East

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.

Graduate Faculty

Associate Professor Hugh O. Peebles, Jr.
Astrophysics
Professor Joseph F. Pizzo, Jr.
Theoretical physics, relativity
Professor Carl J. Rigney
Thermal 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 courses 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.

Below is the approved list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.

431G Classical Mechanics
432G Introductory Quantum Mechanics
433G Solid State Physics
436G Nuclear Physics
437G Astrophysics
448G Optics

Department of Political Science

The faculty of the Department of Political Science, committed to research and scholarly publication which support excellence in graduate programs, is actively engaged in research on the following topics: Southern politics; congressional leadership; administrative accountability in state government; empirical normative links between voting and political obligation; the trial courts' responses to Supreme Court policy changes; Brazilian public policy; minority politics and social policy analysis; public personnel and budgetary policy; Polish-German relations; voting behavior in state and local politics; and a comparison of caucus and primary methods for selection of presidential nominees.

The Department of Political Science offers programs of study leading to the Master of Public Administration degree and the Master of Arts in Political Science degree. Persons seeking admission to either program must meet the general requirements for admission as outlined in the graduate catalog.

Degree Requirements

The degree of Master of Public Administration requires the completion of 36 semester hours of graduate hours of graduated 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 (3 semester hours); urban politics (3 semester hours), and statistics for social scientists (3 semester hours). Students must pass both written and oral comprehensive final examinations.

The degree of Master of Arts in Political Science requires the completion of 30 semester hours of graduate work with a thesis or 36 hours without a thesis. At least 18 semester hours must be in political science courses numbered 500 or above, and Political Science 530 is required for the degree. Applicants for the Master of Arts in Political Science must have completed a bachelors degree in Political Science or a related field **and** earned credit in 12 undergraduate semester hours in political science on the junior or senior level.

Successful completion of 9 hours of quantitative skills courses (POLS 3319, POLS 4319, and POLS 530) may be substituted for the foreign language.

Graduate Faculty

Professor Bruce R. Drury
Comparative politics, Latin American politics
Assistant Professor Elbert T. Dubose, Jr.
Public administration
Professor William M. Pearson
Public administration
Associate Professor Ronald Stidham
Constitutional law, judicial process
Associate Professor Glenn H. Utter
Political philosophy, American political thought

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 head of the 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 Seminars 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 the 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 governmental 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 governmental agency if they elect three additional hours from the approved program courses.
Prerequisite: POLS 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.

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

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 Wayne C. Seelbach
Gerontology, The Family

Associate 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.

Mastery of the microcomputer is a key aspect of studies in Lamar's College of Business, as the professor emphasizes to her student.

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. 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 are **encouraged** to earn the Master of Business Administration degree. Students are encouraged to make an appointment with the Coordinator of Graduate Studies a **minimum of 60-90 days in advance** of the semester in which they wish to enroll.

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 9 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 500 on the TOEFL.
4. Post Baccalaureate students are not permitted to enroll in Business courses for graduate credit without the prior consent of the Coordinator of Graduate Studies.

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 The Legal Environment of Business
BAC 530 Statistical Analysis for Decision Making
Mgt 530 Foundations of Management
Mgt 531 Management Science and Information Systems
Mgt 532 Business Problems and Organization
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 Coordinator of Graduate Studies, College of Business, prior to enrollment.)

3. Students must have met the entrance requirements for the MBA Program to enroll in first year courses. Any exceptions must have the prior approval of the Coordinator of Graduate Studies, College of Business.
4. First year courses may not be taken as second year course electives.

Second Year Courses

Note:

1. All first year courses must 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 531 Seminar in Monetary and Fiscal Policy
Fin 531 Financial Management
Mkt 531 Seminar in Marketing
BAC 531 Advanced Statistical Theory and Analysis for Business
Eco 538 The Environment of Business
Three (3) semester hours of approved electives
BA 669A Thesis
BA 669B Thesis

Note: Once enrolled in thesis, a student must be continually enrolled until the thesis is completed.

Plan II: Non-Thesis Route

Acc 537 Managerial Accounting
Mgt 533 Seminar in Management
Eco 531 Seminar in Monetary and Fiscal Policy
Fin 531 Financial Management
Mkt 531 Seminar in Marketing
BAC 531 Advanced Statistical Theory and Analysis for Business
Eco 538 The Environment of Business
Mgt 538 Business Research
Twelve (12) semester hours of approved electives
A written comprehensive exam will follow the completion of course work

Graduate Faculty

Associate Professor Charles L. Allen
Economics
Associate Professor Richard W. Brunson
Management
Associate Professor Melvin F. Brust
Management and finance
Assistant Professor William T. Burke, III
Business Law
Associate Professor Stephen Caples
Finance
Professor Richard T. Cherry
Finance
Associate Professor Jai-Young Choi
Economics
Professor Nancy S. Darsey
Office administration
Assistant Professor Richard A. Drapeau
Business Analysis
Associate Professor Lynn Godkin
Management
Professor Charles Hawkins
Economics
Associate Professor William T. Harris
Accounting
Professor Richard W. Jones
Accounting
Associate Professor Carl B. Montano
Economics
Assistant Professor Jimmy D. Moss
Finance
Professor Sam F. Parigi
Economics
Associate Professor Donald Price
Economics
Professor Larry W. Spradley
Business statistics
Professor Robert A. Swerdlow
Marketing, Coordinator of Graduate Studies
Professor Malcolm W. Veuleman
Accounting

Professor Kathryn White
Office administration

Professor Bob E. Wooten
Management

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. Emphasis upon conceptual aspects obtained through the problem approach.
Prerequisite: Graduate standing.

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.
Prerequisite: Graduate standing, Acc 530.

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**
Intensive study of financial theory and policy as related to capital budgeting, cost of capital, financial structure, dividend policy, and working capital management of business firms.
Prerequisite: Graduate standing, Fin 530.

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.

Management courses must be selected from the following:

530 Foundations of Management **3:3:0**
A study of the basics of an operational theory and science of management emphasizing the essentials of the discipline most pertinent to practicing managers. The course presents various areas of management as a system and demonstrates how managing itself is part of a larger system interacting with a manager's total environment—economic, technical, social, political, and ethical. Also, the course stresses the practice of management concerning its activities which may be modified by contingencies and situations — the requirements and behavior factors which may be faced.
Prerequisite: Graduate standing, Acc 530, Eco 530.

531 Management Science and Information Systems **3:3:0**
A scientific approach to solving management problems and managing information systems. Special topics include applications taken from the areas of probability theory, linear programming, game theory, simulation, queuing theory, inventory theory. Markov chains and other areas of management science. A systematic exposure to the analysis design and implementation of Management Information Systems is covered.
Prerequisite: Graduate standing, BAC 530.

532 Business Problems and Organization **3:3:0**
Managerial decision making in the areas of marketing, finance, production and labor-management relations. General management perspectives are stressed in determining objectives, establishing policies and planning and organizing the use of facilities, materials and manpower; motivation of individuals and groups. The case-study approach is used.
Prerequisite: Graduate standing, Mgt 530.

533 Seminar in Management **3:3:0**
A course designed to give students an integrated theory of management which incorporates the significant contributions of the various approaches. Research papers are presented by each student as an inquiry in depth of certain sub-theories.
Prerequisite: Graduate standing, Mgt 532.

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.

Marketing courses must be selected from the following:

530 Marketing Concepts **3:3:0**
Marketing orientation and concepts; marketing programs incorporating the societal perspective in formulating strategies for the development, pricing, channels of distribution and promotion of products and services to various customers.
Prerequisite: Graduate standing, Acc 530, Eco 530.

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

532 Seminar in Current Marketing Problems **3:3:0**
A comprehensive overview and critical analysis of selected current problems relating to the field of marketing.
Prerequisite: Graduate standing, Mkt 530.

533 Marketing Thought and Theory **3:3:0**
A study of the contributions of outstanding marketing scholars to marketing thought. An evaluation of the principles and theories in marketing from the social and the firm's point of view.
Prerequisite: Graduate standing, Mkt 530.

534 Legal Aspects of Marketing **3:3:0**
A study of governmental controls which are intended to promote the free enterprise system. Several Supreme Court cases which have affected marketing practices will be briefed.
Prerequisite: Graduate standing, Mkt 530.

Economics courses must be selected from the following list:

530 Foundations of Economics **3:3:0**
Comprehensive introduction to economic principles for MBA students who have not had Economics. Topics covered include macro, micro, and current economic issues.
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**
A study of the theory and practice of monetary management and the taxing-borrowing-spending programs of the government as they affect growth, output, employment, prices and resource allocation.
Prerequisite: Graduate standing, Eco 530.

533 Contemporary Literature and Thought **3:3:0**
Readings, special projects, studies and research in the current professional literature. The student will become acquainted with learned journals, economists, their current thinking, present issues and emphasis in the field.
Prerequisite: Graduate standing, Eco 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.

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**
The growth of industrial capitalism, corporate governance, government promotion and regulation of business, equal rights, consumerism, and the socio-economic-ethical-legal environments of business.
Prerequisite: Graduate standing, Eco 530.

Administrative Service courses must be selected from the following:

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. Theory and applications of probability, normal curve, sampling and sample design, statistical inference, and tests of hypothesis, payoff tables, chi-square, and analysis of variance, regression, and correlation 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. Topics include basic concepts of modern decision analysis, probability, parametric estimation; general hypothesis testing; design of experiments and sampling techniques; linear and non-linear, simple and multiple regression and correlation; and time-series analysis.

Prerequisite: Graduate standing, BAC 530 or equivalent.

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, governmental regulations of business through administrative agencies.

Prerequisite: Graduate standing.

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

Communication theory and practice with emphasis on variables affecting organizational communication. Intrapersonal, organization, and technological dimensions of communication.

Prerequisite: Graduate standing.

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

Problems and materials in teaching skills subjects; analysis of various teaching techniques; examination of recent research and experimentation. When courses are conducted in sufficiently different areas and with the approval of the department head, participants may repeat the course for credit.

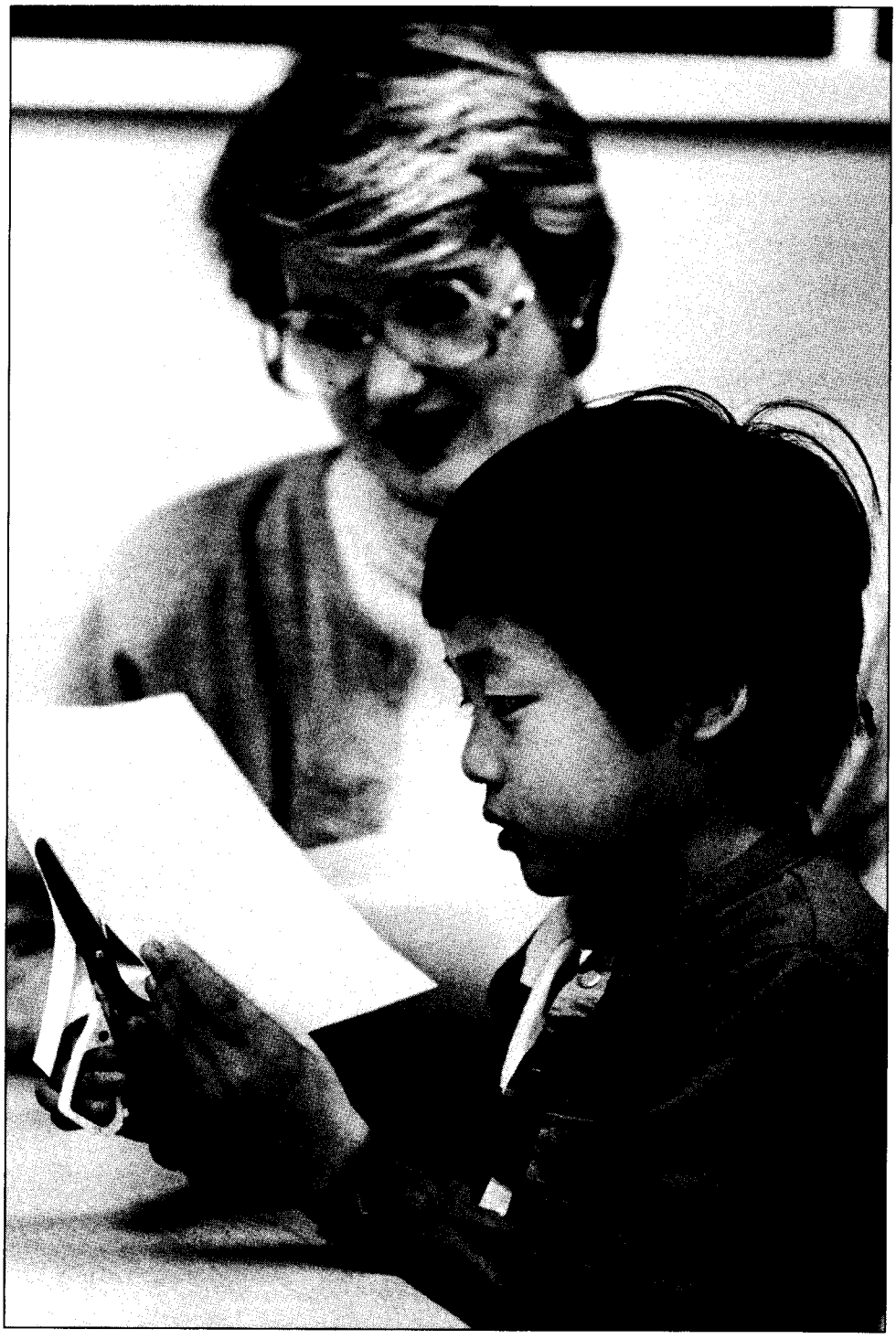
Prerequisite: Graduate standing and suitable background.

Thesis courses necessary for graduation under Plan I.

BA 669A-669B Thesis **6:A:0**

Prerequisite: Approval of Coordinator of Graduate Studies.

Courses numbered 400 level with a G designation may be taken as electives in the MBA program. Courses taken at the 400G level must have the approval of the Coordinator of Graduate Studies and must be augmented by additional requirements. Course descriptions for 400-level courses are found in the *Bulletin of Lamar University.*



Lamar's Early Childhood Development Center offers prospective teachers first-hand experience while it fosters creative learning in their young pupils.

College of Education

The College of Education offers graduate programs of study leading to the Master of Education degree in six different areas and to the Master of Science degree in Health and Physical Education 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 Elementary Education
Master of Education in Guidance and Counseling
Master of Education in School Administration
Master of Education in Secondary Education
Master of Education in Special Education
Master of Education in Supervision
Master of Science in Health and Physical Education
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

Department of Professional Development and Graduate Studies

Office: 204 Education Building
Department Head: Bob Thompson
Graduate Advisement Coordinator: Jerry Tucker

The Department of Professional Development and Graduate Studies offers programs leading to the Master of Education (M.Ed.) degree in Elementary Education, Guidance and Counseling, School Administration, Secondary Education, and Supervision. In addition, the Department offers course work leading to eleven different Professional Certificates. It is the goal of the Master of Education and the Professional Certificate programs to provide the rigorous academic climate and practical experience necessary to produce teachers, administrators, supervisors, 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 Graduate Advisement Coordinator well before the beginning of the semester in which they plan to enroll.

