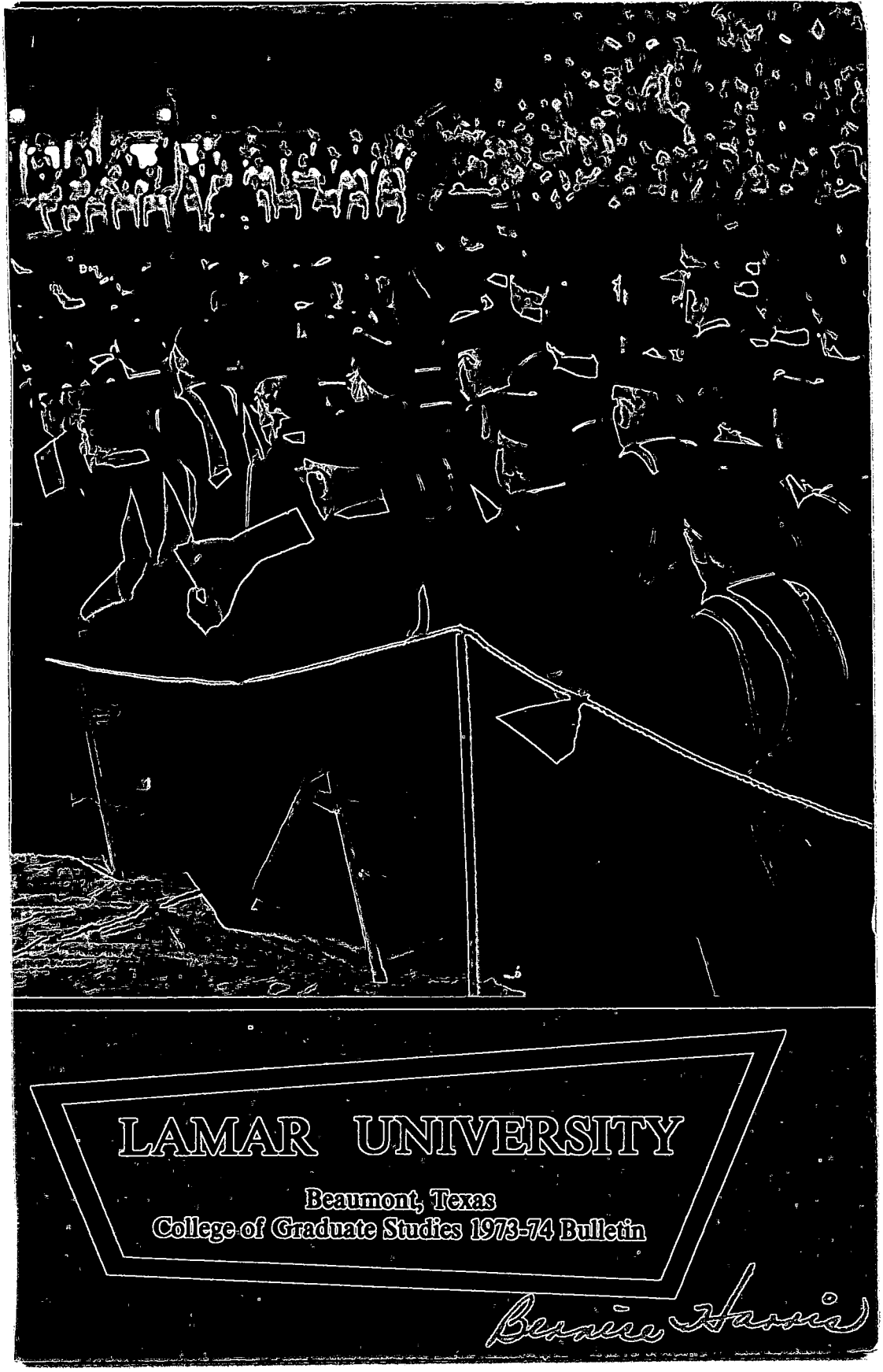


LAMAR UNIVERSITY

Beaumont, Texas
College of Graduate Studies 1973-74 Bulletin

Bernie Harris

LAMAR UNIVERSITY

College of Graduate Studies

1973-74 Bulletin
Vol. 23 No. 7 April 1973

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

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

Second class mail privileges authorized at Beaumont, Texas. Published by Lamar University semi-monthly in February; monthly except in June, July, and August.

Table of Contents

Board of Regents

Otho Plummer, Chairman ..... Beaumont

Cecil Beeson, Vice-Chairman ..... Orange

A. H. Montagne, Secretary ..... Orangefield

Bryan D. Beck, Jr. ..... Beaumont

Lloyd L. Hayes ..... Port Arthur

Tom M. Maes, II ..... Beaumont

W. Sam Monroe ..... Port Arthur

Pat Peyton, Jr. ..... Beaumont

John L. Smith ..... San Augustine

— — —

J. B. Morris, Chairman Emeritus ..... Beaumont

1973-74 Calendar

FALL SEMESTER

AUGUST 1973

		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

29 Registration of students who have completed entrance procedures.
30-31 Continued registration.

SEPTEMBER

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

4 Classes begin, 8 a.m. No Adds/Drops on First class day.
6 Last date for registration or for adding courses.
7 Period of application for December graduation begins.

OCTOBER

	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

22-26 Mid-semester week.
31 Foreign Language Examination.

NOVEMBER

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

9 Last date for dropping courses or for withdrawing without penalty.
Last date for approval for December graduation.
12-30 Period for Comprehensive Oral Examination.
15 Comprehensive Written Examination, 1-4 p.m.
20 Last date to pay for diploma; cap and gown.
21 Thanksgiving holidays begin, 10 p.m.
26 Classes resume, 8 a.m.

DECEMBER

						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7 Last date for dropping courses or for withdrawing.
13-20 Final examinations.
22 Commencement exercises.

SPRING SEMESTER

JANUARY 1974

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

9 Registration of students who have completed entrance procedures.
10-11 Continued registration.
14 Classes begin, 8 a.m. No Adds/Drops on First class day.
16 Last date for registration or for adding courses.
17 Period of application for May graduation begins.

MARCH

					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

4-8 Mid-semester week.
13 Foreign Language Examination.
22 Last date for dropping courses or for withdrawing without penalty.
29 Last date for approval for May graduation.

APRIL

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

1-May 3 Period for Comprehensive Oral Examination.
5 Last date to pay for diploma; cap and gown.
Spring holidays begin, 10 p.m.
15 Classes resume, 8 a.m.
18 Comprehensive Written Examination, 1-4 p.m.

MAY

			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

3 Last date for dropping courses or for withdrawing.
8-17 Final examinations.
18 Commencement exercises.

SUMMER SESSION
First Term

JUNE

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

3 Registration.
4 Classes begin, 8 a.m. No Adds/Drops on First Class Day.
5 Last date for registration or for adding courses.
6 Period of Application for August graduation begins.
20 Comprehensive Written Examination, 1-4 p.m.
24 Last date for dropping courses or for withdrawing without penalty.

JULY

	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

1-August 2 Period for Comprehensive Oral Examination.
4 Independence Day holiday.
8 Last date for dropping courses or for withdrawing.
10 Last Class Day.

SECOND TERM

11 Registration.
12 Classes begin, 8 a.m. No Adds/Drops on First Class Day.
15 Last date to register or to add courses.
Last date to pay for diploma; cap and gown.
25 Comprehensive Written Examination, 1-4 p.m.

AUGUST

				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7 Last date for dropping courses or for withdrawing without penalty.
12 Last date for dropping courses or for withdrawing.
16 Last Class Day.
17 Commencement exercises.

Officers of Administration

GENERAL

JOHN E. GRAY, B.A., M.A., LL.D., President
ANDREW J. JOHNSON, B.A., M.A., Ph.D., Vice-President for Academic Affairs
H. C. GALLOWAY, JR., B.S., M.Ed., Vice-President for Finance
G. A. WIMBERLY, SR., B.S., Assistant to the President and Personnel Officer
NORRIS H. KELTON, B.A., M.A., Dean of Admissions and Records
OSCAR K. BAXLEY, B.B.A., Business Manager
GEORGE E. McLAUGHLIN, B.S., Dean of Student Affairs
ROBERT BLAINE THOMAS, B.S., M.A., M.S., Ph.D., Director of Library Services

COLLEGES

E. B. BLACKBURN, JR., B.S., M.Ed., Ed.D., Dean, College of Graduate Studies
W. BROCK BRENTLINGER, B.A., M.A., Ph.D., Dean, College of Fine and Applied Arts
LLOYD B. CHERRY, B.S., B.A., M.A., Dean, College of Engineering
EDWIN S. HAYES, B.S., Ph.D., Dean, College of Sciences
J. D. LANDES, B.S., M.S., Ph.D., Dean, College of Business
M. L. McLAUGHLIN, B.S., M.Ed., Ed.D., Dean, College of Education
KENNETH E. SHIPPER, B.S., M.A., Ph.D., Dean, College of Technical Arts
PRESTON B. WILLIAMS, B.A., M.A., Ph.D., Dean, College of Liberal Arts

THE GRADUATE COUNCIL

E. B. BLACKBURN, JR., B.S., M.Ed., Ed.D., Dean of the College of Graduate Studies, Chairman
HOWARD W. ADAMS, B.A., M.A., Ed.D., Professor of Education, Director of Graduate Studies in Education
KENNETH LEE DORRIS, B.S., Ph.D., Associate Professor of Chemistry
DEWITTE HOLLAND, B.S., B.D., M.A., Ph.D., Associate Professor of Speech, Head, Department of Speech
REGINALD RUSHING, B.A., M.B.A., Ph.D., Professor of Accounting
FRED M. YOUNG, B.S., M.S., Ph.D., Associate Professor of Mechanical Engineering
DAVID D. ZINK, B.A., M.A., Ph.D., Professor of English

The Graduate Faculty

Members

ROBERT F. ACHILLES, Professor of Speech
B.S., McPherson College
M.A., Ph.D., Wichita State University

HOWARD W. ADAMS, Professor of Secondary Education
B.A., Wayne State Teachers College
M.A., Ed.D., University of Nebraska

ALI M. ALI, Associate Professor of Industrial Engineering
B.S., Alexandria University
M.S., Ph.D., Oklahoma State University

ADRIAN N. ANDERSON, Associate Professor of History—Head, Department of History
B.S., M.A., Ph.D., Texas Tech University

HAROLD T. BAKER, Professor of Chemistry—Head, Department of Chemistry
B.S., University of Minnesota
Ph.D., State University of Iowa

ROBERT J. BARNES, Professor of English
B.A., M.A., The University of Kansas
Ph.D., The University of Texas

LUTHER A. BEALE, Professor of Civil Engineering—Head, Department of Civil Engineering
B.S., M.S., Georgia Institute of Technology
Ph.D., The University of Texas
Registered Professional Engineer

WENDELL C. BEAN, Professor of Electrical Engineering—Head, Department of Electrical Engineering
B.A., B.S., Lamar University
M.S., Ph.D., University of Pittsburgh
Registered Professional Engineer

WENDELL BEDICHEK, Associate Professor of Government
B.A., Abilene Christian College
M.P.A., Ph.D., The University of Texas

ALICE C. BELL, Associate Professor of Health and Physical Education for Women
B.S., M.A., Ph.D., Texas Woman's University

RICHMOND O. BENNETT, Professor of Accounting—Head, Department of Accounting
B.S., M.S., Texas A&M University
Ph.D., The University of Texas
Certified Public Accountant

WALTER W. BENNETT, Professor of Business Administration
B.S., University of Maryland
M.B.A., George Washington University
Ph.D., University of Florida

E. B. BLACKBURN, JR., Professor of Education—Dean, College of Graduate Studies
B.S., North Texas State University
M.Ed., Hardin-Simmons University
Ed.D., University of Colorado

DAVID L. BOST, Professor of Secondary Education
B.A., Hardin-Simmons University
M.J., The University of Texas
Ph.D., East Texas State University

JAMES J. BRENNAN, Associate Professor of Industrial Engineering
B.S., University of Northern Iowa
M.S., University of Arkansas
Ph.D., The University of Texas

W. BROCK BRENTLINGER, Professor of Speech—Dean, College of Fine and Applied Arts
B.A., Greenville College
M.A., Indiana State University
Ph.D., University of Illinois

KENNETH R. BRIGGS, Associate Professor of Secondary Education
B.S., M.Ed., Ed.D., North Texas State University

OTTO GEORGE BROWN, Professor of Mechanical Engineering—Head, Department of Mechanical Engineering
B.S., The University of Oklahoma
M.S., Ph.D., The University of Texas
Registered Professional Engineer

MARGARET D. CAMERON, Professor of Chemistry
B.A., Texas Woman's University
M.S., University of Houston
Ph.D., Tulane University

LLOYD B. CHERRY, Professor of Electrical Engineering—Dean, College of Engineering
B.A., M.A., The University of Texas
B.S., E.E., Oklahoma State University
Registered Professional Engineer

RICHARD T. CHERRY, Professor of Business Administration
B.A., Texas A&M University
M.A., Ph.D., The University of Texas

BETTY FAY COODY, Professor of Elementary Education
B.A., East Texas State University
M.Ed., Ph.D., The University of Texas

JAMES L. COOKE, Professor of Electrical Engineering
B.S., Texas Tech University
M.S., The University of Texas
Ph.D., Northwestern University
Registered Professional Engineer

RUSSELL WALTER COWAN, Professor of Mathematics
A.B., M.A., Ph.D., University of California (Berkeley)

STERLING C. CRIM, Professor of Mathematics
B.S., Baylor University
M.Ed., North Texas State University
M.A., George Peabody College for Teachers
Ph.D., The University of Texas

VERNON ROY CROWDER, Associate Professor of Health and Physical Education for Men
B.S., Lamar University
M.S., Ph.D., Louisiana State University

FLOYD M. CRUM, Professor of Electrical Engineering
B.S., M.S., Louisiana State University
Registered Professional Engineer

ANDRE PIERRE DELFLACHE, Professor of Civil Engineering
Civil Engineer of Mines, University of Brussels
B.S., M.S., Sc.D., University of Brussels
Registered Professional Engineer

GEORGE W. de SCHWEINITZ, Professor of English
B.A., University of Colorado
M.A., Ph.D., State University of Iowa

WALTER DEZELLE, JR., Associate Professor of Special Education
B.S., M.Ed., Southwest Texas State University
Ed.D., University of Houston

KENNETH LEE DORRIS, Associate Professor of Chemistry
B.S., Ph.D., The University of Texas

EWIN A. EADS, Professor of Chemistry
B.S., M.S., North Texas State University
Ph.D., Tulane University

EDWIN O. EISEN, Associate Professor of Chemical Engineering
B.S., M.S., Eng.Sc.D., Newark College of Engineering
Registered Professional Engineering

WINFRED S. EMMONS, JR., Professor of English
B.A., Louisiana Tech University
M.A., The University of Virginia
Ph.D., Louisiana State University

HARRY L. FRISSELL, Professor of English
B.A., Southwestern University
M.A., Ph.D., Vanderbilt University

DAVID G. GATES, Professor of Industrial Engineering—Head, Department of Industrial Engineering
B.S., M.S., University of Arkansas
Ph.D., Oklahoma State University
Registered Professional Engineer

MARILYN D. GEORGAS, Associate Professor of English
B.A., Sam Houston State University
M.A., Lamar University
Ph.D., The University of Texas

VERNON H. GRIFFIN, Associate Professor of Elementary Education
B.S., M.Ed., Sam Houston State University
Ed.D., University of Houston

HOWELL H. GWIN, JR., Associate Professor of History
B.A., M.A., Ph.D., Mississippi State University

W. RICHARD HARGROVE, Professor of Elementary Education
B.S., M.Ed., North Texas State University
Ed.D., George Peabody College for Teachers

MARY JANE HASKINS, Associate Professor of Health and Physical Education for Women
B.S., M.A., Ph.D., The Ohio State University

EDWIN S. HAYES, Professor of Biology—Dean, College of Sciences
B.S., North Texas State University
Ph.D., The University of Texas

JAMES B. HIGGINS, Professor of Health and Physical Education for Men—Head, Department of Health and Physical Education for Men
B.A., Trinity University
M.Ed., University of Houston

BRADLEY B. HOGUE, Professor of Elementary Education
B.A., M.Ed., Southern Methodist University
Ed.D., North Texas State University

DeWITTE HOLLAND, Associate Professor of Speech—Head, Department of Speech
A.B., Howard College
B.S., U.S. Merchant Marine Academy
B.D., Southern Baptist Theological Seminary
M.A., University of Alabama
Ph.D., Northwestern University

BELLE MEAD HOLM, Professor of Health and Physical Education for Women—Head, Department of Health and Physical Education for Women
B.S., M.A., George Peabody College for Teachers
Ph.D., Texas Woman's University

JACK R. HOPPER, Associate Professor of Chemical Engineering
B.S., Texas A&M University
M.Ch.E., University of Delaware
Ph.D., Louisiana State University
Registered Professional Engineer

PAUL EDWARD ISAAC, Professor of History
B.A., Pepperdine College
M.A., Ph.D., The University of Texas

S. WALKER JAMES, Professor of Speech
B.A., M.A., Baylor University
M.F.A., Case Western Reserve University
Ph.D., University of Denver

