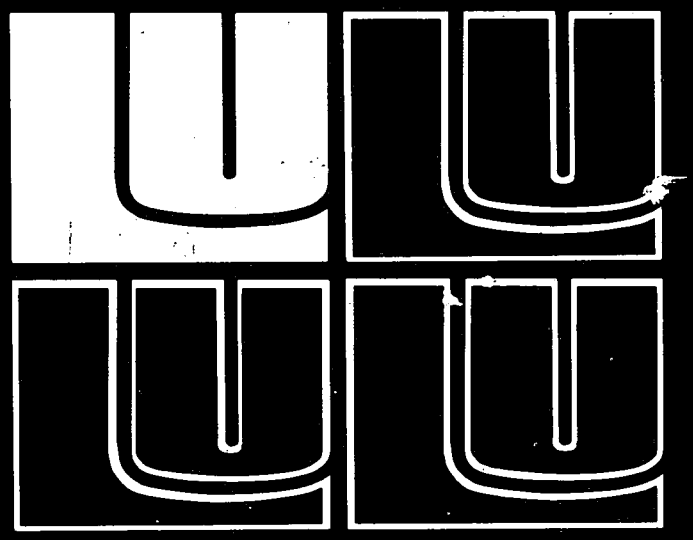

LAMAR UNIVERSITY

Bulletin
1979-81

College of Graduate Studies

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LAMAR UNIVERSITY

College of Graduate Studies

1979-81 Bulletin
Vol. 29 No. 4

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

Lamar University recognizes this bulletin, with all of its degrees, programs and certificates described herein as statements of intent, not of assurance.

The courses, tuition and fees and all other conditions and policies set forth in this catalog issue shall be subject to change without notification.

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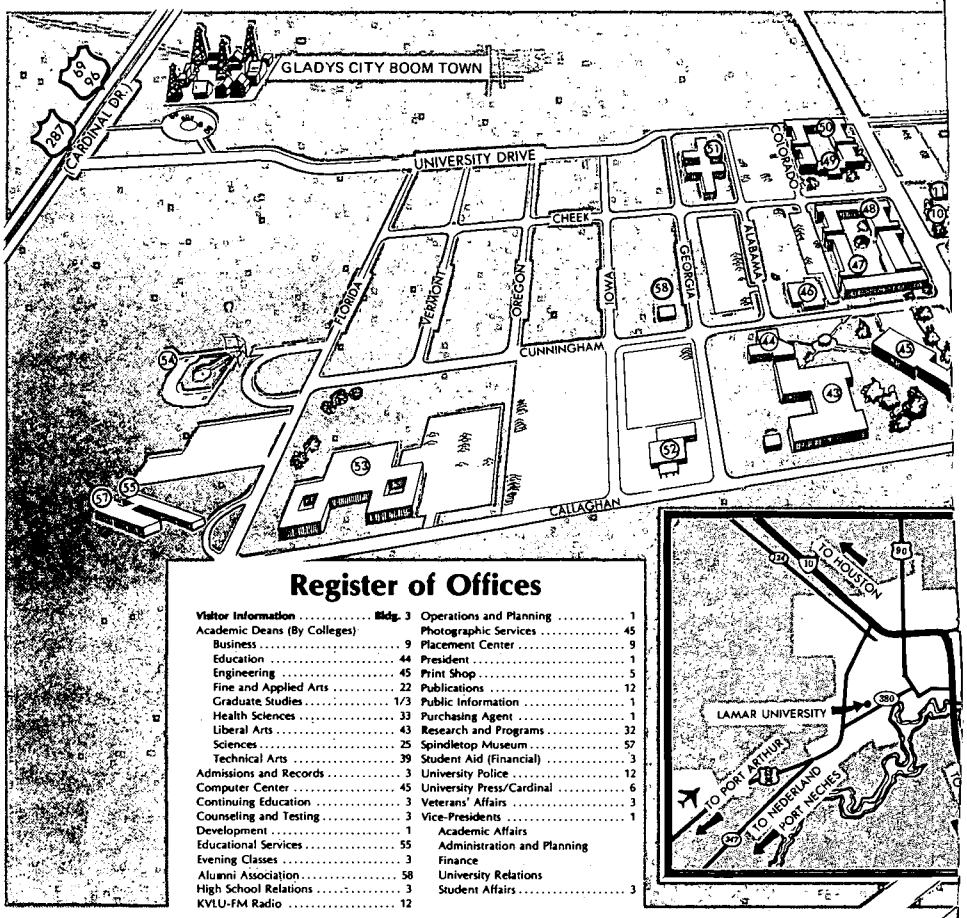

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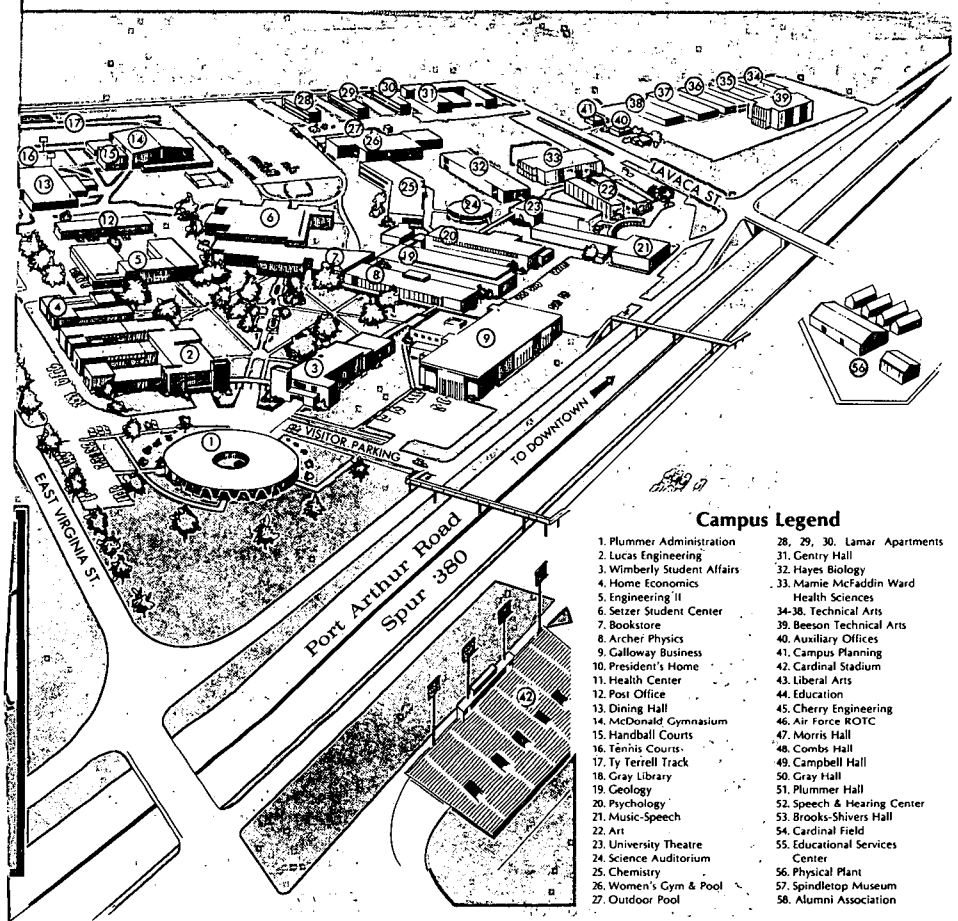
THE CAMPUS

Lamar University's campus has expanded rapidly during the past decade and now encompasses more than 200 acres. The University also has campuses in Orange and Port Arthur.

Guidelines for future expansion of the Beaumont campus are included in a conceptual master plan which will guide development into the year 2000. A large portion of the master plan has been approved by the University's Board of Regents.



Campus Legend

1. Plummer Administration
2. Lucas Engineering
3. Wimberly Student Affairs
4. Home Economics
5. Engineering II
6. Setzer Student Center
7. Bookstore
8. Archer Physics
9. Galloway Business
10. President's Home
11. Health Center
12. Post Office
13. Dining Hall
14. McDonald Gymnasium
15. Handball Courts
16. Tennis Courts
17. Ty Terrell Track
18. Gray Library
19. Geology
20. Psychology
21. Music-Speech
22. Art
23. University Theatre
24. Science Auditorium
25. Chemistry
26. Women's Gym & Pool
27. Outdoor Pool
28, 29, 30. Lamar Apartments
31. Gentry Hall
32. Hayes Biology
33. Mamie McFaddin Ward Health Sciences
34-38. Technical Arts
39. Beeson Technical Arts
40. Auxiliary Offices
41. Campus Planning
42. Cardinal Stadium
43. Liberal Arts
44. Education
45. Cherry Engineering
46. Air Force ROTC
47. Morris Hall
48. Combs Hall
49. Campbell Hall
50. Gray Hall
51. Plummer Hall
52. Speech & Hearing Center
53. Brooks-Shivers Hall
54. Cardinal Field
55. Educational Services Center
56. Physical Plant
57. Spindletop Museum
58. Alumni Association

Architects have placed strong emphasis upon developing a feeling of "monumentality and dignity" with the Mary and John Gray Library as the dominant focus of the campus. The 20-year plan shows the addition of multi-storied buildings.

Calendar

Fall Semester — 1979

AUGUST 1979

21 Dormitories open at 1 p.m.
22 Dining halls open at 4:30 p.m.
Registration begins
23 Registration
24 Registration
27 Classes begin — late registration — no schedule revisions
28 Schedule revisions — late registration
30 Last day for schedule revisions and/or late registration

SEPTEMBER

11 Twelfth Class Day

OCTOBER

11 Last day to drop or withdraw without penalty
19 Last day to apply for December graduation
Last day to pay for diploma; cap and gown

NOVEMBER

5-30 Period for Comprehensive Oral Examinations
8 Comprehensive Written Exam, 1-4 p.m.
21 Thanksgiving holidays begin at 10 p.m.
Dining halls close at 6 p.m.
Dormitories close at 10 p.m.
25 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.
26 Classes resume at 8 a.m.
28 Last day to drop or withdraw

DECEMBER

5-11 Final examinations
12 Dining halls close at 6 p.m.
Dormitories close at 10 p.m.
13 Grades for graduating students due 4:30 p.m.
14 All grades due by noon.
15 Commencement
All grades due by 8:30 a.m.

Spring Semester — 1980

JANUARY 1980

8 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.
9 Registration begins
10 Registration
11 Registration
14 Classes begin — late registration — no schedule revisions
15-18 Schedule revisions — late registration
18 Last day for schedule revisions and/or late registration
29 Twelfth Class Day

FEBRUARY

22 Last day to drop or withdraw without penalty

MARCH

7 Last day to apply for May graduation
Last day to pay for diploma; cap and gown
Spring recess begins at 5 p.m.
Dining halls and dormitories close
16 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.
17 Classes resume at 8 a.m.

APRIL

4 Holiday
1-30 Period for Comprehensive Oral Examinations
10 Comprehensive Written Exam, 1-4 p.m.
23 Last day to drop or withdraw
30-May 6 Final Examinations

MAY

1-6 Final examinations
7 Dining halls close at 6 p.m.
8 Grades for graduating students due 4:30 p.m.
9 All grades due by noon.
10 Commencement
All grades due by 8:30 a.m.

Summer Session — 1980

First Term

JUNE

1 Dormitories open at 1 p.m.
2 Dining halls open at 4:30 p.m.
Registration
3 Classes begin — schedule revisions — late registration
4 Last day for schedule revisions and/or late registration
6 Fourth Class Day
16 Last day to drop or withdraw without penalty
19 Comprehensive Written Exam, 1-4 p.m.
30 Last day to apply for August graduation
Last day to pay for diploma; cap and gown

JULY

3 Last day to drop or withdraw
4 Holiday
7-Aug. 1 Period for Comprehensive Oral Examinations
9 Last class day
11 All grades due by noon

Summer Session — 1980

Second Term

JULY

10 Registration
11 Classes begin — schedule revisions — late registration
14 Last day for schedule revisions and/or late registration
16 Fourth Class Day
24 Last day to drop or withdraw without penalty
Comprehensive Written Exam, 1-4 p.m.

AUGUST

12 Last day to drop or withdraw
15 Last class day
Grades for graduating students due 8:30 a.m.
Dining halls and dormitories close
16 Commencement
All grades due by noon

Fall Semester — 1980

AUGUST 1980

24 Dormitories open at 1 p.m.
25 Dining halls open at 4:30 p.m.
Registration begins
26 Registration
27 Registration
28 Classes begin — late registration — no schedule revisions
29 Schedule revisions — late registration

SEPTEMBER

1 Holiday
2 Last day for schedule revisions and/or late registration
15 Twelfth Class Day

OCTOBER

8 Last day to drop or withdraw without penalty
17 Last day to apply for December graduation
Last day to pay for diploma; cap and gown

NOVEMBER

3-Dec. 5 Period for Comprehensive Oral Examinations
6 Comprehensive Written Exam, 1-4 p.m.
26 Thanksgiving holidays begin at 10 p.m.
Dining halls close at 6 p.m.
Dormitories close at 10 p.m.
30 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.

DECEMBER

1 Classes resume at 8 a.m.
Dining halls open
3 Last day to drop or withdraw
11-17 Final examinations
17 Dining halls close at 6 p.m.
Dormitories close at 10 p.m.
19 Grades for graduating students due 8:30 a.m.
20 Commencement
All grades due by 8:30 a.m.

Spring Semester —1981

JANUARY 1981

11 Dormitories open at 1 p.m.
12 Dining halls open at 4:30 p.m.
Registration begins
13 Registration
14 Registration
15 Classes begin — late registration — no schedule revisions
16-20 Schedule revisions — late registration
20 Last day for schedule revisions and/or late registration
30 Twelfth Class Day

FEBRUARY

25 Last day to drop or withdraw without penalty

MARCH

6 Last day to apply for May graduation
Last day to pay for diploma; cap and gown
Spring recess begins at 5 p.m.
15 Dormitories open at 1 p.m.
16 Dining halls open at 4:30 p.m.
Classes resume at 8 a.m.

APRIL

6-May 1 Period for Comprehensive Oral Examinations
9 Comprehensive Written Exam, 1-4 p.m.
17 Holiday
29 Last day to drop or withdraw

MAY

7-13 Final examinations
Dining halls close at 6 p.m.
Dormitories close at 10 p.m.
15 Grades for graduating students due 8:30 a.m.
16 Commencement
All grades due by 8:30 a.m.
31 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.

Summer Session —1981

First Term

JUNE

1 Registration
2 Classes begin — schedule revisions — late registration
3 Last day for schedule revisions and/or late registration
5 Fourth Class Day
15 Last day to drop or withdraw without penalty
18 Comprehensive Written Exam, 1-4 p.m.
29 Last day to apply for August graduation
Last day to pay for diploma; cap and gown

JULY

2 Last day to drop or withdraw
3 Holiday
6-Aug. 4 Period for Comprehensive Oral Examinations
8 Last class day
10 All grades due by noon

Summer Session — 1981

Second Term

JULY

9 Registration
10 Classes begin
13 Last day for schedule revisions and/or late registration
15 Fourth Class Day
23 Last day to drop or withdraw without penalty
Comprehensive Written Exam, 1-4 p.m.