Master of Education (M.Ed.)

General Requirements

1. The student must fulfill the general requirements for admission and the general degree requirements as stated elsewhere in this bulletin.

2. The applicant in elementary education must have completed 24 semester hours in education, including 12 semester hours in elementary education methods and materials courses.
3. The applicant in secondary education must have completed a minimum of 18 semester hours in education and hold a baccalaureate level teaching certificate or its equivalent in an approved discipline to be pursued at the graduate level, including a minimum of nine hours at the 300 level or higher.
4. The applicant in guidance and counseling, school administration, special education and supervision must hold a Provisional Teaching Certificate, or its equivalent.
5. The student in fields other than guidance and counseling and school administration may elect to write a thesis. If so, the student is required to complete a minimum of 30 hours including the thesis.
6. The student who does not choose to write a thesis must earn a minimum of 36 hours of graduate credit and is required to complete successfully a written comprehensive examination.

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. **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.

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

2. **Professional Development.** Six semester hours must be selected from the following courses:
   Edu 531 Research (Required)
   Edu 534 Advanced Study in Human Development
   Edu 535 The Learning Process
   Edu 537 Public School Curriculum
3. **Resource Area.** Twelve semester hours must be selected from the following courses (nine semester hours if the student elects to write a thesis):
   Edu 536 Problems in Teaching Science and Social Studies in the Elementary School
   Edu 538 Modern Mathematics in the Elementary School
   Edu 539 Foundations of Reading
   Edu 5303 Strategies for Individualizing Elementary Instruction
   Edu 5310 Language Arts in the Elementary School
   Edu 5329 Corrective Reading
4. **Electives.** Twelve 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**
      Edu 539 Foundations of Reading
      Edu 5301 Current Literature for Children and Adolescents
      Edu 5302 Practicum: Diagnosis and Remediation of Reading Difficulties
      Edu 5329 Corrective Reading
   B. **Early Childhood Education**
      Edu 5351 Advanced Study in Early Childhood Curriculum
      Edu 5352 Creative Activities in Early Childhood Education
      Edu 5354 Trends and Issues in Early Childhood Education
      Edu 5355 Analysis of Program Implementation in Early Education

C. **Supervision**
Edu 5334 Test and Measurements
Edu 5336 Leadership and Evaluation of Instruction
Edu 5337 Practicum and Seminar
Edu 5338 Instructional Supervision

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

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. The usual pattern of coursework is as follows:
   A. **Professional Development Area.** Six semester hours required.
   Edu 531 Research (Required)
   Edu 534 Learning Process
   Edu 535 The Learning Process
   Edu 537 Public School Curriculum
   B. **Resource Area.** Twelve semester hours required.
   Edu 536 Problems in Teaching Science and Social Studies in the Elementary School
   Edu 538 Modern Mathematics in the Elementary School
   Edu 539 Foundations of Reading (Required)
   Edu 5303 Strategies for Individualizing Elementary Instruction
   Edu 5310 Language Arts in the Elementary School
   Edu 5329 Corrective Reading (Required)
   Edu 5340 Microcomputers for Educators
   C. **Specialization Area.** Six semester hours.
   Soc 432G Educational Sociology
   or
   Edu 5367 Psychosocial Foundations of Educating the Culturally Different
   Eng 4312G Studies in Language and Linguistics
   D. **Additional Requirements:** Twelve semester hours required.
   Edu 5301 Current Literature for Children and Adolescents (Required)
   Edu 5302 Practicum: Diagnosis and Remediation of Reading Difficulties (Required)
   Six semester hours to be selected from:
   Edu 5312 Middle School Teaching and Research
   Edu 5319 Problems in Secondary School Instruction
   Edu 5320 Adolescent Development
   Edu 5321 Strategies for Individualizing Secondary Instruction

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 Director of Certification in the College of Education or the Department of Professional Development and Graduate Studies.

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 and kindergarten may be adapted to such an arrangement. Specific information concerning these certificates may be obtained from the Director of Certification in the College of Education.

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.** Eighteen semester hours must be taken as follows:
   Required: Six semester hours
   Edu 531 Research in Education
   Edu 5320 Adolescent Development
   Electives: Twelve semester hours should be in one of the following areas:

Classroom Specialist	Reading Specialist
Foundations of Education	Supervision

   A list of specific courses required or recommended in each of the concentrations is available through the Department of Professional Development and Graduate Studies.
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 Department of Professional Development and Graduate Studies. Specialization areas are available in the following disciplines:

Biology	Physical Education
Chemistry	History
Earth Science	Mathematics
Physics	English
Speech	Government

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 six semester hours beyond the usual requirements for the degree. Specific information may be obtained from the Department of Professional Development and Graduate Studies.

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 in the Department of Professional Development and Graduate Studies.

Other Certificates

It is possible for graduate students to complete requirements for a Provisional Teaching Certificate while completing a Master of Education degree in Secondary Education. Specific information concerning these certificates may be obtained from the head of the Department of Professional Development and Graduate Studies.

Degree Plan in Guidance and Counseling

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

1. **The Guidance Program:** Three semester hours.
   Edu 5322 Organization and Administration of Guidance Program
2. **The Pupil Served:** Six semester hours.
   Three semester hours:
   Edu 534 Advanced Studies in Human Development
   Edu 535 The Learning Process
   Three semester hours:
   Soc 532 Sociology of Education
   or
   Edu 5367 Psychosocial Foundation of Educating the Culturally Different
3. **Specialization Area:** Twenty-one semester hours.
   Edu 531 Research
   Edu 5323 Occupational and Vocational Guidance
   Edu 5324 Group Counseling
   Edu 5328 Practicum in Guidance and Counseling
   Edu 5333 Individual Counseling Theories and Techniques
   Edu 5334 Interpretation and Analysis of Tests and Measurements
   Edu 5335 Individual Testing
   Electives: (six semester hours)
4. **Graduate courses in Special Education or Psychology may be used with approval of the advisor**
   SpEd 5361 Survey of Learning Potentials of Exceptional Children
   SpEd 5362 Psychoeducational Evaluation of Exceptional Children
   SpEd 5364 Behavior Modification

Professional Counselor's Certificate

A student who completes requirements for a Master of Education degree in Guidance and Counseling will have fulfilled all curriculum requirements for a Professional School Counselor's Certificate. A student who desires the certificate without fulfilling all degree requirements should check with a faculty member in Guidance and Counseling for specific information. Usually a student who is otherwise eligible can meet these requirements by completing 30 semester hours. The Texas Education Agency issues a Professional Counselor's Certificate based upon completion of an approved program in guidance and counseling and three years of teaching experience in an accredited school system.

Degree Plan in Supervision

Requirements for a Master of Education in Supervision may be met by completing a 36 semester hour non-thesis program or by completing a 30 semester hour plan including thesis. The student is allowed some flexibility in planning the program; however, the usual pattern of course work is as follows:

1. **Professional Development.** Six semester hours.
   Edu 531 Research (Required)
   Edu 5334 Interpretation and Analysis of Tests
   SpEd 5316 Administration and Supervision of Special Education
2. **Specialization Area.** Nine semester hours.
   Edu 5336 Leadership and Evaluation of Instruction
   Edu 5337 Practicum and Seminar: Supervision and Curriculum Development
   Edu 5338 Instructional Supervision
3. **Resource Area.** Twenty-one semester hours; if thesis is written, fifteen semester hours.
   Learning Process: Three semester hours.
   Edu 534 Advanced Study of Human Development
   Edu 535 Learning Process
   SpEd 5364 Behavior Modification
4. Electives: Eighteen semester hours, (six semester hours plus thesis) in the area of Reading, Early Childhood, Special Education, and Curriculum and Instruction.

If the student chooses to write a thesis, the number of electives is reduced to six hours in course work plus six hours in thesis. With approval, other graduate level courses applicable to professional certification sequences may be selected.

Professional Supervisor's Certificate

Curriculum requirements for a Professional Certificate in supervision may be met by completing a Master of Education degree in Supervision. A student who desires the certificate without fulfilling all degree requirements should consult a faculty advisor in the Department of Professional Development and Graduate Studies.

Degree Plan in School Administration

Requirements for a Master of Education degree in School Administration may be met by completing a 36 semester hour non-thesis program. The program is designed to provide the first 36 of the 45 semester hours required for the Mid-Management Administrators' Certificate. A plan listing the specific courses for the degree is available in the office of Professional Development and Graduate Studies.

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

1. **Common Core for Administration:** (24 semester hours)
   A. General Administrative Competencies: 18 semester hours—all required
      Edu 531 Research in Education
      Edu 535 The Learning Process
      Edu 537 The Public School Curriculum, K-12
      Edu 5331 Theory and Practice in School Administration
      Edu 5336 Leadership and Evaluation of Instruction
      Edu 5344 School Law
   B. Related Areas of Study: (6 semester hours)
      Soc 432G Sociology of Education
      or
      Edu 5367 Psychosocial Foundations of Educating the Culturally Different
      CS 5301 Computer Systems for Education Applications
      or
      Edu 5340 Microcomputers for Educators

2. **Specialized Preparation for School Administrators:** (12 semester hours)
   Edu 5317 Organization and Administration of Special Programs (required)
   Edu 5318 School Management and School Services (required)
   Edu 5339 The Public School Principal (required)
3. **Three hours of electives from:**
   Edu 539 Foundations of Reading
   Edu 5334 Tests and Measurements
   Edu 5343 Administration of the School Plant
   Edu 5326 School-Community Relations
   Edu 5342 School Finance and Business Management
   Edu 5345 Personnel Management
   Edu 5347 Seminar in School Administration
4. **Specialized preparation for the School Superintendent.** 15 semester hours required.
   Edu 5326 School-Community Relations
   Edu 5341 The School Superintendent (required)
   Edu 5342 Public School Finance (required if not previously completed)
   Edu 5343 Administration of the School Plant
   Edu 5345 Personnel Management
   Edu 5349 Internship for the School Superintendent (required: three hours to be taken during two consecutive long terms).

Professional Certification for Mid-Management School Administrator and for School Superintendent

The standards presented in this catalog for certification as Mid-Management Administrator and the School Superintendent are based on the 1972 Revised Standards and are applicable to all Lamar students entering programs after September 1, 1973. Two certificates are available under these new standards.

1. The Mid-Management Administrator's Certificate requires the completion of the approved 45 semester hour plan of graduate credit.
2. The Professional School Superintendent's Certificate requires the completion of the Mid-Management Administrator's Certificate and an additional 15 semester hour approved plan of graduate credit.

To be eligible for recommendation for the Mid-Management Administrator's Certificate, the candidate completing the 45 hour approved plan must hold a Provisional Teaching Certificate, must hold a Master's degree, must have a minimum of three years of creditable classroom teaching experience, and must have completed an approved administrative internship experience.

To be eligible for recommendation for the Professional School Superintendent's Certificate, the candidate must have met all of the requirements for the Mid-Management Administrator's Certificate, plus the completion of the 15 semester hour plan of specialized graduate work for school superintendents.

Professional Certificate course requirements are as follows:

1. **General Administrative Competencies:** 18 semester hours—all required.
   Edu 531 Research in Education
   Edu 535 The Learning Process
   Edu 537 The Public School Curriculum, K-12
   Edu 5331 Theory and Practice in School Administration
   Edu 5336 Leadership and Evaluation of Instruction
   Edu 5344 School Law
2. **Related Areas of Study:** Nine semester hours, Six required.
   Soc 432G Sociology of Education
   or
   Edu 5367 Psychosocial Foundations of Educating the Culturally Different
   CS 5301 Computer Systems for Educational Applications
   or

Edu 5340 Microcomputers for Educators
Three semester hours selected from the following:
Eco 534 Collective Bargaining
Eco 4301G Institute in Economics
Gov 535 Seminar in Theory and Practice in Public Administration
Gov 5351 Seminar in Personnel Administration

3. **Specialized Preparation for School Administrators:** 18 semester hours
Edu 5317 Organization and Administration of Special Programs (required)
Edu 5318 School Management and School Service (required)
Edu 5339 The Public School Principal (required)
Edu 5348 Practicum in Educational Administration (required)
Six semester hours to be selected from:
Edu 539 Foundations of Reading
Edu 5334 Tests and Measurements
Edu 5326 School-Community Relations
Edu 5342 Public School Finance
Edu 5343 Administration of the School Plant
Edu 5345 Personnel Administration
Edu 5347 Seminar in School Administration

4. **Specialized preparation for the School Superintendent.** 15 semester hours required.
Edu 5326 School-Community Relations
Edu 5341 The School Superintendent (required)
Edu 5342 Public School Finance (required if not previously completed)
Edu 5343 Administration of the School Plant
Edu 5345 Personnel Management
Edu 5349 Internship for the School Superintendent (required: three hours to be taken during two consecutive long terms).

Degree Plan 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 Professional Certificate as an Educational Diagnostician or in Mental Retardation or in Supervision. Provisional Certification in Special Education-Generic is available, if desired, 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 with the degree may complete a minimum of 30 semester hours including 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 categorical area endorsement. The student should secure information concerning reuirements for certification from the Department of Professional Development and Graduate Studies. General information concerning Professional Certificates is presented in another portion of the College of Education section of the bulletin.

1. **Professional Development Area:** Nine semester hours required.
Edu 531 Research (required)
Edu 533 Contemporary Philosophies of Education
Edu 534 Advanced Study in Human Development (required for Educational Diagnostician)
Edu 535 The Learning Process (required for Educational Diagnostician)

2. **Resource Area:** Twelve semester hours must be selected from the following courses (six semester hours if the student elects to write a thesis)
SpEd 4308G Appraisal Processes in Programming for the Exceptional Individual
SpEd 4309G Instruction of the Exceptional Learner (required for Special Education-Generic)
SpEd 4310G Practicum in Instructing the Exceptional Individual (with permission)

SpEd 5313 Learning Potentials in the Mentally Retarded
SpEd 5314 Instructional Processes with the Mentally Retarded
SpEd 5315 Problems and Issues in Special Education
SpEd 5316 Administration and Supervision of Special Education Programs
Edu 5334 Interpretation and Analysis of Tests and Measurements (required for Supervision)
Edu 5335 Individual Testing (required for Educational Diagnostician)
Edu 5351 Advanced Studies in Early Childhood Curriculum
SpEd 5361 Survey of Learning Potentials of Exceptional Children (required for Special Education-Generic)

3. **Specialization Area:** Fifteen semester hours must be selected from the following courses or in a concentrated area when attaining a specific certification:
   A. **Education Diagnostician**
      SpEd 5362 Psychoeducational Evaluation of Exceptional Children
      SpEd 5363 Practicum in Psychoeducational Procedures
      SpEd 5364 Behavior Modification and Contingency Management of Disabled Learners
      SpEd 5365 Instructional Processes with Exceptional Children
      SpEd 5366 Modification of Curriculum and Instruction for the Atypical Learner
   B. **Mental Retardation**
      SpEd 431G Psychology of Exceptional Children
      SpEd 5313 Learning Potentials in the Mentally Retarded
      SpEd 5314 Instructional Processes with the Mentally Retarded
      SpEd 5315 Problems and Issues in Special Education
      SpEd 5364 Behavior Modification and Contingency Management of Disabled Learners
   C. **Supervision**
      Edu 5336 Leadership and Evaluation of Instruction
      Edu 5337 Practicum and Seminar
      Edu 5338 Instructional Supervision
      SpEd 5316 Administration and Supervision of Special Education Programs
      SpEd 5361 Survey of Learning Potentials of Exceptional Children
   D. **Special Education—Generic**
      SpEd 4307G Practicum in Instructional Alternatives in Reading and Language Arts (with permission)
      SpEd 4308G Appraisal Processes in Programming for the Exceptional Individual (with permission)
      SpEd 4310G Practicum in Instructing the Exceptional Individual (with permission)
      SpEd 5364 Behavior Modification and Contingency Management of Disabled Learners
      SpEd 5365 Instructional Processes with Exceptional Children

Professional Certificates in Special Education

Educational Diagnostician
Mental Retardation
Special Education Supervisor

With careful planning, a student may complete requirements for two of the professional certificates indicated above within the master's degree program. Specific information concerning these certificates may be obtained from the Professional Development and Graduate Studies Department.