FREDERIC C. JELEN, Professor of Chemical Engineering
S.B., S.M., Massachusetts Institute of Technology
M.A., Ph.D., Harvard University
Registered Professional Engineer (New York, Texas)

ANDREW J. JOHNSON, Professor of History, Vice-President for Academic Affairs
B.A., The University of Texas
M.A., The University of Chicago
M.A., Ph.D., Indiana University

HARVEY J. JOHNSON, Professor of Secondary Education
B.A., Texas College
M.A., University of Michigan
Ed.D., University of Southern California

HI KYUNG KIM, Associate Professor Economics
B.B.A., M.B.A., Southern Methodist University
Ph.D., University of Houston

C. D. KIRKSEY, Professor of Business Administration—Head, Department of Business Administration
B.S., M.S., North Texas State University
Ph.D., The University of Texas

J. D. LANDES, Professor of Accounting—Dean, College of Business
B.S., M.S., North Texas State University
Ph.D., University of North Carolina

PHILIP W. LATIMER, Associate Professor of Mathematics
B.A., Baylor University
M.S., North Texas State University

RUSSELL J. LONG, Professor of Biology
B.A., Ohio Northern University
M.A., Miami University
Ph.D., Ohio State University

WILLIAM W. MacDONALD, Associate Professor of History
B.S., Boston University
M.A., Ph.D., New York University

HOWARD MACKEY, Professor of History
B.A., University of Toledo
M.A., Ph.D., Lehigh University

CONRAD DELL MANG, Professor of Elementary Education—Head, Department of Elementary Education
B.S., M.Ed., M.L., University of Houston
Ed.D., The University of Texas

EUGENE P. MARTINEZ, Associate Professor of Mechanical Engineering
B.S., Lamar University
M.S., William Marsh Rice University
Ph.D., University of Houston

ROBERT A. McALLISTER, Professor of Chemical Engineering—Head, Department of Chemical Engineering
B.S., North Carolina State University at Raleigh
M.S., The University of Wisconsin
S.M., Massachusetts Institute of Technology
Ph.D., Georgia Institute of Technology
Registered Professional Engineer

STERLING W. McGUIRE, Professor of Mathematics
B.S., M.A., Sam Houston State University
Ph.D., Texas A&M University

EDWARD ROY McINTOSH, Associate Professor of Elementary Education
B.S.E., University of Florida
M.S., Florida State University
Ed.D., Michigan State University

MARVIN L. McLAUGHLIN, Professor of Elementary Education—Dean, College of Education
B.S., Sam Houston State University
M.Ed., The University of Texas
Ed.D., University of Houston

ELIZABETH M. MEEKS, Associate Professor of English
B.A., Union University
M.A., George Peabody College for Teachers
Ed.D., University of Houston

HARRY T. MEI, Professor of Mechanical Engineering
B.S., National Taiwan University
M.S., Ph.D., The University of Texas
Registered Professional Engineer (Louisiana and Texas)

MIETZL J. MILLER, Professor of Economics
B.A., M.A., Texas Woman's University
Ph.D., Ball State University

OLIVER P. MONK, Professor of Secondary Education—Head, Department of Secondary Education
B.S., M.Ed., North Texas State University
Ed.D., University of Houston

CLAUDE E. MONROE, Associate Professor of Economics
B.A., The University of Texas
M.A., Ph.D., University of Missouri

L. WESLEY NORTON, Professor of History
B.A., Olivet College
M.A., Ph.D., University of Illinois

ROBERT C. OLSON, Professor of English
B.S., Northwestern University
M.A., Ph.D., University of Colorado

SAM F. PARIGI, Professor of Economics
B.S., St. Edward's University
M.B.A., Ph.D., The University of Texas

CHARLES A. PARTIN, Professor of Economics, Head—Department of Economics
B.S., Stephen F. Austin State University
M.A., Ph.D., The University of Texas

HUGH O. PEEBLES, JR., Associate Professor of Physics
B.S., The University of Texas
M.S., Ph.D., Oklahoma State University

JOSEPH F. PIZZO, JR., Associate Professor of Physics
B.A., The University of Saint Thomas
Ph.D., University of Florida

JED J. RAMSEY, Professor of Biology
B.S., Kansas State University of Agriculture & Applied Science
M.S., Kansas State Teachers College
Ph.D., Oklahoma State University

IRVIN L. REIS, Professor of Industrial Engineering
B.S., M.S., University of Nebraska
Ph.D., University of Illinois
Registered Professional Engineer

JACK N. RENFROW, Associate Professor of English
B.A., Louisiana Tech University
M.A., University of Denver
Ph.D., Louisiana State University

CARL J. RIGNEY, Professor of Physics—Head, Department of Physics
B.S., University of Louisville
M.S., Ph.D., Northwestern University

BRUCE G. ROGERS, Professor of Civil Engineering
B.S., University of Houston
M.S., Ph.D., The University of Illinois
Registered Professional Engineer

HENRY B. RULE, Professor of English
B.A., The University of Texas
M.A., Columbia University
Ph.D., University of Colorado

REGINALD RUSHING, Professor of Accounting
B.A., Southwestern University
M.B.A., Ph.D., The University of Texas

R. BEELER SATTERFIELD, Associate Professor of History
B.A., M.A., Vanderbilt University
Ph.D., Johns Hopkins University

E. LEE SELF, Professor of Secondary Education
B.S., M.S., Northwestern State University of Louisiana
Ph.D., Louisiana State University

W. RUSSELL SMITH, Professor of Biology
B.S., M.S., North Texas State University
Ph.D., The University of Texas

MONTY L. SONTAG, Professor of Special Education—Head, Department of Special Education
B.A., University of Denver
M.A., Ed.D., Columbia University

JEREMIAH M. STARK, Professor of Mathematics—Head, Department of Mathematics
B.S., United States Coast Guard Academy
B.S., North Texas State University
S.M., Ph.D., Massachusetts Institute of Technology

MANFRED STEVENS, Professor of Government
B.A., M.A., University of Oklahoma
Ph.D., The University of Michigan

WALTER ALLAN SUTTON, Associate Professor of History
B.A., William Marsh Rice University
M.A., Ph.D., The University of Texas

ROBERT BLAINE THOMAS, Associate Professor of English, Director of Library Services
B.S., Virginia Polytechnic Institute and State University
M.A., Ph.D., Louisiana State University

GEORGE B. TIMS, JR., Professor of Industrial Engineering—Associate Dean, College of Engineering
B.S., M.S., Oklahoma State University
Registered Professional Engineer

WILLIAM R. TUCKER, Professor of Government—Head, Department of Government
B.A., M.A., The University of Oklahoma
Ph.D., The University of Geneva

CHARLES P. TURCO, Associate Professor of Biology, Director of Research and Development
B.S., St. John's College
M.Ed., M.S., St. John's University
Ph.D., Texas A&M University

MALCOLM W. VEULEMAN, Associate Professor of Accounting
B.S., McNeese State University
M.B.A., Ph.D., University of Arkansas
Certified Public Accountant

HENRY T. WADDELL, Professor of Biology
B.S., M.A., George Peabody College for Teachers
Ph.D., University of Florida

BOBBY R. WALDRON, Associate Professor of Industrial Engineering, Director of Computer Center
B.S., Louisiana College
M.S., Northwestern State College
Ph.D., Texas A&M University

RICHARD E. WALKER, Professor of Chemical Engineering
B.S., Purdue University
M.S., Bucknell University
Ph.D., Iowa State University
Registered Professional Engineer

MICHAEL E. WARREN, Associate Professor of Biology—Head, Department of Biology
B.A., M.A., Ph.D., The University of Texas

JOSEPH T. WATT, JR., Associate Professor of Electrical Engineering
B.A., B.S.E.E., William Marsh Rice University
M.S., Ph.D., The University of Texas
Registered Professional Engineer

PRESTON B. WILLIAMS, Professor of History—Dean, College of Liberal Arts
B.A., M.A., North Texas State University
Ph.D., The University of Texas

RALPH A. WOOSTER, Professor of History
B.A., M.A., University of Houston
Ph.D., The University of Texas

LEONARD A. YATES, Associate Professor of Health and Physical Education for Men
B.S., M.S., Louisiana State University
Ed.D., University of Houston

ALVICE W. YEATS, Professor of English
B.A., McMurry College
M.A., Ph.D., The University of Texas

ROGER E. YERICK, Professor of Chemistry—Assistant Dean, College of Sciences
B.S., Texas A&I University
Ph.D., Iowa State University

FRED M. YOUNG, Associate Professor of Mechanical Engineering
B.S., M.S., Ph.D., Southern Methodist University

DAVID D. ZINK, Professor of English
B.A., The University of Texas
M.A., Ph.D., University of Colorado

Associate Members

ARNOLD C. ANDERSON, Associate Professor of Speech
B.S., Northern State College
M.A., University of South Dakota

JOSEPH ADAM BAJ, III, Associate Professor of Mathematics
B.A., Kent State University
M.A., The University of Texas

GEORGE BERZSENYI, Assistant Professor of Mathematics
B.A., University of Dallas
M.S., Ph.D., Texas Christian University

SPENCER L. BRINKERHOFF, JR., Assistant Professor of Civil Engineering
B.S., University of Arizona
M.S., Ph.D., Arizona State University
Registered Professional Engineer

JOHN A. BRUYERE, Associate Professor of Mechanical Engineering
B.S., M.S., The University of Texas
Registered Professional Engineer

CHARLES M. BURKE, Assistant Professor of Elementary Education
B.S., Southeastern Louisiana College
M.Ed., Louisiana State University
Ed.D., University of Southern Mississippi

RAYMOND L. FLETCHER, Assistant Professor of Health and Physical Education for Men
B.S., M.Ed., Sam Houston State University
Ph.D., Texas A&M University

DAVID W. GRANITZ, Assistant Professor of Speech
B.S., East Carolina University
M.A., Ohio State University
Ph.D., Louisiana State University

RICHARD C. HARREL, Assistant Professor of Biology
B.S., East Central State College
M.S. Ed., The University of Georgia
Ph.D., Oklahoma State University

W. PATRICK HARRIGAN, III, Assistant Professor of Speech
B.S., Loyola University
M.F.A., Tulane University
Ph.D., Louisiana State University

OLGA D. HARVILL, Assistant Professor of English
B.A., M.A., Lamar University
Ph.D., University of Houston

FLORENCE A. HEFFRON, Assistant Professor of Government
B.A., State University of New York at Albany
M.A., New York University
Ph.D., University of Colorado

JOHN MICHAEL KRAMER, Assistant Professor of Mechanical Engineering
B.S., M.S., Ph.D., The University of Wisconsin

BOYD LEE LANIER, Assistant Professor of Government
B.A., M.S., Ph.D., Florida State University

J. LEON McGRAW, JR., Assistant Professor of Biology
B.S., Lamar University
M.S., Ph.D., Texas A&M University

JOE M. MEJIA, Associate Professor of Chemistry
B.S., M.S., Texas A&M University

WILLIAM E. MORGAN, Assistant Professor of Civil Engineering
B.S., U.S. Naval Postgraduate School
M.S., University of Alaska
Ph.D., The University of Texas

J. DALE ORTEGO, Assistant Professor of Chemistry
B.S., University of Southwestern Louisiana
Ph.D., Louisiana State University

WILLIAM M. PEARSON, Assistant Professor of Government
B.S. , Sam Houston State University
M.A., Texas A&M University
Ph.D., Louisiana State University

PHILIP B. ROBERTSON, Assistant Professor of Biology
B.S., Concord College
M.S., Ph.D., University of Miami

WILLIAM CHESTER RUNNELS, Assistant Professor of Biology
B.S., M.S., Texas A&I University
Ph.D., Texas A&M University

RAMON S. SATTERWHITE, Assistant Professor of Electrical Engineering
B.S., University of Arkansas
M.S., The University of New Mexico
Ph.D., The Ohio State University

LARRY W. SPRADLEY, Assistant Professor of Business Administration
B.A., Stephen F. Austin State University
M.Th., Southern Methodist University
M.S., Lamar University
Ph.D., Texas A&M University

ARNEY L. STRICKLAND, Assistant Professor of English—Head, Department of English
B.A., M.A., Lamar University
Ed.D., Ball State University

RICHARD E. SWAIN, III, Assistant Professor of Secondary Education
B.S., M.Ed., Ed.D., North Texas State University

NORMA TOMPKINS, Assistant Professor of Special Education
B.S., M.A., Ph.D., Texas Woman's University

JOHN A. WHITTLE, Assistant Professor of Chemistry
B.S., University of Glasgow
Ph.D., University of London

CURTIS E. WILLS, Assistant Professor of Secondary Education
B.S., M.Ed., Sam Houston State University
Ed.D., North Texas State University

SAM M. WOOD, JR., Associate Professor of Mathematics
B.A., The University of Texas
M.S., Texas A&M University

Directory for Correspondence

To obtain prompt attention, address inquiries to the following persons or agencies at Lamar University Station, Box 10004, Beaumont, Texas 77710:

Academic Program—Admissions ..... E. B. Blackburn, Jr.
Dean, College of Graduate Studies

Academic Records and Transcripts ..... Norris H. Kelton
Dean, Admissions and Records

Graduate Record Examination ..... Joe B. Thrash
Placement Office

Master of Arts—English ..... Arney L. Strickland
Head, Department of English

Master of Arts—Government ..... William R. Tucker
Head, Department of Government

Master of Arts—History ..... Howard Mackey
Graduate Counselor, Department of History

Master of Business Administration—Business ..... J. D. Landes
Dean, College of Business

Master of Science—Biology ..... Michael E. Warren
Head, Department of Biology

Master of Science—Chemistry ..... Harold T. Baker
Head, Department of Chemistry

Master of Science—Health and Physical Education ..... Belle Mead Holm
Head, Department of Health and Physical Education for Women

Master of Science—Speech ..... W. B. Brentlinger
Dean, College of Fine and Applied Arts

Master of Science—Mathematics ..... Jeremiah M. Stark
Head, Department of Mathematics

Master of Engineering ..... Lloyd B. Cherry
Dean, College of Engineering

Master of Education ..... M. L. McLaughlin
Dean, College of Education

Doctor of Engineering ..... Fred M. Young
Coordinator

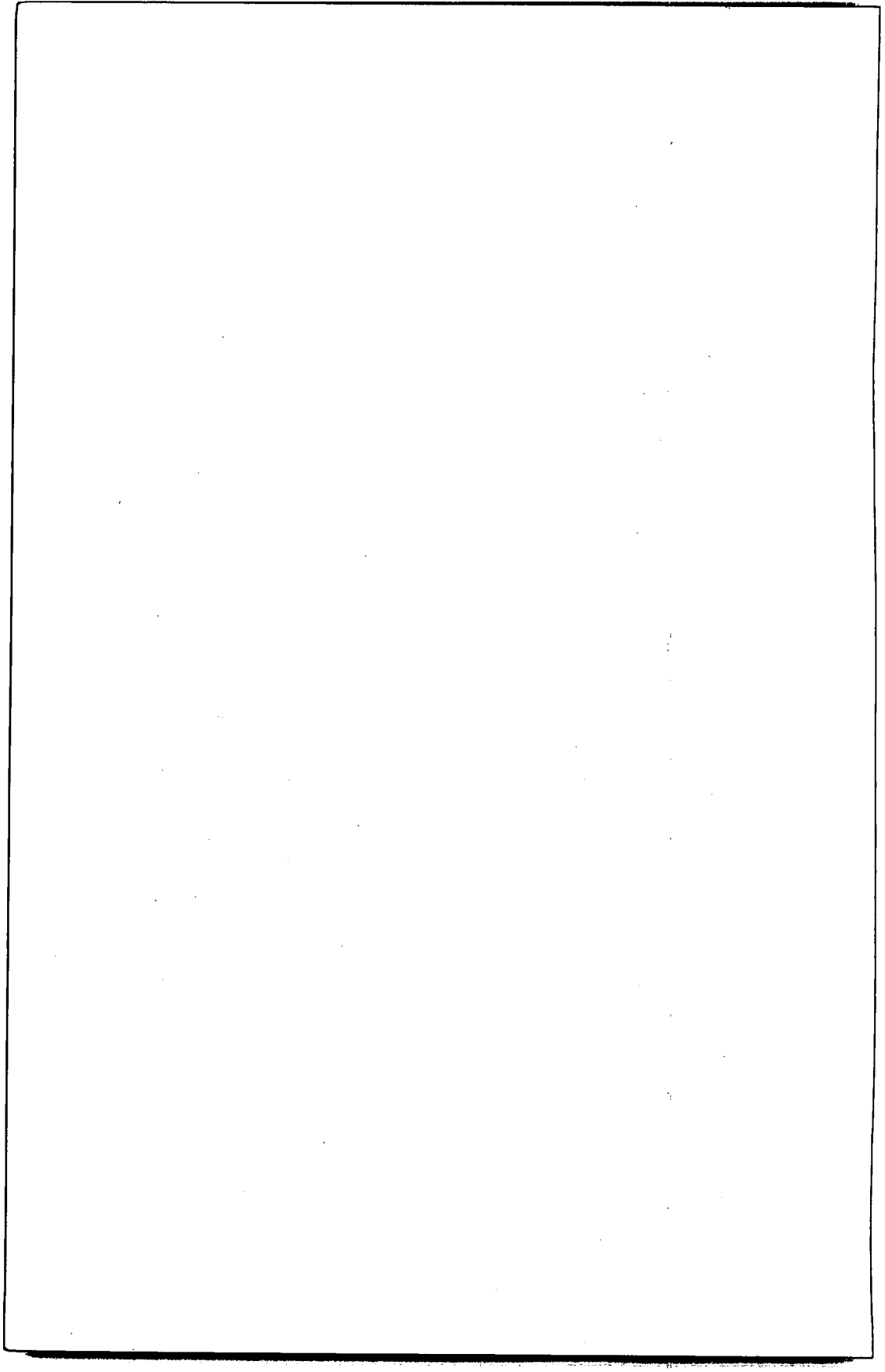
Professional Certification ..... Howard W. Adams
Director, Certification and Graduate Studies in Education

Housing, Dormitory Reservations ..... Bruce E. Stracener
Student Housing Office

Research and Development ..... Charles P. Turco
Director

Tuition, Fees, Expenses ..... Finance Office

Veterans' Affairs ..... Joe B. Thrash
Placement Office



General Information

LOCATION

Lamar University, a state-supported institution, is located in Beaumont, the center of industrial Southeast Texas. The campus is adjacent to the Port Arthur Highway (Spur 380) in southeastern Beaumont.