AUGUST

11 Last day to drop or withdraw
14 Last class day
Grades for graduating students due 8:30 a.m.
Dining halls and dormitories close
15 Commencement
All grades due by noon

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HOW TO ENTER THE COLLEGE OF GRADUATE STUDIES AT LAMAR

1. Complete an application blank and mail to the Dean of Admissions and Records.
2. Ask the Registrar of each college that you attended to send two transcripts to the Dean of Admissions and Records.
3. Have Graduate Record Examination scores (or GMAT scores) sent to the Dean of Admissions and Records.
4. If University housing is desired, send request to Student Housing Office.
5. Submit health data form which will be provided by the University.

General Information

Location

Lamar University, a state-supported institution, is located in Beaumont, 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 Forest.

History

South Park Junior College was established in 1923 and was controlled by the South Park Independent School District. Classes were conducted in the South Park High School Building. An initial enrollment of about 125 students in 1923 had increased to 300 by 1931.

In 1932, the name of the institution was changed to Lamar College. At this time, separate facilities were provided, additional equipment was purchased and new policies instituted. By 1939, enrollment was approximately 640.

Lamar Union Junior College District was created in 1940, and Lamar College was separated from the South Park Independent School District. Bonds were approved and new facilities were constructed on the site of the present main campus.

A movement to expand Lamar College into a four-year state-supported school culminated in the creation of Lamar State College of Technology on September 1, 1951. Since that time, enrollment has increased to more than 12,800 students, and the curriculum has been expanded to include many areas of study. Graduate work in specified fields began in the academic year of 1960-61, and extension work became an integral part of the educational program in 1964. A doctoral program in engineering was added in 1971. Lamar University at Orange, offering first and second year courses, opened in 1969. Lamar University at Port Arthur, also offering first and second year courses, began operation in the fall of 1975. The University also owns 36 acres on Pleasure Island in Port Arthur.

The institution's status as a university became official on August 23, 1971, when the name was changed to Lamar University.

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 president, administrative officers and faculty.

Accreditation and Approval

Lamar University is fully accredited by the Association of Texas Colleges and Universities and by the Southern Association of Colleges and Schools. The College of Graduate Studies is a member of the Council of Graduate Schools in the United States.

Several departments have been accredited by professional agencies. In the College of Engineering, the departments of Chemical, Civil, Electrical, Industrial and Mechanical Engineering are accredited by the Engineers' Council for Professional Development. Other accreditations include the Department of Chemistry, which is accredited by the American Chemical Society; the Department of Music, which is accredited by the National Association of Schools of Music; and the Departments of Elementary and Secondary Education, which are accredited by the National Council for the Accreditation of Teacher Education.

The Texas Education Agency has approved Professional Certification programs in a number of areas.

The Library

The eight-story Mary and John Gray Library has a strong collection of more than 500,000 volumes in support of continuously expanding academic programs. Approximately 20,000 volumes are added to the collection annually. The library subscribes to more than 3,000 periodicals, and as a selective document depository, it has over 50,000 state and federal documents and microforms. Lamar participates in several library networks to extend resources available to Lamar researchers.

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. Its equipment includes a Honeywell 66/20 computer with 196,000 words of main memory, 400,000,000 characters of on line disc storage, extensive communication capability, a variety of remote terminals and other associated peripheral equipment.

Counseling and Testing Center

Lamar University maintains a Counseling and Testing Center to serve students encountering educational, social or personal difficulties as well as provide testing services. The center is staffed with a fully-trained and qualified psychologist, counselors and a psychometrist to assist in the resolution of student problems and questions.

While the Counseling Office 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 maintained as confidential and there are no entries made in the student's records. In addition to counseling, the office maintains a library to assist students in making decisions concerning choices of majors and careers.

The Testing Office coordinates required testing by Lamar University and provides individual testing services which include administering and interpreting appropriate aptitude, vocational interest and personality tests as requested by the Counseling

Center staff. Non-students in need of testing services pay a fee dependent upon the program and type of test taken. The Testing Office also acts as a National Testing Center for programs such as the Graduate Record Examinations, Law School Admission Test, National Teacher Examinations, Graduate Management Admission Test, SAT, ACT, CLEP (advanced standing test), GED (high school equivalency test) and numerous other tests. Information and application forms concerning these tests may be obtained from the Testing Office.

The Counseling and Testing Center is located in the Wimberly Student Affairs Building and observes the office hours of the University. A staff member is also available until 8 p.m. Monday through Thursday for the benefit of students who are attending extended day classes.

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 all costs 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 student 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 the use of students. Two types of service are available: (1) out-patient service for those who have minor ailments but who do not require constant supervision, and (2) infirmary service for those who are in need of the continued attention of the University physician or of nursing care.

It is not possible for the University to provide unlimited medical service. Special medicines, examinations, treatments, X-rays and laboratory tests are not furnished by the University. No charge is made, however, for up to 10 days care each semester in the Health Center.

All students pay a Health Service Fee of $1 per semester hour with a maximum of $10 for each of the Fall and Spring Semesters, and a maximum of $5 for each of the Summer Sessions. This fee will be used only for health services. Added benefits for the student are: (1) vaccines, serums and gamma globulin will be given in the Health Center free of charge. Pre-admission vaccinations are not included; (2) all drugs prescribed and dispensed in the Health Center are free of charge except for a limit of one prescription refill per illness or accident and (3) the first $100 of costs for emergency care of accidental injuries sustained on the campus and treated in a local hospital or doctor's office will be paid from Student Health fees. For services in the Health Center, each student must present his or her student services card.

The Health Center, located on East Virginia Street near Combs Hall, is adequately staffed and equipped for treating most illnesses and injuries. The Center does not provide care for students requiring surgery or the services of specialists. In these cases, every effort will be made by the physician or nurse to notify the parents or guardians of the student's needs.

The University assumes no responsibility for continued medical care for students having chronic diseases. The students should arrange for the care of a private physician located in or near Beaumont. When the University is not in session, the Student Health Center is not responsible for a student's health care.

The University is not under obligation to provide hospital services elsewhere if the Health Center is filled to capacity. The Health Center, however, has a sufficient number of beds for all normal needs.

Students who are ill should report promptly to the Center for medical care.

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 admission requirements 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. The student must reduce his/her academic load in relation to his/her 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 (out of Texas) are not required to pay out-of-state tuition.

Applications should be received by February 1 for the next 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, 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.* Each student pays a student services fee of $2.50 per semester hour, with a maximum of $30 in a long session.

Summary of Fees

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

Term	No. of Semester Hours	Tuition A	Tuition B	Tuition C	Student Services Fee	General Use Fee	Setzer Center Fee	Health Center Fee	Total Charge A	Total Charge B	Total Charge C
Each	1	$50	$ 40	$200	$ 2.50	$20	$15.00	$ 1	$ 88.50	$ 78.50	$238.50
Fall	2	50	80	200	5.00	20	15.00	2	92.00	122.00	242.00
or	3	50	120	200	7.50	20	15.00	3	95.50	165.50	245.50
Spring	4	50	160	200	10.00	24	15.00	4	103.00	213.00	253.00
Semester	5	50	200	200	12.50	30	15.00	5	112.50	262.50	262.50
	6	50	240	200	15.00	36	15.00	6	122.00	312.00	272.50
	7	50	280	200	17.50	42	15.00	7	131.50	361.50	281.50
	8	50	320	200	20.00	48	15.00	8	141.00	411.00	291.00
	9	50	360	200	22.50	54	15.00	9	150.50	460.50	300.50
	10	50	400	200	25.00	60	15.00	10	160.00	510.00	310.00
	11	50	440	200	27.50	66	15.00	10	168.50	558.50	318.50
	12	50	480	200	30.00	72	15.00	10	177.00	607.00	327.00
	13	52	520	200	30.00	78	15.00	10	185.00	653.00	330.00
	14	56	560	200	30.00	84	15.00	10	195.00	699.00	339.00
	15	60	600	210	30.00	90	15.00	10	205.00	745.00	355.00
	16	64	640	224	30.00	90	15.00	10	209.00	785.00	369.00
	17	68	680	238	30.00	90	15.00	10	213.00	825.00	383.00
	18	72	720	252	30.00	90	15.00	10	217.00	865.00	397.00
	19	76	760	266	30.00	90	15.00	10	221.00	905.00	411.00
	20	80	800	280	30.00	90	15.00	10	225.00	945.00	425.00
Each	1	25	40	100	100	20	7.50	1	56.00	71.00	131.00
Six-	2	25	80	100	100	20	7.50	2	59.50	114.50	134.50
Week	3	25	120	100	100	20	7.50	3	63.00	158.00	138.00
Summer	4	25	160	100	100	24	7.50	4	70.50	205.50	145.50
Session	5	25	200	100	100	30	7.50	5	80.00	255.00	155.00
	6	25	240	100	100	36	7.50	5	88.50	303.50	163.50
	7	28	280	100	100	42	7.50	5	97.50	349.50	169.50
	8	32	320	112	112	48	7.50	5	107.50	395.50	187.50
	9	36	360	126	126	54	7.50	5	117.50	441.50	207.50
	10	40	400	140	140	60	7.50	5	127.50	487.50	227.50

Code: **A.** U.S. citizens who are legal residents of Texas under tuition law; **B.** (1) U.S. citizens who are not legal residents of Texas under tuition law, and (2) aliens from non-exempt countries: **C.** Aliens: (1) from exempt countries, or (2) enrolled in a Texas state-supported college prior to June 16, 1975.

*Determination of legal residence for tuition purposes is made on the basis of statues 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 16, 1974, available in the Office of the Dean of Admissions and Records.

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

One half-hour lesson per week	$18
Two half-hour lessons per week	36

Late Registration Fee

A charge of $5 is made during the first day of late registration. This fee increases by $2.50 per day to a maximum of $15 ($7.50, $10, $12.50, $15).

Parking Fee

Each student who pays the necessary fee is issued a car decal which permits parking on the campus. This decal 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 $36. This or similar insurance is required of all international students.

Publication of Thesis/Dissertation Abstracts

The Graduate Council requires that thesis and dissertation abstracts be published by University Microfilms. Fees for this service are changed from year to year by University Microfilms. In 1978, these fees were $20 for a master's thesis and $35 for a doctoral dissertation. If copyrighting is desired, an additional fee is charged.

Miscellaneous Fees

Binding Thesis (one copy required)	$ 6.00
Master's Diploma	7.50
Cap, Gown and Hood Rental (Master's)	12.00
Cap, Gown and Hood Rental (Doctor's)	14.50
Returned Checks	5.00
Re-entry Fee	5.00
Transcript Fee	.50

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 referred to the Finance Office.

Returned Check Fees

A student 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 $5.

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.

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 admissions and records 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 admissions and records.

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 are available and include 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 that 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.

Academic Affairs

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. 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 case; full credit for such numbered courses will be granted only when the series is complete.

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 week of the semester or first two days of a 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 Admissions and Records. A student may not drop a course within seven calendar days of the beginning of the final examinations or three calendar days before the end of a summer term.

Withdrawals

Students wishing to withdraw during a semester or summer term should fill out a Withdrawal Petition in triplicate in the office of their department head or dean of the College of Graduate Studies. Students must clear all financial obligations and return all uniforms, books, laboratory equipment and other materials to the point of original issue. Three copies of the withdrawal form signed by the department head or graduate dean, the director of library services and an associate dean of student development are presented to the Office of Admissions and 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 seven calendar days of the beginning of final examinations or three calendar 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.

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, or deny admission, of a student for health reasons (mental or physical).

Academic Records

Academic records are in the permanent custody of the Admissions and 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 admissions and records.

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 Admissions and Records Office. 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; sex; marital status; country of citizenship; major and minor; semester hour load; classification; class schedule; 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; previous educational agencies or institutions attended.

A student has the right to challenge records and information directly related to him or her if it is 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 Admissions and 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 and second, by the parent validating the student's dependency as defined by IRS.

General Regulations

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 that 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 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 car decal which permits parking on the campus. This decal is numbered and is to be placed in a specific place on the back window 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 Admissions and Records. Any student who moves during a semester must immediately register his/her change of address in the above offices. Change of address forms are available in the Office of Admissions and Records and in the Office of the College of Graduate Studies.

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 Admissions and 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.

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, government, speech, guidance and counseling; in 1969, in biology, and in 1970, in education 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.

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 the student responsible for his/her own scholarship.

Degrees Offered

Master of Arts
- Master of Arts in English
- Master of Arts in Government
- Master of Arts in History

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 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 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
Master of Science in Speech Pathology/Audiology
Doctor of Engineering

ENROLLMENT

Admission

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 four weeks before registration.
   A. An applicant must hold a bachelor's degree from an institution approved by a recognized accrediting agency.
   B. Two official transcripts sent directly from each college previously attended.
   C. Scores on the aptitude section of the Graduate Record Examination (GRE) (sent directly to the office of Admissions and Records, by the Educational Testing Service). The Lamar Placement Center, located in the Galloway Business 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 are required to take the Graduate Management Admission Test (see College of Business section of this Bulletin for specific requirements).
   D. Applicants for the Doctor of Engineering degree also 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. The applicant also should indicate what type of work he/she would like to undertake for his/her field study.
   E. All students are required to complete the University Health Form.
   F. An application for admission sent to the Office of Admissions and Records.
   G. The applicant's undergraduate grade point average and GRE scores must be above the minimum standard 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 must be met for admission:
      (1) A minimum overall grade point average of 2.5 on a four point scale, and a minimum composite score (verbal, quantitative and analytical) of 1100 on the aptitude section of the GRE.
      (2) A minimum grade point average of 2.5 on junior and senior work and a minmum composite score of 1100 on the aptitude section of the GRE.
      (3) A grade point average lower than 2.5 but with a score of at least 540 on an appropriate section of the GRE aptitude test. (Some departments use the verbal score, some the quantitative, some the analytical and some use any one of the three scores.) A composite score of 1100 is also required.

(4) 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) or, 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. This does not exempt such students from submitting GRE aptitude scores prior to admission.

(5) A minimum overall grade point average of 3.0 on all work and the recommendation of the department in which the graduate program is offered. This does not exempt such students from submitting GRE aptitude scores prior to admission.

(6) 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 this bulletin for specific requirements.
3. Provisional admission to a degree program for one term may be granted to some applicants who show promise of the ability to successfully complete a graduate degree program, but who have not submitted the necessary credentials (see above) four weeks prior to registration.
   Students admitted with provisional admission may not register for more than twelve hours graduate credit and must submit all required credentials and meet the minimum standards stated above during the first term. Provisional admission may not be extended past one term, and students so admitted who do not meet the minimum standards will not be allowed to re-enroll.
   International students will not be admitted on a provisional basis.
4. Admission requirements for international students are evaluated on an individual basis after the following information is received:
   A. Two official transcripts 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. In general, an international student whose native language is not English is expected to score 500 or above on the TOEFL and over 1100 on the aptitude section of the GRE. 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.
5. 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 even higher scores.
6. A student who wishes to pursue graduate work in any area for which he/she has not had the prerequisites will be required to make up deficiencies as prescribed by the Graduate Council. In general, the student is required to have a minimum of 24 semester hours (12 of which must be on the junior-senior level) of undergraduate work in the subject chosen as the graduate major. For a 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 dean of admissions will notify the applicant of his/her admission to the College of Graduate Studies. All transcripts, certificates, etc. become the property of Lamar University and are not returnable.