Provisional Certificates in Special Education

Special Education
Generic
Mental Retardation
Physically Handicapped
Learning Disabilities
Emotionally Disturbed
Early Childhood/Exceptional Children

Students may obtain provisional certification in the above listed areas. A combination of graduate and undergraduate courses leading to one or more certificates is possible. Specific information concerning these certificates may be obtained from the Department of Professional Development and Graduate Studies.

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.

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 $10.

Graduate Faculty - College of Education

Associate Professor Virginia Anderson
Home Economics: family life education, housing

Professor Alice C. Bell
Health, Physical Education and Dance: health education

Assistant Professor Douglas Boatwright
Health, Physical Education and Dance: exercise physiology

Professor David L. Bost
Professional Development and Graduate Studies: counseling, research

Professor Kenneth R. Briggs
Professional Development and Graduate Studies: educational psychology

Professor Charles M. Burke
Curriculum and Instruction: school curriculum, math education

Associate Professor Michael A. Cass
Professional Development and Graduate Studies: special education

Assistant Professor Mark J. Cooper
Curriculum and Instruction: early childhood, kindergarten

Professor Vernon R. Crowder
Health, Physical Education and Dance: exercise physiology

Professor Jane S. Davidson
Home Economics: education, nutrition, child development, management family economics

Professor Vernon M. Griffin
Professional Development and Graduate Studies: supervision

Professor W. Richard Hargrove
Curriculum and Instruction: educational psychology, school curriculum

Associate Professor Sandra Lee Haven
Professional Development and Graduate Studies: microcomputer; tests and measurements

Professor Belle Mead Holm
Health, Physical Education and Dance: administration, health education

Professor V. Raye Holt
Health, Physical Education and Dance: Physical Education, health education

Associate Professor Aileen S. Johnson
Professional Development and Graduate Studies: Reading, instruction

Associate Professor Sidney W. Jolly, Jr.
Health, Physical Education and Dance: physical education

Associate Professor Andrea Karlin
Curriculum and Instruction: reading
Assistant Professor James E. Lane
Curriculum and Instruction: special education
Professor Mildred A. Lowrey
Health, Physical Education and Dance: physical education, motor learning, sports psychology
Associate Professor LeBland McAdams
Home Economics: clothing and fashion merchandising
Professor Dennis P. McCabe
Professional Development and Graduate Studies: supervision, administration
Professor E. Lee Self
Curriculum and Instruction: public education
Professor Phillip B. Snyder
Curriculum and Instruction: science education
Professor Monty Sontag
Curriculum and Instruction: special education
Professor William H. Stanley
Professional Development and Graduate Studies: educational administration, supervision
Assistant Professor Rita L. Stevens
Professional Development and Graduate Studies: counseling
Professor Bob Thompson
Professional Development and Graduate Studies: administration and supervision
Associate Professor Jerry R. Tucker
Professional Development and Graduate Studies: educational administration, supervision
Professor William White
Professional Development and Graduate Studies: educational psychology, research
Associate Professor Curtis F. Wills
Professional Development and Graduate Studies: counseling

Education Courses

530 Structure and Organization of Public Education 3:3:0
Analysis of the operation and function of public education at the local, state and national levels.

531 Research 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.

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

533 Contemporary Philosophies of Education 3:3:0
Influence of recent philosophies on education. Schools of educational philosophy and implications for curriculum development and teaching methods.

534 Advanced Study in Human 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. Emphasis on social learning and cognitive theories and strategies. Twenty percent of the class in learning laboratory activities.

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 Foundations of Reading 3:3:0
Methods for extending and refining fundamental reading habits and attitudes, and for increasing reading efficiency. Attention will be given to all facets of the foundations of a reading program.

510, 5201, 5401, 5601 Institute in Education **1-6:1-6:0**
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 6 hours in institutes may be applied toward a Master's degree.

5301 Current Literature for Children and Adolescents **3:3:0**
Survey of recent literature for children and adolescents. Emphasis is given to nonfiction in such areas as earth science and social science. Extensive reading of actual literature.

5302 Practicum: Diagnosis and Remediation of Reading Difficulties **3:3:0**
Work with pupils in diagnosing and correcting reading disabilities. Students will determine the causes of reading disabilities, employ observation and interview procedures, use standard and informal tests and study materials and methods of instruction.
Prerequisite: Edu. 5329

5303 Individualized Instruction in the Elementary School **3:3:0**
Basic concepts of individualized instruction will be covered in detail. Various innovative methods of individualized instruction will be investigated. Particular attention will be given to types of school organization such as the "open" school.

5304 Advanced Child Development **3:3:0**
A consideration of the contribution of scientific research to an understanding of child development and behavior. Emphasis on biological, social, cultural and psychological factors determining individual differences in the child.

5305 Problems in Elementary School Instruction **3:3:0**
Consideration of the instructional problems encountered by teachers in the elementary schools.
Prerequisite: One year of teaching experience.

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 6 hours in institutes may be applied toward a Master's degree.

5307 History of Education **3:3:0**
A study of the evolution of educational theory traced from the time of primitive man to the present and depicting the development of concepts and contributions leading to modern educational thought.

5308 The Gifted Child **3:3:0**
Study of the process of identifying and effectively teaching academically gifted students in a variety of settings.

5310 Language Arts in the Elementary School **3:3:0**
A study of developments and trends in the teaching of language arts with primary consideration given to individual teaching problems, individual research and recent innovative methods.

5111, 5211, 5311 Individual Study in Education **1-3: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.

5317 Organization and Administration of Special Program **3:3:0**
Study of principles, organization and administrative practices in special, vocational, adult and community education programs. Study of programs for guidance and standardized testing, library and media, UIL and student activities, and state and regional accreditation.

5318 Organization and Administration of School Services **3:3:0**
Study of principles, organization and administrative practices for school service of attendance, food, health, maintenance, personnel, textbooks, and transportation.

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.

5322 Organization and Administration of the Guidance Program **3:3:0**
Essential services and management functions of guidance and counseling services for schools.

5323 Occupational and Vocational Guidance **3:3:0**
Concepts and delivery of vocational guidance and career education.

5324 Group Counseling **3:3:0**
Processes of individual study. Counseling procedures and techniques for individuals and groups.

5325 Pupil Personnel Management **3:3:0**
Survey of student services in the public schools emphasizing principles, philosophy and operating procedures.

5326 School-Community Relations **3:3:0**
Emphasizes the relationship of educational and social patterns of living which exists in every community; recognizes the burden of leadership which rests with the public school as it occupies the central position of influence in the community.

5327 College Teaching **3:3:0**
Designed for graduate students with little or no pedagogical training or experience. Application of learning principles and pedagogical procedures in college classes.

5328 Practicum in Guidance and Counseling **3:8:0**
Supervised observation and practice of guidance and counseling in a school setting.
Prerequisites: Edu 5335 and approval of department head. Class: the number of hours equivalent to 8 hours per week for 16 weeks.

5329 Corrective Reading **3:3:0**
Causes of reading disability, methods of diagnosis and remedial instruction.

5331 Theory and Practice in School Administration **3:3:0**
Introduction to theories of administration, organizational structures and current practices in educational administration. Emphasis is given to types of organizational designs, personnel titles and roles, line staff relationships and general theories of successful administrative practice.

5332 Guidance and Counseling in the Elementary School **3:3:0**
A course designed to provide an understanding of guidance principles and techniques applicable to the elementary school.

5333 Individual Counseling Theories and Techniques **3:3:0**
Opportunities are provided for the student to enrich his/her background and experience in interviewing and in dealing with human relations problems in the counseling situation.

5334 Tests and Measurement **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.

5335 Individual Testing **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.
Prerequisite: Edu 4337G or Edu 5334.

5336 Leadership and Evaluation of Instruction **3:3:0**
An investigation of processes and procedures used to evaluate instructional and administrative personnel in the public schools. Special attention is given to the role of the principal and supervisor in this process. Included in the content are programs of clinical supervision and staff development.

5337 Practicum and Seminar **3:3:0**
Supervision and curriculum development. Investigation of the role of the supervisor with emphasis on curriculum development. Investigations will center around problems in supervision, curriculum theory and educational experimentation.

5338 Instructional Supervision **3:3:0**
A study of human resources supervision and organizational leadership for more effective schools. Special investigation into the elements of school climate, leadership behavior, motivation theory, and group supervisory effectiveness.

5339 The Public School Principal **3:3:0**
Study of the role and competencies for the administrator of the elementary, middle and secondary schools. Specific studies of job analysis and responsibilities in various organizations of the K-12 program are included.

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.

5341 The School Superintendent **3:3:0**
Emphasis on the legal and delegated authority, responsibilities and operative techniques of the superintendency.

5342 Public School Finance **3:3:0**
Analysis of principles of school finance to include problems of budgeting, accounting and administration of funds.

5343 Administration of School Plant **3:3:0**
Operation, maintenance and utilization of physical plant to include administration of records, standards and control of plant and development of school building programs.

5344 School Law **3:3:0**
Interpretation and operation of school law including a study of the Texas Education Code and the Handbook for Public School Law.

5345 Personnel Management **3:3:0**
Fundamentals of human relations and organizational behavior in developing programs of recruitment selection, assignment, evaluation, promotion and termination of personnel.

5346 Public Relations in School Administration **3:3:0**
Development of principles governing school-community relationships to promote mutual understanding and support of school's purpose, functions and needs.

5347 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.

5348 Practicum in Eductional Administration **3:A:0**
Supervised experience in administration and offered by arrangement between the University and the public school.

5349 Internship for School Superintendent **3:A:0**
Designed to give the prospective superintendent on-the-job training under the guidance of a successful, experienced, practicing administrator with the supportive supervision of members of the University faculty. May be repeated once for credit; must be done in consecutive long terms.

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.

5367 Psycho-Social Foundations of Educating the Culturally Different **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.

5368 Practicum: Role and Responsibilities of the Visiting Teacher **3:0:0**
Studies involve supervised one-to-one interactions with pupils, parents, community agencies and other personnel to actualize resources that enhance educational opportunities for children.

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.

5381 Advanced Seminar in Counselor Relations **3:0:0**
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.
Prerequisite: Edu 5333.

5390-1 Selected Instructional Topics **3:3:0**
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 semester schedule. Contact hours must be the same as instructional courses require.

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

Below is the approved list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.
431G Diagnostic-Prescriptive Techniques in the Teaching of Reading
4301G Institute or Workshop in Education
4304G History and Philosphy of the Kindergarten
4305G Seminar in Early Childhood Educational Research
4337G Tests and Measurements
439G Reading Practicum

Special Education Courses (SpEd)

5101, 5201, 5301, 5601 Institute or Workshop in Special Education **1-6:1-6:0**
Designed to advance the professional competence of participants. For each institute or workshop a description of the particular area of study will be indicated. May be repeated for credit when institute or workshop differs sufficiently from one previously taken. A maximum of 6 hours of credit in Institutes may be applied toward a Master's degree.

5121, 5221, 5321 Individual Study in Special Education **1-3:A:0**
Investigation into special areas in special education under the direction of a faculty member. This course may be repeated for credit when topics of investigation differ.
Prerequisite: Consent of department head.

5313 Learning Potentials in the Mentally Retarded **3:3:0**
Determining the degree of modifiability of pupil behaviors and identifying functioning levels; individual projects.

5314 Instruction Processes with the Mentally Retarded **3:3:0**
Translating the behaviors of the mentally retarded into developmental categories and applied instructional modification processes.

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.

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.

5390 Special Education and the Pre-school Age Child **3:3:0**
Study in the problems, trends and practices in the education and care of the pre-school child in special education.

5391 Special Education and the Elementary School Age Child **3:3:0**
Study in the problems, trends and practices in the education and care of the elementary school age child in special education.

5392 Special Education and the Secondary School Age Child **3:3:0**
Study in the problems, trends and practices in the education and care of the secondary school age child in special education.

5393 Mainstreaming and the Exceptional Child **3:3:0**
Review of current problems, trends and practices in the education and care of exceptional children through mainstreaming.

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

Below is the approved list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.

431G Psychology of Exceptional Children
436G Education of Gifted Children
438G Instructional Processes with the Severely and Profoundly Handicapped
439G Methods and Materials in Learning Disabilities 4101G, 4201G, 4301G, 4601G Institute or Workshop in Special Education
4307G Practicum in Instructional Alternatives in Reading and Language Arts for the Exceptional Individual (with permission)
4308G Appraisal Processes in Programming for the Exceptional Individual
4309G Instruction of the Exceptional Learner
4310G Practicum in Instructing the Exceptional Individual (with permission)
4318G Instructional Processes With the Severely/Profoundly Handicapped

Graduate Resource Courses

These courses are not offered by the College of Education 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 430G 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 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 4312G 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, Physical Education and Dance

The Department of Health, Physical Education and Dance offers a program of study leading to the Master of Science degree in Health and Physical Education. 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 and must meet the necessary undergraduate prerequisites as prescribed for a particular area of specialization. The areas of specialization available include (1) teaching and research, (2) exercise science, and (3) 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. The exercise science area of specialization provides a concentration on theory and research. Fitness program administration involves a concentration in exercise technology and practical applications for those students seeking employment in public, private, or corporate fitness centers.

Degree Requirements

The candidates for the Master of Science degree in Health and Physical Education 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 HPE 534 (Scientific Basis of Exercise), HPE 536 (Research Methods), and HPE 538 (Motor Learning).
2. The thesis is optional for specialization areas of teaching/research and fitness program administration.
3. The thesis is **required** for the exercise science area of specialization.
4. Each specialization area requires additional core requirements contingent upon the option selected.
5. Exercise science specialization requires undergraduate prerequisites in biology and chemistry.