The city features modern schools, churches and shopping districts to serve the industrial community of approximately 120,000 persons. Principal industries in the area are oil refining, shipping, shipbuilding, rubber manufacturing and chemical production. Surrounding the urban communities are ranches and rice farms.

Within the metropolitan area are the cities of Port Arthur, Orange, Vidor, Port Neches, Nederland and Groves. All lie within 25 miles of Beaumont and form the heart of the upper Gulf Coast area with a population of more than 350,000.

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 10,000 students, and the curriculum has been expanded and liberalized 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 County, offering first and second year courses, opened in 1969 as an extension center. The branch campus was authorized by the 62nd Texas Legislature. The University also owns the old Sabine Pass Lighthouse and 45.56 acres of surrounding land and 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

The government of the University is vested in a board of nine regents appointed by the Governor and approved by the Senate for terms of six years. The direction of academic affairs is delegated by the Board of Regents to the President, administrative officers, and faculty.

The general policies of the College of Graduate Studies are determined and administered by the Graduate Council.

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 Lamar Library has developed a strong collection of over 250,000 volumes in support of continuously expanding academic programs. Approximately 25,000 volumes are added annually to the present collection and over 3,000 periodicals are received. Library resources are further enriched by some 30,000 state and federal documents and microform materials. Additional resources are available to faculty, graduate students and advanced research students through the Library's membership in a statewide teletype network. Construction of a new, multi-story Library is to begin in the Fall of 1973.

RESEARCH AND DEVELOPMENT

A Research Office was formally organized in 1956. In August 1970, it became the Office of Research and Programs, and in July 1972, the Office of Research and Development. 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.

In development, the office works closely with the President and Board of Regents in raising funds for many worthwhile programs for which appropriations are not received from the Legislature.

COMPUTER CENTER

The University operates a Computer Center as a service to faculty, administration, students, researchers and others. The Computer Center has modern, high-speed digital and analog equipment valued in excess of $750,000.

TESTING AND PLACEMENT SERVICE

The Testing and Placement Center is located in the Educational Services Center and is open 8 a.m. to 5 p.m. Monday through Friday.

This Center provides testing service for entering students and for others who want it. Nonstudents wishing to use this service pay a fee depending upon the testing program desired.

Placement service also is provided at this Center and is available to all students, faculty and former students.

HEALTH CENTER

The University maintains a Health Center for the use of students during the long term or summer session.

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. A small fee for drugs, supplies, and special services may be charged students required to remain in the Health Center for more than 10 days.

The Health Center, located on East Virginia St. near Combs Hall, is adequately staffed and equipped for treating 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 University physician or nurse to notify the parents or guardians of the student's needs.

The University assumes to responsibility for continued medical care for students having chronic diseases. These students should arrange for the care of a private physician located in or near Beaumont.

In the event the Health Center is filled to capacity, the University is not under obligation to provide hospital service elsewhere. However, the Health Center has a sufficient number of beds for all normal needs.

Students who are ill should report promptly to the Center for diagnosis and treatment. They will not be treated in the dormitory or in rooming houses.

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 and aid in planning their university work by consulting the Office for Veterans' Education, Educational Services Center.

LOAN FUNDS AND SCHOLARSHIPS

Financial assistance in the form of loans and scholarships is available for a limited number of students. Details may be obtained on request from the Director of Student Financial Aids.

TEACHING FELLOWSHIPS

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

The stipend for a teaching fellowship varies in accordance with the number of courses taught, and the student must reduce his academic load in relation to his teaching assignment.

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

TEACHER CERTIFICATION

Lamar University has been approved by the Texas Education Agency to offer professional certification programs in Elementary, Special, Secondary Education, Counseling and Guidance, Supervision and Administration. Specific information concerning certification may be found in the "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 his 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 nonresident who is a citizen of another country (foreign or alien students).

Texas residents taking 12 hours or less pay $50 tuition per semester. Each additional hour is $4 per hour. Tuition for nonresident U.S. citizens is $40 per semester hour. Nonresident U.S. citizens who were enrolled in the Spring 1971 semester and are maintaining qualifications, will pay the same tuition charges as they paid in that semester. Nonresidents who are citizens of another country pay a minimum of $200 for up to 14 semester hours. Each additional semester hour is $14 per hour. Each student pays a student services fee of $3 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				Student Services Fee	Building Use Fee	Setzer Center Fee	Total Charge			
		A	B	C	D				A	B	C	D
Each Fall or Spring Semester	1	$50	$40	$50	$200	$3	$13	$10	$76	$66	$76	$226
	2	50	80	50	200	6	13	10	79	109	79	229
	3	50	120	50	200	9	13	10	82	152	82	232
	4	50	160	66	200	12	13	10	85	195	101	235
	5	50	200	83	200	15	13	10	88	238	121	238
	6	50	240	100	200	18	13	10	91	281	141	241
	7	50	280	117	200	21	13	10	94	324	161	244
	8	50	320	133	200	24	26	10	110	380	193	260
	9	50	360	150	200	27	26	10	113	423	213	263
	10	50	400	167	200	30	26	10	116	466	233	266
	11	50	440	183	200	30	26	10	116	506	249	266
	12	50	480	200	200	30	26	10	116	546	266	266
	13	52	520	200	200	30	26	10	118	586	266	266
	14	56	560	200	200	30	26	10	122	626	266	266
	15	60	600	200	210	30	26	10	126	666	266	276
	16	64	640	200	224	30	26	10	130	706	266	290
	17	68	680	200	238	30	26	10	134	746	266	304
	18	72	720	200	252	30	26	10	138	786	266	318
	19	76	760	200	266	30	26	10	142	826	266	332
	20	80	800	200	280	30	26	10	146	866	266	346

Term	No. of Semester Hours	Tuition A	Tuition B	Tuition C	Tuition D	Student Services Fee	Building Use Fee	Setzer Center Fee	Total Charge A	Total Charge B	Total Charge C	Total Charge D
Each	1	$25	$40	$50	$100	$3	$13	$5	$46	$61	$71	$121
Six-	2	25	80	50	100	6	13	5	49	104	74	124
Week	3	25	120	50	100	9	13	5	52	147	77	127
Summer	4	25	160	66	100	12	13	5	55	190	96	130
Session	5	25	200	83	100	15	13	5	58	233	116	133
	6	25	240	100	100	15	13	5	58	273	133	133
	7	28	280	117	100	15	13	5	61	313	150	133
	8	32	320	133	112	15	13	5	65	353	166	145
	9	36	360	150	126	15	13	5	69	393	183	159
	10	40	400	167	140	15	13	5	73	433	200	173

Code: A, Texas residents; B, nonresidents who are U.S. citizens; C, nonresidents who are U.S. citizens and who were enrolled in the Spring Semester 1971 and are maintaining qualifications; and D, nonresidents who are citizens of another country.

Laboratory Fees

A laboratory fee of $2 is charged for each semester for all courses in which the combined credit of lecture and laboratory is from one to three semester hours. For such courses in which the credit is four semester hours or more, the laboratory fee is $4 per semester.

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 the time a student is registered. In each instance, a student's parking fee is honored up to the end of Summer Session II.

Registration of an automobile in August is $10. The January fee is $6. A student registering for the first Summer Session is charged $4, and for the second Summer Session, $2. Only one registration is required for one school year.

Returned Check Fees

If a check is returned unpaid, the student is automatically suspended from the University. He may re-enter upon redemption of the check plus payment of the returned check fee of $2.

Miscellaneous Fees

Binding Thesis (3 copies)	$18.00
Master's Diploma	7.50
Cap, Gown and Hood Rental (Master's)	9.50
Late Registration	5.00
Returned Checks	2.00
Re-entry Fee	5.00
Transcript Fee	.50

Health and Accident Insurance

Additional health and accident coverage providing protection over and beyond that given by the Health Center is available at registration for students carrying nine or more semester hours. The fee is $25 (estimated). For their protection and welfare this (or similar) insurance is required of all foreign students.

Refund of Fees

Any student officially withdrawing will receive a refund on tuition, student service, laboratory and private lesson fees according to the following schedule:

Long Session

1. During the first two weeks of the semester, 80 per cent.
2. During the third week of the semester, 60 per cent.
3. During the fourth week of the semester, 40 per cent.
4. During the fifth week of the semester, 20 per cent.

Summer Session

1. During the first week of the semester, 60 per cent.
2. After first week no refund.

No refunds are made when dropping courses.

Application for refund must be made to the Vice-President for Finance after the student has officially withdrawn, but not later than the end of the current semester or summer session.

It takes about 30 days to process these refunds.

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 his right to classification as a resident of Texas, it is his obligation, prior to or at the time of his registration, to raise the question with the Dean of Admissions and Records and have his 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 own action or by the person controlling his 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 of instruction. It provides opportunities for social and intellectual development and recreation in a pleasant living environment. A professional staff is on hand to assist with residence hall programs and to serve as advisors and counselors to students.

A variety of room accommodations and meal plans are available to meet the needs of the individual student.

Students who do not feel that the residence hall programs meet their personal needs may elect to find living accommodations off-campus.

Further information concerning the types of housing available and current room and board rates may be obtained by writing to the Student Housing Office, Box 10041, Lamar University Station, Beaumont, Texas 77710.

Academic Regulations

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 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

No course may be added, changed or dropped without permission of the department head of the student's major field. Usually a course may not be added after the first week of the semester (first two days of summer session). See university calendar.

DROPPING COURSE

A student may drop a course without penalty during the first 10 weeks (three weeks of the summer session) of the semester.

For drops after this penalty free period, grades are recorded as *Drop* or *F* indicating that the student was passing or failing at the time of the drop.

A student may not drop a course the last three days prior to the beginning of semester examinations.

WITHDRAWALS

A student wishing to withdraw for the remainder of a semester, or term, should fill out a Withdrawal Petition in triplicate, after clearing all financial obligations and returning all uniforms, books, laboratory equipment, and other materials to the point of original issue.

The Withdrawal Petition is signed by the Dean of the College of Graduate Studies and, together with a withdrawal notice for each class, is then presented to the Dean of Admissions and Records by the student.

On application before the end of the semester or summer term, the Vice-President for Finance will return such fees as are returnable according to the schedule shown under the "Fees" section of this bulletin. This refund is made only to the person withdrawing and only if requested before the end of the current semester or summer term.

If a withdrawal is made before the end of the first 10 weeks (three weeks of summer term) or if the student is passing at the time of withdrawal, a grade of W is issued for each course so affected. A grade of F is issued for all courses not being passed at time of withdrawal after this penalty-free period.

A student who leaves without an official withdrawal will receive a grade of F in all courses and will forfeit all returnable fees.

ENFORCED WITHDRAWAL DUE TO ILLNESS

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

General Regulations

OFFICIAL SUMMONS

An official summons from any administrative office takes precedence over all 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, available from the office of the Dean of Student Affairs.

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

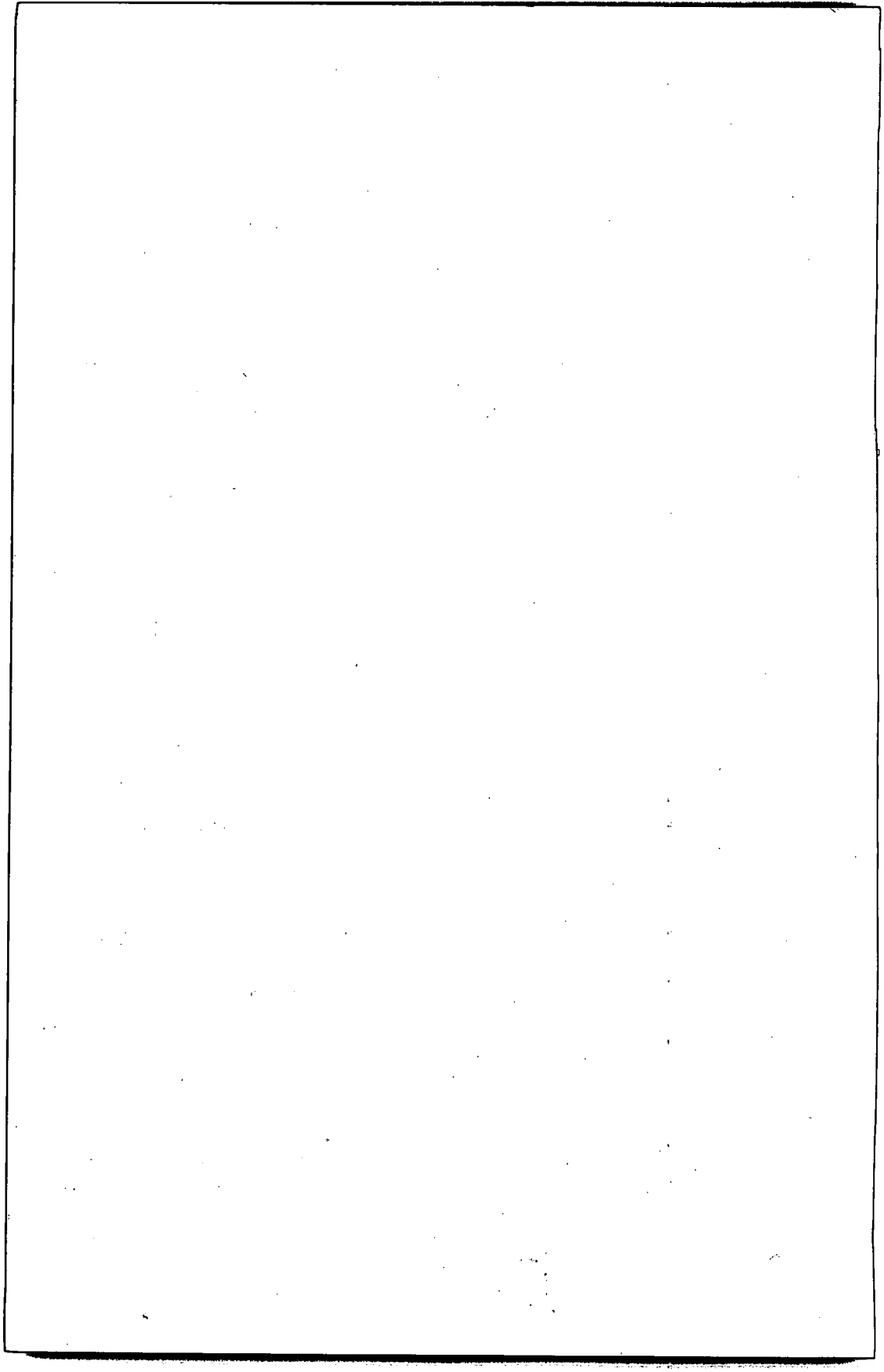
The University is not responsible for debts contracted by individual students or student organizations and will not act as a collection agency for organizations, firms or individuals to whom students may owe bills.

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.



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 public school administration was approved.

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 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 Public School Administration

Master of Engineering

Master of Engineering Science

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 Mathematics
- Master of Science in Speech
- Master of Science in Speech Pathology/Audiology

Doctor of Engineering

ENROLLMENT

Admission

Applicants seeking admission to the College of Graduate Studies must present evidence that their academic record and personal attributes indicate the ability to pursue graduate work successfully. The policies for admission set forth by the Graduate Council are as follows:

1. An applicant must hold a bachelor's degree from an institution approved by a recognized accrediting agency.

   The following official credentials should be filed with the Dean of the College of Graduate Studies at least four weeks before registration.

   A. Two official transcripts sent directly from each college previously attended.
   B. Two completed copies of the application for admission to the College of Graduate Studies.
   C. Scores on the aptitude and the appropriate subject matter area of the Graduate Record Examination (send directly to the Dean, College of Graduate Studies by the Educational Testing Service). The Lamar Testing and Placement Center, located in the Educational Services Building, administers the Graduate Record Examination. Application forms and information about the Graduate Record Examination are available at this Center.
   D. Applicants for the Doctor of Engineering degree also should write a letter to the coordinator of engineering graduate students. 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 would like to undertake for his field study.
   E. All students are required to present a certificate at registration showing proof of immunization against tetanus and diphtheria.