9. Admission requirements stated above are minimum requirements and the applicant must also have the approval of the department in which the degree program is offered.

Post Baccalaureate Admission

1. Students who wish to take graduate courses but do not wish to be admitted to the College of Graduate Studies (or who have not met all requirements for admission to the College of Graduate Studies) may be admitted as Post Baccalaureate students in one of the undergraduate colleges under the following conditions:
   A. The applicant must hold the bachelor's degree.
   B. The applicant must submit an application for admission to the Post Baccalaureate program.
   C. The applicant must submit official transcripts from each college previously attended.
   D. The applicant must complete the University Health Form.
   E. 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 is received in a subsequent semester and requirements for admission to the College of Graduate Studies are complete and the minimum standards (see above) are met, a maximum of 12 semester hours previously completed *may*, with the approval of the department and the graduate dean, be counted for degree credit (only 12 semester hours taken prior to meeting all admission requirements to a degree program may be counted; this includes hours taken both as a provisional graduate and post baccalaureate student).

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. A graduate student who has completed all course work, but is working on his/her thesis, must be registered if he/she wishes to obtain professional assistance from a faculty member.

COLLEGE OF GRADUATE STUDIES REQUIREMENTS

General

1. All course work applied toward a given degree (except the Doctor of Engineering) must be completed within a period of six years. Time spent in active military service will not be used in computing the six-year limit.
2. No graduate student is permitted to carry more than 15 semester hours of graduate work during one semester of the long term nor more than 12 semester hours of graduate work during the summer session of 11 weeks (six semester hours each summer term). A graduate student is permitted to take seven semester hours in a summer term if the course has a lab section.
   A full-time graduate student is defined as a student carrying nine semester hours of graduate work, or being enrolled in both 669A and 669B thesis during the same semester, or enrolled in Egr 662. Students taking 4-5 hours of gradu-

ate 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 not more than 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, the student may transfer as much as six semester hours of graduate work (with grades of A or B) completed at another institution.
5. The number of semester hours of off-campus courses taken from this institution which may count toward a graduate degree is determined by each college, provided the standards of the College of Graduate Studies (regarding graduate faculty and instructional facilities) are consistent with those on the Lamar campus.
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 either from any course or from the University temporarily, or permanently, for any of the following reasons:
   A. Academic work below the standard as specified by the Graduate Council.
   B. Academic dishonesty or misconduct on the part of the student.
9. The grading system for graduate students is A, B, C, D, F, I, S, U, Drop and Withdrawal. Graduate credit is allowed only for grades A, B and C; D, F and U are all considered as failing grades for graduate students. 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 must change the grade of I to the grade of F, unless arrangements for a time extension are made (Form G-16). Under unusual circumstances, the student may apply, through the instructor, for an extension. The extension may be granted by the dean of the College of Graduate Studies.
10. When a graduate student with regular admission status falls more than three grade points below a 3.0 (B) average, he/she is placed on probation. If he/she makes progress toward eliminating the grade point deficiency during the next semester in which he/she is registered, he/she is removed from probation. If the student does not make progress toward eliminating the deficiency, his/her case is referred to the Academic Standards Committee of the College of Graduate Studies for a recommendation.
11. Resignation from the College of Graduate Studies should be made in writing to the dean.
12. The University reserves the right to change any of its rules, requirements or course regulations without notice.

DEGREE REQUIREMENTS

General

1. A graduate student must earn 30 to 36 semester hours of graduate credit, depending upon the plan the student is following.
2. A minimum of 18 semester hours of the required 30 to 36 hours must be courses numbered 500 or above.
3. All candidates must pass a comprehensive oral examination if a thesis is writ-

ten. If a thesis is not written, a comprehensive written or oral examination or a combination of both written and oral examinations is required.
4. The student must meet the specific requirements as set forth in this catalog for his/her 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. If a thesis is not written, complete 36 hours of approved course work.

Master of Business Administration

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work as specified under College of Business degree requirements if a thesis is written.
3. If a thesis is not written, complete 36 hours of graduate work as specified under College of Business degree requirements.

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 specific requirements that are 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

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work: 24 in the major field, six in thesis or a recital and a research paper.

Master of Music Education

1. Meet all general degree requirements.
2. Complete 36 hours of graduate work which may include six in thesis.

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 Government section of this catalog.

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. On approval by the head of his/her major department a student may elect to take all his/her work in his/her 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.

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, his/her 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 devised 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 that a graduate student is admitted to candidacy, the head of the major department or a person designated by him/her acts as the student's adviser.
2. A student may be admitted to candidacy after completing one-half of his/her course work, excluding the thesis, and after removing all undergraduate deficiencies. During this time the student must have demonstrated the ability and inclination to do graduate work attempted before being admitted to candidacy. A student must have a 3.0 grade point average on all graduate work attempted before being admitted to candidacy.
3. The individual student is responsible for making an application for Admission to Candidacy. This is done in the office of the head of the major department or graduate coordinator.
4. A departmental recommendation concerning the applicant's degree plan and

the appointment of an advisory committee is then submitted to the dean of the College of Graduate Studies. If approved, the student is admitted to candidacy.

5. The advisory committee will include a person designated as the supervising professor, along with two other members of the faculty.
6. A student must complete at least nine semester hours after admission to candidacy.
7. Advanced GRE scores are required by specified 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. Continuously pursuing his/her course work by earning at least three semester hours credit in two consecutive long terms. Failure to do so will require the student to make application to the graduate engineering faculty for permission to continue.
3. Prepare a proposal for a field study involving a technological innovation and defend this proposal to his/her doctoral committee as part of his/her candidacy examinations.
4. Satisfactorily pass other examinations designed to determine if 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 his/her doctoral committee. Failure to meet minimum requirements as estimated by the student's doctoral committee may require the student to withdraw from the doctoral program.

Structure of 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 prior to 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 approve a request for a committee change, the student may request the graduate dean to appoint a three member Review Committee. In the event the Review Committee fails to effect an agreement between the student and the original committee, a new committee may be selected for the student by the graduate dean, the dean of the student's academic college and two members of the graduate faculty of the student's academic college chosen by the graduate dean. The time period should not exceed 10 class days from the date of receipt by the graduate dean of a written request for review and arbitration by the student and the appointment of a new committee, should one be necessary.

THESIS REQUIREMENTS

A thesis is optional in Master of Arts degree plans and may be a departmental requirement or option in other programs. A student who is required or elects to write a thesis must/may:

1. Register for the thesis course and begin research with the approval of the

student's graduate advisor. The first registration is for Thesis Course 699A; subsequent registrations are for Thesis Course 669B. No Grade "NG" is assigned for each registration until the thesis is finally approved.
2. Register for a thesis course each semester or term that the student works on research or writing.
3. Secure a copy of the approved manual of instructions for preparing a thesis and follow it explicitly.
4. Write a thesis under the direction of his/her supervising professor. The thesis must be approved by his/her advisory committee and the graduate dean. Six semester hours of credit will be granted for the successful completion of the thesis. No credit will be reported for the thesis course until the final copy of the thesis has been approved.
5. Submit a single, unbound copy of the thesis to the dean of the College of Graduate Studies at least 30 days prior to the expected date of graduation.
6. Submit three copies (four if a personal copy is desired) or the finished thesis to the graduate dean no later than 10 days prior to the graduation date.
7. Submit abstracts of the thesis as required for publication in *Dissertation/Thesis Abstracts* published by University Microfilms.
8. Pay the thesis binding and abstract publication fees to the Lamar Bookstore no later than 10 days prior to the graduation date.

FINAL EXAMINATION

1. Each candidate for a master's degree is required to pass a final oral or written examination. This examination must be taken at least 15 days prior to the conferring of the degree.
2. A student presenting a thesis as a part of the degree requirement must be enrolled and take an oral examination. This examination is confined to the thesis and background subject matter pertaining to the thesis.
3. A candidate not presenting a thesis as a part of the degree requirement must take a written or oral examination or a combination of both written and oral examinations.
4. If all requirements for graduation except the comprehesive examination are completed during a semester for a nonthesis program, the oral or written examination may be administered the following semester without the student being enrolled in the College of Graduate Studies.
5. A calendar showing scheduled dates for oral and written examinations is prepared by the dean of the College of Graduate Studies.

GRADUATION

1. A candidate for the master's degree or Doctor of Engineering must file an application for graduation in the office of the graduate dean. This application must be made in accordance with the calendar published in this bulletin.
2. The student is responsible for making the application, for securing official advisement about study plans, and for checking compliance with all degree requirements with the office of the graduate dean.
3. Candidates for graduate degrees must be present at graduation ceremonies unless they have been excused by the graduate dean. Requests to receive a degree *in absentia* must be filed in writing in the graduate dean's office at least four weeks before the commencement date.

College of Business

The College of Business offers a program of study leading to the Master of Business Administration degree. The objective of this program is to develop a general competency for management.

ADMISSION

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

a. The student is not required to take the Graduate Record Examination.
b. The student is required to take the Graduate Management Admission Test (GMAT), formerly the Admission Test for Graduate Study in Business. The Lamar Placement Center, located in the Galloway Business Building, administers this examination. Application forms and information about the GMAT are available at this center.
c. 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:
   1. GMAT score of 450 or above and overall undergraduate grade point average of 2.5 or above (4.0 system).
   2. GMAT score of 450 or above and junior-senior grade point average of 2.75 or above (4.0 system).
   3. A total of at least 950 points based on the formula: 200 times the undergraduate GPA (4.0 system) plus the GMAT score.
   4. A total of at least 1,000 points based on the formula: 200 times junior-senior grade point average (4.0 system) plus the GMAT score.
d. A student whose native language is not English is expected to score over 500 on the TOEFL.

The Common Body of Knowledge in Business

The applicant must have completed the equivalent of the following undergraduate courses which comprise the common body of knowledge in business:

Acc 231 and 232 — Principles of Accounting
BA 331 — Business Law
BA 332 — Principles of Finance
BA 334 — Marketing
BA 335 — Principles of Management
BA 3302 — Business Statistics
Eco 131 and 132 — Principles of Economics
OA 334 — Business Communications

Degree Requirements

The candidate for the Master of Business Administration degree must meet all the College of Graduate Studies general degree requirements as listed in this Bulletin. The student may follow either of two plans described below.

Plan I: (24 hours of course work and a six-hour thesis)
- Acc 534 — Seminar in Accounting
- BA 530 — Seminar in Management
- BA 531 — Seminar in Marketing
- BA 5311 — Seminar in Financial Management
- Three hours in Economics (must be 500-level)
- Nine semester hours of graduate level courses in College of Business (including at least three semester hours of a 500-level course)
- BA 669A — Thesis in Business Administration
- BA 669B — Thesis in Business Administration

Plan II: (36 hours of course work, non-thesis)
- Acc 534 —Seminar in Accounting
- BA 530 — Seminar in Management
- BA 531 — Seminar in Marketing
- BA 5311 — Seminar in Financial Management
- BA 5312 — Business Research
- Three hours in Economics (must be 500-level)
- 18 hours of graduate level courses in College of Business (including at least three semester hours of a 500-level course)

Requirements for Applicants With Degrees in Nonbusiness Fields

Students whose baccalaureate degrees are in nonbusiness fields may earn the Master of Business Administration degree by completing the common body of knowledge in business listed above followed by either Plan I or Plan II. Descriptions of courses included in the common body of knowledge can be found in the undergraduate bulletin.

GRADUATE FACULTY

Members

Professor Richmond O. Bennett
Accounting
Assistant Professor Melvin F. Brust
Business administration
Assistant Professor David W. E. Cabell
Business administration
Professor Richard T. Cherry
Business administration
Professor Nancy S. Darsey
Office administration
Associate Professor Richard W. Jones
Accounting
Associate Professor Hi K. Kim
Economics

Professor C. D. Kirksey
Business administration
Professor J. D. Landes
Accounting
Assistant Professor Orland S. Lee
Accounting
Associate Professor Charles D. McCullough
Business administration
Professor Mietzl Miller
Economics
Professor Sam F. Parigi
Economics
Professor Charles A. Partin
Economics
Assistant Professor Larry T. Patterson
Business administration
Professor John A. Ryan
Business administration
Associate Professor Larry W. Spradley
Business administration
Assistant Professor Robert A. Swerdlow
Business administration
Professor Malcolm W. Veuleman
Accounting
Associate Professor Kathryn White
Office administration
Assistant Professor Bobby E. Wooten
Office administration

*Business Courses:

Accounting courses will be selected from the following list:

534 — Seminar in Accounting (3:3:0)
A course designed to broaden the student's concept of current accounting theory and problems.

535 — Contemporary Accounting Theory (3:3:0)
A comprehensive study of the contemporary approaches to the development of accounting theory. This will include a study of historical development as well as more recent contributions of present day scholars.

536 — Advanced Accounting Problems (3:3:0)
An intensive study of accounting techniques and problems with emphasis placed on the concepts of income determination, asset valuation and cost analysis. Contemporary developments are reflected through a study of research materials and professional publications.

537 — Managerial Accounting (3:3:0)
Application of accounting data in decision-making: cost analyses as applied in the development of budgets and standards; accounting as a tool for cost control and pricing; case problems.

Business Administration courses must be selected from the following:

530 — 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: BA 335.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

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: BA 334.

532 — Problems in Business Finance (3:3:0)
A comprehensive study of how financial problems affect all areas of business management. The case study approach is utilized in order to stimulate analysis and discussion of forms of organization, promotion of new firms, short-term and long-term sources of funds and financing, dividend policies, mergers, refinancing and recapitalization, reorganization and comprehensive financial planning.

538 — 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 utilized.

539 — Quantitative Analysis Control (3:3:0)
A course designed to help the student examine the decision-making function through the use of model building and other mathematical procedures. Emphasis is on the selection of a model or tool for a particular business problem. Problem areas are drawn from the major functions of an organization. The techniques covered include decision making under uncertainty, inventory analysis, linear programming. Markov analysis and project-planning models. Prerequisite: BA 3302 and mathematical competence.

5310 — Advanced Statistical Analysis (3:3:0)
Further development of the application of statistical methods to the process of making decisions in the face of uncertainty. The use of quantitative methods and models for management is emphasized. Topics include multiple correlations, sampling theory, queuing theory and statistical quality control. Prerequisite: BA 3302.

5311 — Seminar in Financial Management (3:3:0)
A study of selected topics in financial management, including capital budgeting and optimum financial structure. Research papers are presented by each student for critical analysis and discussion.

5312 — 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.

5314 — 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: Six semester hours in marketing.

5315 — 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: Six semester hours in marketing.

5316 — 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: Six semester hours in marketing.

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

*Arranged

Economics courses must be selected from the following:

530 — 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. Prerequisites: Eco 131, 132 and 334 or consent of instructor, and graduate standing.

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. Prerequisites: 6 hours of Economics and graduate standing.

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

536 — American Economic Growth and Development (3:3:0)
An advanced level study and analysis of the major forces which contributed to American economic development; regional development theory and actual growth patterns; theories of growth applied to America's economic development, past, present and potential. Prerequisites: 6 hours of economics or consent of instructor and graduate standing.