Graduate Faculty

Professor Alice C. Bell
Health education
Assistant Professor Douglas Boatwright
Physical education, exercise physiology
Professor Vernon R. Crowder
Exercise physiology
Professor Belle Mead Holm
Administration, health education
Professor V. Raye Holt
Physical education, health education
Associate Professor Sidney W. Jolly, Jr.
Physical education
Professor Mildred A. Lowrey
Physical education, motor learning, sports psychology

Health and Physical Education Courses

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

531 Cultural Foundations of Physical Education **3:3:0**
A study of history and cultural foundations of sport and physical education activities, their origin and influence upon modern man.

532 Seminar in Health and Physical Education **3:3:0**
Designed to develop abilities in locating and evaluating literature and research in physical education and in allied fields. Course may be repeated for a maximum of six semester hours as the topic varies.

533 Organization and Administration of the School Health Program **3:3:0**
Administrative relationships and procedures in conducting school health programs.

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 in Health and Physical Education **3:3:0**
Designed to assist the student to become knowledgeable on current trends and issues in the areas of the health and physical education. 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 in Health and Physical Education **3:3:0**
Familiarity with types of research in Health and Physical Education 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 Psychosocial Aspects 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 Health and Physical Education **1-6:1-6:0**
This course is designed to advance the professional competence of graduate students in health and physical education. 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 in Physical Education **3:3:0**
Emphasis given to models of curriculum development and to techniques for curriculum improvement. Analysis of objectives, organization and content of physical education K-12.

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

5316 Exercise Psychobiology **3:2:1**
Comprehensive review of current literature dealing with exercise stress, emotionality, immune system function, and neuroendocrine function. Psychoneuroendocrine aspects of holistic health concepts are considered, including those of Asian fitness systems and Oriental philosophy.
Prerequisite: Exercise physiology.

5318 Fitness Program Management and Exercise Technology **3:2:1**
Review of current literature dealing with physical fitness. Students function a group leaders and learn applied exercise technology, including stress and diet management, fitness testing, and exercise prescription. Preparation for adult fitness program administration.
Prerequisite: Exercise physiology.

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. Workshops and travel/study tours along with regular daytime and evening classes make completion of a Home Economics Masters degree attainable and rewarding.

Degree Requirements

The Master of Science degree in Home Economics requires the completion of 30 semester hours of graduate work; 18 in home economics, 6 in thesis and 6 in an approved supporting field. With the approval of the the student's graduate committee 6 semester hours of course work may be substituted for the thesis. If the non-thesis option is selected, 6 hours must be taken in an approved supporting field.

The student's graduate program must include Home Economics 5314, Research Techniques and Home Economics 530, Seminar in Home Economics.

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

Graduate Faculty in Home Economics

Associate Professor Virginia Anderson
Family life education, housing
Professor Jane S. Davidson
Home economics education, nutrition, child development and management
Associate Professor LeBland McAdams
Clothing, fashion merchandising and retailing

Home Economics Courses

530 Seminar in Home Economics **3:3:0**
An intensive study of selected problems and recent developments in Home Economics.

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 to 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 Aspects of Food **3:2:3**
The relationships of food acceptability and use to the cultural and social development of people over the world. Food preparation experiences as influenced by international food patterns.

537 Family Management **3:3:0**
Socio-economic changes, public policies and programs, and management practices related to family well-being.

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 6 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 (or expertise) 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**
Consideration of home economics-related occupations and factors needed for success in the world of work. Credit for course applied to 6 hours required for teaching in occupational home economics programs.

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.

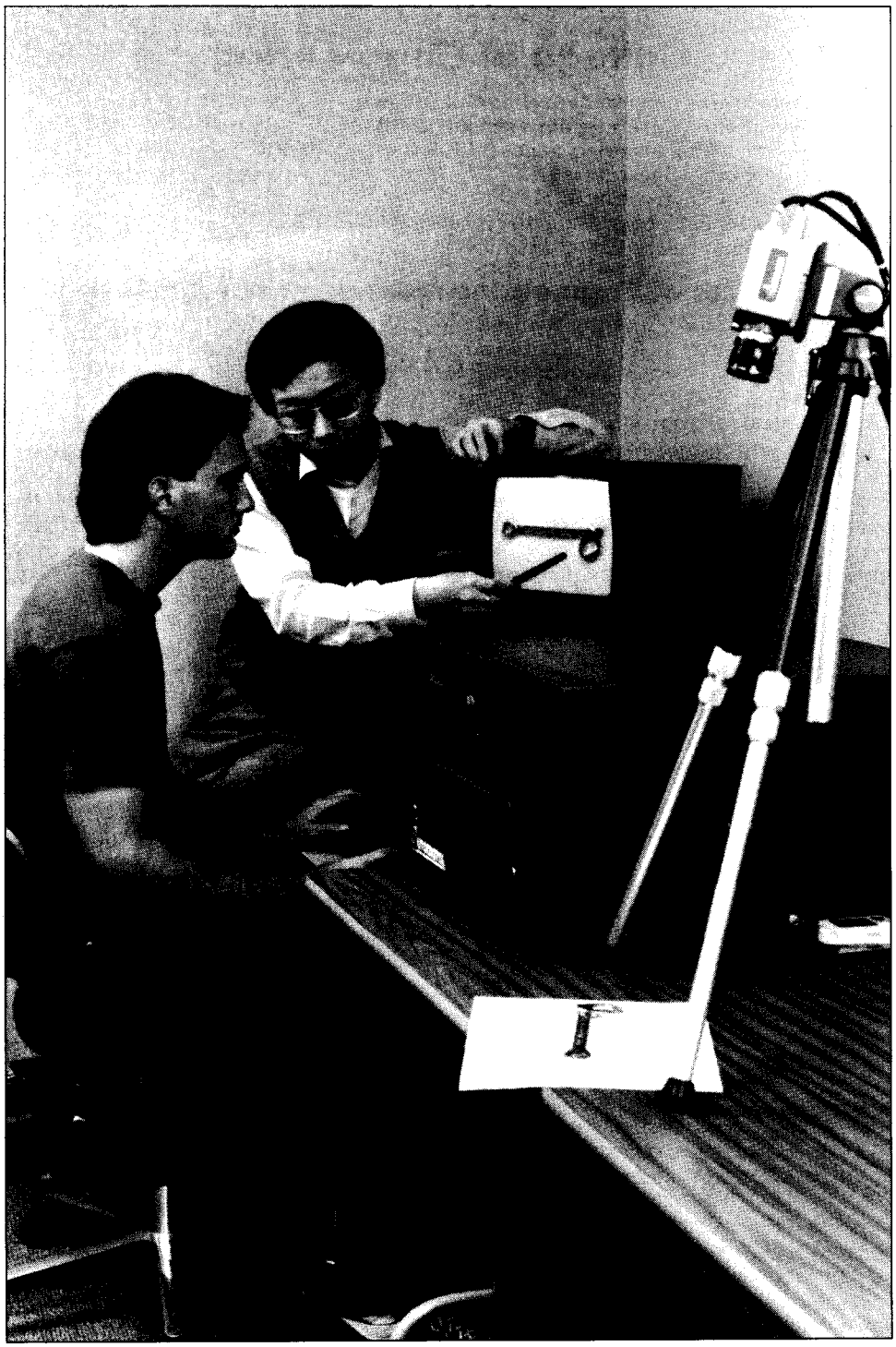
5313 Current Topics in Home Economics
Intensive study of a current problem of professional interest in home economics. The description of the particular area of study will appear on the printed semester schedule. May be repeated for credit when topic of investigation varies. Credit: 3 hours.

5314 Research Techniques **3:3:0**
Principles and application of standard techniques used in research.

5315 Independent Study in Home Economics
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: 3 hours.

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

Below is the approved list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.
411G, 421G, 431G Special Topics
430G Therapeutic Nutrition
432G Family Clothing
433G Household Equipment
434G Fashion and Production
435G Consumer Housing
436G Retail Management
437G Individual Problems in Home Economics
4305G Advanced Interior Design
4307G Professional Practices and Procedures in Interior Design
4317G Internship in Fashion Merchandising
4327G Family Life and Parenting Behavior



Students in the College of Engineering learn to work with this artificial vision system and other examples of state-of-the-art high technology.

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 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 4:00 p.m. Coursework 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 thirty-six credit hours are required at the graduate level. Included among these thirty-six credit hours are fifteen hours of core courses required of all M.E.M. students. Coursework 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. 2-5 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 2-5 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 as in b.
   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 fifteen hours of coursework including all core courses and apply for admission to candidacy.

6. Complete remaining coursework specified in candidacy application
   a. Apply for Graduation
   b. Pass Comprehensive Examination
7. Graduate

Core Courses

1.	EGR	5369	Engineering Management
2.	EGR	5362	Decision Making Processes
			or
	IE	432G	Statistical Decision-Making for Engineers
3.	EGR	5363	Adminstrative Control Systems
			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 5365 Industrial Planning

Business Administration

*ACC 530 Financial Accounting
ACC 537 Managerial Accounting
ECO 534 Collective Bargaining
ECO 530 Foundations of Economics

Technical Management

*EGR 5369 Engineering Management
*EGR 5362 Decision Making Processes
*EGR 5321 Quality Control Systems
*EGR 5366 Advanced Engineering Economics

II. Constuction Project Management (CE)

Technical Discipline

CE 432G Planning, Scheduling and Estimating
EGR 5301 Elements of Construction Systems
EGR 5318 Stress Analysis
EGR 5308 Cost and Optimization Engineering

Technical Management

Same as Option I

Business Administration

Same as Option I

III. 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

IV. Instrumentation and Control (EE)

Technical Discipline

(Select 4)

EGR 5364 Digital Hardware Design
EGR 6364 Micro Processor Design
EGR 535 Control Theory
EGR 6346 Advanced Engineering Analysis
EGR 538 Digital Control

Technical Management

Same as Option I

Business Administration

Same as Option I

V. Power and Energy (EE)

Technical Discipline

(Select 4)

EGR 5354 Nuclear Power Plants
EGR 5351 Power Systems I
EGR 5352 Power Systems II
EGR 6311 Computer Methods in Power Systems
EGR 5364 Digital Hardware

Technical Management

Same as Option I

Business Administration

Same as Option I

VI. Construction Project Management (IE)

Technical Discipline

EGR 5308 Cost and Optimization Engineering (Pert/Cost)
EGR 5303 Regression Analysis
EGR 5370 Technical Communication
EGR 5305 Reliability

Technical Management

Same as Option I

Business Administration

Same as Option I

VII. 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 Courses: (M.E.S., M.E. and D.E. Programs)

EGR	5311	Heat Transfer Analysis
EGR	5341	Mass Transfer Operations
EGR	535	Advanced Process Control
EGR	5347	Manufacturing Analysis
EGR	5366	Advanced Engineering Economics
EGR	5316	Operations Research I
EGR	532	Instrumentation
EGR	5306	Linear Systems Control Theory
EGR	5318	Stress Analysis
EGR	5309	Problems in Design and Analysis
EGR	5308	Cost and Optimization Engineering
EGR	5312	Transport Mechanisms
EGR	539	CAD/CAG
EGR	537	Thermodynamics
MTH	5310	Numerical Analysis
EGR	5319	Design of Experiments
EGR	5303	Regression Analysis

The following mathematics courses are recommended as support courses for the graduate programs in engineering:

MTH	5303	Modeling Theory
MTH	5311	Complex Variables

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.

Degree Requirements

1. All of the College of Graduate Studies general degree requirements.
2. A minimum of 9 semester hours (3 courses) from those courses listed above as core courses.
3. A minimum of 15 semester hours (5 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.

Degree Requirements

1. All of the College of Graduate Studies general degree requirements.
2. A minimum of 21 semester hours (7 courses) from those listed above as core courses.

3. A minimum of 15 semester hours* (5 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 twelve semester hours of electives provided EGR 631 (Design Project) is included.

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. Attainment of appropriate scores on the Graduate Record Examination (GRE).
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.

Degree Requirements

1. All of the College of Graduate Studies general degree requirements.
2. Completion of a minimum of 21 semester hours (7 courses) of course work from those listed as core courses above. For students who have completed a thesis this requirement is reduced to a minimum of 9 semester hours (3 courses) from the core courses listed above.
3. 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.
4. Completion of the field study preparatory requirements for "Design, Analysis, and Control", "Energy Systems", "Manufacturing Systems" as stated below. (See Note 1)
5. 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.
6. Completion of the field study. After the student is admitted to candidacy a formal engineering proposal conforming to a standard 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.

   Note 1: A student's Doctoral Committee may, with the written approval of the Graduate Steering Committee and the Dean of the College of Engineering, design a special course group for a particular student.
7. 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.

Field Study Preparatory Requirements

Design, Analysis, and Control

EGR	538	Sampled Data Control Systems
EGR	611***	Professional Seminar
EGR	632	Justification of Engineering Projects
EGR	633	Advanced Engr. Design
EGR	6346	Advanced Engr. Analysis
	15	Semester Hours
	15	Semester Hours Related Electives
	30	Semester Hours Total

Energy Systems

EGR	5354	Nuclear Power Plants
EGR	611***	Professional Seminar
EGR	632	Justification of Engr. Projects
EGR	634	Synthetic Fuel Process Analysis
EGR	6361	Solar Energy I
	15	Semester Hours
	15	Semester Hours Related Electives
	30	Semester Hours Total

Manufacturing Systems

EGR	5347	Manufacturing Analysis
EGR	632	Justification of Engineering Projects
EGR	611***	Professional Seminar
EGR	633	Advanced Engineering Design
EGR	5321	Quality Control Systems
	15	Semester Hours
	15	Semester Hours Related Electives
	30	Semester Hours Total

***Doctoral Candidates must enroll in EGR 611 for three semesters.

Graduate Faculty

Professor Wendell C. Bean
Nuclear engineering, bioengineering

Associate Professor John A. Bruyere
Materials science, metallurgy

Associate Professor Carl Carruth
Work design and measurement, human factors and motivation

Assistant Professor Daniel H. Chen
Process control, optimization, numerical methods

Assistant Professor Hsing-wei Chu
Operations research statistical decision analysis, networks

Professor James L. Cooke
Process control; power systems analysis

Professor Floyd M. Crum
Solid state devices in electronic circuits

Assistant Professor Saeed Daniali
Structural analysis and design

Professor David C. Gates
Decision-making processes; plant layout, human factors, engineering management

Associate Professor John B. Harvill
Data base management systems, microcomputers

Assistant Professor Tho-Ching Ho
Fluidization, heat transfer, optimization

Professor Jack R. Hopper
Reaction kinetics, catalysis

Assistant Professor Donald L. Jordan
Information systems

Associate Professor Narayan R. Joshi
Metallurgical engineering, material science
Professor Enno Koehn
Construction, planning, scheduling and productivity. Design and analysis
Assistant Professor Hikyoo Koh
Software engineering, software testing, artificial intelligence
Associate Professor Subodh Kumar
Geotechnical Engineering
Associate Professor Kwan R. Lee
Statistics
Associate Professor Ku-Yen Li
Mass transfer, thermodynamic properties, gas-liquid reactions
Associate Professor Peter A. Mantz
Ocean engineering, coastal and wave process
Professor Eugene P. Martinez
Kinetics and thermal sciences of fluids
Professor Sterling W. McGuire
Computer science, statistics and optimization techniques
Professor Harry T. Mei
Computer applications, humidity control, solar energy
Professor William E. Morgan
Environmental engineering
Professor David R. Read
Computer science, numerical analysis
Professor Bruce G. Rogers
Ultimate load characterstics of structures, analysis
Associate Professor James L. Thomas
Computer-aided Manufacturing, Computer-aided Design
Assistant Professor Gary L. Viviani
Computer methods for analysis, control of large scale systems
Professor William R. Wakeland
Control systems design, computer-aided design
Professor Bobby R. Waldron
Computer science, statistics and information systems
Professor Richard E. Walker
Rheology, computer applications
Professor Joseph T. Watt
Digital systems, control, and analog computers
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

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.
Note: Core Course. May be repeated one time for graduate credit with prior approval where course content varies.