3. The applicant's undergraduate grade point average and Graduate Record Examination scores must be above the minimum standard established by the College of Graduate Studies. These standards are:

   A. For regular admission *both* of the following requirements must be met:
      (1) A minimum overall grade point average of 2.5 on a four-point scale.
      (2) A minimum composite score (verbal and quantitative) of 720 on the aptitude section of the Graduate Record Examination and a minimum verbal score of 350.
   B. For admission on probation one of the following requirements must be met:
      (1) A minimum grade point average of 2.5 on junior and senior work and acceptable scores on the Graduate Record Examination—a composite (V + Q) of 720 and a minimum verbal score of 350.
      (2) 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 use the quantitative score; and some use either.)
      (3) A minimum overall grade point average of 3.0 and a minimum verbal score of 350 on the GRE.

NOTE: Probation is removed automatically without notification after the student completes nine semester hours of graduate work with grades of B or better.

C. Admission requirements for foreign students are evaluated on an individual basis after the following information is received:
   (1) Official transcripts from colleges previously attended.
   (2) Scores on the Graduate Record Examination, and scores on the Test of English as a Foreign Language. In general, a foreign student whose native language is not English is expected to score over 500 on the TOEFL, over 300 on the verbal aptitude of the GRE and fulfill the composite requirement (V + Q = 720) on the GRE. The advanced GRE examination in the student's major field is required.

4. A student who wishes to pursue graduate work in any area for which he 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.
5. Admission to the College of Graduate Studies does not imply candidacy for a master's degree.
6. The Dean of the College of Graduate Studies will notify the applicant of his admission to the College of Graduate Studies. All transcripts, certificates, etc. become the property of the College of Graduate Studies and are not returnable.

Special Students

An applicant who wishes to register for graduate work without enrolling in a degree program may do so under the following conditions:

1. He must hold a bachelor's degree.
2. He must be approved for admission by the Dean of the College of Graduate Studies.
3. With departmental approval, courses taken by a special student may be used for graduate degree credit under the following conditions:
   (a) If requirements for admission to a degree program are met during his initial semester of enrollment.
   (b) If requirements for admission are met in a subsequent semester, a maximum of six semester hours previously completed may be approved for degree credit.

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 thesis, must be registered if he 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 12 weeks (six semester hours each session).
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. A maximum of three semester hours of extension work taken at this institution may count for graduate credit on a 30 semester hour degree program; six semester hours of extension work may be counted on a 36 hour program.
6. A maximum of six semester hours of work done in institutes may be approved for graduate credit on a degree program.
7. 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.
8. The grading system for Graduate students is A, B, C, D, F, I, Drop, Withdrawal—graduate credit being allowed for grades of A, B and C. An overall grade point average of B (3.0) 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 made up within 12 months or the grade of I automatically becomes an F. 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.
9. When a graduate student with regular admission status falls more than three grade points below a 3.0 (B) average, he is placed on probation. If he makes progress toward eliminating the grade point deficiency during the next semester in which he is registered, he is removed from probation. If he does not make progress toward eliminating the deficiency, his case is referred to the Academic Standards Committee of the College of Graduate Studies for a recommendation.
10. The student admitted on probation whose grade point average falls more than three grade points below a 3.0 (B) average is referred to the Academic Standards Committee.
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 he is following, and must complete a residence requirement of at least one academic year or its equivalent in summer terms.
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 written. If a thesis is not written, a comprehensive written or oral examination is required or a combination of both written and oral examinations.
4. The student must meet the specific requirements as set forth in this catalog for his 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 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 major department a student may elect to take all of his work in his major field.
3. If a thesis is not required, complete 36 hours of approved course work.

Master of Engineering Science

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work as follows: a minimum of 12 semester hours in engineering courses, six semester hours in thesis, a minimum of nine

semester hours in a combination of science and mathematics, and three semester hours of electives.

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 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 Education section of this catalog for each degree program.

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 engineering experience, and educational objectives.
2. In general a minimum of 30 semester hours beyond the equivalent of a master's degree will be required.
3. Satisfactorily pass candidacy examinations as devised by the student's doctoral committee.
4. Complete a field study involving some technological innovation.
5. 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 acts as the student's adviser.
2. A student may be admitted to candidacy after completing one-half of his course work, excluding the thesis, and after removing all undergraduate deficiencies. During this time he must have demonstrated his ability and inclination to do graduate work.
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 major 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.

Doctor of Engineering

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

1. Satisfactory progress in all course work.
2. Continuously pursuing his 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 doctoral committee as part of his 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 his first attempt may take additional courses or otherwise prepare himself for an additional attempt as may be recommended by his 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.

THESIS REQUIREMENTS

A thesis is optional in all 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:

1. Register for the thesis course after he has been admitted to candidacy and has obtained the approval of the head of the department. The first registration is for Thesis Course 669A; subsequent registrations are for Thesis Course 669B. The grade of "I" is assigned for each registration until the thesis is finally approved.
2. Register for a thesis course each semester or term that he works on the thesis under active supervision.
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 supervising professor. The thesis must be approved by his 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) of the finished thesis to the Graduate Dean no later than 10 days prior to the graduation date.
7. Pay the thesis binding fee 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 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 comprehensive examination are completed during a semester, 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.

CONFERRING OF DEGREES

Degrees earned in the College of Graduate Studies are conferred in December, May and August. The candidate must be present to receive the degree, unless he has been excused by the Graduate Dean.

1. A candidate for the Master's degree or Doctor of Engineering degree 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. Requests to receive a degree in absentia must be filed in the Graduate Dean's office at least four weeks before the commencement date.

Fields of Study

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 a minimum of 24 semester hours in the biological sciences, or remove any deficiencies as provided in the section on Admission.

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. Twenty-four semester hours of graduate credit which may include a maximum of 12 semester hours in approved 400G level biology courses with augmented requirements.
2. A thesis (six semester hours).
3. Program of study to be approved by graduate advisor and Department Head.

GRADUATE FACULTY

Members

Professor Edwin S. Hayes
Cytology
Professor Russell J. Long
Mammalogy, histology, embryology
Professor Jed J. Ramsey
Ornithology, comparative physiology
Professor W. Russell Smith
Microbiology
Professor Henry T. Waddell
Mycology, genetics
Associate Professor Michael E. Warren
Entomology, biochemical systematics

Associate Members

Assistant Professor Richard C. Harrel
Limnology, environmental science
Assistant Professor J. Leon McGraw, Jr.
Ichthyology, cellular biology, invertebrate zoology
Assistant Professor Philip B. Robertson
Marine biology

Assistant Professor William C. Runnels
Botany, algology

Biology courses may be selected from the following list:

510—Materials and Techniques of Research. Survey of laboratory and library research techniques, instrumentation and materials requisite to scientific investigation. Required of all entering graduate students. Class: 1 hour. Credit: 1 semester hour.

511—Graduate Seminar. Current topics in biological research. May be repeated for credit. Class: 1 hour. Credit: 1 semester hour.

530—Ornithology. Natural history, taxonomy and ecology of birds. Lecture: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

531—Seminar in Biological Sciences. Designed as a resource area course for the M.Ed. in Elementary Education degree, and is so restricted. Relevant biological concepts, library research, and synoptic reports. Class: 3 hours. Credit: 3 semester hours.

532—Mycology. Isolation, cultivation and identification of fungi with special emphasis on those of economic importance. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

533—Ichthyology. Natural history, taxonomy and ecology of freshwater and marine fishes. Required field trip. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

534—Herpetology. Natural history, taxonomy and ecology of amphibians and reptiles. Required field trip. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

535—Mammalogy. Natural history, taxonomy and ecology of mammals. Required field trip. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

536—Marine Invertebrate Zoology. Field study and identification of area species; current research. Required field trips. Recommended prerequisites: Bio 346 or 445G. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

537—Advanced Limnology. Analysis of freshwater communities with emphasis on effects of pollution. Prerequisite: Bio 443G. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

538—Helminthology. Biology of free-living and parasitic worms. Prerequisite: Bio 346 or 441G. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

539—Comparative Physiology. Fundamental physiological processes in animals from the phylogenetic viewpoint. Prerequisite: Bio 344, Chm 342. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

5101, 5201, 5301, 5401—Special Problems. Research in areas other than thesis. Prerequisite: approval of graduate supervisor. Time arranged. Credit: 1-4 semester hours; maximum of 4 semester hours.

5333, 5666—Institute in Biological Sciences. 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. Class: 3 or 6 hours. Credit: 3 or 6 semester hours.

669A-669B—Thesis. Prerequisite: admission to candidacy. Credit: 6 semester hours.

From the list below, a maximum of 12 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.

Bio 440G—Ornithology
Bio 441G—Parasitology
Bio 442G—Entomology
Bio 443G—Limnology
Bio 444G—Vertebrate Natural History
Bio 445G—Marine Biology
Bio 446G—Terrestrial Ecology
Bio 447G—Cellular Biology
Bio 449G—Protistology

College of Business

The College of Business offers a program of study leading to the Master of Business Administration degree. Persons seeking admission to this program must meet the general requirements for admission that are outlined in the Graduate Catalog. An applicant must also have completed the equivalent of the following undergraduate courses in business: accounting, six semester hours; business law, three semester hours; business statistics, three semester hours; principles of economics, six semester hours; principles of management, three semester hours; principles of marketing, three semester hours; principles of finance, three semester hours; business communications, three semester hours, or a substitution approved by the Dean of the College of Business.

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 catalog. The student may follow either of two plans. Plan I requires 24 hours of course work and a thesis. Plan II requires 36 hours of course work, including BA 5312 for students who do not write a thesis. More than 50 per cent of work must be 500 level courses and must include at least one 500 level course in each of the following subject areas: accounting, economics, finance, management, and marketing.

1. Undifferentiated Business Courses:
   Acc 534—Seminar in Accounting
   BA 530—Seminar in Management
   BA 531—Seminar in Marketing
   BA 5310—Advanced Statistical Analysis
   BA 5311—Seminar in Financial Management
   BA 5312—Business Research
2. Specialization:
   Acc 535—Contemporary Accounting Theory
   Acc 536—Advanced Accounting Problems
   Acc 537—Managerial Accounting
   BA 532—Problems in Business Finance
   BA 538—Business Problems and Organization
   BA 539—Quantitative Analysis Control
3. Six hours Thesis:
   669A-669B—Thesis in Business Administration
4. Economics:
   Eco 530—Seminar in Monetary and Fiscal Policy
   Eco 532—Advanced Economic Theory
   Eco 533—Contemporary Literature and Thought
   Eco 534—Collective Bargaining
   Eco 536—American Economic Growth and Development
   Eco 537—Managerial Economics

Eco 5301—Money and Capital Markets
Eco 5341—Manpower
Eco 5371—International Finance

5. Approved electives—six semester hours in accounting, business administration, or economics. If a thesis is not written, 18 hours of approved courses must be completed in addition to those selected from 1, 2, and 4 above.

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 60 semester hours of work in the College of Business. The first year of work (30 semester hours) will consist of the following undergraduate core courses or their equivalents. Descriptions of these courses may be found in the undergraduate catalog of this institution.

Acc 231 and 232—Principles of Accounting or equivalent
BA 331—Business Law
BA 332—Principles of Finance
BA 334—Marketing
BA 335—Industrial Management
BA 3302—Business Statistics
Eco 231 and 232—Principles of Economics
Business Communications—three semester hours (or a substitution approved by the Dean of the College of Business)

Requirements for the second year of work leading to the MBA degree for non-business majors are as outlined above for business graduates.

GRADUATE FACULTY

Members

Professor Richmond O. Bennett
Accounting, Business Administration
Professor Walter W. Bennett
Business Administration
Professor Richard T. Cherry
Business Administration, Economics
Associate Professor Hi K. Kim
Economics
Professor C. D. Kirksey
Business Administration
Professor J. D. Landes
Accounting, Business Administration
Professor Mietzl Miller
Economics
Associate Professor Claude Monroe
Economics
Professor Sam F. Parigi
Economics
Professor Charles A. Partin
Economics

Professor Reginald Rushing
Accounting
Associate Professor Malcolm W. Veuleman
Accounting

Associate Member

Assistant Professor Larry W. Spradley
Business Administration

Accounting courses will be selected from the following list:

534—Seminar in Accounting. A course designed to broaden the student's concept of current accounting theory and problems. Class: 3 hours. Credit: 3 semester hours.

535—Contemporary Accounting Theory. 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. Class: 3 hours. Credit: 3 semester hours.

536—Advanced Accounting Problems. 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. Class: 3 hours. Credit: 3 semester hours.

537—Managerial Accounting. 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. Class: 3 hours. Credit: 3 semester hours.

Business administration courses must be selected from the following:

530—Seminar in Management. 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. Class: 3 hours. Credit: 3 semester hours.

531—Seminar in Marketing. An intensive study of specific marketing problems with emphasis on research methodology and marketing-decision-making; a critical evaluation of research procedures and utilization of research findings. Prerequisite: BA 334. Class: 3 hours. Credit: 3 semester hours.

532—Problems in Business Finance. 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. Prerequisite: BA 5311. Class: 3 hours. Credit: 3 semester hours.

538—Business Problems and Organization. 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. Class: 3 hours. Credit: 3 semester hours.

539—Quantitative Analysis Control. 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 a 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. Class: 3 hours. Credit: 3 semester hours.

5310—Advanced Statistical Analysis. 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. Class: 3 hours. Credit: 3 semester hours.

5311—Seminar in Financial Management. 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. Class: 3 hours. Credit: 3 semester hours.

5312—Business Research. 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. Credit: 3 semester hours.

669A-669B—Thesis. Prerequisite: Admission to candidacy for the master's degree. Credit: 6 semester hours.

Economics courses must be selected from the following:

530—Seminar in Monetary and Fiscal Policy. 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 231, 232, and 334 or consent of instructor, and graduate standing. Class: 3 hours. Credit: 3 semester hours.

532—Advanced Economic Theory. Advanced economic analysis and methodology; price and distribution theory; perfect and imperfect competition and allied subjects. Prerequisites: Eco 333 or 339 and graduate standing. Class: 3 hours. Credit: 3 semester hours.

533—Contemporary Literature and Thought. 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. Class: 3 hours. Credit: 3 semester hours.

534—Collective Bargaining: Background ideologies, contract provisions, current legal and social developments, public employment and international labor practices. Prerequisite: Eco 336 or consent of instructor and graduate standing. Class: 3 hours. Credit: 3 semester hours.

536—American Economic Growth and Development. 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. Class: 3 hours. Credit: 3 semester hours.

537—Managerial Economics. 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. Class: 3 hours. Credit: 3 semester hours.

5301—Money and Capital Markets. 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. Class: 3 hours. Credit: 3 semester hours.

5341—Manpower: Identification and analysis of income distribution, unemployment, occupational composition of the labor force, manpower training program legislation and evaluation, field trips and experiences in local manpower training projects. Prerequisite: 3 hours Labor Economics and graduate standing. Class: 3 hours. Credit: 3 semester hours.

5371—International Finance. 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. Prerequisite: Either Eco 332, 334, 335, or 431G and graduate standing. Class: 3 hours. Credit: 3 semester hours.

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 434G—Advanced Legal Principles
BA 436G—Production Management
BA 437G—Investments
BA 4303G—Intermediate Business Statistics
BA 4310G—Marketing Management
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

Eco 431G—Monetary Theory
Eco 432G—Econometrics

Eco 433G—History of Economic Thought
Eco 434G—Economic Development
Eco 435G—Comparative Economic Systems
Eco 436G—Business Cycles
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 Organizations and Countervailance
Eco 4315G—Social Control of Business

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 courses in general chemistry, inorganic chemistry, analytical chemistry, organic chemistry, and physical chemistry required of undergraduate students in the chemistry curriculum. The applicant must also have completed one year of college physics and mathematics through integral calculus.

Students working towards 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.
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 one of the following modern foreign languages: German, French, or Russian.

GRADUATE FACULTY

Members

Professor Harold T. Baker
Physical Chemistry
Professor Margaret D. Cameron
Organic Chemistry
Associate Professor Kenneth L. Dorris
Physical Chemistry
Professor Ewin A. Eads
Environmental Science
Professor Roger E. Yerick
Analytical Chemistry

Associate Members

Associate Professor Joe M. Mejia
Inorganic Chemistry
Assistant Professor J. Dale Ortego
Inorganic Chemistry

Assistant Professor John A. Whittle
Organic Chemistry, biochemistry

The graduate student will select his *chemistry* courses from the following list:

531—Advanced Analytical. Prerequisites: Graduate standing or consent of instructor. Class: 3 hours. Credit: 3 semester hours.

532—Kinetics. Rate equations developed by the application of statistical methods to the kinetic theory of gases will be compared with experimental reaction rate determinations. The development and significance of partition functions, the collision theory, and the theory of absolute reaction rates will be presented. May be taken for graduate credit in chemistry or engineering. Class: 3 hours. Credit: 3 semester hours.