537 — Managerial Economics (3:3:0)
A study in depth of the principles and techniques of economic analysis applicable to the problems of business management. Prerequisites: 9 hours of Economics including Eco 333 or 339 and graduate standing.

538 — Economics of Government and Business Relations (3:3:0)
Promotion of business, market structures, antitrust and other forms of regulation. 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 interests rates; and flow of funds analysis. Prerequisite: One of the following: Eco 332, 334, 431G, or BA 332, or 437G, and graduate standing.

5341 — Manpower (3:3:0)
Identification and analysis of income distribution, unemployment, occupational composition of the labor force, manpower training program legislation and evaluation. Prerequisite: Graduate standing.

5371 — International Finance (3:3:0)
Analysis of the international balance of payments and problems associated with it, international liquidity and monetary systems with emphasis on theory and issues of international financial markets — their nature, ramifications and practices. Prerequisites: Eco 332, 334, 335 or 4331G, and graduate standing.

Office Administration —
The following course may be taken as a graduate level course in business to satisfy the Master of Business Administration degree elective requirements or the course may be counted as an approved elective for the Master of Education degree in secondary education.

5301 — 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 course for credit. Prerequisites: graduate standing and skill in proposed subject.

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.

Acc 430G — Auditing

Acc 431G — Advanced Accounting
Acc 433G — C.P.A. Review
Acc 434G — Advanced Cost Accounting
Acc 435G — Accounting Systems
Acc 437G — Municipal and Governmental Accounting

BA 4111G, 4211G, 4311G, 4411G — Special Problems in Business
BA 434G — Advanced Legal Principles
BA 437G — Investments
BA 438G — Petroleum Law
BA 4303G — Quantitative Techniques in Marketing
BA 4306G — Financial Markets
BA 4307G — Financial Institutions
BA 4308G — Organizational Behavior
BA 4309G — Industrial Marketing
BA 4310G — Marketing Management
BA 4312G — International Marketing
BA 4314G — Administrative Policy
BA 4315G — Budgetary Control
BA 4316G — Business Simulation, Modeling and Decision Theory
BA 4317G — Computers in Business Management
BA 4318G — Marketing Research
BA 4319G — Advanced Marketing Problems
BA 4320G — Small Business Enterprises

Eco 430G — Economics of Urban Problems
Eco 431G — Monetary Theory
Eco 433G — History of Economic Thought
Eco 434G — Economics Development
Eco 435G — Comparative Economic Systems
Eco 436G — Business Cycles
Eco 437G — Applied Economic Analysis
Eco 439G — Mathematical Economics
Eco 4101G, 4201G, 4301G, 4401G, 4501G, 4601G — Institute in Economics
Eco 4111G, 4211G, 4311G, 4411G — Special Problems in Economics
Eco 4314G — Industrial Organization
Eco 4315G — Social Control of Business

College of Education

Graduate degree and certification programs are offered by the departments of Elementary Education, Secondary Education, Special Education, Health and Physical Education and Home Economics.

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
Reading Specialist
School Administrator
School Superintendent
Secondary Education
Special Education
Special Education Supervisor
Supervisor
Visiting Teacher

MASTER OF EDUCATION DEGREE (M.Ed.)

General Requirements:

1. The student must fulfill the general requirements for admission and the general degree requirements that are 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 24 hours in addition to a 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 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 six additional hours in the area of specialization and substitute these hours for six hours in the elective area. The student also should elect a 36 hour nonthesis program.)

2. *Professional Development.* Six semester hours must be selected from the following courses (three semester hours if the student elects to write a thesis):
   Edu 530 — Structure and Organization of Public Education
   Edu 531 — Research (Required)
   Edu 532 — Current Issues in Education
   Edu 533 — Contemporary Philosophies of Education
   Edu 534 — Advanced Study in Human Development
   Edu 535 — The Learning Process
   Edu 537 — Public School Curriculum
   Edu 5307 — History of Education
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 (six 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. Audio-Visual Specialist
      Edu 433G — Teaching Media and Audio-Visual Technology

Edu 435G — Individualized Instruction Through Technology
Edu 5370 — Technology
Edu 5372 — Film and Television as a System of Teaching

C. Early Childhood Education
Edu 4304G — History and Philosophy of the Kindergarten
Edu 4305G — Seminar in Early Childhood Educational Research
Edu 5351 — Advanced Study in Early Childhood Curriculum
Edu 5352 — Creative Activities in Early Childhood Education

D. Supervision
SpEd 5316 — Administration & Supervision of Special Education Programs
Edu 5336 — Leadership and Evaluation of Instruction
Edu 5337 — Practicum and Seminar
Edu 5338 — Instructional Supervision

E. 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.
   D. Should elect a 36 hour nonthesis program.
2. The usual pattern of coursework is as follows:
   A. Professional Development Area. Six semester hours required.
   Edu 531 — Research (required)
   Edu 530 — Structure and Organization of Public Education
   Edu 532 — Current Issues in Education
   Edu 533 — Contemporary Philosophies of Education
   Edu 534 — Advanced Study in Human Development
   Edu 535 — The Learning Process
   Edu 537 — Public School Curriculum
   Edu 5307 — History of Education
   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)
   C. Specialization Area. Six semester hours.
   Soc 432G — Educational Sociology
   Eng 4312G — Study in Language and Linguistics
   D. Additional Requirements: Twelve semester hours.
   Edu 5301 — Current Literature for Children and Adolescents (required)
   Edu 5302 — Practicum: Diagnosis and Remediation of Reading Difficulties (required)

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 nonthesis 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 Graduate Studies or the Department of Elementary Education.

Other Certificates

It is possible for students to complete part of 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, language and/or 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 Graduate Studies or from the Department of Elementary 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
   Edu 5320 — Adolescent Development
   Electives: Twelve semester hours must 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 Office of the Director of Graduate Studies or the Department of Secondary Education.
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 or recommended is available through the Office of the Director of Graduate Studies of the Department of Secondary Education. Specialization areas are available in the following disciplines:

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

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 head of the Department of Secondary Education.

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 Office of the Director of Graduate Studies or in the Department of Secondary Education.

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 Secondary Education.

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.
   SpEd 431G — Psychology of Exceptional Children
   SpEd 534 — Advanced Study in Human Development
   Edu 535 — The Learning Process
   Soc 432G — Sociology of Education (required)
3. *Resource Areas.* Twenty-seven semester hours.
   Required (21 semester hours)
   Edu 531 — Research
   Edu 5323 — Occupational and Vocational Guidance
   Edu 5324 — Individual and Group Counseling
   Edu 5328 — Practicum in Guidance and Counseling

Edu 5333 — Individual Counseling Theories and Techniques
Edu 5334 — Interpretation and Analysis of Tests and Measurement
Edu 5335 — Individual Testing
Electives (six semester hours)
Edu 5332 — Guidance and Counseling in the Elementary School
SpEd 5361 — Survey of Learning Potentials of Exceptional Children
SpEd 5362 — Psychoeducational Evaluation of Exceptional Children
SpEd 5363 — Practicum in Psychoeducational Procedures

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 Counselor's Certificate. A student who desires the certificate, without fulfilling all degree requirements should check with the Director of Guidance and Counseling for specific information. Usually such 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.

Professional Visiting Teacher's Certificate

The Visiting Teacher Professional Certificate is based upon a Provisional Teaching Certificate, three years experience in an accredited school or three years experience in an approved social agency, and the completion of an approved 36 semester hour graduate program.

The purpose of the Visiting Teacher professional preparation program is to qualify certified, experienced teachers for supportive staff positions and leadership responsibilities as liaisons between school-home-and community agencies. The program has been developed with flexibility to utilize the educational and experimental background of the student to develop and enhance competencies in interpersonal transactions, behavioral management, multi-cultural understanding and familiarity with the health, social and child welfare resources of the community and the state.

A student who desires to seek this certificate should consult with the Director of Guidance and Counseling or with the head of the Department of Secondary Education for information.

Note: To qualify for a Special Education Visiting Teacher Certificate, the student must have, or be eligible for, a Professional Visiting Teacher Certificate and must have completed six semester hours in graduate or undergraduate work in Special Education.

Completion of the Visiting Teacher Certificate program does not fulfill the requirements for a Master of Education degree. This certificate is planned as an adjunct or addition to an approved graduate degree program.

Certification Plan for the Visiting Teacher

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. *Professional Development Area.* Three semester hours.
   Edu 5318 — School Management and School Services
   Edu 5344 — School Law

2. *Specialization Area*: Twenty-one semester hours.
   Required: Twelve semester hours
   Edu 5322 — Organization and Administration of the Guidance Program
   Edu 5334 — Interpretation and Analysis of Tests and Measurement
   Edu 5367 — Psycho-Social Foundations of Educating the Culturally Different
   Edu 5368 — Practicum: Role and Responsibilities of the Visiting Teacher
   Electives: Nine semester hours
   Edu 534 — Advanced Studies in Human Development
   or
   Edu 5320 — Adolescent Development
   Edu 5323 — Occupational and Vocational Guidance
   Edu 5324 — Individual and Group Counseling
   Edu 5332 — Guidance and Counseling in the Elementary School
   Edu 5333 — Individual Counseling Theories and Techniques
   Edu 537 — Public School Curriculum
3. *Resource Area*. Twelve semester hours.
   Edu 5326 — School and Community Relations
   SpEd 5316 — Administration and Supervision of Special Education Programs
   SpEd 5362 — Psychoeducational Evaluation of Exceptional Children
   SpEd 5364 — Behavior Modification and Contingency Management
   SpEd 5365 — Instructional Processes with Exceptional Children
   Psy 5310 — Introduction to Social and Psychological Assessment
   Psy 5311 — Community Psychology
   Soc 432G — Sociology of Education

Degree Plan in Supervision

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

1. *Professional Development*: Six semester hours.
   Edu 531 — Research (required)
   SpEd 5316 — Administration and Supervision of Special Education Programs
   Edu 5334 — Interpretation and Analysis of Tests and Measurement
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 (15 if thesis is written).
   A. Learning Process. Three semester hours.
      (1) Edu 534 — Advanced Study in Human Development
      (2) Edu 535 — The Learning Process
      (3) SpEd 5364 — Behavior Modification and Contingency Management of

   B. *Electives*. Eighteen semester hours (12 if thesis is written).

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 with the Director of Certification for specific information.

Degree Plan in School Administration

Requirements for a Master of Education degree in School Administration may be met by completing a 36 semester hour nonthesis 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 the Director of Graduate Studies or in the Department of Secondary Education.

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 Administrators* (24 hours)
   A. General Administrative Competencies (18 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 Eval of Instruction
      Edu 5344 — School Law
   B. Related Areas of Study (6 hours)
      Soc 432G — Sociology of Education (required)
      CS 5301 — Computer Systems for Education Applications (required)
2. Specialized Preparation for School Administrators (12 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)
      Plus three hours of electives from:
      Edu 5324 — Individual and Group Counseling
      Edu 5326 — School-Community Relations
      Edu 5342 — School Finance and Bus Mgt
      Edu 5345 — Personnel Management
      Edu 5347 — Seminar in School Administration

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 two 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 Eval of Instruction
   Edu 5344 — School Law
2. *Related Areas of Study.* Nine semester hours — Six required.
   Soc 432G — Sociology of Education (required)
   CS 5301 — Computer Systems for Educational Applications (required)
   Three semester hours selected from the following:
   Eco 534 — Collective Bargaining
   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 Services (required)
   Edu 5339 — The Public School Principal (required)
   Edu 5348 — Practicum in Educational Administration (required)
   Six semester hours to be selected from:
   Edu 5324 — Individual and Group Counseling
   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 must be repeated once during 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 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 nonthesis program. A student not seeking a certificate within the degree may complete a minimum of 24 semester hours in addition to a thesis.

To fulfill requirements concurrently for a Master's degree and Professional Certification in Supervision, the student also must complete a special education categorical area endorsement. The student should secure information concerning requirements for certification from the Department of Special Education. 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 must be selected from the following courses (three semester hours if the student elects to write a thesis):
   Edu 530 — Structure and Organization of Public Education
   Edu 531 — Research (required)
   Edu 532 — Current Issues in Education
   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)
   Edu 537 — Public School Curriculum
   SpEd 5364 — Behavior Modification and Contingency Management of Disabled Learners
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 431G — Psychology of Exceptional Children
   SpEd 439G — Methods and Materials for Learning Disabilities
   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:
   A. Educational 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
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 masters degree program. Specific information concerning these certificates may be obtained from the Director of Graduate Studies or the Department of Special Education.

Provisional Certificates in Special Education

Special Education — Generic
Mental Retardation
Physically Handicapped/Minimal Brain Injury
Language/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 Special Education.

GENERAL INFORMATION CONCERNING PROFESSIONAL CERTIFICATES

Validity

The Professional Certificate is valid for life unless canceled 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 $3.

GRADUATE FACULTY

Members

Professor Howard W. Adams
Secondary education, education research
Professor David L. Bost
Secondary education, guidance and counseling
Professor Kenneth R. Briggs
Secondary education, educational psychology
Professor Charles M. Burke
Elementary education, elementary curriculum
Professor Betty Fay Coody
Elementary education, elementary curriculum
Professor Vernon H. Griffin
Elementary education, elementary curriculum
Professor W. Richard Hargrove
Elementary education, foundations of education
Assistant Professor Sandra Lee Haven
Math education
Professor Bradley B. Hogue
Elementary education, educational psychology
Professor Harvey C. Johnson
Secondary education, curriculum and administration
Professor Conrad Dell Mang
Elementary education
Associate Professor Edward Roy McIntosh
Elementary education, instructional media
Professor M. L. McLaughlin
Elementary education, contemporary education
Associate Professor David E. Nelson
Elementary education
Assistant Professor Sally Nielsen
Elementary education, early childhood education
Professor E. Lee Self
Secondary education, public education
Associate Professor Phillip B. Snyder
Science education
Professor Monty Sontag
Special education
Associate Professor William H. Stanley
Educational administration
Associate Professor Leslie Sternberg
Special education

Associate Professor Richard E. Swain, III
Secondary education, science education
Assistant Professor Jerry R. Tucker
Secondary education
Assistant Professor Norma L. Tompkins
Special education
Assistant Professor Curtis E. Wills
Secondary education, guidance and 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 research and problem solving in education. Emphasis on terminology, methodology and spirit of systematic research.

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)
Dynamics, processes and systems of learning. Theoretical emphasis.

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.

5101, 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.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

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.

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 contributions 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.

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 age depicting the development of concepts and contributions leading to modern educational thought.

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.

5317 — Organization and Administration of Special Programs (3:3:0)
Study of principles, organization and administrative practices in special, compensatory and vocational education. Attention is given to administrative competencies essential to the successful implementation of career education in all elements of the school program.

5318 — School Management and School Services (3:3:0)
Study of principles of school business procedures related to fiscal accounting, including the preparation, analysis and control of the school fiscal budget. Study of building management, cafeteria programs, transportation services and textbook services.

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; his/her interests and problems; his/her family and community relationships.

*Arranged

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)
Survey of occupational fields, requirements and rewards. Concepts of vocational guidance.