534 Nonlinear Analysis **3:3:0**
Various methods of solving nonlinear differential equations are studied. Analytical, graphical and computer solutions are included.

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.
Note: Core Course. 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.
Note: Core Course. 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.

5304 Nonlinear Programming **3:3:0**
Theory of linear and nonlinear programming; the lambda and delta-form of the approximating problem; quadratic programming; gradient methods.

5305 Reliability **3:3:0**
Statistical theories pertinent to solution of engineering problems in reliablility; 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 with 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, thermoclastic problems. May be repeated for credit when the subject matter varies.

5316 Operations Research I **3:3:0**
The use of advanced mathmatical 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.

5321 Quality Control Systems **3:3:0**
Application of statistical methods to industrial problems; regression and correlation theory; analysis of variance; use of control charts for control of manufacturing operations.

5322 Rheology **3:3:0**
A study of non-Newtonian liquids with emphasis on principles and fundamentals. Methods of measuring rheological properties of non-elastic and elastic liquids are developed. Laminar and turbulent flow characteristics are reviewed.

5323 Advanced Steel Design **3:3:0**
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.

5324 Wave Mechanics in Particulate Matter **3:3:0**
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.

5325 Information Theory **3:3:0**
Aspects applicable to all fields of engineering. Entropy as a measure of information: signal processing; channel capacity; and coding theory.

5326 Waves and Coastal Processes **3:3:0**
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.

5327 Numerical Methods of Structural Analysis **3:3:0**
Matrix methods applied to analysis of trusses, beams and frames. May be repeated for credit when the subject matter varies.

5328 Inelastic Theory of Structures **3:3:0**
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.

5329 Water and Waste Analysis **3:3:0**
Fundamental treatment of sanitary chemistry and microbiology; an intensive study of basic chemical theories and/or laboratory techniques and instrumentation. May be repeated for credit when the subject matter varies.

5330 Wastewater Treatment **3:3:0**
Principles of treatment for domestic and industrial wastewaters with emphasis on process kinetics. May be repeated for credit when the subject matter varies.

5331 Similitude and Model Design **3:3:0**
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.

5332 Operations Research II **3:3:0**
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.

5333 Production Control **3:3:0**
Advanced topics in techniques employed in different types of manufacture for planning and controlling production.

5334 Salary Administration for Engineers and Scientists **3:3:0**
A study of salary incentives, job evaluation and merit rating for engineering and scientific personnel, executive and managerial compensation.

5336 Operations Research III **3:3:0**
Recent advances in the methodology and philosophy of operations research.
Prerequisite: Consent of instructor.

5337 System Simulation **3:3:0**
Study of the design, construction, testing and operation of process models for simulation. Starting with simple hand-computed simulations, the student progresses to relatively complex models requiring the use of a high-speed digital computer.

5338 Reclamation Engineering Seminar **3:3:0**
Investigations of the reclamation of resources by multiple use, reuse and improvement of existing sources to meet quality requirements. May be repeated for credit when the subject matter varies.

5340 Kinetics **3:3:0**
Rate equations are developed by the application of statistical methods and the theory of absolute reaction rates. Partition functions and potential energy surfaces will be introduced. Considerable attention will be given to the measurement of reaction rates and the interpretation of experimental data. May be taken for graduate credit in chemistry or engineering.

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.

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 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.

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.

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, 5352, 5353 Electric Power Systems Analysis I, II, III **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.

5354 Nuclear Power Plants **3:3:0**
Nuclear reactor neutron kinetics; core reactivity effects of control poisons, coolant and fuel temperatures, fission product poisons; self regulation, automatic control; startup and shut-down; types of nuclear plants foreseen in electric power generation; special problems and benefits of nuclear power plants.

5356 Optimal Control **3:3:0**
Bellman's Dynamic Programming, calculus of variations, and Pontryagin's minimum principle. System representation by state variables. Computer methods utilized.
Prerequisite: EGR 535 or consent of instructor.

5359 Seminar in Engineering Administration **3:3:0**
Direct reading, analysis and research in the classic and modern literature of engineering administration. May be repeated for credit where subject matter differs.

5360 Case Problems in Engineering Administration **3:3:0**
The case method applied to complex administration problems encountered by engineers. May be repeated for credit where subject matter differs.

5362 Decision Making Processes **3:3:0**
A study of the bases and philosophical implications of executive decision-making. Elementary game theory, minimax and other strategies. Bayesian interference, subjective probability, teleology of measurement.
Prerequisite: Consent of instructor.

5363 Adminstrative Control Systems **3:3:0**
Problems affecting the engineer in design, analysis and control of information systems.

5364 Digital Hardware Design **3:3:0**
Problem formulation, dependency notation, programmable combinational circuits, designing for maintainability, algorithmic state machines.
Prerequisite: Logical design, or consent of instructor.

5365 Industrial Planning **3:3:0**
Industrial planning and decisions. Plant location, design, evaluation. Symbolic logic, relative importance factors, probabilistic models, fiscal factors.

5366 Advanced Engineering Economy **3:3:0**
Special economic analyses based on risk, uncertainty and other probabilistic considerations. Bayesian attacks, influence of perfect information, competitive decisions and decisions under pressure.

5369 Engineering Management **3:3:0**
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.

5370 Technical Communication **3:3:0**
Improving the effectiveness and efficiency of technical communications; interpersonal relations and organizational structure for communications.

5371 Seminar in Adminstrative Practices **3:3:0**
Study of the interrelationships between the fields of economics, politics, physical science and social science and the effects upon the management of engineering work. May be repeated for credit where subject matter differs.

5380 Structural Timber Design **3:3:0**
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

5381 Structural Masonry Design **3:3:0**
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

5382 Structural Dynamics **3:3:0**
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 434.

5387 Special Topics **3:3:0**
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.

5390 Special Topics **3:3:0**
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.

5391 Work Systems Engineering **3:3:0**
Study of current research in methods engineering and work measurement; work design; work systems, systems of standard data and predetermined motion time data, statistical treatment of work measurement.

5399 Human Factors Engineering **3:3:0**
The specialized adaptation of engineering designs to the human operator's role in man-machine systems.

611 Professional Seminar **1:1:0**
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.

631 Design Projects **3:A:0**
May be repeated for credit when the subject matter varies.
Prerequisite; Admission to candidacy.

6311 Optimal Control of Power Systems **3:3:0**
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.

6313 Digital Filters **3:3:0**
Introduction to digital filtering. Recursive, non-recursive filters and their design. Butterworth, chebysbev filters.
Prerequisite: Proficiency in computer programming.

632 Justification of Engineering Projects **3:3:0**
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.

633 Advanced Engineering Design **3:3:0**
Application of various engineering concepts and principles combined with economic considerations and decision-making processes to the rigorous methods required in the design, analysis, and synthesis of complex engineering systems and their components.

634 Synthetic Fuel Process Analysis **3:3:0**
Attention is devoted to engineering fundamentals required to develop systhetic fuels from alternate energy sources of coal, shale oil and tar sands. The fundamentals of thermodynamics, kinetics, mass transfer, fluid mechanics, and heat transfer will be discussed in relation to the development of alternate energy sources.

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.

6341 Absorption **3:3:0**
The theoretical aspects of gas-phase and liquid phase diffusion systems are presented, and empirical correlations for diffusion coefficients are critically surveyed. Equipment for gas-liquid operations and the estimation of gas-liquid solubilities are discussed. The principles of gas absorption will be applied to chemical reactions occurring on the surface of solid catalysts and on liquid surfaces.

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.

6345 Professional Practice **3:3:0**
The development of engineering as a profession. Code of ethics and their justification, licensing requirements, engineer-client relationships and responsibilities. Credit will be given only to students who have passed the professional part of a state engineering registration examination.

6346 Advanced Engineering Analysis **3:3:0**
Methods of analysis based on finite differences, finite elements, matrices and special numerical techniques applied to engineering systems. The computer is used as a tool of investigation and optimization.

6350 Nuclear Reactor Plant Dynamics **3:3:0**
Operating characteristics of reactor systems; modeling of neutronic, fluid, heat transfer and fluid processes; dynamics, stability and control of reactor plant systems; engineered safeguards.
Prerequisite: Egr 5354 or equivalent.

6351 Nuclear Reactor Kinetics **3:3:0**
Development of kinetics equations; special topics in space-time kinetics, noise analysis, rod oscillator tests, xenon stability, special control problems.
Prerequisite: Egr 5354 or equivalent.

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.

6362 Solar Energy II **3:3:0**
The design of solar heating and cooling systems. Performance estimates and economic analyses are included.
Prerequisite: Egr 6361

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.

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 6 or 12 hours credit per semester. Must be repeated for credit until field study is completed. Total credit: 6 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 6 or 12 hours credit per semester. Must be repeated for credit until field study is completed. Total credit: 6 semester hours per section.

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

Below is the approved list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.

ChE 435G Advanced Analysis
ChE 437G Computer Applications
ChE 4111G Seminar
ChE 4316G Stagewise Processes
ChE 4318G Advanced Distillation
ChE 4321G Process Economics
ChE 4322G Unit Operations
ChE 4323G Engineering Materials
ChE 4325G Introduction to Nuclear Engineering
CE 420G Photogrammetry
CE 430G Indeterminate Structures
CE 431G Hydraulics II

CE 432G Planning, Scheduling and Estimating
CE 433G Environmental Health Engineering
CE 434G Soil Engineering
CE 435G Water and Waste Water Treatment
CE 437G Transportation
CE 438G Reinforced Concrete Design
CE 439G Structural Steel Design
CE 4310G Soil-Structure Interaction
CE 4312G Advanced Structural Design
CS 439G Scientific Computer Application
CS 4101G Special Topics
CS 4201G Special Topics
CS 4301G Special Topics
CS 4302G System Analysis and Design
CS 4305G Introduction to Information Structure
CS 4306G Techniques of Information Processing and Retrieval
CS 4307G Survey of Programming Languages
CS 4308G Introduction to Compiler Theory
CS 4309G Introduction to Simulation Techniques
CS 4310G Computer Architecture
CS 4321G Computer Uses in Education
CS 4401G Special Topics
EE 432G Electronics III
EE 436G Control Engineering
EE 4302G Communication Theory
EE 4304G Advanced Topics
EE 4306G Minicomputers
EE 4307G Microcomputers
EE 4308G Automata Theory
EE 4310G Computer Architecture
EGR 438G Introductory Petroleum Engineering
IE 430G Quality Assurance and Control
IE 432G Statistical Decision Making for Engineers
IE 434G Materials Science and Manufacturing
IE 435G Production and Inventory Control
IE 437G Operations Research
IE 4313G Human Engineering
IE 4315G Organization and Management
MTH 4301G Differential Equations and Linear Algebra
MTH 4302G Partial Differential Equations
MTH 431G Complex Variables
MTH 4315G Numerical Analysis
MTH 4316G Mathematical Programming
MTH 4317G Modern Developments in Statistical Methodology
MTH 4321G Least Squares and Regression Analysis
MTH 4322G Analysis of Variance
MTH 433G Linear Algebra
MTH 437G Probability and Statistics
MTH 4386 Theory of Statistics
ME 432G Mechanical Vibrations
ME 434G Internal Combustion Engines
ME 435G Turbomachinery
ME 438G Environmental Systems Engineering
ME 439G Advanced Strength of Materials
ME 4311G Controls Engineering
ME 4312G Gas Dynamics

ME 4313G Transport Theory II
ME 4315G Thermodynamics III
ME 4316G Engineering Project
ME 4317G Engineering Analysis II

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.

Admission

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. Satisfy the depth and breadth requirements of knowledge in Computer Science as defined by the Graduate Faculty of the Department of Computer Science. This may be done with a combination of academic achievement, professional experience and individual examination by the Department's Graduate Faculty.
3. 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.

Degree Requirements

A. Core Courses
Students in the masters program in Computer Science are required to establish competence in several areas considered basic to the field of Computer Science. The Core Requirement consists of the indicated number of courses in each field listed below.

Number	Area	Courses
2	Programming Languages	CS 5315, CS 5319, CS 5320
2	Operating Systems and Computer Architecture	CS 5310, CS 5322, CS 5324, CS 5328
1	Theoretical Computer Science	CS 5313, CS 5330, CS 5329
1	Data and File Structures or Other Topics	CS 5311, CS 5312, CS 5314, CS 5331, CS 5332, CS 5333, CS 5334, CS 5335, CS 5336, CS 5340, CS 5339
6	Courses (18 semester hours)	

B. Option I (Thesis)
   1. Satisfactory completion of the depth and breadth requirements.
   2. Completion of the core requirements listed above with at least a B (3.0) average. One C is permitted in this area if it is balanced by an A in one other course.
   3. Completion of nine additional hours in graduate level courses* **OR** completion of an approved minor of nine hours with at least a B (3.0) average. One C is permitted in this area if it is balanced by an A in one other graduate level course.*

4. Completion of CS 669A and 669B and submission of an acceptable thesis.
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. Satisfactory completion of the depth and breadth requirements.
2. Completion of the core requirements listed above with at least a B (3.0) average. One C is permitted in this area if it is balanced by an A in one other graduate level course.*
3. All non-thesis students must take and satisfactorily complete CS 5340. This course consists primarily of a significant research project and the submission of a written professional report.
4. Completion of an additional fifteen hours in graduate level Computer Science courses **OR** the completion of an approved minor of nine hours, with six additional hours of graduate level courses* in Computer Science. One C is permitted in this area if it is balanced by an A in one other graduate level course.*
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 Graduate Faculty. Failure to pass this examination in two attempts will result in the student being dropped from the degree program in Computer Science.

*NOTE: All courses for the Master of Science in Computer Science must be 500 level or above; 400 and 400G courses may not be applied toward degree requirements.

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.

Computer Science Courses

5301 Computer Systems for Educational Application 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. (Not for Computer Science majors)
Prerequisite: Consent of Department Head.

5310 Operating Systems and Computer Architecture II 3:3:0
Study of concurrent processes, support structures for modular programming, resource allocation and protection, pipelining and parallelism, telecommunications, networks and distributed processing.
Prerequisite: CS 4302 or its equivalent.

5311 Database Management Systems Design 3:3:0
Advanced file structures; database concepts including relational, hierarchial and network logical models; data description and manipulation languages.
Prerequisite: Consent of Department Head.