533—Advanced Inorganic. Prerequisite: Graduate standing or consent of instructor. Class: 3 hours. Credit: 3 semester hours.

535—Advanced Organic. Prerequisite: Graduate standing or consent of instructor. Class: 3 hours. Credit: 3 semester hours.

536—Thermodynamics. The basic laws of thermodynamics are derived and their applications to physical phenomena presented. The treatment of the thermodynamics of surfaces, and of systems in gravitational, centrifugal, electric, or magnetic fields is given. The course may be taken for credit in engineering or chemistry. Class: 3 hours. Credit: 3 semester hours.

537—Advanced Physical. Prerequisite: Graduate standing or consent of instructor. Class: 3 hours. Credit: 3 semester hours.

539, 569—Graduate Problems in Chemistry. 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. Time arranged. Credit: 3 or 6 semester hours.

538—History of Chemistry. The development of chemistry as related to the men of science who contributed to its progress. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

5101, 5201, 5301, 5401, 5501, 5601—Chemistry for Teachers. Designed to advance the professional competence of participants. For each course, a description of the particular area of study will appear in the printed schedule. May be repeated for credit when nature of course differs sufficiently from one previously taken. Class: 1-6 hours and/or laboratory 0-6 hours. Credit: 1-6 semester hours.

5311—Selected Topics in Analytical Chemistry. May be repeated for a maximum of six semester hours when topic varies. Description of course content will appear in schedule of classes. Prerequisite: Chm 531 or equivalent. Class: 3 hours. Credit: 3 semester hours.

5331—Selected Topics in Inorganic Chemistry. May be repeated for a maximum of six semester hours when topic varies. Description of course content will appear in schedule of classes. Prerequisite: Chm 533 or equivalent. Class: 3 hours. Credit: 3 semester hours.

5351—Selected Topics in Organic Chemistry. May be repeated for a maximum of six semester hours when topic varies. Description of course content will appear in schedule of classes. Prerequisite: Chm 535 or equivalent. Class: 3 hours. Credit: 3 semester hours.

5352—Modern Synthetic Organic. Selected topics in modern synthetic organic chemistry. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

5371—Selected Topics in Physical Chemistry. May be repeated a maximum of six semester hours when topic varies. Description of course content will appear in schedule of classes. Prerequisite: Chm 537 or equivalent. Class: 3 hours. Credit: 3 semester hours.

669A, 669B—Thesis. Prerequisite: Admission to candidacy for the master's degree. Credit: 6 semester hours.

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.

433G—Modern Physical
436G—Inorganic
443G—Biochemistry
446G—Instrumental Methods of Analysis

College of Education

Graduate degree and certification programs are offered by the departments of Elementary, Secondary, Special and Health and Physical Education. These programs of study are described in the following pages.

DEPARTMENTS OF EDUCATION

The above departments offer programs of study leading to the Master of Education degree and/or certification in the areas indicated below:

Degrees Offered:

Master of Education in Elementary Education
Master of Education in Secondary Education
Master of Education in Guidance and Counseling
Master of Education in School Administration
Master of Education in Special Education
Master of Education in Supervision

Professional Certificates available:

Elementary Education
Secondary Education
Special Education
Educational Diagnostician
Mental Retardation
Counselor
Supervisor
School Administrator
School Superintendent

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 special education must have completed a minimum of 24 semester hours in education, including six semester hours in special education.
4. The applicant in secondary education must have completed a minimum of 18 semester hours in education and 24 hours in the discipline to be pursued at the graduate level, including a minimum of nine hours at the 300 level or higher.
5. The applicant in guidance and counseling, supervision and school administration must hold a Provisional Teaching Certificate, or its equivalent.
6. The student in fields other than guidance and counseling and school administration may elect to write a thesis. If so, he is required to complete a minimum of 24 hours in addition to a thesis.

7. 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. He should also 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

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 539—Developmental Reading
   Edu 5310—Language Arts In The Elementary School
   Edu 538—Modern Mathematics in the Elementary School
   Edu 5329—Corrective Reading
   Edu 5303—Strategies for Individualizing Elementary Instruction

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—Developmental Reading
      Edu 5329—Corrective Reading
      Edu 5301—Current Literature for Children and Adolescents
      Edu 5302—Practicum: Diagnosis and Remediation of Reading Difficulties
   B. Audio-Visual Specialist
      Edu 433G—Teaching Media and Audio-Visual Technology
      Edu 5370—Technology
      Edu 5371—Teaching Machines and Programmed Instruction
      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 Education
Edu 5352—Creative Activities in Early Childhood Education

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

E. Special Education
Edu 431G—Psychology of Exceptional Children
Edu 5361—Survey of Learning Potentials of Exceptional Children
Edu 5311—Prescriptive Teaching with the Mentally Retarded
OR Edu 5314—Instructional Processes with the Mentally Retarded
Edu 5313—Learning Potentials in Mentally Retarded Children
OR Edu 5315 —Problems and Issues in Mental Retardation

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. 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 obtain provisional certification in the areas of Mental Retardation and Kindergarten. It is also possible to obtain the Professional Supervisors Certificate. Specific information concerning these certificates may be obtained from the Director of Graduate Studies or the Department of Elementary Education.

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 may complete requirements concurrently for a Professional Certificate in Mental Retardation or requirements for a Professional Certificate as an Educational Diagnostician. This degree is planned as a 36 hour nonthesis program.

A. Specialization Area. Fifteen semester hours must be selected from the following courses:

(1) Edu 5311—Prescriptive Teaching with the Mentally Retarded

(2) Edu 5313—Learning Potentials in Mentally Retarded Children
(3) Edu 5314—Instructional Processes with the Mentally Retarded
(4) Edu 5315—Problems and Issues in Mental Retardation
(5) Edu 5362—Psychoeducational Evaluation of Exceptional Children
(6) Edu 5363—Practicum in Psychoeducational Procedures
(7) Edu 5364—Behavior Modification and Contingency Management of Disabled Learners
(8) Edu 5365—Instructional Processes with Exceptional Children
(9) Edu 5366—Modification of Curriculum and Instruction for the Atypical Learner

B. *Professional Development.* Nine semester hours must be selected from the following courses:
(1) Edu 431G—Psychology of Exceptional Children (with special permission)
(2) Edu 530—Structure and Organization of Public Education
(3) Edu 531—Research (required)
(4) Edu 532—Current Issues in Education
(5) Edu 533—Contemporary Philosophies of Education
(6) Edu 534—Advanced Study in Human Development
(7) Edu 535—The Learning Process
(8) Edu 5316—Administration and Supervision of Special Education Programs
(9) Edu 5361—Survey of Learning Potentials of Exceptional Children

C. *Resource Area.* Twelve semester hours must be selected from the following courses:
(1) Soc 531—Seminar in Principles of Sociology
(2) Swk 532—Group Work
(3) Spc 532—Communication Theory
(4) Edu 5301—Current Literature for Children and Adolescents
(5) Spc 5322—Seminar in Disorders of Language
(6) Edu 5334—Interpretation and Analysis of Tests and Measurements
(7) Edu 5335—Individual Testing
(8) Edu 5351—Advanced Studies in Early Childhood Curriculum

Professional Certificates in Special Education

Educational Diagnostician
Mental Retardation

With careful planning a student may complete requirements for either 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

Mental Retardation
Physically Handicapped/Minimally Brain Injured
Language/Learning Disabilities
Emotionally Disturbed

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 Director of Graduate Studies or the Department of Special 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 537—Public School Curriculum
   Electives: Twelve semester hours may be selected from any of the courses approved for the following areas, or may be concentrated in one area

Teaching Specialization	Audio-Visuals Specialist
Supervision	Guidance
Testing and Measurement	Special Education

   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, 18 semester hours of graduate work must be completed in one of the disciplines listed below. A minimum of 12 hours must be taken at the 500 level. If the student elects to write a thesis, the specialization requirement is reduced to 12 semester hours with at least six at the 500 level. A list of specific courses required or recommended is available through the Office of the Director of Graduate Studies or in the departmental office of the discipline. Graduate students should check the approved list before registering for specific courses. Complete lists of graduate offerings are found in this graduate catalog for each discipline. Specialization areas are available in the following disciplines:

Biology	History
Chemistry	Mathematics
English	Physics
Government	Speech
Health and Physical 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 has completed an approved thirty 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.
   Edu 431G—Psychology of Exceptional Children
   Edu 534—Advanced Study in Human Development
   Edu 535—The Learning Process
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 5322—Guidance and Counseling in the Elementary School
   Edu 5361—Survey of Learning Potentials of Exceptional Children
   Edu 5362—Psychoeducational Evaluation of Exceptional Children
   Edu 5363—Practicum in Psychoeducational Procedures
   Psy 432G—Abnormal Psychology
   Swk 532—Group Work

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.

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)
   Edu 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 (Required)
   Edu 5337—Practicum and Seminar: Supervision and Curriculum Development (Required)
   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) Edu 5364—Behavior Modification and Contingency Management of Disabled Learners
   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 Professional 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. The degree requirements include the Common Core plus nine hours from Specialized Preparation for School Administrators described below in the Professional Certificate Plan.

Professional Certification for School Administrator and for School Superintendent

There are two plans in operation for the completion of valid Administrators' Certificates. One is based upon a plan approved under 1966 Standards, and students working under that plan have until September 1, 1977, to complete all requirements for that

program. Students enrolled in the Professional Administrator's program at Lamar before September 1, 1973, had until that date to declare whether they wished to complete requirements of the "old" program or change to the new standards.

The new standards are presented in this catalog, since all students entering Lamar's program after September 1, 1973, will follow these plans. Two types of certificates are available under the new standards:

1. The Professional 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 Professional Administrator's Certificate and an additional 15 semester-hour approved plan of graduate credit.

To be eligible for recommendation for the Professional 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 Professional 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. Common Core for School Administrators and School Superintendents
   - A. General Administrative Competencies. Eighteen semester hours
     1. Edu 531—Research
     2. Edu 537—Public School Curriculum
     3. Edu 534—Advanced Study of Human Development
     4. Edu 5336—Leadership and Evaluation of Instruction
     5. Edu 5318—School Management and School Services
     6. Edu 5344—School Law
   - B. Related Academic Studies. Nine semester hours
     1. Soc 532—Sociology of Education (Required)
     2. CS 5301—Computer Systems for Educational Applications (Required)
     3. Three semester hours selected from the following
        BA 5311—Seminar in Financial Management
        BA 538—Business Problems and Organization
        Gov 535—Seminar in Theory and Practice of Public Administration
2. Specialized Preparation for School Administrators. Eighteen semester hours
   1. Edu 5338—Instructional Supervision (Required)
   2. Edu 5339—The School Principal (Required)
   3. Edu 5317—Organization and Administration of Special Programs (Required)
   4. Edu 5325—Pupil Personnel Management
   5. Edu 5342—Public School Finance

6. Edu 5347—Seminar in Public School Administration
7. Edu 5348—Practicum in School Administration (Required)

3. Specialized Preparation for the School Superintendent. Fifteen semester hours.
   1. Edu 5341—The School Superintendent (Required)
   2. Edu 5326—School-Community Relations
   3. Edu 5343—Administration of School Plant
   4. Edu 5342—Public School Finance
   5. Edu 5345—Personnel Management
   6. Edu 5349—Internship for the School Superintendent

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 E. B. Blackburn, Jr.
Elementary Education, elementary curriculum
Professor David L. Bost
Secondary Education, Counselor Education
Associate Professor Kenneth R. Briggs
Educational Psychology

Professor Betty Fay Coody
Elementary Education, elementary curriculum
Associate Professor Walter Dezelle, Jr.
Special Education, mental retardation
Associate Professor Vernon H. Griffin
Elementary Education, elementary curriculum
Professor W. Richard Hargrove
Elementary Education, foundations of education
Professor Bradley B. Hogue
Elementary Education, educational psychology
Professor Harvey C. Johnson
Secondary Education, Curriculum and Administration
Professor Conrad Dell Mang
Elementary Education
Professor Edward Roy McIntosh
Elementary Education, instructional media
Professor M. L. McLaughlin
Elementary Education, contemporary education
Professor Oliver P. Monk
Secondary Education, mathematics education
Professor E. Lee Self
Secondary Education, public education
Professor Monty Sontag
Special Education

Associate Members

Assistant Professor Charles M. Burke
Elementary Education
Assistant Professor Richard E. Swain, III
Secondary Education, science education
Assistant Professor Norma L. Tompkins
Special Education
Assistant Professor Curtis E. Wills
Secondary Education, Counseling

The graduate student will select his *education* courses from the following list:

530—Structure and Organization of Public Education. Analysis of the operation and function of public education at the local, state, and national levels. Class: 3 hours. Credit: 3 semester hours.

531—Research. Introduction to skills and techniques necessary for research and problem solving in education. Emphasis on terminology, methodology, and spirit of systematic research. Class: 3 hours. Credit: 3 semester hours.

532—Current Issues in Education. Current controversies and trends in public education. Class: 3 hours. Credit: 3 semester hours.

533—Contemporary Philosophies of Education. Influence of recent philosophies on education. Schools of educational philosophy and implications for curriculum development and teaching methods. Class: 3 hours. Credit: 3 semester hours.

534—Advanced Study in Human Development. A study of the development and nature of the human personality. Emphasis on recent psychological and biological experiments. Class: 3 hours. Credit: 3 semester hours.

535—The Learning Process. Dynamics, processes, and systems of learning. Theoretical emphasis. Class: 3 hours. Credit: 3 semester hours.

536—Problems in Teaching Science and Social Studies in the Elementary School. 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. Class: 3 hours. Credit: 3 semester hours.

537—The Public School Curriculum. 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. Class: 3 hours. Credit: 3 semester hours.

538—Modern Mathematics in the Elementary School. 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. Class: 3 hours. Credit: 3 semester hours.

539—Developmental Reading. Methods for extending and refining fundamental reading habits and attitudes, and for increasing reading efficiency. Class: 3 hours. Credit: 3 semester hours.

5101, 5201, 5401, 5501, 5601—Institute in Education. 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. Class: 1 to 6 hours. Credit: 1 to 6 semester hours.

5301—Current Literature for Children and Adolescents. Survey of recent literature for children and adolescents. Emphasis given to nonfiction in such areas as earth science and social science. Extensive reading of actual literature. Class: 3 hours. Credit: 3 semester hours.

5302—Practicum: Diagnosis and Remediation of Reading Difficulties. 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. Class: 3 hours. Credit: 3 semester hours.

5303—Individualized Instruction in the Elementary School. 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. Class: 3 hours. Credit: 3 semester hours.

5310—Language Arts in the Elementary School. 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. Class: 3 hours. Credit: 3 semester hours.

5311—Prescriptive Teaching with the Mentally Retarded. Extrapolate psychological and sociological data into individual teaching prescriptions for mentally retarded children; applied experience. Class: 3 hours. Credit: 3 semester hours.

5313—Learning Potentials in Mentally Retarded Children. Determining the degree of modifiability of pupil behaviors, identifying functioning levels, and devising appropriate teaching strategies; individual project. Class: 3 hours. Credit: 3 semester hours.

5314—Instructional Processes with the Mentally Retarded. Translating the behaviors of mentally retarded children into child development categories and applied behavior modification processes in child study projects. Class: 3 hours. Credit: 3 semester hours.

5315—Problems and Issues in Mental Retardation. Appraisal of current problems, trends and practices in the education and care of exceptional children. Class: 3 hours. Credit: 3 semester hours.

5316—Administration and Supervision of Special Education Programs. 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. Project: A school survey. Class: 3 hours. Credit: 3 semester hours.

5317—Organization and Administration of Special Programs. 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. Class: 3 hours. Credit: 3 semester hours.

5318—School Management and School Services. 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. Class: 3 hours. Credit: 3 semester hours.

5319—Problems in Secondary School Instruction. Consideration of the instructional problems encountered by experienced teachers in the secondary schools. Prerequisite: One year of teaching experience. Class: 3 hours. Credit: 3 semester hours.

5321—Strategies for Individualizing Secondary Instruction. 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. Class: 3 hours. Credit: 3 semester hours.

5322—Organization and Administration of the Guidance Program. Essential services and management functions of guidance and counseling services for schools. Class: 3 hours. Credit: 3 semester hours.

5323—Occupational and Vocational Guidance. Survey of occupational fields, requirements and rewards. Concepts of vocational guidance. Class: 3 hours. Credit: 3 semester hours.

5324—Individual and Group Counseling. Processes of individual study. Counseling procedures and techniques for individuals and groups. Class: 3 hours. Credit: 3 semester hours.

5325—Pupil Personnel Management. Survey of student services in the public schools emphasizing principles, philosophy and operating procedures. Class: 3 hours. Credit: 3 semester hours.

5326—School-Community Relations. 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. Class: 3 hours. Credit: 3 semester hours.

5327—College Teaching. Designed for graduate students with little or no pedagogial training or experience. Application of learning principles and pedagogical procedures in college classes. Class: 3 hours. Credit: 3 semester hours.

5328—Practicum in Guidance and Counseling. 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. Credit: 3 semester hours.

5329—Corrective Reading. Causes of reading disability, methods of diagnosis, and remedial instruction. Class: 3 hours. Credit: 3 semester hours.