5324 — Individual and 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. Prerequisite: 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 — Interpretation and Analysis of 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)
Investigation of the leadership roles in instructional programs. Techniques of evaluation and interpersonal relationships leading to instructional im-

provement are considered. Special attention is given to reading programs and the total language arts program K-12.

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)**
Identification of the role and competencies of the supervisor, including a study of supervisory practices and policies relating to program development and instructional improvement in the public schools, K-12.

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.

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 Relation 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 Educational Administration (3:A*:0)**
Supervised experience in administration and offered by arrangement between the university and the public school.

5349 — **Internship for the 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.

5367 — **Psycho-Social Foundations of Educating the Culturally Different (3:3:0)**
Studies delineate personal psychological characteristics and the affective domain of the culturally different. Identifies educational strategies applica-

ble to the teaching process as well as other supportive pupil services.

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.

5370 — Technology (3:3:0)
Application of present technology to the production of educational materials, and the utilization of these materials in the direction of instruction.

5372 — Film and Television as a System of Teaching (3:3:0)
Study of the basic concepts of the production and use of educational television, still and motion pictures. Emphasis will be given to the production of pictorial teaching materials and to the use of such materials as a system of teaching.

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 for supervising teachers as specified by state statute.)

5390-9 — Selected Topics (3:3:0)
Significant topics in Elementary, Secondary and Special Education. The description of the particular area of study will appear on the printed semester schedule. A student may repeat for a maximum of six semester hours when topic varies.

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
433G — Teaching Media and Audio-Visual Technology
435G — Individualized Instruction through Technology
4301G — Institute or workshop in Education
4304G — History and Philosophy of the Kindergarten
4305G — Seminar in Early Childhood Educational Research
4337G — Tests and Measurements
439G — Reading Practicum

Special Education (SpEd) Courses:

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.

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.

*Arranged

5314 — Instructional 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 disorders.

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: Edu 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.

5390-9 — Selected Topics (3:3:0)
Significant topics in Special Education. The description of the particular area of study will appear on the printed semester schedule. A student may repeat for a maximum of six semester hours when topic varies.

669A-669B — Thesis (6:A*:0)
Prerequisite: Approval of graduate advisor. Credit: 6 semester hours.

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
4308G — Appraisal Processes in Programming for the Exceptional Individual
4309G — Instruction of the Exceptional Learner
4310G — Practicum in Instructing the Exceptional Individual.

*Arranged

Graduate Resource Courses:

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 432G — Sociology of Education (3:3:0)
A study of the multi-cultural influences on the school system and the democratic society. Included will be an analysis of educational problems in the multi-cultural society of Texas.

Department of Health and Physical Education

Degree Requirements

The Master of Science degree in Health and Physical Education requires the completion of 30 semester hours of graduate work: 18 in Health and Physical Education, six in thesis and six in an approved supporting field. The supporting field must be approved by the student's graduate committee or with its approval six additional hours in Health and Physical Education may be substituted for the supporting field.

With the approval of the student's graduate committee in Health and Physical Education, 12 semester hours of course work may be substituted for the thesis. If the nonthesis option is selected, six hours must be taken in an approved supporting field.

HPE 536, Research Methods in Health and Physical Education, is required of all students.

GRADUATE FACULTY

Members

Associate Professor Alice C. Bell
Health education
Professor Vernon R. Crowder
Exercise physiology
Assistant Professor Raymond L. Fletcher
Physical education, recreation
Professor Mary Jane Haskins
Physical education, research
Professor James B. Higgins
Physical education
Professor Belle Mead Holm
Health education, administration
Associate Professor Virginia R. Holt
Physical education, health education
Associate Professor Mildred A. Lowrey
Physical education, motor learning, sports psychology
Professor Leonard A. Yates
Physical education, curriculum, administration

The graduate student will select courses in health and physical education from the following:

Health and Physical Education Courses:

530 — Problems in Health and Physical Education (3:3:0)*
Biological, physiological, social, psychological and other purposes and outcomes; selection and distribution of activities; teaching methods; facilities; teacher preparation; literature; research problems. Permission must be obtained from department head for enrollment in class.

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 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, 5601 — 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. May be repeated for credit when nature of course differs sufficiently from one previously taken.

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 competency for independent work and consent of director.

*Arranged

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

Department of Home Economics

Degree Requirements

The Master of Science degree in Home Economics requires the completion of 30 semester hours of graduate work: 18 in home economics, six in thesis and six in an approved supporting field. With the approval of the student's graduate committee, 12 semester hours of course work may be substituted for the thesis. If the nonthesis option is selected, six hours must be taken in an approved supporting field.

The student's graduate program must include Home Economics 5314: Research Techniques.

GRADUATE FACULTY

Members

Associate Professor Jane S. Davidson
Home economics education
Associate Professor Ferial A. El-Maguid
Nutrition and food science
Associate Professor LeBland McAdams
Clothing and fashion merchandising
Professor Dorothy W. McAlister
Home economics education; textiles and clothing, consumer economics

*Home Economic 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 — Draping (3:2:3)
An application of couture costume design principles and construction techniques. Dress design based on the manipulation of fabric on a form.

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 civilizations.

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.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

535 — Cultural Aspects of Food (3:2:3)
The relationship 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 — Curriculum Development in Home Economics (3:3:0)
Philosophy and development of home economics education programs for secondary schools, colleges or universities with emphasis on current curriculum developments and trends.

539 — Experimental Foods (3:2:2)
Investigation into principles and problems of food preparation. Development of professional attitudes and techniques through laboratory groups and individual projects.

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.

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

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 — Quantity Food
432G — Family Clothing
433G — Household Equipment
434G — Fashion and Production
435G — Consumer Housing
436G — Home and Fashion Merchandising
437G — Individual Problems in Home Economics

*Arranged

College of Engineering

Graduate degree programs are offered by the Departments of Chemical Engineering, Civil Engineering, Electrical Engineering, Industrial Engineering, Mathematics and Mechanical Engineering.

DEGREES OFFERED:

Engineering Departments
Master of Engineering
Master of Engineering Science
Doctor of Engineering
Mathematics Department
Master of Science in Mathematics

MASTER OF ENGINEERING SCIENCE DEGREE (MES)

The Master of Engineering Science degree plan requires the completion of 30 semester hours of graduate work, including thesis. 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 applied science.
3. Have credit equivalent to that required for undergraduate engineering students at Lamar.

It is assumed that all graduate students are proficient in the use of digital computers.

Degree Requirements

The candidate for the M.E.S. degree must meet all the College of Graduate Studies general degree requirements as listed in this catalog. Thirty semester hours of graduate work are required with the following restrictions:

1. A minimum of 18 semester hours of credit in engineering courses, including:
   a. Six semester hours in thesis.
   b. Twelve additional semester hours of engineering courses of which at least nine semester hours must be on the 500 level.
2. From approved 400G-500 level courses, nine semester hours in a combination of mathematics and science.
3. All course work presented for the M.E.S. degree must have the approval of the candidate's committee.

MASTER OF ENGINEERING DEGREE (ME)

The Master of Engineering degree is designed to suit the needs of the practicing engineer. For admission to the program, the student must meet the following requirements:

1. The general requirement for admission to the College of Graduate Studies.
2. Hold a bachelor's degree with credit substantially equivalent to that required for an engineering degree at Lamar.

Degree Requirements:

1. The candidate for the M.E. degree must meet all the general requirements of the College of Graduate Studies as listed in this catalog.
2. The general requirement is 36 semester hours of graduate work. At least 18 semester hours of this work must be engineering courses at the 500 level. The remainder will be selected by the graduate student through consultation and agreement with his/her graduate committee.
3. 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 33 semester hours of graduate work providing Egr 631 (Design Project) is included.

DOCTOR OF ENGINEERING (D.Egr.)

The Doctor of Engineering degree is designed as an extension of the Master of Engineering to allow a practicing engineer to work on practical engineering problems of considerable complexity.

For admission to the program, these requirements must be met:

1. Hold a master's degree in engineering or at least 30 semester hours of engineering, science or mathematics courses at the graduate level.
2. Submit a letter of application to the Dean of Engineering. This letter should include information about the applicant's engineering experience, present employment, chief interests and type of work he/she might undertake for his/her field study.

An applicant who has been accepted into the College of Graduate Studies and whose application indicates he/she might be admitted to the program, will be notified and a graduate faculty committee will review the applicant's transcripts, test scores and letter of application. The committee will then determine if a diagnostic examination is warranted. If such an examination is approved, the committee will then prepare and administer the examination during the first long semester after admission.

Diagnostic Examination

The objectives of the diagnostic examinations are threefold: (1) to determine the appropriateness of the student's background, (2) to help determine the student's qualifications for a doctoral program and (3) to provide guidance for the selection of a study program. The committee may decide to do any one of the following: (1) accept the student into the doctoral program, (2) not accept the student or (3) accept the student conditionally. If the student is accepted conditionally, the committee will

specify what additional preparation the student must make. The committee also will specify whether the student is to retake the diagnostic exams, a portion of these exams, or may be accepted into the doctoral program upon completion of the additional preparation.

Study Program

After a student is accepted into the doctoral program he/she will meet with his/her committee to outline a program of study. This program of study would normally consist of 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.

The study program would be chosen in consultation with the student to suit the student's interests and abilities as nearly as the standards of the doctoral program and the interests of the faculty will allow. In addition to his/her study program the student will be expected to demonstrate a proficiency in at least one computer language.

The student is expected to pursue his/her study program in a continuous manner by earning three semester hours credit in two consecutive long terms. Failure to do so will require an application to the Graduate Engineering Faculty to continue his/her program.

Candidacy Examination

Near the end of the study program the student will make written application to his/her doctoral committee to be allowed to take the candidacy examinations. The purposes of the candidacy examinations are threefold: (1) to test the ability of the student to comprehensively relate the subjects of his study program (2) to verify that the time taken to complete the study program has not been so long as to disassociate the student's graduate education and (3) ascertain the student is ready to do the field study. The committee may again make any one of three decisions upon evaluation of these exams: again make any one of three decisions upon evaluation of these (1) pass, (2) fail or (3) conditional pass. A conditional pass would be accompanied by the requirements of the committee and the action to be taken upon the fulfillment of these requirements.

Field Study

After the student is admitted to candidacy he/she will be required to submit a formal engineering proposal conforming to a standard format outlining his/her field study. This field study normally would be expected to take a minimum of one man-year and should involve some technological innovation. A unanimous vote of the doctoral committee shall be required to approve a field study. During the course of the field study the student would normally register for 30 semester hours of field study. Upon completion of the field study a formal engineering report with a standard format shall be submitted to the members of the doctoral committee and defended in an oral examination.

GRADUATE FACULTY

Members

Professor Ali M. Alli
Operations research, quality control

Professor Luther A. Beale
Structural analysis, design
Professor Wendell C. Bean
Automatic control systems, bioengineering
Professor James J. Brennan
Applied statistics, systems simulation, manufacturing processes and materials
Professor Otto G. Brown
Fluid mechanics in turbulent flow; bioengineering
Associate Professor John A. Bruyere
Materials science
Assistant Professor Carl Carruth
Work design and measurement, human factors and motivation
Assistant Professor Serban D. Constantin
Computer Science
Professor James L. Cooke
Process control; power system analysis
Professor Floyd M. Crum
Solid state devices in electronic circuits
Professor Andrew P. Delflache
Soil mechanics, foundations, ocean engineering, geophysics
Professor David G. Gates
Decision-making processes; plant layout, human factors
Professor Jack R. Hopper
Reaction kinetics, catalysis
Assistant Professor Ku-Len Li
Mass transfer, thermodynamics I, math modeling
Assistant Professor Richard L. Long
Process control, optimization, math modeling
Professor Eugene P. Martinez
Kinetic and thermal sciences of fluids
Professor Robert A. McAllister
Transport properties, fluid mechanics
Professor Harry T. Mei
Computer applications, humidity control
Associate Professor William E. Morgan
Environmental engineering
Associate Professor William C. Nylin
Computer science
Assistant Professor Desmond N. Penny
Civil engineering
Profesor Irvin L. Reis
Probabilistic design, mathematical models, management engineering
Professor Bruce G. Rogers
Ultimate load characteristics of structures, stress analysis
Assistant Professor L. Wayne Sanders
Heat transfer, air pollution control, fluid mechanics
Associate Professor Ramon S. Satterwhite
Electromagnetic fields and waves
Associate Professor Paul Schillings
Operations research
Associate Professor Marlin L. Sheridan
Structural analysis, design
Professor George B. Tims, Jr.
Engineering management
Professor William R. Wakeland
Control systems design, computer-aided design
Associate Professor Bobby R. Waldron
Mathematical statistics, computer science

Professor Richard E. Walker
Rheology, analog-hybrid computers
Associate Professor Joseph T. Watt
Digital systems, control, and analog computers
Associate Professor Carl L. Yaws
Physical and thermodynamic properties, solar energy

*Engineering Courses:

531 — **Materials Science (3:3:0)
Principles underlying the behavior of materials existing in the solid, liquid and gaseous phases.

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.

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

535 — **Control Theory (3:3:0)
Introduction to state variables; multiple-input-multiple-output systems; controllability; performance criteria; choice of control strategy.

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. Statistical and irreversible thermodynamics are introduced. Course credit in chemistry is optional.

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 solids.

538 — **Sampled Data Control Systems (3:3:0)**
Principles of digital and sampled-data control systems. Analysis of response, stability and compensation by transforms and other methods; special topics as time permits. Prerequisite: Mth 4301G.

5101, 5201, 5301 — **Special Topics (1-3:1-3:0)**
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.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week
**Core Courses. A core course may be repeated one time for graduate credit, upon prior approval, where course content varies.

5305 — **Reliability** (3:3:0)
Statistical theories pertinent to solution of engineering problems in reliability; distribution and failure theory including failure rate and mean time to failure for the exponential, log normal, gamma and Weibull distributions.

5308 — **Cost and Optimization Engineering** (3:3:0)
Includes the mathematics of cost comparisons, profitability and optimization with emphasis on processing, cost estimation and control.

5310 — **Advanced Concrete Design** (3:3:0)
Analysis and design of concrete members with consideration given to prestressing or post-stressing of beams and structural components.

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 — **Heat Transfer Mechanisms.** (3:3:0)
This course will be concerned with individual mechanisms of heat transfer. The mechanisms studied will be conduction, radiation, convection or boiling. The course may be repeated for credit as the mechanism studied varies.

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.

5315 — **Theory of Elasticity** (3:3:0)
General analysis of stress and strain, equations of equilibrium and compatibility, stress and strain relations, two dimensional stress problems, elastic energy principles, thermoelastic problems.

5316 — **Operations Research I** (3:3:0)
The use of advanced mathematical models for optimizing engineering problems with emphasis on management decisions. Includes special techniques based on systems analysis, design of experiments, linear programming, queuing, simulation and probabilistic analysis.

5317 — **Micromeritics** (3:3:0)
Shape and size-distribution of particles. Theories of sieving, grading and grinding. Surface properties. Chemical properties. Packing mechanics of particulate matter (statics, dynamics, behavior under stress, thermodynamics). Electrical, optical and sonic properties. Diffusion, transport, collection and separation of small particles.