5312 Artificial Intelligence 3:3:0
Introduction to basic concepts and techniques of artificial intelligence and to insights into active research and application areas. Emphasis is placed on representation methods and strategies in both heyristic and algorithmic approaches. Students are expected to implement a small intelligent system of their design in LISP.
Prerequisite: Consent of Department Head.

5313 Algorithims 3:3:0
Topics on what can and cannot be proven about computational complexity including Algorithm design methodologies.
Prerequisite: Consent of Department Head.

5314 Software Design and Development 3:3:0
Program development techniques with structured methodology, structured design, the Jackson method, top-down development, structured programming, programming style, program testing and debugging, and other current techniques.
Prerequisite: Consent of Department Head.

5315 Theory of Programming Languages **3:3:0**
Theoretical aspects of parsing context free languages, translation specifications, and machine-independent code, finite state grammars, and recognizers, lexical scanners, push-down automata, recursive descent.
Prerequisite: CS 4307 or its equivalent.

5319 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 its 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: Consent of Department Head.

5322 Performance Evaluation **3:3:0**
A survey of techniques of modeling concurrent processes and the resources they share. Includes levels and types of system simulation, performance prediction, bench-marking and synthetic loading, hardware and software monitors.
Prerequisite: Consent of Department Head.

5324 Computer Communication Networks and Distribute Processing **3:3:0**
A study of networks of interacting computers. The problems, rationales, and possible solutions for both distributed databases will be examined. Major national and international protocols including SNA, X.21, and X.25 will be presented.
Prerequisite: Consent of Department Head.

5328 Microcomputer Systems and Local Networks **3:3:0**
A consideration of the uses and organization of microcomputers. Typical eight or sixteen bit microprocessors will be described. Microcomputer software will be discussed and contrasted with that available for larger computers. Each student will gain hands-on experience with a microcomputer.
Prerequisite: Consent of Department Head.

5329 Applied Combinatorics and Graph Theory **3:3:0**
A study of combinatorial and graphical techniques for complexity analysis including generating functions, recurrence relations, Polya's theory of counting, planar directed and undirected graphs, and NP complete problems. Applications of the techniques to analysis of algorithms in graph theory and sorting and searching.
Prerequisite: Consent of Department Head.

5330 Theory of Computation **3:3:0**
A survey of formal models for computation. Includes Turing Machines, partial recursive functions, recursive and recursively enumberable sets, the recursive theorem, abstract complexity theory, program schemes, and concrete complexity.
Prerequisite: Consent of Department Head.

5331 Information System Design **3:3:0**
A practical guide to Information System Programming and Design, Theories relating to module design, module coupling, and module strength are discussed. Techniques for reducing a system's complexity are emphasized. The topics are oriented toward the experienced programmer or systems analyst.
Prerequisite: Consent of Department Head.

5332 Information Storage and Access **3:3:0**
Advanced data structures, file structures, databases, and processing systems for access and maintenance. For explicitly structured data, interactions among these structures accessing patterns, and design of processing/access systems. Data Administration, processing system life cycle, system security.
Prerequisites: CS 4305 and CS 4306 or their equivalents.

5333 Distribution System Analysis **3:3:0**
A consideration of the problems and opportunities inherent in distributed databases on a network computer system. Includes file allocation, directory systems, deadlock detection and prevention, synchronization, query optimization, and fault tolerance.
Prerequisite: Consent of Department Head.

5334 Pattern Recognition **3:3:0**
An introduction to the problems, potential, and methods of pattern recognition through a comparative presentation of different methodologies and practical examples. Covers feature extraction methods, similarity measures, statistical classification, minimax procedures, maximum likelihood decisions, and the structure of data to ease recognition. Applications are presented in image and character recognition, chemical anaylsis, speech recognition, and automated medical diagnosis.
Prerequisite: Consent of Department Head.

5335 Computer Graphics **3:3:0**
An overview of the hardware, software, and techniques used in computer graphics. The three types of graphics hardware: refresh, storage, and raster scan are covered as well as two-dimensional transformations, clipping, windowing, display files, and input devices, If a raster scan device is available, solid area display, painting and shading will be covered. If time allows, three-dimensional graphics may be included.
Prerequisite: Consent of Department Head.

5336 Modeling and Simulations **3:3:0**
A study of the construction of models which simulate real systems. The methodology of solution should include probability and distribution theory, statistical estimation and inference, the use of random variates, and validation procedures. A simulation language should be used for the solution of typical problems.
Prerequisite: Consent of Department Head.

5339 Information System Analysis **3:3:0**
Methods and considerations for planning, organizing, implementing, and evaluating information systems; current systems analysis tools and techniques are presented.
Prerequisite: Consent of Department Head.

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 Head.

5402 Microcomputers I **3:3:0**
Architecture, hardware components, languages, operating systems, software systems and utilization of microcomputers. Not for Computer Science Majors.
Prerequisite: Consent of Department Head.

5403 Microcomputers II **3:3:0**
Continuation of CS 5402. Not for Computer Science Majors.
Prerequisite: Consent of Department Head.

669A-669B Thesis **3:3:0**
Thesis.
Prerequisite: Consent of Department Head.

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 pure and 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 deficiences in undergraduate mathematics.

Admission to Candidacy

In order to be admitted to candidacy a student must

1. Score 1100 or higher on the Graduate Record Examination.
2. Successfully complete 12 semester hours of approved graduate work in mathematics.
3. Remove any deficiencies in mathematics designated by the Graduate Advisor and the Department Head.
4. 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 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 a committee designated by the Graduate Faculty.
3. Include at least three course from among the following five possibilities:
   Math 531 Theory of Functions of a Real Variable
   Math 532 Modern Algebra
   Math 534 Topology
   Math 5310 Numerical Analysis **or** Math 4315E Numerical Analysis
   Math 5311 Complex Variables **or**
   Math 431G Complex Variables
4. Satisfy the general degree requirements as set forth in this catalog.

Graduate Faculty

Associate Professor Joseph A. Baj, II
Topology, analysis

Professor George Berzsenyi
Analysis, problem solving

Professor Sterling C. Crim
Applied mathematics

Associate Professor Michael A. Laidacker
Topology, applied mathematics

Associate Professor Kwan R. Lee
Statistics

Assistant Professor Alec Matheson
Functional and numerical analysis

Professor Jeremiah M. Stark
Analysis, applied mathematics

Associate Professor Sam M. Wood, Jr.
Analysis, abstract algebra

Mathematics Courses

531 Theory of Functions of Real Variable **3:3:0**
Analytical functions, pathological functions, set functions, Riemann integral, measure theory, Lebesque integral, Riemann-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 Mathmatics 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 Data Processing **3:3:0**
Includes a history of computers, an overview of computer and data organization, computer languages, program design, and applications to computational mathematics.
Prerequisite: Graduate standing and 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 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 instuctor.

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**
Prerequistie: Approval of graduate advisor.

The following list of 400G level courses and graduate engineering courses may be taken for graduate credit, with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University, or in this Bulletin.

Mth 4202G Partial Differential Equations
Mth 4203G Vector Analysis
Mth 4315G Numerical Analysis
Mth 4316G Mathematical Programming
Mth 4321G Least Squares and Regression Analysis
Mth 4322G Analysis of Variance
Mth 4325G Finite Element Analysis
Mth 433G Linear Algebra II
Mth 435G Introductory Topology
Mth 4351G Cultural Approach to Mathematics
Mth 437G Mathematical Theory of Probability
Mth 438G Statistical Methods
Egr 5303 Regression Analysis
Egr 5304 Nonlinear Programming
Egr 5305 Reliability
Egr 5316 Operations Research
Egr 5319 Design of Experiments

A tiny client of the Lamar Speech and Hearing Center receives the attention of a graduate audiology student during a test of middle-ear function.

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, theatre, speech pathology and audiology, a Master of Science degree in Deaf Education and the Master of Music and Master of Music Education degrees.

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 Art

The Department of Art offers the following graduate courses in support of the Master of Education degree programs in Elementary Education and in Supervision.

Graduate Faculty

Professor Jerry A. Newman
Studio art

Art Courses

5338 Research in Art History **3:0:3**
An examination of a selected topic in art history including production of a research paper. May be repeated for credit when the subject varies.

5395 Graduate Studio Art **0:6:3**
Individual study at the graduate level of a specific area within the visual arts field. May be repeated for credit when the subject varies.

Department of Communication

The Master of Science degree is offered by the Department of Communication in Speech and Deaf Education. Approved majors under the Master of Science degree in Speech include public address, Theatre, speech pathology and audiology. The master's 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 the above fields of study. Persons seeking admission to these programs must meet the general requirements for admission that are outlined in this bulletin. In addition, a composite GRE score of 1200 is required for admission to the Department. An exception to these requirements may be made for the deaf adult student wishing to major in Deaf Education (see below). Generally, an applicant should have completed 24 semester hours of undergraduate courses in the appropriate curriculum. Each student's curriculum choices will be guided by a graduate advisor.

Specializations in Speech Pathology/Audiology/Deaf Education

The graduate programs of study in Speech Pathology and Deaf Education are accredited by the American Speech, Language and Hearing Association and the Council on Education of the Deaf, respectively. The Speech and Hearing Center and its academic programs have been designated as one of the 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 of the College of Graduate Studies general degree requirements as listed in this catalog. The candidate must complete a minimum of 36 semester hours, including six semester hours of electives and, in addition, obtain a minimum of 150 supervised clock hours of clinical experience. An optional thesis program may be substituted for the six hours of electives, with faculty approval and advisement.

Students who have completed their Bachelor's degree in one of the above areas at Lamar will have completed the undergraduate core curriculum and are eligible for admission into the graduate program if they meet the minimum entrance requirements of the

Department and College of Graduate Studies. All other applications must be reviewed by a committee of the graduate faculty of the Communication Disorders Program. The committeee will follow the criteria for student/faculty ratios as established by the American Speech, Language and Hearing Association and individual decisions for admission will be made based on: 1. Student appointments 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 admitted to the graduate program with specific curricular deficiencies will be expected to remove the deficiencies before being admitted to candidacy.

Students completing the graduate programs in Speech Pathology and 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. These students will also have completed the academic and clinical requirements for licensure in Audiology or Speech Pathology in Texas and all other states which require licensure. Further, those students desiring to practice Audiology or Speech Pathology in the public schools will not have to complete additional requirements. The Texas Education Agency in 1984 determined the license to be the credential of choice.

Students completing the graduate program in Deaf Education will be eligible for national certification in Deaf Education (CED). 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 in the masters degree curriculum.

Students who wish to pursue professional credentials in either speech pathology or audiology **and** deaf education may do so with the approval of the Coordinator of Graduate Studies and the Director of Communication Disorders. This combined program of study leads to eligibility for the Certificate of Clinical Competence (see below), state licensure in speech pathology or audiology and certification from the Council on Education of the Deaf and the Texas Education Agency. Completion requires an extended graduate program of study in order to meet both the academic and clinical training requirements.

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 60 semester hours that includes 18 hours in fundamentals and 42 hours in the management of disorders of communication. Of these 42 hours, 24 not including thesis must be in courses in either Speech Pathology or Audiology, and no fewer than six in either. Furthermore, 30 of the 42 semester hours must be in the courses acceptable toward a graduate degree. Certification also requires 300 hours of CCC supervisor-verified clinical practicum.

Admission Criteria for Deaf Students

An exception to the existing GRE requirements as outlined in this bulletin may be made for those individuals who wish to major in Deaf Education and who are themselves congenitally or pre-lingually deaf. Such applicants must have at least a severe or profound hearing loss across the speech frequencies in their better ear and must utilize a visual-verbal, rather than auditory-verbal, system of communication. For such individuals, an undergraduate cumulative grade point average of 2.5 (4 point system) and an IQ equivalent score of 120 on the Raven Progressive Matrices Test may be accepted in lieu of the GRE requirement.

Specialization in Public Address

The Master's Degree in Speech with a major in public address is a highly flexible graduate program designed to provide students with an opportunity for indepth study in

human communication. Students must complete a minimum of 36 semester hours of study including the following core courses: Spc 530, 532, 533, 5331, 534, and 536. All fully admitted, degree seeking students in the program must enroll in two of the core courses each semester until the core requirements are completed. In addition to the core courses, students will select, with faculty approval, an additional 18 semester hours of study which are consistent with career objectives and professional interest. A thesis may substitute for six semester hours of elective coursework.

Students with undergraduate degrees from disciplines other than speech or communication may be admitted to the program on a provisional basis. These students may be required to complete selected undergraduate coursework in order to strengthen their preparation for graduate study. The Director of the Speech Program will serve as the student's advisor until a major professor is selected.

Through the use of elective coursework and the thesis option, a number of areas of academic and applied emphasis are possible. Graduates of the program may elect to pursue doctoral programs of study in preparation for careers in higher education or apply their knowledge and skills in such fields as communication consulting and management, internal and public relations, personnel training, development and management.

Specialization in Theatre

Specialization in theatre provides students with an opportunity for indepth study in all aspects of the theatre arts. Coursework is offered which allows for advanced study in directing, acting, dramatic criticism, stagecraft and technical theatre. The program is highly individualized through the directed study option. Students are prepared for careers in professional theatre or teaching.

Graduate Faculty

Professor Robert F. Achilles
Communication disorders
Associate Professor May Alice Baker
Speech communication
Associate Professor Irwin D. Bingham
Communication
Associate Professor Don R. Campbell
Communication disorders
Associate Professor W. Patrick Harrigan, III
Speech communication
Professor DeWitte T. Holland
Speech communication
Professor S. Walker James
Speech communication
Associate Professor Jess Freeman King
Communication disorders
Associate Professor Lane Roth
Communication
Professor Robert Moulton
Communication disorders
Professor Olen Pederson
Communication disorders

Speech Courses

530 Communication Research **3:3:0**
Empirical research methodologies and design for knowledge discovery and validation.

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 Cleft Palate **3:3:0**
Nature, evaluation and treatment of speech disorders related to orofacial anomalies.

5305 Diagnostics and Counseling **3:3:0**
Evaluation and counseling procedures in communication disorders.

5306 Language Disorders and Mental Retardation **3:3:0**
Two topics: a) language disorders and b) communication problems relating to the mentally retarded.

5307 Articulation Disorders **3:3:0**
Nature, evaluation and treatment of articulation disorders.

5308 Advanced Speech Science 3:3:0
Acoustic nature of speech perceptual processes. Project on spectrography required.

5309 Advanced Clinical Practice 3:0:10
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 3:3:0
Methods, curriculum and classroom procedures for the teacher of the deaf.

5312 Advanced Manual Communication 3:3:0
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.

5314 Advanced Speech for the Deaf 3:3:0
Curricular and methodological considerations for improving the speech of the deaf.

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 3:3:0
Study of otologic pathology and influence upon auditory/vestibular systems.

5323 Electrophysical Assessment of Hearing 3:3:0
Current Electrophysiological auditory assessment; includes ENG, BSER, and Impedance.

5324 Advanced Hearing Aids 3:3:0
Pros and cons of amplification theory and practicum.

5325 Advanced Directing 3:2:3
Theory and problems in directing plays of different periods and styles including musical comedy.
Prerequisite: The 335 or equivalent.