5332—Guidance and Counseling in the Elementary School. A course designed to provide an understanding of guidance principles and techniques applicable to the elementary school. Class: 3 hours. Credit: 3 semester hours.

5333—Individual Counseling Theories and Techniques. Opportunities are provided for the student to enrich his background and experience in interviewing and in dealing with human relations problems in the counseling situation. Class: 3 hours. Credit: 3 semester hours.

5334—Interpretation and Analysis of Tests and Measurement. 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. Class: 3 hours. Credit: 3 semester hours.

5335—Individual Testing. 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. Class: 3 hours. Credit: 3 semester hours.

5336—Leadership and Evaluation of Instruction. Investigation of the leadership roles in instructional programs. Techniques of evaluation and interpersonal relationships leading to instructional improvement are considered. Special attention is given to reading programs and the total language arts program K-12. Class: 3 hours. Credit: 3 semester hours.

5337—Practicum and Seminar: 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. Class: 3 hours. Credit: 3 semester hours.

5338—Instructional Supervision. 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. Class: 3 hours. Credit: 3 semester hours.

5339—The Public School Principal. 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. Class: 3 hours. Credit: 3 semester hours.

5341—The School Superintendent. Emphasis on the legal and delegated authority, responsibilities and operative techniques of the superintendency. Class: 3 hours. Credit: 3 semester hours.

5342—Public School Finance. Analysis of principles of school finance to include problems of budgeting, accounting, and administration of funds. Class: 3 hours. Credit: 3 semester hours.

5343—Administration of School Plant. Operation, maintenance, and utilization of physical plant to include administration of records, standards and control of plant, and development of school building programs. Class: 3 hours. Credit: 3 semester hours.

5344—School Law. Interpretation and operation of school law including a study of the Texas Education Code and the Handbook for Public School Law. Class: 3 hours. Credit: 3 semester hours.

5345—Personnel Management. Fundamentals of human relations and organizational behavior in developing programs of recruitment, selection, assignment, evaluation, promotion, and termination of personnel. Class: 3 hours. Credit: 3 semester hours.

5346—Public Relation in School Administration. Development of principles governing school-community relationships to promote mutual understanding and support of school's purposes, functions, and needs. Class: 3 hours. Credit: 3 semester hours.

5347—Seminar in School Administration. 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 administrator's roles in these programs. Class: 3 hours. Credit: 3 semester hours.

5348—Practicum in Educational Administration. Supervised experience in administration and offered by arrangement between the university and the public school. Class: arranged. Credit: 3 semester hours.

5349—Internship for the School Superintendent. Designed to give the prospective school superintendent on-the-job training under the guidance of a successful, experienced, practicing administrator and under the supervision of members of the university staff. Class: Time arranged. Credit: 3 semester hours.

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

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

5361—Survey of Learning Potentials of Exceptional Children. General survey of the learning potentials of those children deficient in basic integrities which can be categorized into central or peripheral nervous system dysfunction, and for behavioral disorders. Class: 3 hours. Credit: 3 semester hours.

5362—Psychoeducational Evaluation of Exceptional Children. Simulated experiences in the use of formal and informal methods of appraising and communicating pupils' educational status and progress. Class: 3 hours. Credit: 3 semester hours.

5363—Practicum in Psychoeducational Procedures. 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 5335. Class: 3 hours. Credit: 3 semester hours.

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

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

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

5370—Technology. Application of present technology to the production of educational materials, and the utilization of these materials in the direction of instruction. Class: 3 hours. Credit: 3 semester hours.

5371—Teaching Machines and Programmed Instruction. Basic concepts of linear and branching programs, scrambled books, and various teaching machines will be covered in detail. Students will be expected to construct a teaching program as a class project. Class: 3 hours. Credit: 3 semester hours.

5372—Film and Television as a System of Teaching. 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. Class: 3 hours. Credit: 3 semester hours.

5390-9—Selected Topics. 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. Class: 3 hours. Credit: 3 semester hours.

669A-669B—Thesis. Prerequisite: admission to candidacy for the Master of Education degree. 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
433G—Teaching Media and Audio-Visual Technology
4304G—History and Philosophy of the Kindergarten
4305G—Seminar in Early Childhood Educational Research
4337G—Tests and Measurements

GRADUATE RESOURCE COURSES

CS 5301—Computer Systems for Educational Applications. 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. Class: 3 hours. Credit: 3 semester hours.

Gov 535—Seminar in the Theory and Practice of Public Administration. An analytical survey of organization, management and problems in public executive organizations: includes study of organizational theory, policy formulation, personnel, finance and administrative leadership. Class: 3 hours. Credit: 3 semester hours.

Soc 531—Seminar in Sociology. Basic concepts and principles of sociology as applied to the study of selected topics. Designed for education majors or other nonsociology majors. Class: 3 hours. Credit: 3 semester hours.

Soc 532—Educational Sociology. 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. Class: 3 hours. Credit: 3 semester hours.

Swk 532—Group Work. The structures and processes of groups — both formal and informal — as sources of support and of modification of the behavior of group members. Class: 3 hours. Credit: 3 semester hours.

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION FOR WOMEN

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION FOR MEN

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
Associate Professor Vernon R. Crowder
Exercise Physiology
Associate Professor Mary Jane Haskins
Physical Education, research
Professor James B. Higgins
Physical Education
Professor Belle Mead Holm
Health Education, curriculum, administration
Associate Professor Leonard A. Yates
Physical Education, curriculum, administration

Associate Members

Assistant Professor Raymond L. Fletcher
Physical Education, Recreation

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

530—Problems in Health and Physical Education. Biological, physiological, social, psychological, and other purposes and outcomes; selection and distribution of activities; teaching methods; facilities; teacher preparation; literature; research problems. Time arranged. Credit: 3 semester hours.

531—Cultural Foundations of Physical Education. A study of history and cultural foundations of sport and physical education activities, their origin and influence upon modern man. Class: 3 hours. Credit: 3 semester hours.

532—Seminar in Physical Education. 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. Class: 3 hours. Credit: 3 semester hours.

533—Organization and Administration of the School Health Program. Administrative relationships and procedures in conducting school health programs. Class: 3 hours. Credit: 3 semester hours.

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

535—Trends and Issues in Health and Physical Education. 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. Class: 3 hours. Credit: 3 semester hours.

536—Research Methods in Health and Physical Education. Familiarity with types of research in Health and Physical Education with emphasis on tools and techniques of research and research design. Class: 3 hours. Credit: 3 semester hours.

5101, 5201, 5301, 5601—Workshop in Health and Physical Education. This course is designed to advance the professional competence of graduate students in health and physical education. Topic 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. Class: 1-6 hours. Credit: 1-6 semester hours.

669A-669B—Thesis. Prerequisite: admission to candidacy for the Master of Science degree. 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.

432G(M)—Officiating Major Sports
434G—Health and Human Ecology
435G(M)—Adapted Physical Education
439G—History and Theory of Dance

College of Engineering

The College of Engineering offers a program of study leading to the Master of Engineering Science degree (M.E.S.), a Master of Engineering degree (M.E.), and Doctor of Engineering (D. Egr.). The Department of Mathematics offers a Master of Science degree in Mathematics (M.S.). (See Department of Mathematics, this catalog.)

MASTER OF ENGINEERING SCIENCE

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. Three semester hours of engineering courses from those designated as graduate core courses, and
   c. Nine additional semester hours of engineering courses of which at least six 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. Three hours of electives.
4. All course work presented for the M.E.S. degree must have the approval of the candidate's committee.

MASTER OF ENGINEERING

The Master of Engineering (M.E.) degree is designed to suit the needs of the practicing engineer. This program recognizes the value of, and the initiative required for, professional registration.

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 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 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

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 Coordinator of Engineering Graduate Studies. This letter should include information about the applicant's engineering experience, present employment, chief interests, and type of work he might undertake for his field study.

An applicant who has been accepted into the College of Graduate Studies and whose application indicates he 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.

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 will also 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 will meet with his committee to outline a program of study. This program of study would normally consist of a minimum of 30 semester hours of 500D and 600 level course work beyond the equivalent of a master's degree.

The study program would be chosen in consultation with the student to suit his interests and abilities as nearly as the standards of the doctoral program and the interests of the

faculty will allow. In addition to his study program the student will be expected to demonstrate a proficiency in at least one computer language.

The student is expected to pursue his 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 study program.

Candidacy Examination

Near the end of the study program the student would make written application to his 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: (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 would be required to submit a formal engineering proposal conforming to a standard format outlining his field study. This field study would normally 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

Associate Professor Ali M. Ali
Operations research, quality control
Professor Luther A. Beale
Structural analysis, design, marine structures
Professor Wendell C. Bean
Automatic control systems, bioengineering
Associate Professor James J. Brennan
Applied statistics, systems simulation, manufacturing processes and materials
Professor Otto G. Brown
Fluid mechanics in turbulent flow; bioengineering
Professor Lloyd B. Cherry
Electronic instrumentation and control
Professor James L. Cooke
Process control; power system analysis
Professor Floyd M. Crum
Solid state devices in electronic circuits
Professor Andre P. Delflache
Soil mechanics, foundations, ocean engineering, geophysics

Associate Professor Edwin O. Eisen
Vapor-liquid equilibria,
reaction kinetics, thermodynamics
Professor David G. Gates
Decision-making processes; plant layout, human factors
Associate Professor Jack R. Hopper
Reaction, kinetics, catalysis
Professor Frederic C. Jelen
Corrosion, economic analysis
Professor Robert A. McAllister
Transport properties, fluid mechanics
Associate Professor Eugene P. Martinez
Gas dynamics
Professor Harry T. Mei
Heat transfer, humidity control
Professor Irvin L. Reis
Probabilistic design, mathematical models, management engineering
Professor Bruce G. Rogers
Ultimate load characteristics of structures, stress analysis
Professor George B. Tims, Jr.
Engineering management
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 Fred M. Young
Heat transfer, compressible flow

Associate Members

Associate Professor James J. Brennan
Engineering statistics, hospital systems, operative research
Assistant Professor Spencer L. Brinkerhoff, Jr.
Engineering Mechanics, structural design
Associate Professor John A. Bruyere
Material science
Assistant Professor John M. Kramer
Solid mechanics
Assistant Professor William E. Morgan
Environmental engineering
Assistant Professor Ramon S. Satterwhite
Electromagnetic fields and waves

The graduate student will select his *engineering* courses from the following:

531—Materials Science. Principles underlying the behavior of materials existing in the solid, liquid, and gaseous phases. Class: 3 hours. Credit: 3 semester hours.

533—Computer Methods in Engineering Analysis. 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. Class: 3 hours. Credit: 3 semester hours.

534—Nonlinear Analysis. Various methods of solving nonlinear differential equations are studied. Analytical, graphical, and computer solutions are included. Class: 3 hours. Credit: 3 semester hours.

**535—Control Theory.* Introduction to state variables; multiple-input-multiple-output systems; controllability; performance criteria; choice of control strategy. Class: 3 hours. Credit: 3 semester hours.

**536—Thermodynamics-Process Industry.* 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. Class: 3 hours. Credit: 3 semester hours.

**537—Thermodynamics-Energy Conversion.* 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. Class: 3 hours. Credit: 3 semester hours.

538—Sampled Data Control Systems. 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. Class: 3 hours. Credit: 3 semester hours.

539—Seminar. Investigation of current engineering practices, research, and literature. The course may be repeated for credit when the subject matter differs. Class: 3 hours. Credit: 3 semester hours.

5303—Regression Analysis. Review of regression analysis; theory of least squares; multivariate analysis; theory of the general linear hypothesis model. Class: 3 hours. Credit: 3 semester hours.

5304—Nonlinear Programming. Theory of linear and nonlinear programming; the lambda and delta-form of the approximating problem; quadratic programming; gradient methods. Class: 3 hours. Credit: 3 semester hours.

5305—Reliability. 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. Class: 3 hours. Credit: 3 semester hours.

5308—Cost and Optimization Engineering. Includes the mathematics of cost comparisons, profitability, and optimization with emphasis on processing, cost estimation, and control. Class: 3 hours. Credit: 3 semester hours.

---

*Core Courses. A core course may be repeated one time for graduate credit, upon prior approval, where course content varies.

5311—Heat Transfer Analysis. 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. Class: 3 hours. Credit: 3 semester hours.

5312—Heat Transfer Mechanisms. 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. Class: 3 hours. Credit: 3 semester hours.

5313—Fluid Mechanics. 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. Class: 3 hours. Credit: 3 semester hours.

5314—Hydraulic Engineering. Design considerations of hydraulic systems including closed and open channel flow together with related hydraulic accessories. Class: 3 hours. Credit: 3 semester hours.

5315—Theory of Elasticity. General analysis of stress and strain, equations of equilibrium and compatibility, stress and strain relations, two dimensional stress problems, elastic energy principles, thermoelastic problems. Class: 3 hours. Credit: 3 semester hours.

5316—Operations Research I. 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. Class: 3 hours. Credit: 3 semester hours.

5317—Micromeritics. 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. Class: 3 hours. Credit: 3 semester hours.

5318—Stress Analysis. 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. Class: 3 hours. Credit: 3 semester hours.

5319—Design of Experiments. 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. Prerequistie: Course in statistics or equivalent. Class: 3 hours. Credit: 3 semester hours.

5321—Quality Control Systems. Application of statistical methods to industrial problems; regression and correlation theory; analysis of variance; use of control charts for control of manufacturing operations. Class: 3 hours. Credit: 3 semester hours.

5322—Rheology. 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. Class: 3 hours. Credit: 3 semester hours.

5324—Wave Mechanics in Particulate Matter. Propagation of elastic waves in semi-infinite media. Surface waves and body waves. Behavior of particulate masses under the effect of dynamic loading, impact and transient phenomena. Effect on substructures of

waves from industrial, seismic and nuclear sources. Mechanical and electronic recording. Class: 3 hours. Credit: 3 semester hours.

5325—Information Theory. Aspects applicable to all fields of engineering. Entropy as a measure of information; signal processing, channel capacity and coding theory. Class: 3 hours. Credit: 3 semester hours.

5326—Waves and Coastal Processes. Hydrodynamics of waves, wave generation, reflection, energy transmission and dissipation. Coastal phenomena, harbors and breakwaters. Analysis of tides and tidal currents. Salt water, fresh water interaction and diffusion in estuaries; erosion and shoaling in tidal waters. Class: 3 hours. Credit: 3 semester hours.

5327—Marine Structures. Analysis of wind and wave forces acting on marine structures. Consideration of design techniques and design requirements for offshore structures. Application of computer methods. Class: 3 hours. Credit: 3 semester hours.

5328—Inelastic Theory of Structures. Investigation of structural behavior under conditions of overload. Design of structures using principles of ultimate strength and plastic design theories. Consideration of load and safety factors, stress redistribution, and shakedown. Class: 3 hours. Credit: 3 semester hours.

5329—Water and Waste Analysis. Fundamental treatment of sanitary chemistry and microbiology; an intensive study of basic laboratory techniques and instrumentation. Class: 3 hours. Credit: 3 semester hours.

5330—Wastewater Treatment. Principles of treatment for domestic and industrial wastewaters with emphasis on process kinetics. Class: 3 hours. Credit: 3 semester hours.

5331—Similitude and Model Design. Dimensional analysis, data processes, prediction equations and model design, including a study of distorted and dissimilar models. Models studied include structural fluid flow, thermal, electrical, magnetic, acoustical, and illumination types. Various analogues from second-order ordinary and partial differential equations are also discussed. Prerequisite: Mth 434G recommended. Class: 3 hours. Credit: 3 semester hours.

5332—Operations Research II. Advanced topics in operations research-linear programming, non-linear programming, advanced topics in queuing and inventory theories, sensitivity analysis, and dynamic programming. Prerequisite: EGR 5316 or equivalent. Class: 3 hours. Credit: 3 semester hours.

5333—Production Control. Advanced topics in techniques employed in different types of manufacture for planning and controlling production. Class: 3 hours. Credit: 3 semester hours.

5334—Salary Administration for Engineers and Scientists. A study of salary incentives, job evaluation, and merit rating for engineering and scientific personnel, executive and managerial compensation. Class: 3 hours. Credit: 3 semester hours.

5335—Engineering Administration. The qualitative and quantitative responsibilities of the engineer as an administrator. The planning, organization and control of engineering functions. Class: 3 hours. Credit: 3 semester hours.

5336—Operations Research III. Recent advances in the methodology and philosophy of Operations Research. Prerequisite: Consent of instructor. Class: 3 hours. Credit: 3 semester hours.

5337—System Simulation. 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. Class: 3 hours. Credit: 3 semester hours.

5338—Reclamation Engineering Seminar. Investigations of the reclamation of water resources by multiple use, reuse and improvement of existing sources to meet quality requirements. Class: 3 hours. Credit: 3 semester hours.

5340—Kinetics. 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. Class: 3 hours. Credit: 3 semester hours.

5341—Mass-Transfer Operations. 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. Class: 3 hours. Credit: 3 semester hours.

5343—Industrial Waste Treatment. 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. Class: 3 hours. Credit: 3 semester hours.