5318 — **Stress Analysis** (3:3:0)
Use of reflection and refraction photoelastic apparatus to determine state of stress in opaque and transparent structural models. Demonstration of brittle coating techniques. Comparison of electrical resistance and mechanical strain gages. Investigation of dynamic loading with oscilloscopes and other recording apparatus.

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.

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 — Light Gage Steel Design (3:3:0)
Analysis and design of structural members using light gage cold formed steel. Consideration is given to elastic and inelastic buckling in beams and columns due to local, flexural, torsional and torsional flexural action.

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.

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.

5327 — Numerical Methods of Structural Analysis (3:3:0)
Matrix methods applied to analysis of trusses, beams and frames.

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.

5329 — Water and Waste Analysis (3:3:0)
Fundamental treatment of sanitary chemistry and microbiology; an intensive study of basic laboratory techniques and instrumentation.

5330 — Wastewater Treatment (3:3:0)
Principles of treatment for domestic and industrial wastewaters with emphasis on process kinetics.

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 analogues from second-order ordinary and partial differential equations are also discussed. 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 Re-

search. 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 water resources by multiple use, reuse and improvement of existing sources to meet quality requirements.

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 adsorption, 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.

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, impe-

dance 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.

5355 — **Random Signal Theory (3:3:0)**
Basic concepts of probability theory, correlation functions, power-density spectrum and mean-square error criteria as applied to stationary stochastic processes in linear systems; optimum filtering and prediction and other special topics depending upon class interest and time available, such as: nonlinear devices, time-varying systems, non-stationary processes.

5356 — **Modern Control Theory (3:3:0)**
Review of state variables; determining mathematical models from input-output data; on-off control systems; optimal control.

5357 — **Electromagnetic Fields and Waves (3:3:0)**
Maxwell's equations and various field theorems derived from them. Boundary value problems including plane wave interaction with planar and cylindrical objects. Source-excited boundary value problems. Green's functions. Microwave optics.

5358 — **Scientific Writing and Editing (3:3:0)**
Supervised presentation of technical and scientific projects for students proficient in exposition. Projects subject to department's and instructor's approval. Prerequisite: Instructor's consent and departmental approval.

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.

5361 — **Microelectronic Integrated Circuits (3:3:0)**
A basic study of the synthesis of semiconductor and thin film integrated circuits using passive and active elements. The application of such devices to computers, signal processors and instruments.

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 — **Administrative Control Systems (3:3:0)**
Problems affecting the engineer in his/her design, analysis and control of information systems.

5364 — **Digital System Engineers (3:3:0)**
Review of combinational and sequential logic; organization of digital computers; data representation and transfer; arithmetic operations; storage and access; control functions.

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.

5367 — Nuclear Reactor Theory (3:3:0)
Nuclear fission; neutron diffusion, moderation and absorption; Fermi age treatment; reactor materials and shielding.

5371 — Seminar in Administrative 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.

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 (3:2:3)
The specialized adaptation of engineering designs to the human operator's role in man-machine systems.

631 — Design Project (3:A*:0)
Prerequisite: admission to candidacy.

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.

6340 — Distillation (3:3:0)
Material and energy-balance relationships are reviewed for multicomponent fractionation equipment and for batch skills. 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 adsorption will be applied to chemical reactions occurring on the surface of solid catalysts and on liquid surfaces.

6342 — Extraction (3:3:0)
The thermodynamics of nonideal solutions is reviewed, and the prediction of ternary solubility relationships from binary solution data is thoroughly developed. The quantitative design of equipment for liquid-liquid extractions is given considerable emphasis. Both multistage and continuous contact equipment are considered.

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. Computer utilized as a tool of investigation and optimization.

6350 — 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.

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 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 430G — Indeterminate Structures
CE 433G — Environmental Health Engineering
CE 434G — Soil Engineering
CE 435G — Water and Waste Water Treatment
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

*Arranged

EE 432G — Electronics III
EE 434G — Network Synthesis
EE 436G — Control Engineering
EE 437G — Electromagnetic Fields II
EE 4302G — Communication Theory
EE 4303G — Logical Design of Switching Systems
EE 4304G — Advanced Topics
EE 4305G — Digital Systems
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 — Design of Tools and Processes
IE 435G — Production and Inventory Control
IE 437G — Operations Research
IE 4302G — System Analysis and Design
IE 4303G — Linear Programming
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 438G — Theory of Statistics

ME 431G — Engineering Systems Design
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 Mathematics

The Department of Mathematics offers two programs of study leading to the Master of Science (M.S.) degree in Mathematics. The program in the Mathematical Sciences is designed to train students for a professionally oriented career in industry, in government or in training for further graduate study in pure mathematics. This program includes pure and applied mathematics, computer science, statistics, operations research, etc. The other program is designed to provide depth and breadth in Mathematics Education. Consequently, these two programs are referred to as the Mathematical Science Specialization or as the Mathematics Education Specialization.

Those seeking admission to either of these specializations must first meet the general requirements as set forth in this catalog for admission to the College of Graduate Studies. In addition, the applicant must satisfy the special requirements as indicated below for the specialization of interest.

Mathematical Sciences Specialization

The program under this specialization permits students to study in the areas of applied and pure mathematics, computer science, statistics, operations research, mathematical physics, mathematical engineering, etc. The programs are designed so that students may select courses suited to a variety of interests and career goals. Advising plays an integral role in achieving these objectives.

Admission to Candidacy

In order to be admitted to candidacy in the Mathematical Sciences Specialization of the M.S. degree in mathematics, students should either already have the following courses (or their equivalents) in their background or they should proceed to acquire them as developmental courses.

1. An advanced course in real analysis (this may be satisfied by Mth 338)
2. One course in each of four of the following areas:
   (a) Topology (Mth 435)
   (b) Geometry (Mth 333 or 433)
   (c) Complex analysis (Mth 431)
   (d) Abstract algebra (Mth 335 or 336)
   (e) Differential equations (Mth 4301 or 331)

Completion of the Program

In order to complete the M.S. program students must demonstrate their general understanding of basic mathematical concepts either by

3. scoring in the 70 percentile or higher on the Advanced Mathematics part of the Graduate Record Examination or by
4. passing a general survey test to be developed by the Department of Mathematics.

The above mentioned survey test will be offered each long semester and students will be encouraged to take it as soon as they have mastered the background material referred to in 1 and 2 above. Upon the failure of this test, other developmental courses will be suggested. A student will be permitted to repeat this test no more than twice.

5. In lieu of a thesis, students must write a definitive paper completed during the last semester describing their efforts in the practicum courses (Mth 5360-5361). The defense of the resulting research paper will constitute their final oral examination. A total of six credit hours will be assigned to the practicum and the paper.
6. Apart from the above restrictions, the M.S. program should allow for the pursu-

ing of knowledge in diverse areas of pure and applied mathematics. Accordingly, every effort may be made to fit the required additional 30 credit hours of graduate courses to the individual needs of each student. In conjunction with 5 above, this gives a total of 30 hours to complete the degree.

Sample Tracks and Suggested Courses

The following are suggested courses that may be used to develop tracks of specializations for the candidate. In each track, the candidate is permitted to choose six elective semester hours in the mathematical sciences in addition to the 24 semester hours listed below and the six semester hours assigned to Mth 5360 and 5361. Additional tracks may be designed. All programs must have the approval of the Department Head of Mathematics.

Numerical Analysis
- Mth 431C - 3-Complex Variables
- Mth 4315G - 3-Numerical Analysis
- Mth 4325G - 3-Finite Element Analysis
- Mth 5310 - 3-Numerical Analysis
- Mth 4316G - 3-Mathematical Programming
- Mth - 6-hours to be chosen from
  - Mth 532 — Modern Algebra
  - Mth 5304 — Functional Analysis
  - Mth 535 — Introduction to Advanced Analysis

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Mathematics/Engineering
- Mth 5310 - 3-Numerical Analysis (or Mth 4315G)
- Mth 5311 - 3-Complex Variables (or Mth 431G)
- Mth 438G - 3-Theory of Statistics
- Mth 537 - 3-Methods of Applied Mathematics
- Mth 5303 - 3-Modeling Theory
- Mth - 3-hours to be chosen from
  - Mth 532 — Modern Algebra
  - Mth 534 — Topology
  - Mth 5304 — Functional Analysis
- Mth - 3-hours to be chosen from
  - Mth 5301 — Operational Math I
  - Mth 5302 — Operational Math II
  - Mth 533 — Calculus of Variations
  - Mth 535 — Introduction to Advanced Analysis
  - Mth 536 — Integral Equations. Fredholm theory
  - Mth 538 — Fourier Series
  - Mth 539 — Infinite Series
- EGR - 3-hours to be chosen from
  - EGR 5303 — Regression Analysis
  - EGR 5304 — Nonlinear Programming
  - EGR 5305 — Reliability
  - EGR 5319 — Design of Experiments

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Administration and Management Science
- Mth 433G - 3-Linear Algebra
- Mth 4316G - 3-Mathematical Programming
- Mth 5311 - 3-Complex Variables
- Mth 532 - 3-Modern Algebra
- Mth 437G - 3-Probability and Statistics
- Bus 539. - 3-Quantitative Analysis Control
- 6-hours from College of Business

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Mathematics/Statistics
- Mth 532 - 3-Modern Algebra
- Mth 431C - 3-Complex Variables
- Mth 433G - 3-Linear Algebra
- Mth 437G - 3-Probability & Statistics
- Mth 438G - 3-Theory of Statistics
- Mth 5303 - 3-Modeling Theory
- EGR - 6-hours to be chosen from
  - EGR 5303 — Regression Analysis
  - EGR 5304 — Nonlinear programming
  - EGR 5305 — Reliability
  - EGR 5319 — Design of Experiments

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Operations Research
- Mth 5311 - 3-Complex Variables
- Mth 532 - 3-Modern Algebra
- Mth 4315G - 3-Numerical Analysis
- Mth 4316G - 3-Mathematical Programming
- EGR 5304 - 3-Nonlinear Programming
- EGR 5316 - 3-Operations Research I
- EGR 5332 - 3-Operations Research II
- Mth 5303 - 3-Modeling Theory

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Mathematics/Computer Science
- Mth 5320 - 3-Modern Algebra
- Mth 5311 - 3-Complex Variables
- Mth 4315G - 3-Numerical Analysis
- Mth 4316G - 3-Mathematical Programming
- Mth 5303 - 3-Modeling Theory
- 9-semester hours in Computer Sciences

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Mathematics/Physics
- Mth 5311 - 3-Complex Variables
- Mth 5320 - 3-Modern Algebra
- Mth 4315G - 3-Numerical Analysis
- Mth 4302G - 3-Partial Differential Equations
- Phy 531 - 3-Theoretical Physics
- Phy 532 - 3-Relativity
- Phy 431G - 3-Classical Mechanics
- Mth 537 - 3-Methods of Applied Mathematics

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Mathematics Education Specialization

This specialization is professionally oriented to concepts, structures, styles, skills and applications essential for enhancing the teaching of mathematics in the elementary and secondary grades. Development of techniques for effective communication of mathematics is emphasized through creative activities, research and student involvement in the acquisition and presentation of mathematical ideas. Each student's program is established and further developed in close association with his/her advisor. The Department of Mathematics has special interest in developing programs for elementary, middle and secondary school teachers.

Admission to Candidacy

To be admitted to candidacy in this program a student

1. must successfully complete at least 24 semester hours of undergraduate mathematics including at least one course in calculus;
2. must successfully complete 24 semester hours of graduate course work in Mathematics Education including Mathematics 5321, 5322 and a Seminar in Current Mathematical Literature (Mth 5338). A maximum of six of the required graduate semester hours may be taken in another discipline if approved by the head of the Mathematics Department.

Satisfactory completion of one of the following is required to complete the program:

3. Preparation and presentation of a creative mathematical project of an advanced nature to a subcommittee of the graduate faculty and six additional semester hours of graduate level mathematics.
4. Write and defend a mathematical thesis before a committee of the graduate faculty.
5. Satisfactory completion of 36 hours of course work, a comprehensive written examination and successful completion of Mth 5335, Seminar in Mathematical Research.

If a creative project is not elected, the student will be encouraged to write a thesis. The practicum may involve development of course materials, curricula and related topics under the guidance of an advisor. It must be presented before an examining comittee of the graduate faculty. Six credit hours will be given for either the thesis or the practicum. The decision to elect the practicum or a thesis should be made when approximately one-third of the required semester hours for the degree is completed. It must be started no later than mid-semester of the penultimate semester of study.

GRADUATE FACULTY

Members

Professor Richard A. Alo
Analysis, topology, algebraic structures, programming languages, medical applications, mathematics education, mathematical programming, probability

Associate Professor Joseph A. Baj, II
Topology, analysis

Associate Professor Mary Katherine Bell
Mathematics education

Associate Professor George Berzsenyi
Analysis, problem solving

Professor Russell W. Cowan
Differential equations, applied mathematics

Professor Sterling C. Crim
Applied mathematics
Assistant Professor Michael A. Laidacker
Topology, applied mathematics
Professor Philip W. Latimer
Analysis, modern elementary mathematics
Professor Sterling W. McGuire
Statistics, applied mathematics
Associate Professor Richard L. Price
Mathematics education
Associate Professor David Read
Topology, numerical analysis, statistics
Professor Jeremiah M. Stark
Analysis, applied mathematics
Professor Howard C. Vanzant
Applied mathematics
Associate Professor Sam M. Wood, Jr.
Analysis, abstract algebra

*Mathematical Sciences 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.

532 — Modern Algebra (3:3:0)
Numbers, sets, rings, fields, polynomials and the theory of fields. The theory of fields includes the study of subfields, prime fields, simple field extensions, algebraic field extensions and Galois fields.

533 — Calculus of Variations (3:3:0)
The Euler-Lagrange differential equation, necessary conditions of Legendre, Jacobi and Weierstrass, sufficient conditions for an extreme brachistochrone problem, geodesics, surface of revolutions of minimum area, other problems as time permits.

534 — Topology (3:3:0)
Sets, compact spaces, topological spaces, embedding and metrization and Urysohn lemma. Uniform spaces and function spaces as time permits.

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: Mth 431G.

536 — Integral Equations, Fredholm theory (3:3:0)
Eigenvalues and eigenfunctions. Volterra integral equation. Degenerate, symmetric, resolvent, iterated and arbitrary kernels. Neumann series. Use of integral equations theory as a unified approach to boundary value problems, differential equations and potential theory.

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: Mth 431G.

538 — Fourier Series (3:3:0)
Expansion of functions in Fourier series, Fourier theorems, orthogonal sets of functions, orthonormality, Parseval's theorem. Integration and differentiation of Fourier series. Fourier integrals. Application to boundary value

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Third number: Laboratory hours required per week

problems arising from partial differential equations of physics and engineering.

539 — Infinite Series (3:3:0)
Sequences, power series, series of functions, complex series, expansion of functions, tests for convergence, uniform convergence, conditions for rearranging terms in a series. Fourier series. Lambert series. Weierstrass theorem on double series, asymptotic expansions, summation of series.

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.

5302 — Operational Mathematics (3:3:0)
Application of Laplace Transform to partial differential equations; boundary-value problems and characteristics, function representation.