5326 Psychology of Deafness 3:3:0
Psychological, personal and social impact of deafness.

5327 Advanced Auditory Rehabilitation 3:3:0
Speech reading, auditory training, amplification and counseling for the aurally impaired.

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 analyses of communication processes and systems.

5340 Studies in Modern Theater 3:3:0
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 reqeated once for credit.

536 Communication Theory 3:3:0
Study of 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.

Below is the approved list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.

430G Creative Communication
430G Problems and Projects in Speech
4301G Advanced Speech Pathology
4302G Advanced Audiology
431G Problems and Projects in Theater
431G Laws and Ethics of Mass Media
432G History and Principles of American Journalism
4324G Nonverbal Communication
434G Advanced Stagecraft
434G Persuasion
4341G Advanced Interviewing
436G History of Theater
437G Directing Secondary School Theater and Speech Activities
438G Broadcast News
439G Seminar in Fine Arts, Rhetoric and Public Address
4311G Theory and Practice of Scenery and Lighting Design
4312G Costume Design and Construction
4371G Advanced Oral Interpretation
4381G Rhetoric of Social Movements
4383G Print Advertising
4391G Advanced Television Production

Department of Music

The Department of Music offers the following graduate degrees: the Master of Music in Performance and the Master of Music Education. These 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 bachelors 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.

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 twelve 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 eighteen 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.

Graduate Faculty

Professor Joseph B. Carlucci
Woodwinds, Departmental Director of Graduate Studies
Associate Professor J. N. Collier
Musicology
Assistant Professor Barry W. Johnson
Brass, music education
Professor John R. LeBlanc
Voice, choral
Assistant Professor Raul S. Ornelas
Brass, music education
Associate Professor James M. Simmons
Woodwinds, music education
Associate Professor Joseph Truncale
Voice, opera

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 in 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 contries.

534 Survey of Medieval Music 3:3:0
Comprehensive study of the period, from the early Christian Church to c. 1450.

535 Survey of Renaissance Music 3:3:0
Comprehensive study of the period, from c. 1430 to c. 1600. Emphasis on advances in musical form, stylistic developments and performance practices.

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.

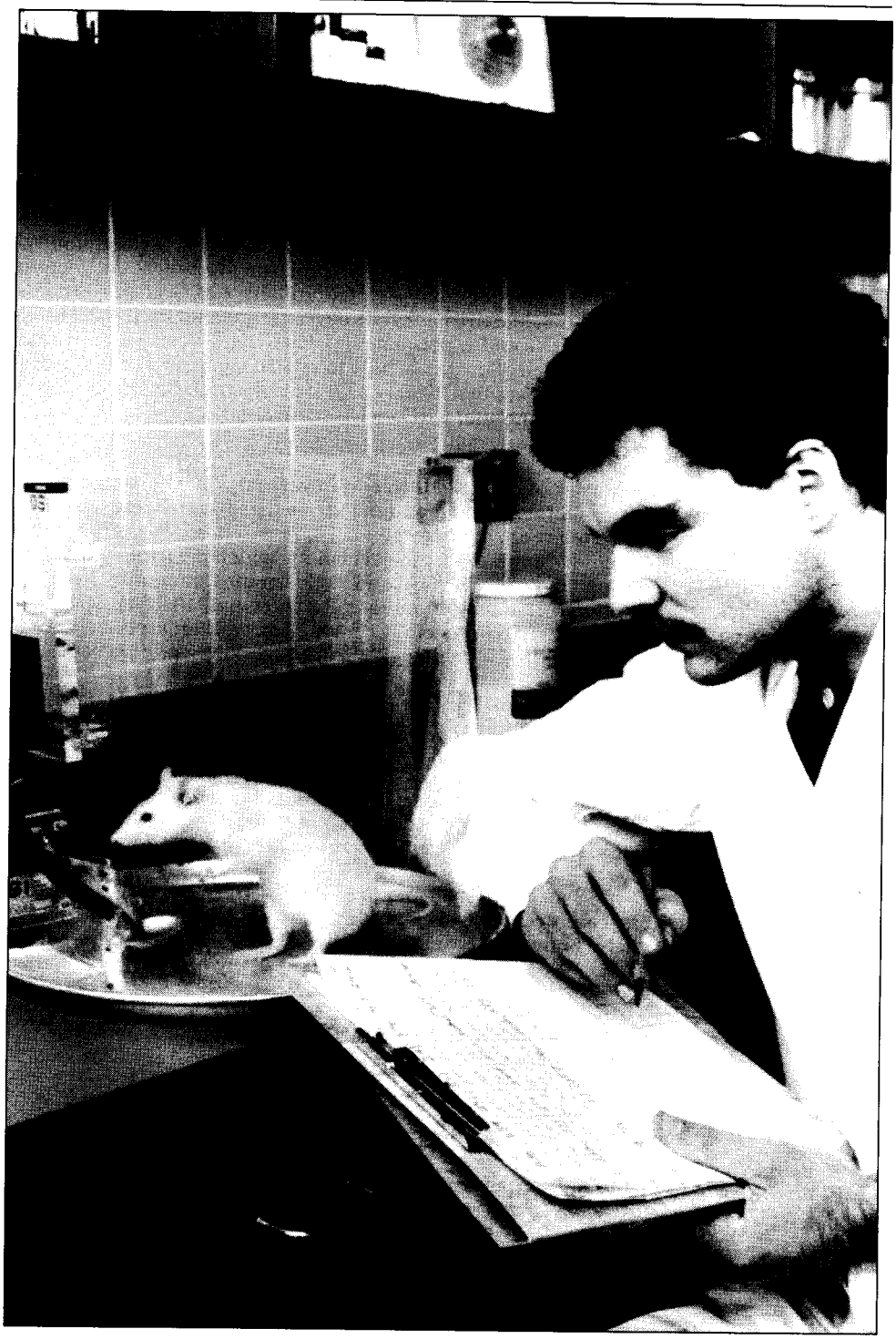
536 Pedagogy of Theory 3:3:0
The principles and techniques of teaching the various branches of music theory, including principles of learning, history of theory, critical study of appropriate texts and supervised teaching of music theory classes.

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 3:A:0
Individual projects for students with specialized needs.
Prerequisite: Approval of graduate advisor.

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



With a little help from a friend, a Lamar psychology student studies animal behavior and records his observations during a laboratory session.

College of Health and Behavioral Sciences

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 bachelors 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 that 1000 (V + Q) are not usually accepted. International Students must present a minimum GRE verbal score of 400.

Degree Requirements

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

1. Forty-two semester hours of course work in psychology which must include twelve semester hours in Psychology 530, 531, 532, and 5323. For the Community Psychology Program, an additional 12 semester hours in Psychology 5310, 5311, 5312 and 5313 is required. In the Industrial Psychology Program, an additional eleven semester hours is required, including Psychology 5320, 5321, 5322 and two semester hours in Psychology 512.
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 course work listed in #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 or 669A.
3. Six-seven additional semester hours of 400G and/or 500 level courses in an approved field of study.
4. Six semester hours in Psychology 5330 and 5331.
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 an exempt agency as defined by the *Psychologists' Certification and Licensing Act*. Students in training are expected to be aware of and abide by the *Psychologists' 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 head 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

Associate Professor Ann M. Die
Individual and group psychotherapy, intellectual/personality assessment

Associate Professor James K. Esser
Social, industrial-organization psychology, leadership

Assistant Professor Joanne S. Lindoerfer
Clinical Psychology, community psychology

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

Assistant Professor Joyce E. Shaheen
Developmental and cognitive psychology

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

Psychology Courses

510 Clinic Practice **1:A:0**
Prepracticum experience.
Prerequisite: Regular admission to the program and consent of the instructor.

512 Research Practicum: Industrial-Organizational Psychology **1:A:0**
Individualized laboratory or field research activities in industrial-organizational 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 industrial-organizational graduate students prior to eligibility for Psy 5330 with a maximum credit of 3 semester hours allowed.

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: Acceptance to psychology graduate program and consent of the instructor.

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.

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 bivariate 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.

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.

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 circumstnaces, 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 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 Psychology program if they elect three additional hours from the approved program courses.
Prerequisite: Psy 5330.

5332 Practicum III **3:A:0**
Supervised internship in the area of particular interest to the student upon approval of the graduate advisor. The practicum includes training in community mental health intervention skills and diagnostic abilities.
Prerequisite: Psy 5331 and consent of instructor.

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

Below is the list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor and instructor. Course descriptions may be found in the Bulletin of Lamar University.

431G Sensation and Perception
435G Leadership and Group Dynamics
436G Learning
438G Physiological Psychology
439G Contemporary Problems in Psychology

The joy of accomplishment, like the traditional graduate robe, cloaks the Lamar University graduate degree recipient on commencement day.

Directory of Personnel 1987-88

Board of Regents

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Thomas M. Maes II, Vice Chairman ..... *Beaumont*
Joseph D. Deshotel, Secretary ..... *Beaumont*
Otho Plummer, Chairman Emeritus ..... *Beaumont*
Lloyd Hayes, Chairman Emeritus ..... *Port Arthur*
Truman Arnold ..... *Texarkana*
Donna Davis ..... *Bryan*
George A. Dishman Jr. ..... *Beaumont*
Wayne Reaud ..... *Beaumont*

Administration

McLaughlin, George E., *Ed.D., Chancellor*
Baxley, Oscar K., *M.B.A., Vice Chancellor for Finance*
Leonard, W. S., *M.S., Vice Chancellor for Development*
Franklin, Billy J., *Ph.D., President, Lamar University-Beaumont; Chief Academic Officer, Lamar University System*
Nylin, William C., *Ph.D., Executive Vice President for Finance and Operations*
Johnson, Andrew J., *Ph.D., Vice President for Student and University Affairs*
Brickhouse, J. Earl, *B.S., Executive Director for Public Affairs*
Wooster, Ralph A., *Ph.D., Associate Vice President for Academic Affairs; Dean of Faculties*
Monroe, W. Sam, *L.L.D., President, Lamar University-Port Arthur*
Welch, Joe Ben, *Ph.D., President, Lamar University-Orange*
Breaux, Merlin, *B.S., President, John Gray Institute*

Council of Deans/Academic Administration

Bell, Myrtle L., *Ed.D., Dean, College of Health and Behavioral Sciences*
Brentlinger, W. Brock, *Ph.D., Dean, College of Fine Arts and Communication*
Gwin, Howell H., Jr., *Ph.D., Director of Graduate Studies*
Idoux, John P., *Ph.D., Dean, College of Arts and Sciences*
Johnston, Maxine, *M.L.S., Director of Library Services*
Kay, John, *M.A., Director of Admissions Services*
McCabe, Dennis P., *Ph.D., Dean, College of Education*
Rode, Elmer G., Jr., *M.Ed., Dean of Admissions and Registrar*
Rush, James, *M.Ed., Director of Academic Services*
Shipper, Kenneth E., *Ph.D., Dean, College of Technical Arts*
Sullivan, LeRoy, *Ed.D., Director of Public Services*
Turco, Charles P., *Ph.D., Dean, College of Graduate Studies and Research*
Young, Fred M., *Ph.D., Dean, College of Engineering*

The Graduate Council

Turco, Charles P., *Professor of Biology and Dean, College of Graduate Studies and Research*
Marriott, Richard G., *Associate Professor of Psychology and Head, Department of Psychology*
Ortego, J. Dale., *Professor of Chemistry*
Swerdlow, Robert A., *Professor of Marketing and Graduate Coordinator, College of Business*

Thompson, Bob, *Professor of Education and Head, Department of Professional Development and Graduate Studies*

Zaloom, Victor, *Professor of Industrial Engineering and Head, Department of Industrial Engineering*

Gwin, Howell H., Jr., *Professor of History and Director of Graduate Studies*

The Graduate Faculty 1987-88

The following list reflects the status of the graduate faculty of Lamar University as of Fall, 1986. 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.

Achilles, Robert F. *1963, Regents' Professor of Speech*
B.S., McPherson College; M.A., Ph.D., Wichita State University

Akers, Hugh A. *1977, Associate Professor of Chemistry*
B.S., University of California at Riverside; Ph.D., University of California at Berkeley

Allen, Charles L. *1979, Associate Professor of Economics*
B.A., East Texas State University; M.A., Ph.D., University of Arkansas

Anderson, Adrian N. *1967, Professor of History and Head, Department of History*
B.S., M.A., Ph.D., Texas Tech University

Anderson, Virginia *1960, Associate Professor of Home Economics*
B.S., Georgia State College for Women; M.Ed., Trinity University

Baj, Joseph A. II *1964, Associate Professor of Mathematics*
B.A., Kent State University; M.A., The University of Texas

Baker, Christopher *1976, Associate Professor of 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

Barnes, Robert J. *1960, Regents' Professor of English*
B.A., M.A., The University of Kansas; Ph.D., The University of Texas

Bean, Wendell C. *1968, Professor of Electrical and Nuclear 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

Bell, Alice C. *1971, Professor of Health, Physical Education and Dance, Head, Department of Health, Physical Education and Dance, and Women's Athletic Director*
B.S., M.A., Ph.D., Texas Woman's University

Berzsenyi, George *1969, Professor of Mathematics*
B.A., M.S., University of Dallas; M.S., Ph.S., Texas Christian University

Bingham, Drake *1985, Associate Professor of Communication*
B.A., Northwestern State College; M.A., University of Oklahoma, Ph.D., Southern Illinois University

Boatwright, Douglas *1976, Assistant Professor of Health, Physical Education and Dance*
B.S., University of Alabama in Birmingham; M.S., Ph.D., Louisiana State University

Bost, David L. *1949, Professor of Graduate Studies in Education*
B.A., Hardin-Simmons University; M.J., The University of Texas; Ph.D., East Texas State University; Licensed Psychologist

Briggs, Kenneth R. *1966, Regents' Professor of Graduate Studies in Education*
B.S., M.Ed., Ed.D., North Texas State University

Brunson, Richard *1982, Associate Professor of Management*
B.S., U.S. Military Academy; M.B.A., Babson College; Ph.D., Michigan State University

Brust, Melvin R. *1978, Assistant 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

Burke, Charles M. *1970, Professor of Curriculum and Instruction*
B.A., Southeastern Louisiana University; M.Ed., Louisiana State University; Ed.D., The University of Southern Mississippi

Burke, William T. III *1982, Assistant Professor of Business Law*
B.A., Morehouse College; J.D., Howard University Law Center

Cameron, Margaret D. *1956, Regents' Professor of Chemistry*
B.A., Texas Woman's University; M.S., University of Houston; Ph.D., Tulane University

Campbell, Don *1984, Associate Professor of Communication*
B.A., Brigham Young University; M.S., Gaulledet College; M.A., California State University; Ed.D., Brigham Young University

Caples, Stephen C. *1984, Associate Professor of Finance*
B.A., Lake Superior College; M.B.A., Louisiana Tech University; Ph.D., University of Texas at Arlington

Carley, Wayne W. *1983, Assistant Professor of Biology*
B.S., M.A., Ph.D., University of California