5344—Process Modeling. 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. Class: 3 hours. Credit: 3 semester hours.

5345—Reactor Design I. 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. Class: 3 hours. Credit: 3 semester hours.

5347—Manufacturing Analysis. 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. Class: 3 hours. Credit: 3 semester hours.

5348—Probabilistic Design. Application of algebra of normal function to engineering design. Distributive nature of stresses, strengths, and times. Realistic versus idealized design procedures. Class: 3 hours. Credit: 3 semester hours.

5350—Unit Operations of Environmental Engineering. 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. Class: 3 hours. Credit: 3 semester hours.

5351, 5352, 5353—Electric Power Systems Analysis I, II, III. A three-semester sequence, selected from: symmetrical components, impedance and fault-current calculations, load-flow studies, economic operation, stability and control, system modelling,

non-fossil fuel energy conversion. Both analytical and digital-computer methods may be employed as appropriate. Class: 3 hours. Credit: 3 semester hours each.

5354—Nuclear Power Plants. 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. Class: 3 hours. Credit: 3 semester hours.

5355—Random Signal Theory. 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. Class: 3 hours. Credit: 3 semester hours.

5356—Modern Control Theory. Review of state variables; determining mathematical models from input-output data; on-off control systems; optimal control. Class: 3 hours. Credit: 3 semester hours.

5357—Electromagnetic Fields and Waves. 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. Class: 3 hours. Credit: 3 semester hours.

5358—Scientific Writing and Editing. 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. Class: 3 hours. Credit: 3 semester hours.

5359—Seminar in Engineering Administration. Direct reading, analysis and research in the classic and modern literature of engineering administration. Class: 3 hours. Credit: 3 semester hours.

5360—Case Problems In Engineering Administration. The case method applied to complex administration problems encountered by engineers. Class: 3 hours. Credit: 3 semester hours.

5361—Microelectronic Integrated Circuits. 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. Class: 3 hours. Credit: 3 semester hours.

5362—Decision-Making Processes. 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. Class: 3 hours. Credit: 3 semester hours.

5363—Administrative Control Systems. Problems affecting the engineer in his design, analysis and control of information systems. Class: 3 hours. Credit: 3 semester hours.

5364—Digital System Engineering. Review of combinational and sequential logic; organization of digital computers; data representation and transfer; arithmetic operations; storage and access; control functions. Class: 3 hours. Credit: 3 semester hours.

5371—Seminar In Administrative Practices. Study of the interrelationships between the fields of economics, politics, physical science and social science and the effects upon the management of engineering work. Class: 3 hours. Credit: 3 semester hours.

5375-5390—Special Topics. The course is designed to meet special needs of students. Each topic is offered on an irregular schedule as the demand requires. Example topics include:

1. Kinetic Theory of Gases
2. Transients in Compressible Flow
3. Non-linear Vibrations
4. Protective Construction
5. Absorption and Extraction
6. Stagewise Mass Transfer
7. Properties of Gases and Liquids
8. Nuclear Engineering
9. Hybrid and Analog Computers
10. Adaptive Control
11. Optimization Techniques
12. Sampling Techniques

Class: 3 hours. Credit: 3 semester hours.

5391—Work Systems Engineering. 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. Class: 3 hours. Credit: 3 semester hours.

5399—Human Factors Engineering. The specialized adaptation of engineering designs to the human operator's role in man-machine systems. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

5101, 5201, 5301, 5401, 5501, 5601—Institute in Engineering. 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. Class: 1-6 hours. Credit: 1-6 hours.

631—Design Project. Prerequisite: admission to candidacy. Credit: 3 semester hours.

632—Justification of Engineering Projects. The preparation of proposals for advanced engineering work. The student will be given individual assistance in preparing a proposal for his field study. Prerequisite: Satisfactory scores on diagnostic exam and approval of advisory committee. Class: 3 hours. Credit: 3 semester hours.

6340—Distillation. Material and energy-balance relationships are reviewed for multicomponent fractionation equipment and for batch stills. Various plate designs are presented from the standpoint of two-phase hydraulics and mass-transfer efficiency. Class: 3 hours. Credit: 3 semester hours.

6341—Absorption. 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 occuring on the surface of solid catalysts and on liquid surfaces. Class: 3 hours. Credit: 3 semester hours.

6342—Extraction. 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. Class: 3 hours. Credit: 3 semester hours.

6343—Reactor Design II. 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. Class: 3 hours. Credit: 3 semester hours.

661—Engineering Practice. An internship period under personal supervision. Approval must be obtained from the student's graduate committee. Usually, a formal proposal will be required. Prerequisite: Consent of advisor. Total credit: 6 semester hours.

662—Engineering Practice. An internship period under personal supervision. Approval must be obtained from the student's graduate committee. Usually, a formal proposal will be required. Prerequisite: EGR 632 and consent of advisor. Total credit: 6 semester hours. May be repeated for credit until Field Study is completed.

669A-669B—Thesis. Prerequisite: admission to candidacy. 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.

ChE 435G—Experimental Design
ChE 4111G—Seminar
ChE 4316G—Stagewise Processes
ChE 4318G—Advanced Distillation
ChE 4322G—Advanced Unit Operations
ChE 4323G—Materials
ChE 4324G—Chemical Engineering Economics
ChE 4325G—Introduction to Nuclear Engineering

CE 430G—Indeterminate Structures
CE 433G—Environmental Health Engineering
CE 434G—Soil Engineering
CE 435G—Water Supply Engineering
CE 438G—Reinforced Concrete Design
CE 439G—Structural Steel Design
CE 4310G—Soil-Structure Interaction
CE 4321G—Advanced Structural Design

EE 432G—Electronics III
EE 434G—Network Synthesis
EE 436G—Control Engineering
EE 437G—Microwaves
EE 4302G—Communication Theory
EE 4303G—Logical Design of Switching Systems
EE 4304G—Advanced Topics

IE 411G—Seminar
IE 430G—Statistical Quality Control
IE 432G—Industrial Statistics
IE 434G—Manufacturing Engineering
IE 435G—Production and Inventory Control
IE 436G—Production Systems Design
IE 437G—Operations Research
IE 4302G—System Analysis and Design

IE 4303G—Linear Programming
IE 4313G—Human Engineering
IE 4315G—Organization and Management

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

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 his approval six additional hours in English may be substituted for the minor.

Professional Certification Requirements (Texas) in English

The plan for the Professional Certificate—Secondary requires the completion of 30 semester hours of graduate work: 18 in English, six in resource areas, and six 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 six 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 graduate program in English will include Eng 4327G, 533, and 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
Associate Professor Marilyn D. Georgas
Renaissance and Victorian literature
Associate 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 Robert Blaine Thomas
Seventeenth and eighteenth century British literature, short story

Professor Alvice W. Yeats
British literature: 1840 to the present
Professor David D. Zink
Nineteenth century American and British literature

Associate Members

Assistant Professor Olga D. Harvill
British Romantic literature
Assistant Professor Arney L. Stirckland
Linguistics and English education

The graduate student will select his *English* courses from the following list:

533—Special Topics In Old And Middle English Language And Literature. 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. Class: 3 hours. Credit: 3 semester hours.

535—Special Topics In Renaissance And Seventeenth Century English Literature. 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. Class: 3 hours. Credit: 3 semester hours.

536—Special Topics In Restoration And Eighteenth Century English Literature. 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. Class: 3 hours. Credit: 3 semester hours.

537—Special Topics In Nineteenth Century English Literature. 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. Class: 3 hours. Credit: 3 semester hours.

538—Special Topics In Twentieth Century Literature. 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. Class: 3 hours. Credit: 3 semester hours.

539—Special Topics In American Literature. 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. Class: 3 hours. Credit: 3 semester hours.

5311—Special Topics In Comparative Literature. 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. Class: 3 hours. Credit: 3 semester hours.

669A-669B—Thesis. Prerequisite: admission to candidacy for the master's degree. 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.

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
4123G, 4223G, 4323G, 4423G, 4523G, 4623G—Institute in English
4325G—Language: Sound and Meaning
4326G—Expository Writing
4327G—Bibliography and Methods of Research
4328G—Colonial American Literature
4329G—Modern American Literature
4333G—Studies in a Particular Author
4334G—Critical Studies in Literature

Department of Geology

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

GRADUATE FACULTY

Members

Professor H. E. Eveland
Geomorphology, glacial geology
Professor William H. Matthews, III
Paleontology, stratigraphy
Associate Professor William R. Pampe
Paleontology, meteorology, stratigraphy

530—Earth Science Seminar. 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. Designed for non-science majors. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

5301, 5601—Institute in Earth Science. Summer, in-service or other institute for earth science teachers, with emphasis on Earth Science Curriculum Project materials and techniques. Class: 3-6 hours. Laboratory: 3-9 hours. Credit: 3 or 6 semester hours.

Department of Government

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 his approval six additional hours in Government may be substituted for the minor.

The student's graduate program must include Government 530.

GRADUATE FACULTY

Members

Associate Professor Wendell Bedichek
American Government
Professor Manfred Stevens
Comparative Government, Europe
Professor William R. Tucker
Political Thought

Associate Members

Assistant Professor Florence Heffron
American Government
Assistant Professor Boyd Lanier
International Relations
Assistant Professor William M. Pearson
Public Administration

The graduate student will select his *government* courses from the following list:

530—Scope and Method of Political Science. 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. Class: 3 hours. Credit: 3 semester hours.

531—Seminar in Political Theory. Selected issues in political thought with emphasis on the classical thinkers and their relationship to contemporary political, economic and social problems. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

534—Seminar in American Government and Politics. 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. Class: 3 hours. Credit: 3 semester hours.

535—Seminar in the Theory and Practice of Public Administration. An analytical survey of organization, management and problems in public executive organizations: includes study of organizational theory, policy formulation, personnel, finance and administrative leadership. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

536—Seminar in International Politics. The study in depth of selected problems in international relations, both historical and current. Problems of a theoretical and institutional nature as well as specific policies will be dealt with. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

537—Seminar in Comparative Study of Political Systems. 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. Class: 3 hours. Credit: 3 semester hours.

669A-669B—Thesis. Prerequisite: admission to candidacy for the master's degree. 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.

430G—Organization Theory and Behavior
431G—History of Political Thought I
432G—History of Political Thought II
433G—History of Political Thought III
434G—Formulation of Public Policy
435G—The International System
436G—American Constitutional Law and Development
437G—American Constitutional Law and Development
439G—Comparative Public Administration

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 18 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
Associate Professor Howell Holmes Gwin, Jr.
European history, classical and medieval
Professor Paul E. Isaac
United States history, recent, the West
Associate Professor William W. MacDonald
Modern European history, Great Britain
Professor Howard Mackey
Modern European history, Great Britain
Professor L. Wesley Norton
United States history, social and intellectual
Associate Professor R. Beeler Satterfield
United States history, middle period
Associate 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

530—Classical and European Historiography. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

531—American Historiography. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

532—Readings in American History. Course may be repeated for a maximum of six semester hours credit when topic varies. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

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

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

535—Seminar in Texas History. Course may be repeated for a maximum of six semester hours credit when the topic varies. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

536—Seminar in Southern History. Course may be repeated for a maximum of six semester hours credit when the topic varies. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

537—Seminar in United States History. Course may be repeated for a maximum of six semester hours credit when the topic varies. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

539—Seminar in the American West. Course may be repeated for a maximum of six semester hours credit when the topic varies. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

5311—Seminar in European History. Course may be repeated for a maximum of six semester hours credit when the topic varies. Prerequisite: graduate standing. Class: 3 hours. Credit: 3 semester hours.

5101, 5201, 5301, 5401, 5501, 5601—Institute in History. 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. Class: 1-6 hours. Credit: 1-6 semester hours.

669A-669B—Thesis. Prerequisite: admission to candidacy for the master's degree. 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.

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

Department of Mathematics

The Department of Mathematics offers a program of study leading to the Master of Science degree in Mathematics (M.S.). 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's 24 semester hours of undergraduate work in Mathematics must include a course in advanced calculus or its equivalent.

Degree Requirements

The Master of Science degree in mathematics requires the completion of 30 semester hours of graduate work of which 18 semester hours must be in courses listed 500 or higher.

Additional specific degree requirements are as follows:

1. Fifteen to 18 semester hours in mathematics, including nine semester hours of 500 level courses (exclusive of thesis).
2. Six semester hours in thesis.
3. Six to nine semester hours in a minor field to be approved by the head of the department. On approval by the head of the department a student may elect to take all of his work in his major field.

GRADUATE FACULTY

Members

Professor Russell W. Cowan
Differential equations, applied mathematics
Professor Sterling C. Crim
Applied mathematics
Associate Professor Philip W. Latimer
Analysis, modern elementary mathematics
Professor Sterling W. McGuire
Mathematical statistics
Professor Jeremiah M. Stark
Analysis, applied mathematics

Associate Members

Associate Professor Joseph A. Baj, II
Topology, analysis
Assistant Professor George Berzsenyi
Topology, algebra
Associate Professor Sam M. Wood, Jr.
Analysis, abstract algebra

For *mathematics* majors:

531—Theory of Functions of Real Variable. Analytical functions, pathological functions, set functions, Riemann integral, measure theory, Lebesque integral, Riemann-Stieltjes and Lebesque-Stieltjes integral. Class: 3 hours. Credit: 3 semester hours.

532—Modern Algebra. 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. Class: 3 hours. Credit: 3 semester hours.

533—Calculus of Variations. The Euler-Lagrange differential equation, necessary conditions of Legendre, Jacobi, and Weierstrass, sufficient conditions for an extreme, brachistrochrome problem, goedesics, surface of revolutions of minimum area, other problems as time permits. Class: 3 hours. Credit: 3 semester hours.

534—Topology. Sets, compact spaces, topological spaces, embedding and metrization, and Urysohn lemma. Uniform spaces and function spaces as time permits. Class: 3 hours. Credit: 3 semester hours.

535—Introduction to Advanced Analysis. 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. Class: 3 hours. Credit: 3 semester hours.

536—Integral Equations. Fredholm theory. 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. Class: 3 hours. Credit: 3 semester hours.

537—Methods of Applied Mathematics. The Dirichlet problem, solution of boundary value problems, the Bergman kernel function, method of the minimum integral, applications of conformal mapping. Prerequisite: Mth 431G. Class: 3 hours. Credit: 3 semester hours.

538—Fourier Series. 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 problems arising from partial differential equations of physics and engineering. Class: 3 hours. Credit: 3 semester hours.

539—Infinite Series. 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. Class: 3 hours. Credit: 3 semester hours.

5301—Operational Mathematics. Ordinary differential equations, the Laplace Transform, elementary properties; Inverse Transforms, applications of the Laplace Transform to ordinary differential equations. Class: 3 hours. Credit: 3 semester hours.

5302—Operational Mathematics. Application of Laplace Transform to partial differential equations, boundary-value problems and characteristics, function representation. Class: 3 hours. Credit: 3 semester hours.

5331—Special Topics for Graduate Students. 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. Class: 3 hours. Credit: 3 semester hours.

669A-669B—Thesis. Prerequisite: admission to candidacy for the master's degree. 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.

4301G—Advanced Calculus for Engineers
431G, 432G—Introduction to Functions of a Complex Variable
433G—Vector Analysis
434G—Partial Differential Equations
435G—Introductory Topology
437G, 438G—Probability and Statistics
4311G—Numerical Solution of Differential Equations
4315G—Numerical Analysis

Mathematics-Education

530—Seminar in Mathematics for Teachers. A review of basic mathematics through description and problem solving techniques. May not be taken for credit by science, engineering, or mathematics students. Class: 3 hours. Credit: 3 semester hours.

5321—Foundations I. Basic set theory and mathematical logic, introduction to axiomatic systems, the role of definitions, theorems, examples, intuition versus rigor in mathematics, constructive foundation for the real number system, its algebraic and topological properties. Class: 3 hours. Credit: 3 semester hours.

5322—Foundations II. Continuation of Math 5321. Prerequisite: Math 5321. Class: 3 hours. Credit: 3 semester hours.

5323—Real Analysis. The first year of Calculus reviewed from a higher viewpoint. Prerequisite: Math 5321. Class: 3 hours. Credit: 3 semester hours.

5324—Algebra. Basic algebraic structures, groups, rings, euclidean rings, division rings, integral domains, fields. Prerequisite: Math 5321. Class: 3 hours. Credit: 3 semester hours.

5325—Linear Algebra. Vector spaces with special emphasis on the algebraic structures of R, R^2, and R^3. Prerequisite: Math 5321. Class: 3 hours. Credit: 3 semester hours.

5326—Probability and Statistics. Permutation and factorials, elementary principles of probability, mathematical expectations, averages, curve fitting, application. Prerequisite: Math 5321. Class: 3 hours. Credit: 3 semester hours.

5327—Data Processing. 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. Prerequisite: Math 5321. Class: 3 hours. Credit: 3 semester hours.

5328—Seminar in the History of Mathematics. Historical origin of mathematical concepts, lives and achievements of great men of mathematics, balance kept between ancient and modern developments. Class: 3 hours. Credit: 3 semester hours.

5329—Seminar in Mathematical Discovery. Case histories studied in detail, inductive and heuristic reasoning, teaching by the discovery method. Class: 3 hours. Credit: 3 semester hours.