5303 — Modeling Theory (3:3:0)
Study of techniques of building and applying mathematical models. Applications in biology, ecology, economics and sociology.

5304 — Functional Analysis (3:3:0)
Study of linear topological spaces, convexity, Hilbert spaces and spectral theory. Applications in linear programming and solutions of partial differential equations.

5310 — Numerical Analysis (3:3:0)
Stiff and nonstiff ordinary differential equations. Steady state solutions. Finite element and finite difference approximations of elliptic boundary value problems. Direct and iterative methods. Extensions to parabolic equations. Finite differences schemes for hyperbolic equations.

5311 — Complex Variables (3:3:0)
Conformal mapping and analytic continuation, calculus or residues, hydrodynamics and asymptotic expansions.

5331 — Special Topics in the Mathematical Sciences (3:3:0)
Advanced topics in mathematics to suit the needs of individual classes of graduate students. Course may be repeated for a maximum of six semester hours credit when the topic varies.

5360 — Practicum in Applied Mathematics I (3:3:0)
A practical experience for individual students in the methods and practices of mathematics. The graduate student (under faculty supervision) will be required to identify, analyze and construct a mathematical model of an appropriate problem in a chosen field. Prerequisite: Approval of graduate advisor.

5361 — Practicum in Applied Mathematics II (3:3:0)
This course is a sequel to Mth 5360. A grade for both courses will be given at the completion of all the requirements for this course. Prerequisite: Approval of graduate advisor and Mth 5360.

669A-669B — Thesis (6:A*:0)
Approval of graduate advisor.

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

Mathematics Education Courses:

5321 — Foundations I (3:3:0)
Basic set theory and mathematical logic, introduction to axiomatic systems, the role of definitions, theorems, examples, intuition versus rigor in mathe-

matics, constructive foundation for the real number system, its algebraic and topological properties.

5322 — **Foundations II (3:3:0)**
Continuation of Mth 5321.

5323 — **Real Analysis (3:3:0)**
The first year of Calculus reviewed from a higher viewpoint.

5324 — **Algebra (3:3:0)**
Basic algebraic structures, groups, rings, Euclidean rings, division rings, integral domains, fields.

5325 — **Linear Algebra (3:3:0)**
Vector spaces with special emphasis on the algebraic structures of R, R^2 and $R.^3$

5326 — **Probability and Statistics (3:3:0)**
Permutation and factorials, elementary principles of probability, mathematical expectations, averages, curve fitting, application.

5327 — **Data Processing (3:3:0)**
A survey of higher level languages and an assembly language with applications to advanced programming techniques. Syntax, semantics and numerical techniques as applied to programming applications.

5328 — **Seminar in the History of Mathematics (3:3:0)**
Historical origin of mathematical concepts, lives and achievements of great men of mathematics, balance kept between ancient and modern developments.

5329 — **Seminar in Mathematical Discovery (3:3:0)**
Case histories studied in detail, inductive and heuristic reasoning, teaching by the discovery method.

5330 — **Seminar in Enrichment Topics in Mathematics (3:3:0)**
Curves of constant width, squaring the square, magic squares, mathematical puzzles, games, many other topics.

5332 — **Seminar in Geometry (3:3:0)**
Basic concepts and selected Euclidean topics.

5333 — **Seminar in Number Theory (3:3:0)**
Pythagorean, Fibonacci, Lucas, triangular and other numbers, other topics as time permits.

5334 — **Seminar in Problem Solving (3:3:0)**
Understanding the problem, search for the solution, making sketches, the role of trial and error, checking the solution.

5335 — **Seminar in Mathematical Research (3:3:0)**
An individual research project under supervision with emphasis placed on concepts and methods.

5336 — **Descriptive Topology (3:3:0)**
Study of topological properties of familiar geometric figures.

5337 — **Special Topics in Mathematics Education (3:3:0)**
Treats problems, recent techniques and developments in an identified area of Mathematics Education. May be repeated for credit. Prerequisite: Consent of instructor.

5338 — **Seminar in Current Mathematical Literature (3:3:0)**
Survey of publications by professional organizations, trends in mathematical education, pros and cons of various issues of current interest to mathematics.

College of Fine and Applied Arts

The College of Fine and Applied Arts offers graduate programs of study leading to the Master of Science degree in the fields of public address, theater and speech pathology/audiology, 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 Communication

A Master of Science degree in Speech is offered by the Department of Communication and may be obtained through programs of study with specializations in Public Address, Theater, Speech Pathology, Audiology or Audiology with emphasis in education of the deaf. The master's program is designed to help the student deepen and expand his/her knowledge and provide him/her with the opportunity to develop skills and concepts which may be applied to the several vocational ends relating to the above fields of study. Persons seeking admission to these programs must meet the general requirements for admission that are outlined in this bulletin. Generally, an applicant should have completed 24 semester hours of undergraduate courses in the speech curriculum. Each student's curriculum choices will be guided by a graduate advisor.

Specializations in Speech Pathology/ Audiology/Audiology-Deaf Education

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 total 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 in Speech and Hearing and are eligible for admission into the graduate program if they meet the minimum entrance requirements of the College of Graduate Studies. All other applicants must be reviewed by a committee of the graduate faculty of the Speech and Hearing Center. The committee will follow the criteria for student/faculty ratios as established by the American Speech and Hearing Association and individual decisions for admission will be made based on: 1) space available; 2) the student's undergraduate GPA; 3) the student's undergraduate curricular preparation; 4) the student's letters of recommen-

dation and 5) GRE scores. Students admitted to the graduate program with specific curricular deficiencies will be expected to remove the deficiencies before graduation.

Students completing the graduate programs in Speech Pathology or Audiology will be eligible for membership in the American Speech and Hearing Association and will have completed the academic and supervised clinical practicum requirements for the Certificate of Clinical Competence. Speech Pathology and Deaf Education students wishing to work in the public schools in the state of Texas must meet the College of Education's requirements for certification. Student teaching in the public schools, a state requirement for a teaching certificate, takes place during the graduate year for Speech and Hearing majors. It should be noted that though student teaching is taken during the graduate year, graduate credit is not awarded for student teaching and the semester credits earned from student teaching may not be included in the 36 hours of graduate credit required for graduation.

Professional Certification Requirements of the American Speech & 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 verification of 300 hours of supervised clinical practice.

Specialization in Public Address/Theater

Thirty semester hours are required to complete programs in these areas, 18 of which will come as a result of course work in either of these two fields, six hours in thesis and six hours of course work in an approved minor field. At least 12 semester hours, exclusive of the thesis, must be in speech courses numbered 500 or above. With the approval of the head of the Department of Communication, 12 semester hours of course work may be substituted for the thesis.

GRADUATE FACULTY

Members

Professor Robert F. Achilles
Speech pathology
Professor W. Brock Brentlinger
Speech, mass media
Associate Professor W. Patrick Harrigan, III
Theater, oral interpretation
Professor DeWitte T. Holland
Public address
Professor S. Walker James
Theater
Associate Professor John P. Johnson
Speech pathology

Associate Professor Robert Moulton
Speech pathology, education of the deaf
Associate Professor Olen Pederson
Audiology, speech pathology

*Speech Courses:

5101, 5201, 5301, 5401, 5501, 5601 — Institute in Communication (1-6:1-6:0)
Credit for participation in summer or other institutes. Subject of each institute to be noted on the schedule. May be repeated for credit when topic varies.

515, 525 — Individual Study (1-2:A:0)**
Independent study of special problems in disorders of communication.

5301 — Aphasia and Neurogenic Disorders (3:3:0)
Theory and treatment for organic speech disorders or 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.

5310 — American Public Address (3:3:0)
Studies of significant American oral rhetoric from colonial times to the present. May be repeated for credit when topic varies.

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 Ameslan 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.

5315 — Advanced Argumentation and Debate (3:3:0)
The application of the principles of logic and motivation to the argumenta-

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

**Arranged

tive process. A review of the place of forensics in the high school and how such a program is developed and maintained.

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.

5321 — Contemporary Problems-Audiology (3:3:0)
Seminar, controversial issues in audiology — private practice, hearing-aid dispensing.

5322 — Medical Audiology (3:3:0)
Study of otologic pathology and influence upon auditory/vestibular systems.

5323 — Electronystagmography (3:3:0)
Study of vestibular system-physiology and assessment.

5324 — Advanced Hearing Aids (3:3:0)
Contemporary amplification for the hearing impaired — design, testing and counseling.

5325 — (Theater) 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.

5340 — (Theater) 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.

5341 — Seminar in Oral Interpretation (3:3:0)
A study of the history of oral interpretation and its contributions to the field of communication. Experimental studies in literary analysis, rhetorical principles and performance skills.

5345 — Rhetorical Criticism (3:3:0)
Theories and criteria of rhetorical criticism from Aristotle to the present.

5346 — (Theater) Dramatic Criticism (3:3:0)
Theories and criteria of dramatics from Classical Greek period to the present.

535 — Individual Study (3:A*:0)
Independent study of special problems in disorders of communication. May be repeated once for credit.

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.

*Arranged

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 (Theater)
430G — Problems and Projects in Speech (Speech)
4301G — Advanced Speech Pathology
4302G — Advanced Audiology
4303G — Clinical Practicum
4304G — Intermediate Manual Communication
431G — Problems and Projects in Theater (Theater)
431G — Laws and Ethics of Mass Media (Communication)
432G — History and Principles of American Journalism (Communication)
434G — Advanced Stagecraft (Theater)
434G — Persuasian (Speech)
436G — History of Theater (Theater)
437G — Italian Rhetoric (Speech)
437G — Directing Secondary School Theater Activities (Theater)
438G — Directing Secondary School Speech Activities (Speech)
438G — Broadcast News (Communication)
438G — History of Theater in Italy (Theater)
439G — Seminar in Fine Arts (Humanities)
439G — Rhetoric and Public Address (Speech)
4311G — Theory and Practice of Scenery and Lighting Design (Theater)
4312G — Costume Design and Construction (Theater)
4371G — Advanced Oral Interpretation (Speech)
4381G — Black Rhetoric (Speech)
4383G — Print Advertising (Communication)
4391G — Advanced Television Production (Communication)

Department of Music

The Master of Music and the Master of Music Education degrees are offered by the Department of Music. The master's program is designed to help performers and specialists in the several areas of the music program to develop skills and concepts which may be applied to their particular fields of endeavor. Persons seeking admission to these programs must meet the general requirements for admission that are outlined in this catalog. Generally, an applicant should hold a Bachelor of Music degree or its equivalent in music courses, this equivalency to be determined by the Department of Music.

Degree Requirements

The candidate for the Master of Music degree must meet all the College of Graduate Studies general degree requirements as listed in this catalog. The Master of Music in performance requires 30 semester hours of course work, of which six hours consist of a thesis, or a recital and a research paper. The Master of Music Education degree requires 36 hours of course work, which may include six hours of thesis work. All degree candidates must take MEd 532, Seminar in Special Problems. An oral examination is required for all students before completion of a degree.

GRADUATE FACULTY

Members

Professor Joseph B. Carlucci
Single reed woodwinds
Associate Professor J. N. Collier
Musicology
Associate Professor Paul W. Holmes
Theory and composition
Professor Hubert B. Kaszynski
Piano, organ
Assistant Professor John R. LeBlanc
Voice, choral
Professor George L. Parks
Voice, music education
Associate Professor Joseph Truncale
Voice, opera
Professor Charles A. Wiley
Double reed woodwinds

The graduate student will select music courses from the following list:

*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 eight hours may be applied to the music education degree toward graduation.

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 to the Master of Music degree.

Music Education (MEd)

520 — Piano Accompanying (2:2:0)
A study of the techniques of accompanying, with practical experience.

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.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

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.

Music Literature (MLt)

532 — **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.

533 — **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.

534 — **Choral Literature (3:3:0)**
The literature, performance practices and history of choral music, including a study of representative works from various countries.

535 — **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.

536 — **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.

537 — **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.

538 — **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 devises.

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.

538 — **Advanced Choral Arranging (3:3:0)**
Advanced techniques in arranging music for various vocal combinations.

539 — **Jazz Arranging (3:3:0)**
Techniques in arranging music for various jazz combinations.

Music (Mus)

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

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College of Liberal Arts

The College of Liberal Arts offers programs of study leading to the Master of Arts degree in the fields of English, government and history and to the Master of Public Administration degree.

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 English

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.

Master of Arts Students Seeking 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, his/her graduate program in English will include English 4327G, 533, 539, and one course from either 535, 536, 537, 538 or 5311.

GRADUATE FACULTY

Members

Professor Robert J. Barnes
British and Continental literature: 1840 to the present
Professor George W. de Schweinitz
Modern American literature, creative writing
Professor Winfred S. Emmons, Jr.
Middle English language and literature, American literature
Professor Harry L. Frissell
Seventeenth century British literature
Professor Marilyn D. Georgas
Renaissance and Victorian literature
Associate Professor Olga D. Harvill
British Romantic literature
Associate Professor Kirkland C. Jones
Medieval and Renaissance literature
Professor Elizabeth M. Meeks
American literature and English education
Professor Robert C. Olson
Eighteenth century British literature
Associate Professor Jack N. Renfrow
Renaissance literature: dramatic
Professor Henry B. Rule
American literature: 1840 to the present
Professor Arney L. Strickland
Linguistics and English education
Professor Robert Blaine Thomas
Seventeenth and eighteenth century British literature, short story
Professor Alvice W. Yeats
British literature: 1840 to present

*English Courses:

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 focused on. 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.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

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.

699A-699-B — 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 — History of the English Language
432G — Studies in Sixteenth Century Literature
434G — Shakespeare
435G — Studies in Seventeenth Century Literature
438G — Studies in Eighteenth Century Literature
439G — Studies in Romantic Literature
4311G — Studies in Victorian Literature
4317G — Contemporary Drama
4318G — Contemporary Poetry
4319G — Contemporary Fiction
4322G — Russian Literature
4325G — Language: Sound and Meaning
4326G — Expository Writing
4327G — Bibliography and Methods of Research
4328G — Early American Literature
4329G — Modern American Literature
4333G — Studies in a Particular Author
4334G — Critical Studies in Literature

Department of Government

The Department of Government offers programs of study leading to the Master of Arts in Government degree and the Master of Public Administration degree. Persons seeking admission to either program must meet the general requirements for admission that are outlined in the Graduate catalog. An applicant must have completed a bachelor's degree in government or political science, or if the degree is in another area, a minimum of 24 semester hours of undergraduate courses in government. Twelve of the 24 hours must be on the junior and senior level.

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Degree Requirements

The degree of Master of Arts in Government requires the completion of 30 semester hours of graduate work: 18 in government, six in thesis and six in an approved minor. With the approval of the head of the Department of Government, 12 semester hours of course work may be substituted for the thesis. At least 18 semester hours, including the thesis, must be in government courses numbered 500 or above. The minor must be approved by the head of the Department of Government or with the department head's approval six additional hours in government may be substituted for the minor.

The student's graduate program must include Government 530.

The degree of Master of Public Administration requires the completion of 36 semester hours of graduate work: 21 in the core curriculum and 15 from the approved list of courses. The applicant must have completed the following undergraduate courses or their equivalents: urban politics, three semester hours; introduction to public administration, three semester hours; statistics for social scientists, three semester hours. A foreign language is not required.