Carlucci, Joseph B. *1971, Professor of Music*
B.M., M.M., Yale University; D.M.A., Eastman School of Music, University of Rochester

Carroll, John M. *1972, Associate Professor of History*
A.B., Brown University; M.A., Providence College; Ph.D., University of Kentucky

Carruth, Carl *1966, Assistant Professor of Industrial Engineering*
B.S., Lamar University; M.S., University of Houston; Ph.D., The University of Texas at Arlington; Registered Professional Engineer

Cass, Michael A. *1982, Associate Professor of Professional Development and Graduate Studies*
B.A., University of Vermont; M.A., Ed.D., University of Alabama

Chen, Daniel H. *1982, Assistant Professor of Chemical Engineering*
B.S., National Cheng-Kung University; M.S. National Taiwan University; Ph.D., Oklahoma State University

Cherry, Richard T. *1966, Regents' Professor of Finance and Head, Department of Management, Marketing, and Finance*
B.A., Texas A&M University; M.A., Ph.D., The University of Texas

Choi, Jai-Young *1982, Associate Professor of Economics*
B.A., Yonsei University; M.A., University of Kansas; Ph.D., University of Oklahoma

Chu, Hsing Wei *1979, Assistant Professor in the Department of Industrial Engineering*
B.D. Tunghai University; M.S., Asian Institute of Technology; Ph.D., University of Texas

Collier, J. N. *1955, Associate Professor of Music*
B.M., University of Houston; M.M., Southern Methodist University

Cooke, James L. *1956, Regents' Professor of Electrical Engineering*
B.S., Texas Tech University; M.S., The University of Texas; Ph.D., Northwestern University; Registered Professional Engineer

Cooper, Mark J. *1984, Assistant Professor of Curriculum and Instruction*
B.S.E., M.S.E., Henderson State University; Ph.D., Georgia State University

Crim, Sterling C. *1964, Professor of Mathematics*
B.A., Lamar University; B.S., Baylor University; M.Ed., North Texas State University; M.A., George Peabody College for Teachers; Ph.D., The University of Texas

Crowder, Vernon Roy *1967, Professor of Health, Physical Education and Dance*
B.S., Lamar University; M.S., Ph.D., Louisiana State University

Crum, Floyd M. *1955, Regents' Professor of Electrical Engineering*
B.S., M.S., Louisiana Stae University; Registered Professional Engineer

Daigrepont, Lloyd M. *1981, Assistant Professor of English*
B.A., M.A., Ph.D., Louisiana State University

Daniali, Saeed *1981, Assistant Professor of Civil Engineering.*
B.S. Tehran Polytechnique; M.S. School of Engineering of Strasbourg; Ph.D., University of Lille

Darsey, Nancy S. *1955, Professor of Office Administration and Head, Department of Administrative Services*
B.B.A., M.B.A., Texas Tech University; Ph.D., Louisiana State University

Davidson, Jane S. *1970, Professor of Home Economics*
B.S., Texas Woman's University; M.S., Sam Houston State University; Ph.D., Texas Woman's University

Die, Ann H. *1977, Regent's Professor of Psychology*
B.S., Lamar University; M.Ed., University of Houston; Ph.D., Texas A&M University

Dorris, Kenneth L. *1965, Associate Professor of Chemistry*
B.S., Ph.D., The University of Texas

Drapeau, Richard A. *1983, Assistant Professor of Business Analysis*
B.S., Arizona State University; M.B.A., Lamar University; Ph.D., Texas A & M 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, Assistant Professor of Political Science*
B.A., Southwest Texas State University; M.A., Texas Tech University; Ph.D., The University of Oklahoma

Duncan, Edwin *1986, Assistant Professor of English*
B.A., Texas Tech University; M.A., Ph.D., The University of Texas

Esser, James K. *1976, Associate Professor of Psychology*
B.S., University of Iowa; Ph.D., Indiana University

Fritze, Ronald H. *1984, Assistant 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., The University of Texas

Godkin, Roy Lynn *1981, Assistant Professor of Management*
A.B., Bethany Nazarene College; M.B.E., Nazarene Theological Seminary; M.A., Sangamon State University; Ph.D., North Texas State University

Griffin, Vernon H. *1970, Professor of Graduate Studies in Education*
B.S., M.Ed., Sam Houston State University; Ed.D., University of Houston

Gwin, Howell H., Jr. *1962, Professor of History and Director of Graduate Studies*
B.A., M.A., Ph.D., Mississippi State University

Gwynn, Robert S. *1976, Assistant Professor of English*
A.B., Davidson College; M.A., M.F.A., University of Arkansas

Haiduk, Michael W. *1983, Assistant Professor of Biology*
B.S., M.S., Texas A & M University; Ph.D., Texas Tech University

Hansen, Keith C. *1967, Professor of Chemistry and Head, Department of Chemistry*
B.S., Lamar University; Ph.D., Tulane University

Hargrove, W. Richard *1964, Professor of Curriculum and Instruction*
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., The University of Georgia; Ph.D., Oklahoma State University

Harrigan, W. Patrick, III *1969, Associate Professor of Speech*
B.S., Loyola University; M.F.A., Tulane University; Ph.D., Louisiana State University

Harris, William T. *1983, Associate Professor of Accounting*
B.B.A., M.B.A., Texas Tech University; Ph.D., Louisiana State University; Certified Public Accountant

Harvill, John B. *1984, Associate Professor of Computer Science*
B.A., M.A., North Texas State University; Ph.D., Southern Methodist University

Haven, Sandra L. *1973, Associate Professor of Graduate Studies in Education*
B.S., Lamar University; M.A., Central Michigan University; Ed.D., University of Houston

Hawkins, Charles F. *1966, Regents' Professor of Economics, Acting Head, Department of Economics*
B.A., Lamar University; M.A., Ph.D., Louisiana State University

Heumann, J. Mark *1985, Assistant Professor of English*
B.A., Cornell University; M.A., University of Houston; Ph.D., State University of New York at Stony Brook

Ho, Tho-Ching *1982, Associate Professor in the Department of Chemical Engineering*
B.S., National Taiwan University; M.S., Ph.D., Kansas State University

Holland, DeWitte T. *1971, Professor of Speech*
A.B., Howard College; B.S., U.S. Merchant Marine Academy; B.D., Southern Baptist Theological Seminary; M.A., University of Alabama; Ph.D., Northwestern University

Holm, Belle Mead *1963, Professor of Health, Physical Education and Dance*
B.S., M.S., George Peabody College for Teachers; Ph.D., Texas Woman's University

Holt, V. Raye *1975, Professor of Health, Physical Education and Dance; Coordinator of Health, Physical Education and Dance Graduate Programs*
B.S., Georgia State College for Women; M.S., Baylor University; Ed.D., University of Tennessee

Hopper, Jack R. *1969, Professor of Chemical Engineering and Head, Department of Chemical Engineering*
B.S., Texas A & M University; M.Ch.E., University of Delaware; Ph.D., Louisiana State University; Registered Professional Engineer

Hunt, Madelyn D. *1984, Assistant 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 and Dean, College of Arts and Sciences*
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., The University of Texas

James, S. Walker *1965, Professor of Speech and Director of Theater*
B.A., M.A., Baylor University; M.F.A., Case Western Reserve University; Ph.D., University of Denver

Johnson, Aileen S. *1986, Associate Professor of Graduate Studies in Education*
B.A., Western Michigan University; M.A., Ph.D., Arizona State University

Johnson, Barry W. *1983, Assistant Professor of Music*
B.M.E., M.A., Sam Houston State University; Ed.D., University of Houston

Jolly, Sidney W., Jr. *1971, Associate Professor of Health, Physical Education and Dance, Athletic Director, Head Track Coach*
B.S., Lamar University; M.Ed., Stephen F. Austin State University; M.S., Lamar University; Ed.D., North Texas State University

Jones, Kirkland C. *1973, Professor of English*
B.A., University of Washington; M.A., Texas Southern University; Ph.D., University of Wisconsin

Jones, Richard W. *1975, Associate Professor of Accounting*
B.S.C., Texas Christian University; M.A., University of Alabama; Ph.D., University of Arkansas; Certified Public Accountant

Jordan, Donald L. *1979, Assistant Professor of Computer Science*
B.S., East Texas Baptist College; B.S., Lamar University; M.S., Air Force Institute of Technology; Ph.D., University of Houston

Joshi, Narayan R. *1984, Associate Professor of Mechanical Engineering*
B.S., M.S., Poona University; M.S., Ph.D., Johns Hopkins University

Karlin, Andrea *1981, Associate Professor of Curriculum and Instruction*
B.A., Hunter College; M.A., Ph.D., University of New Mexico

King, Jess Freeman *1978, Associate Professor of Communication*
B.S., McNeese State College; M.S., Eastern New Mexico University; Ed.D., McNeese State College

Koehn, Enno *1984, Professor of Civil Engineering and Head, 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, Assistant Professor of Computer Science*
B.A. Young-Nam; M.S., University of Hawaii; Ph.D. University of Pittsburgh

Kumar, Subodh *1981, Associate Professor of Civil Engineering*
B.Tech, I.I.T., Kharagpur; M.Tech., I.I.T., Bombay; M.S., Iowa State University; Ph.D., University of Oklahoma; Registered Professional Engineer

Laidacker, Michael A. *1967, Associate Professor of Mathematics*
B.S., M.S., Lamar University; Ph.D., University of Houston

Lane, James E. *1967, Assistant Professor of Curriculum and Instruction*
B.A., Abilene Christian University; M.Ed., Lamar University; Ed.D., North Texas State University

LeBlanc, John R. *1971, Professor of Music*
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, Kwan Rim *1981, Associate Professor of Mathematics*
B.S., M.S., Seoul National University; Ph.D. Southern Methodist University

Li, Ku-Yen *1978, Associate Professor of Chemical Engineering*
B.S., M.S., Cheng Kung University; Ph.D., Mississippi State University; Registered Professional Engineer

Lindoerfer, Joanne *1980, Assistant Professor of Psychology*
B.S., Loyola University, Chicago; M.S., Ph.D., University of Texas

Lowrey, Mildred A. *1974, Professor of Health, Physical Education and Dance and Academic Director*
B.S., Howard College; M.S., Alabama College; Ph.D., Florida State University

Mackey, Howard *1963, Professor of History*
B.A., University of Toledo; M.A., Ph.D., Lehigh University

Malnassy, Phillip G. *1973, Associate Professor of Biology*
A.B., Hutner College; Ph.D., Rutgers University

Mantz, Peter A. *1983, Associate Professor of Civil Engineering*
B.Sc., Newcastle University; M.Sc., Southampton University; Ph.D., London University; Chartered Engineer (U.K.)

Marriott, Richard G. *1976, Associate Professor of Psychology and Head, Department of Psychology*
B.S., Weber State College; M.A., Ph.D., University of New Mexico

Martinez, Eugene P. *1959, Regents' Professor of Mechanical Engineering*
B.S., Lamar University; M.S., William Marsh Rice University; Ph.D., University of Houston

Matheson, Alec L. *1983, Assistant Professor of Mathematics*
B.S., University of Washington; Ph.D., University of Illinois

McAdams, LeBland *1967, Associate Professor of Home Economics and Head, Department of Home Economics*
B.S., Sam Houston State University; M.Ed., University of Houston; Ph.D., Texas Woman's University

McCabe, Dennis P. *1984, Professor of Graduate Studies in Education and Dean, College of Education*
B.A., M.S., New Mexico Highlands University; Ph.D., University of New Mexico

McGraw, J. Leon, Jr. *1967, Professor of Biology*
B.S., Lamar University; M.S., Ph.D., Texas A & M University

McGuire, Sterling W. *1956, Professor of Computer Science*
B.S, M.A., Sam Houston State University; Ph.D., Texas A & M University

Mei, Harry T. *1960, Professor of Mechanical Engineering*
B.S., National Taiwan University; M.S., Ph.D., The University of Texas; Registered Professional Engineer

Montano, Carl B. *1981, Assistant 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., The University of Texas; Registered Professional Engineer

Moss, Jimmy D. *1986, Assistant Professor of Finance*
B.S., M.B.A., D.B.A., Mississippi State University

Moulton, Robert D. *1974, Professor of Speech and Director of Speech Pathology*
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

Ornelas, Raul Sosa *1972, Assistant 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, Professor of Chemistry*
B.S., University of Southwestern Louisiana; Ph.D., Louisiana State University

Pampe, William R. *1966, Professor of Geology*
A.B., M.S., University of Illinois; Ph.D., University of Nebraska

Parigi, Sam F. *1961, Regents' Professor of Economics*
B.S., St. Edward's University; M.B.A., Ph.D., The University of Texas

Partin, Charles A. *1964, Professor of Economics*
B.S., Stephen F. Austin State University; M.A., Ph.D., The University of Texas

Pearson, William M. *1969, Professor of Political Science and Head, Department of Political Science*
B.S., Sam Houston State University; M.A., Texas A&M University; Ph.D., Louisiana State University

Pederson, Olen T. *1975, Professor of Communication*
B.S., University of Houston; M.S., East Texas State University; Ph.D., University of Oklahoma

Peebles, Hugh O. Jr. *1963, Associate Professor of Physics*
B.S., The University of Texas; M.S., Ph.D., Oklahoma State University

Pizzo, Joseph F. Jr. *1964, Professor of Physics*
B.A., The University of Saint Thomas; Ph.D., University of Florida

Platt, Annette E. *1963, Associate Professor of English*
B.A., M.A., University of Texas; Ed.D., McNeese State University

Price, Donald I. *1983, Assistant Professor of Economics*
B.A., Hendrix College; M.A., Ph.D., University of Arkansas

Price, R. Victoria *1972, Associate Professor of Modern Languages*
B.A., Tift College; M.A., M.Ed., Lamar University; M.A., Ph.D., Rice University

Priest, Dale G. *1986, Assistant Professor of English*
B.A., Lamar University; M.A., Ph.D., Rice University

Ramsey, Jed J. *1965, Professor of Biology*
B.S., Kansas State University of Agriculture and Applied Science; M.S., Kansas State Teachers College; Ph.D., Oklahoma State University

Read, David R. *1965, Professor of Computer Science*
B.S., Lamar University; M.S., North Texas State University; Ph.D., University of Houston

Reynolds, Richard Clay *1978, Associate Professor of English*
B.A., University of Texas at Austin; M.A., Trinity University; Ph.D., University of Tulsa

Rigney, Carl J. *1957, Professor of Physics*
B.S., University of Louisville; M.S., Ph.D., Northwestern University

Rogers, Bruce G. *1961, Professor of Civil Engineering*
B.S., University of Houston; M.S., Ph.D., The University of Illinois; Registered Professional Engineer

Roth, Lane *1978, Associate Professor of Communication*
B.A., New York University; M.A., Ph.D., Florida State University

Runnels, Williams C. *1965, Assistant Professor of Biology*
B.S., M.S., Texas A&I University; Ph.D., Texas A&M University

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The tranquility of the Quadrangle provides an ideal setting for study or leisure activity under tall trees on the campus of Lamar University-Beaumont.

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