5330—Seminar in Enrichment Topics in Mathematics. Curves of constant width, squaring the square, magic squares, mathematical puzzles, games, many other topics. Class: 3 hours. Credit: 3 semester hours.

5332—Seminar in Geometry. Basic concepts and selected Euclidean topics. Class: 3 hours. Credit: 3 semester hours.

5333—Seminar in Number Theory. Pythagorian, Fibonacci, Lucas, triangular and other numbers, other topics as time permits. Class: 3 hours. Credit: 3 semester hours.

5334—Seminar in Problem Solving. Understanding the problem, search for the solution, making sketches, the role of trial and error, checking the solution. Class: 3 hours. Credit: 3 semester hours.

Department of Physics

The Department of Physics offers the following graduate courses to be used primarily to provide an area of specialization for the Master of Education degree in Secondary Education and as support to other advanced degree programs.

GRADUATE FACULTY

Members

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

5101, 5201, 5301, 5401, 5501, and 5601—Institute in Physics. 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. Class: 1-6 hours. Laboratory: 2-4 hours. Credit: 1-6 semester hours.

530—Seminar in Physical Science. 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. May not be taken for credit by any student with a major in engineering, mathematics, or a science. Class: 3 hours. Credit: 3 semester hours.

531—Theoretical Physics. The application of typical mathematical techniques, with emphasis on field and potential concepts. Class: 3 hours. Credit: 3 semester hours.

532—Relativity. Brief introduction to the special and general theory followed by detailed study of a particular topic. Class: 3 hours. Credit: 3 semester hours.

533—Seminar. Selected topics pertaining to the research reported in contemporary publications. Course may be repeated for a maximum of six semester hours credit when the topic varies. Class: 3 hours. Credit: 3 semester hours.

Department of Speech

A Master of Science degree in Speech is offered by the Department of Speech and may be obtained through programs of study with an optional emphasis in Public Address, Theater, and Speech Pathology or Audiology. The master's program is designed to help the student deepen and expand his knowledge of these fields and provide him with the opportunity to develop skills and concepts which may be applied to the several vocational ends relating to the above three fields of study. Persons seeking admission to these programs must meet the general requirements for admission that are outlined in the College of Graduate Studies catalog. Generally, an applicant should have completed 24 semester hours of undergraduate courses in the speech curriculum.

MASTER OF SCIENCE IN SPEECH PATHOLOGY/AUDIOLOGY

Degree Requirements

The candidate for the Master of Science degree in Speech must meet all the College of Graduate Studies general degree requirements as listed in this catalog, plus the special requirements of obtaining a minimum of 100 supervised hours of clinical experience. A total of 36 semester hours of course work is required for the degree, including six semester hours of electives. An optional thesis program may be elected by the candidate which would eliminate the six hours of electives.

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 or 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 courses acceptable toward a graduate degree. Certification also requires verification of 275 hours of supervised clinical practice.

MASTER OF SCIENCE 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 Speech, 12 semester hours of course work may be substituted for the thesis. No specific courses are required in either of these programs, and each student should work out his particular program in consultation with an assigned graduate advisor.

GRADUATE FACULTY

Members

Professor Robert F. Achilles
Speech Pathology
Professor W. Brock Brentlinger
Speech
Associate Professor DeWitte T. Holland
Public Address
Professor S. Walker James
Theater

Associate Members

Associate Professor Arnold C. Anderson
Rhetoric
Assistant Professor David Granitz
Speech Audiology
Assistant Professor W. Patrick Harrigan, III
Theater, Oral Interpretation

The graduate student may select his courses in *Speech* from the following list:

515, 525, 535—Individual Study. Independent study of special and/or specific problems in disorders of communication. Credit: 1-3 semester hours.

530—Seminar in Speech Pathology. Study of theory and diagnostic procedures with emphasis on educational and vocational aspects as they relate to speech pathology. Credit: 3 semester hours.

531—Advanced Clinical Practice. Diagnostic and therapeutic procedures in speech pathology or audiology. One hour of clinical practice per week per credit hour. Credit: 3 semester hours.

532—Communication Theory. Development of language, automatic control devices, sensory feedback systems, tonal flow and modulation, and qualitative aspects of sound as related to speech development and dysfunctions. Class: 3 hours. Credit: 3 semester hours.

533—Disorders of Communication: Clinical Management. Study of theory, procedure, and clinical management as they relate to problems in disorders of communication. Class: 3 hours. Credit: 3 semester hours.

534—Disorders of Communication: Administration. Study of procedure, inter and intra agency and professional relationships, supervision, and program development as they relate to administrative practice in the field of disorders of communication. Class: 3 hours. Credit: 3 semester hours.

537—Medical Audiology. Differential diagnosis, medical legal implications, testing of infants with emphasis on electro-physiological audiometry. Class: 3 hours. Credit: 3 semester hours.

538—Hearing Conservation. Programs in industry and the public schools including study and practicum. Class: 3 hours. Credit: 3 semester hours.

539—Seminar in Fine Arts. A study of the areas of art, music and theater. Class: 3 hours. Credit: 3 semester hours.

5310—American And British Public Address. A review of selected famous American and British orators and a comprehensive study of their speeches. Class: 3 hours. Credit: 3 semester hours.

5315—Advanced Argumentation And Debate. The application of the principles of logic and motivation to the argumentative process. A review of the place of forensics in the high school and how such a program is developed and maintained. Class: 3 hours. Credit: 3 semester hours.

5321—Seminar in Audiology. Study of theory and diagnostic procedures, with emphasis on educational and vocational aspects as they relate to loss of hearing. Class: 3 hours. Credit: 3 semester hours.

5322—Seminar in Disorders of Language. Etiology, diagnosis and clinical management of language disorders, with emphasis on aphasia. Class: 3 hours. Credit: 3 semester hours.

5323—Neurological Speech and Hearing Disorders. Principles of general neurology with special reference to the functions of the central nervous system, as related to speech and hearing disorders. Class: 3 hours. Credit: 3 semester hours.

5324—Science of Sound. Study of amplification and phonation in relation to electrical theories of audition. Class: 3 hours. Credit: 3 semester hours.

5325—Advanced Problems Of Stage Direction. Theory and problems in directing plays of different periods and styles, including musical comedy, and practice in solving such problems. Prerequisites: graduate standing and Spc 335. Class: 2 hours. Laboratory: 3 hours. Credit: 3 semester hours.

5340—Studies In Modern Theater. Trends in theater production, theory, practice, and techniques from Adolph Appia to the present. Prerequisites: graduate standing and Spc 233. Class: 3 hours. Credit: 3 semester hours.

5341—Seminar In Oral Interpretation. 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. Class: 3 hours. Credit: 3 semester hours.

5345—History And Principles Of Dramatic And Rhetorical Criticism. The development of the theories and criteria of dramatic and rhetorical criticism as practiced by representative critics from Aristotle to the present. Class: 3 hours. Credit: 3 semester hours.

5350—Individual Study. Independent study of special problems in theater and public address. Course may be repeated for credit. Class: 3 hours. Credit: 3 semester hours.

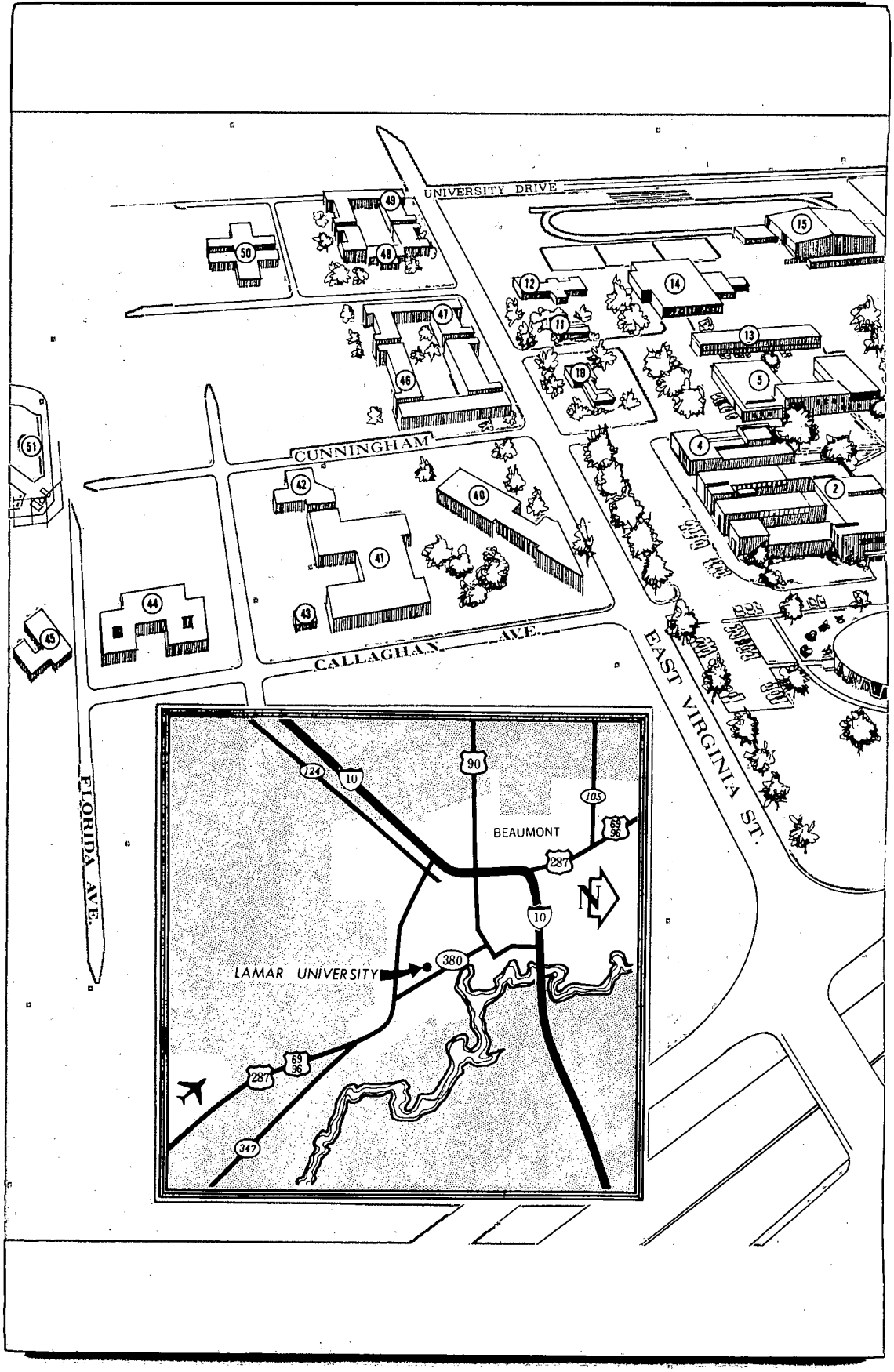
669A, 669B—Thesis: Prerequisite: Admission to candidacy to the master's degree. Credit: 6 semester hours.

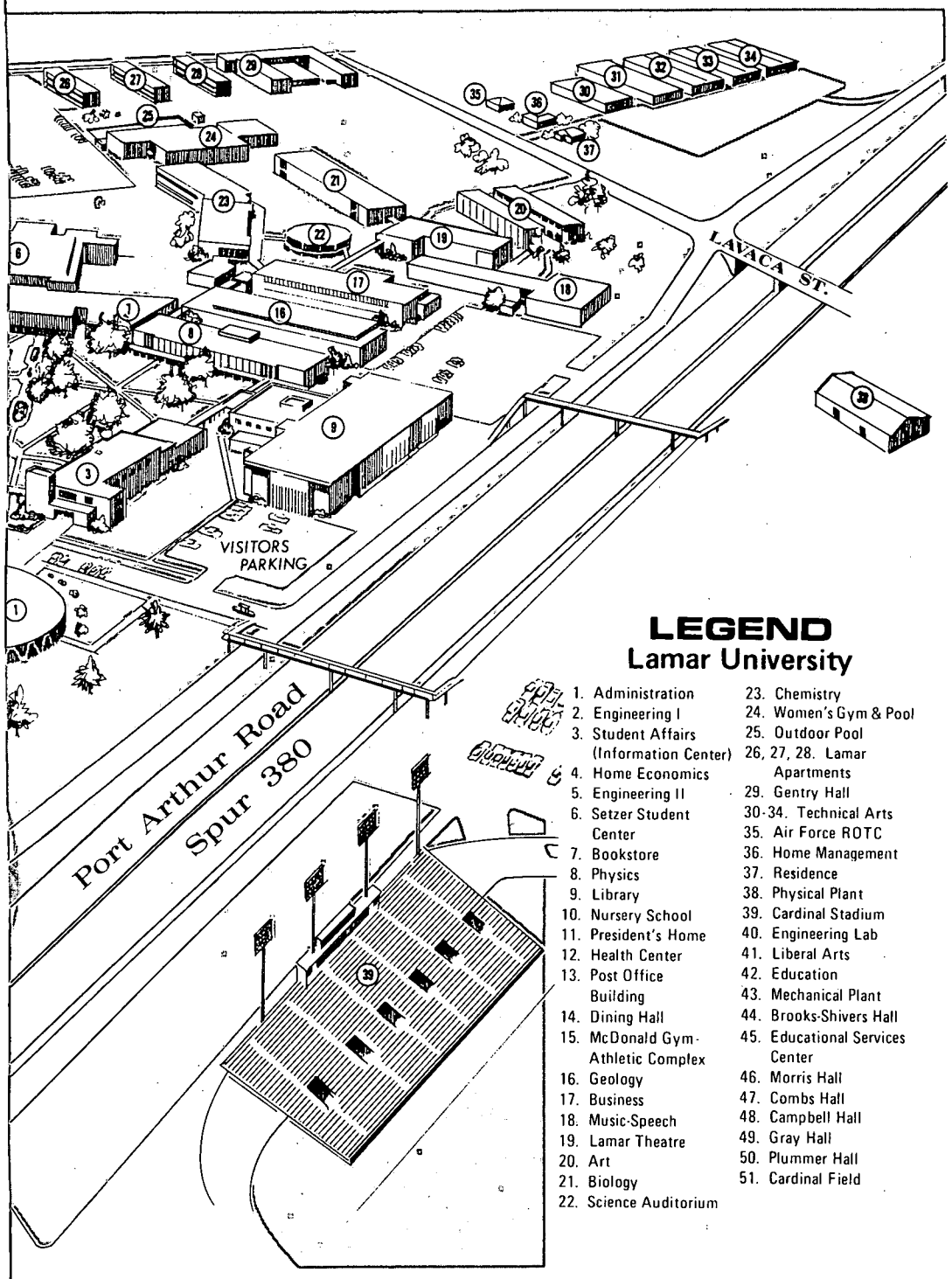
Below is the approved list of 400G level courses which may be taken with augmented requirements for graduate credit, subject to approval by the graduate advisor. Course descriptions may be found in the Bulletin of Lamar University.

430G—Problems and Projects in Speech
431G—Problems and Projects in Theater
434G—Persuasion
435G—Organic Speech and Voice Disorders

436G—History of Theater
437G—Directing Secondary School Theater Activities
438G—Directing Secondary School Speech Activities
439G—Rhetoric and Public Address
4311G—Theory and Practice of Scenery and Lighting Design
4312G—Costume Design and Construction
4324G—Advanced Audiology
4325G—Instrumentation

Index


UNIVERSITY DRIVE
CUNNINGHAM
CALLAGHAN AVE.
FLORIDA AVE.
EAST VIRGINIA ST.
BEAUMONT
LAMAR UNIVERSITY
124
10
90
105
287
69
96
380
347
N



LEGEND
Lamar University

1. Administration
2. Engineering I
3. Student Affairs (Information Center)
4. Home Economics
5. Engineering II
6. Setzer Student Center
7. Bookstore
8. Physics
9. Library
10. Nursery School
11. President's Home
12. Health Center
13. Post Office Building
14. Dining Hall
15. McDonald Gym-Athletic Complex
16. Geology
17. Business
18. Music-Speech
19. Lamar Theatre
20. Art
21. Biology
22. Science Auditorium
23. Chemistry
24. Women's Gym & Pool
25. Outdoor Pool
26, 27, 28. Lamar Apartments
29. Gentry Hall
30-34. Technical Arts
35. Air Force ROTC
36. Home Management
37. Residence
38. Physical Plant
39. Cardinal Stadium
40. Engineering Lab
41. Liberal Arts
42. Education
43. Mechanical Plant
44. Brooks-Shivers Hall
45. Educational Services Center
46. Morris Hall
47. Combs Hall
48. Campbell Hall
49. Gray Hall
50. Plummer Hall
51. Cardinal Field

How to Enter the College of Graduate Studies at Lamar

1. Complete two application blanks and mail to the Dean of the College of Graduate Studies.
2. Ask the Registrar of each college that you attended to send two transcripts to the Dean of the College of Graduate Studies.
3. Have Graduate Record Examination scores (aptitude section and the appropriate subject area) sent to the Dean of the College of Graduate Studies.
4. If University housing is desired, send request to Student Housing Office.
5. All students are required to submit a certificate of immunization for tetanus and diphtheria at each registration.