GRADUATE FACULTY

Members

Associate Professor Bruce Drury
Latin American governments and the developing areas
Assistant Professor Elbert T. Dubose, Jr.
Public administration
Associate Professor Boyd Lanier
International relations
Associate Professor William M. Pearson
Public administration
Assistant Professor L. Thomas Sanders
Urban politics, public policy
Professor Manfred Stevens
Comparative government, Europe
Professor William R. Tucker
Political thought
Associate Professor Glenn Utter
Theory and methodology

*Government 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.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

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 Government.

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

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

536 — Seminar in International Relations (3:3:0)
The study in depth of selected problems in international relations both historical and current. Problems of a theoretical, legal and institutional nature as well as specific policies will be dealt with. 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.

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 — Organization Theory and Behavior
433G — Contemporary Political Thought
434G — Formulation of Public Policy
435G — The International System
436G — American Constitutional Law and Development
437G — American Constitutional Law and Development
439G — Special Topics in Public Administration
4310G — Directed Study
4312G — American State Government
4381G — Government and Politics of the Soviet Union
4382G — Government and Politics of East Asia
4383G — Government and Politics of Latin America

The graduate student in the **MPA** program is required to complete the following core curriculum of 21 hours:

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

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

5352 — Seminar in Fiscal Administration (3:3:0)
The study of formulation and administration of government budgeting, including the role of the budget in the policy process, approaches to budget formulation and analysis, the development of 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 select 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: Gov 5358 and graduate standing.

The graduate student in the MPA program will select an additional 15 hours to the 21 hour core requirement with the approval of the graduate advisor.

Department of 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

Members

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

*Arranged

Assistant Professor John M. Carroll
United States history, diplomatic, the South
Associate Professor Howell Holmes Gwin, Jr.
European history, classical and medieval
Professor Paul E. Isaac
United States history, recent, the West
Professor William M. MacDonald
Modern European history, Great Britain
Professor Howard Mackey
Modern European history, Great Britain
Professor L. Wesley Norton
United States history, social and intellectual
Professor R. Beeler Satterfield
United States history, middle period
Associate Professor John W. Storey
United States history, urban, social and intellectual
Professor Walter A. Sutton
United States history, diplomatic
Professor Preston B. Williams
Modern European history, Central and Western Europe
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.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

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 — Russia 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

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College of Sciences

The College of Sciences offers programs of study leading to the Master of Science degree in fields of biology, chemistry and psychology. In addition, graduate study is available in geology and physics 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 have completed: 1) a minimum of 24 semester hours in the biological sciences; 2) 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 on the Graduate Record Examination (sum of verbal plus quantitative score) *or* when GRE scores (V + Q) fall between 720 and 949, obtain a majority vote of the biology graduate faculty.

Degree Requirements

The candidate for the M.S. in Biology degree 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 in the second exam results in rejection. The prelminary examination must be completed within the first two years of graduate study.

GRADUATE FACULTY

Members

Professor Richard C. Harrel
Limnology, environmental science
Professor Russell J. Long
Mammalogy, histology, embryology
Assistant Professor Phillip Malnassy
Botany, plant physiology
Professor J. Leon McGraw, Jr.
Ichthyology, cellular biology, invertebrate zoology
Professor Jed J. Ramsey
Ornithology, comparative physiology
Associate Professor Philip B. Robertson
Marine biology
Assistant Professor William C. Runnels
Botany, algology
Professor W. Russell Smith
Microbiology
Associate Professor Charles P. Turco
Parasitology, invertebrate zoology
Professor Henry T. Waddell
Mycology, genetics
Professor Michael E. Warren
Entomology, biochemical systematics

*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 — Seminar 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 demonstrations of how these concepts may be applied to varied 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.

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.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

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. Recommended 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. Prerequisites: 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. Prerequisites: 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.

5333, 5666 — Institute in Biological Sciences (3:3:0 or 6:6:0)
Designed to provide credit for participation in summer or in-service institutes. Credit varies with duration. May be repeated for credit when nature of institute differs from those taken previously.

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

From the list below a maximum of 16 semester hours of 400G 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.

440G — Ornithology
441G — Parasitology
442G — Entomology
443G — Limnology
444G — Vertebrate Natural History
445G — Marine Biology
446G — Ecology
447G — Cellular Biology
449G — Protistology
460G — Field Biology
4101G-4401G — Special Topics in Biology
4302G — Cellular Physiology
4303G — Principles of Electron Microscopy
4304G — Electron Microscope Techniques
4402G — 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

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courses 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 this 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 recommended) or Computer Science 439.
5. Examination results of the chemistry section of the GRE must be submitted before graduation.

GRADUATE FACULTY

Professor Harold T. Baker
Physical chemistry
Professor Margaret D. Cameron
Organic chemistry
Associate Professor Kenneth L. Dorris
Physical chemistry
Professor Ewin A. Eads
Inorganic chemistry
Associate Professor Keith C. Hansen
Organic chemistry
Associate Professor J. Dale Ortego
Inorganic chemistry
Associate Professor John A. Whittle
Organic chemistry, biochemistry
Professor Roger E. Yerick
Analytical chemistry

*Chemistry Courses:

531 — Advanced Analytical (3:3:0)
Prerequisites: 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.

5101, 5201, 5301, 5401, 5501, 5601 — 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 533 or consent of instructor.

5351 — Selected Topics in Organic 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
441G — Biochemistry I
442G — Biochemistry II
444G — Qualitative Organic Analysis
446G — Instrumental Methods of Analysis

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week
**Arranged

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

Members

Professor H. E. Eveland
Geomorphology, glacial geology
Professor William H. Matthews, III
Paleontology, stratigraphy
Professor William R. Pampe
Paleontology, meteorology, stratigraphy
Professor Anthony C. Tennissen
Mineralogy, economic geology

*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. Prerequisite: Geo. 530 or equivalent.

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.

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.

4370G — Meteorology
4380G — Oceanography

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

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 from physics.

GRADUATE FACULTY

Members

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 course may not be applied toward a degree in science, engineering or mathematics.

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

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

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

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

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week

Department of Psychology

The Department of Psychology offers a program of study leading to the Master of Science degree in Psychology. It is designed to prepare professional personnel for employment in industry or in the area of community mental health. 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. Special attention is called to the requirement that GRE scores must be on record in the graduate dean's office and that provisional students will not receive credit for more than 12 semester hours. In addition, the applicant must offer the substantial equivalent of the courses in statistics and experimental psychology required of undergraduate students in the psychology curriculum.

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. Twenty-one semester hours of course work in psychology which must include nine semester hours in Psychology 530, 531 and 532. For the Community Psychology Program, an additional 12 semester hours in Psychology 5310, 5311, 5312 and 5313 is required. For the Industrial Psychology Program, an additional 12 semester hours in Psychology 5320, 5321, 5322 and 5323 is required.
2. Satisfactorily pass candidacy examinations as devised by the Psychology Department Graduate Faculty. A student may request and be administered both the written and oral examinations upon completion of a minimum of 15 semester hours of graduate credit in psychology with a grade point average of 3.0 (B) and consent of the Program Coordinator. A student must have satisfactorily passed candidacy examinations prior to enrolling in Psychology 5330.
3. Nine additional semester hours of 400G and/or 500 level courses in an approved field of study.
4. Six semester hours of Psychology 5330 and 5331 or six additional hours in 400G and/or 500 level courses if this requirement is waived.
5. Thesis: Submission of an acceptable thesis and satisfactory performance on a final written comprehensive and/or oral examination.

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.
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 a course more than twice.

GRADUATE FACULTY

Members

Professor Billy Ray Barrington
Individual and group psychotherapy, diagnostics

Professor Myrtle Lee Bell
Developmental psychology, child psychology, group dynamics
Assistant Professor Ann M. Die
Individual and group psychotherapy, diagnostics, child psychology
Assistant Professor James K. Esser
Social, organizational behavior, group dynamics
Associate Professor Otto R. Flocke
Individual and group psychotherapy, diagnostics, child psychology
Professor James R. Hawker
Program Coordinator, Industrial Psychology
Industrial-organizational psychology, communications, human learning, research methodology
Assistant Professor Richard G. Marriott
Physiological, learning, psychopharmacology
Assistant Professor James E. Schroeder
Animal learning, motivation, cognitive processes
Assistant Professor James L. Walker, Jr.
Psychological measurement, statistics, instrumentation and methodology

*Psychology Courses:

510 — Clinic Practices (1:A:0)**
Prepracticum experience which provides the training and skills necessary for the first practicum course. Required of all community psychology majors for three semesters prior to registration for the first practicum. Prerequisite: Regular admission to the program and approval of program coordinator.

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 and cognition. Emphasis will be placed on both background material and current research. May be taken out of sequence.

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

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.

533 — Individual Study (3:A:0)**
Independent study of special problems in industry or in the community. 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 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.

*Code explanation
First number: Semester hours of credit
Second number: Class hours of lecture, recitation or seminar meetings per week
Third number: Laboratory hours required per week
**Arranged

535 — Seminar in Psychology (3:3:0)
An intensive study of selected areas of psychological thought and/or research. Emphasis will be on locating and evaluating literature in a selected area of psychology. Description of course content will appear in the schedule of classes. May be repeated for credit when topic varies. Prerequisite: Consent of instructor.

5310 — Introduction to Psychological Assessment (3:3:0)
An introduction to psychological evaluation techniques including test construction, statistics and administration and scoring techniques for selected objective and projective tests. Prerequisite: Acceptance to psychology graduate program.

5311 — Community Psychology: Introduction to Psychotherapy (3:3:0)
Psychotherapy skills are introduced through didactic, demonstration and experiential learning situations. Students will study their own behavior by participating as a member of a group. Emphasis is placed upon each student developing greater self awareness while being exposed to psychotherapeutic techniques by the instructor.

5312 — Advanced Psychological Assessment (3:3:0)
A study of evaluative procedures stressing test interpretation and report writing with field experience included. Prerequisite: Psy 5310.

5313 — Community Psychology: Advanced Psychotherapy (3:3:0)
The emphasis shifts toward the student taking on greater responsibility as a therapist. Each student will assume a client case load to practice psychotherapy techniques under the supervision of a faculty member. In addition, students will alternate between being a member of a group and being a group facilitator. Prerequisite: Psy 5311.

5320 — Theory and Techniques of Psychological Measurement (3:3:0)
Theory of measurement of human behavior; survey of representative tests of intelligence, aptitudes, interests, personality, etc.

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.

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. This course may be waived by the graduate faculty of the Psychology Department for students already employed in a professional capacity 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. This course may be waived by the Graduate Faculty of the Psychology Department for students already employed in a professional capacity if they elect three additional hours from the approved program courses. Prerequisite: Psy 5330.

*Arranged

5332 — Practicum III (3:A*:0)
Supervised internship in the area of particular interest to the student upon approval of the graduate coordinator. The practicum includes teaching and training other graduate students who are in the process of developing community mental health intervention skills and diagnostic abilities. Prerequisite: Psy 5331, selection of nonthesis option and 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.

431G — Sensation and Perception
433G — Differential Psychology
434G — An Introduction to Psychotherapy
435G — Leadership and Group Dynamics
436G — Learning
437G — Quantitative Psychology
438G — Physiological Psychology
439G — Contemporary Problems in Psychology

*Arranged

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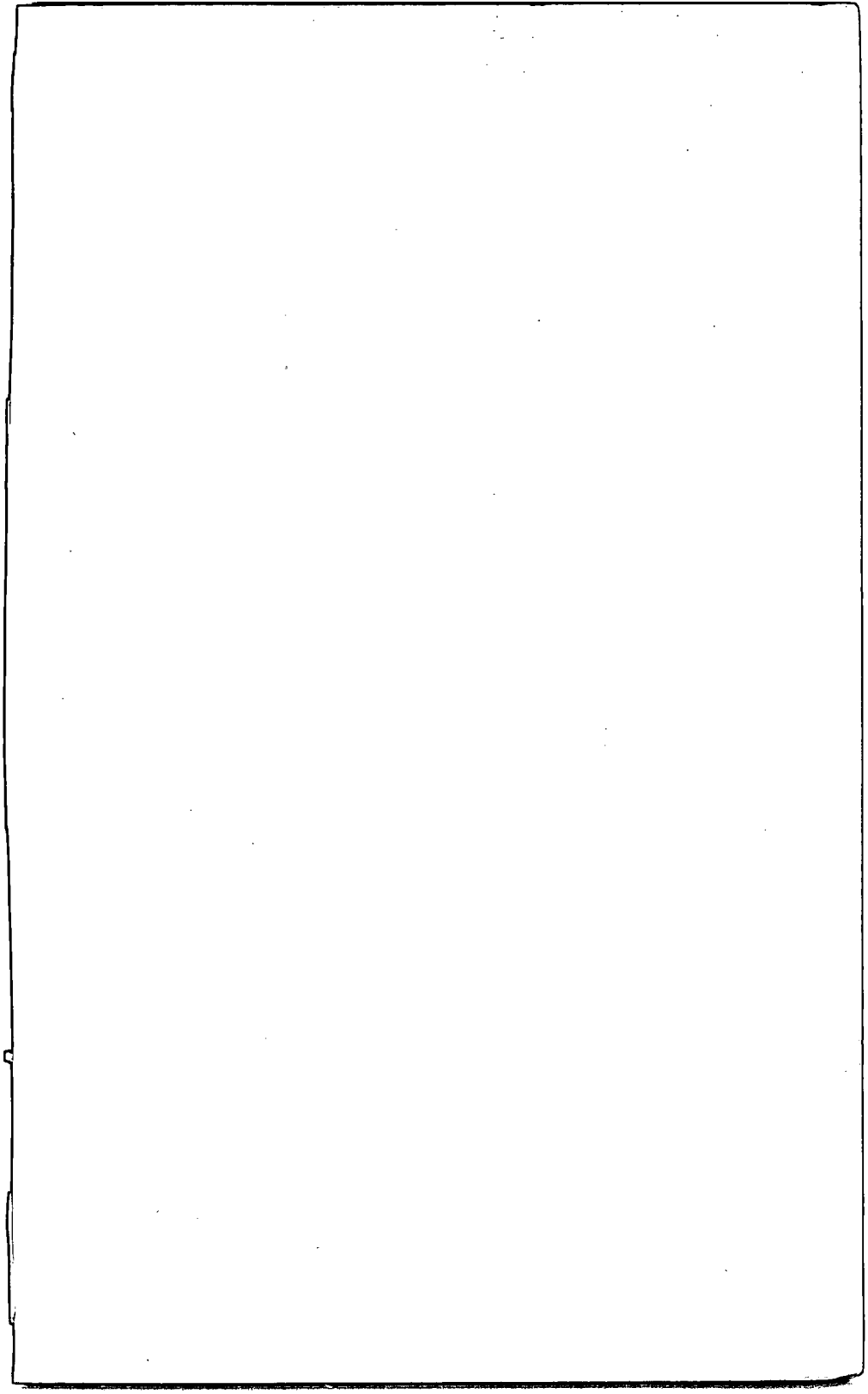

Bulletin of
LAMAR UNIVERSITY (USPS-074-420)
Beaumont, Texas 77710

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