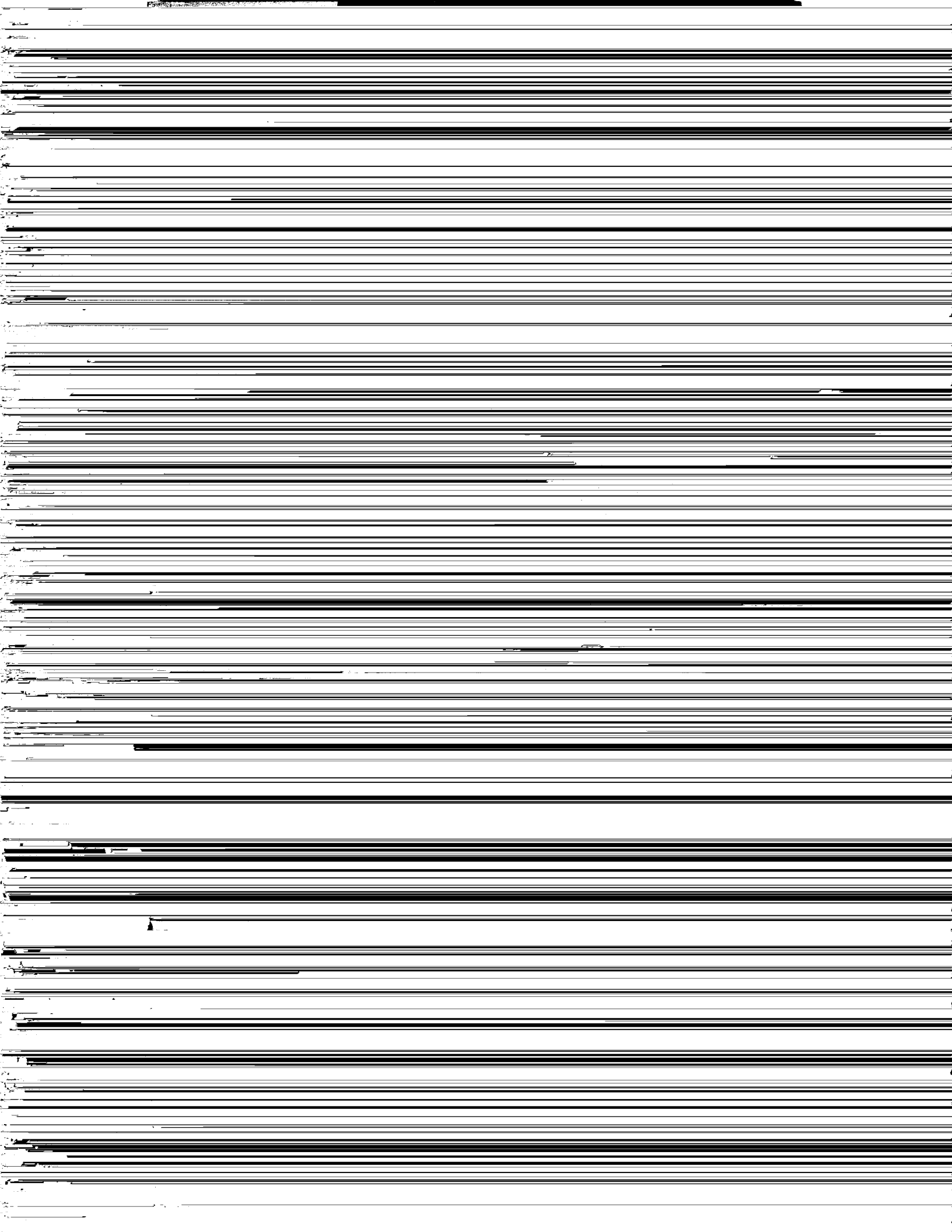
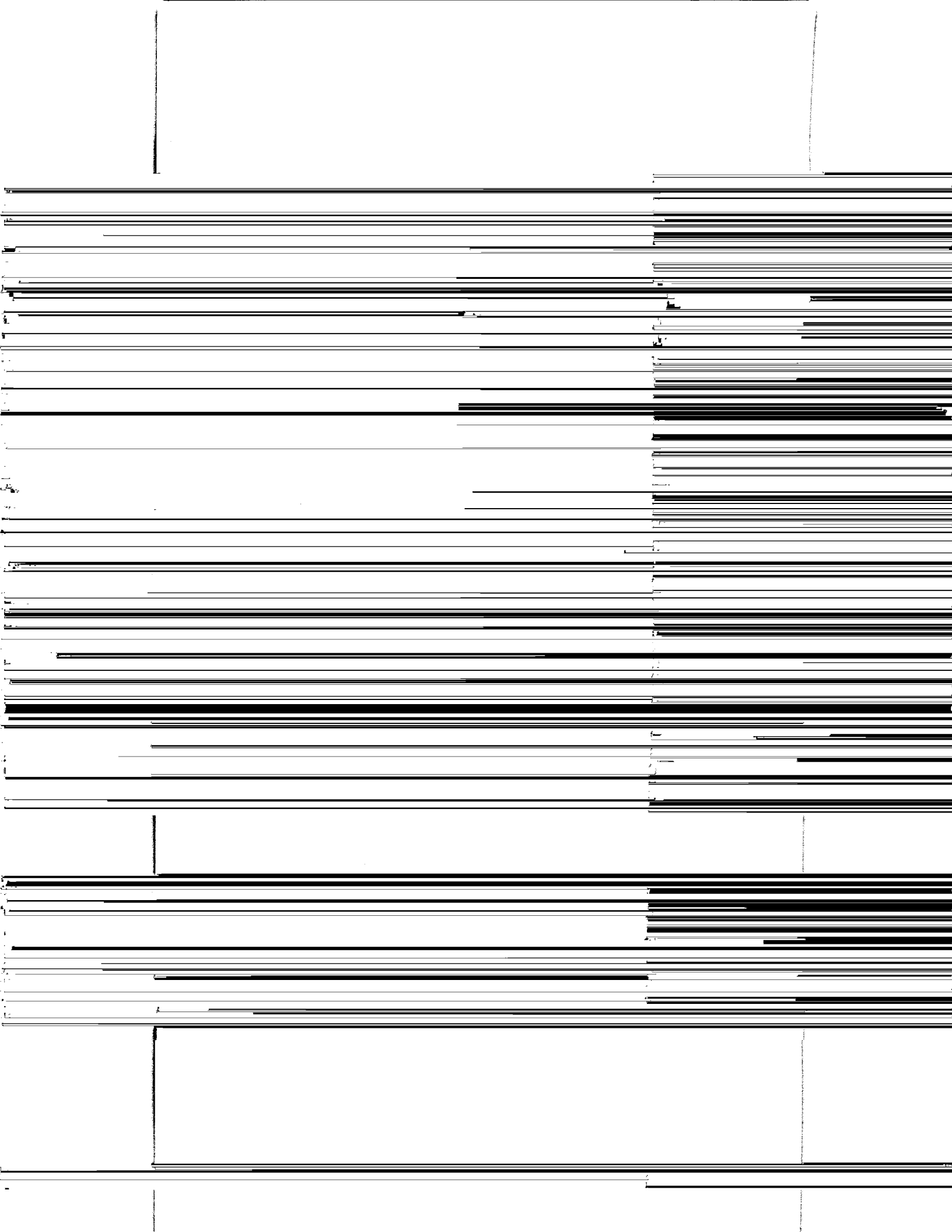
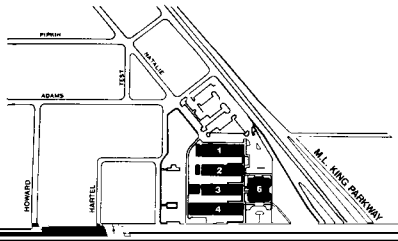




LAMAR UNIVERSITY

COLLEGE OF GRADUATE STUDIES

1987-88 • Bulletin • Volume 36 Number 2



LAMAR UNIVERSITY SYSTEM

Administration (Plummer Bldg.) 48
Newman Catholic Center 62
Army ROTC 64

1987-88 Calendar

Office of the Associate Vice President for Academic Affairs

Fall Semester-1987

August 1987

20 International Student Orientation
21 Orientation – New Students
23 Dormitories open at 1 p.m.
Dining Halls open at 4:30 p.m.
24 Registration begins

AUGUST

S	M	T	W	T	F	S

Spring Semester-1988

JANUARY

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

10 Dormitories open at 1 p.m.
Dining halls open at 4:30 p.m.
11 Registration begins
12 Registration
14 Classes begin
Schedule revisions – late registration
15 Last day for schedule revisions and/or late

FEBRUARY

S M T W T F S

February

May

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

June

1 Last day for schedule revisions and/or late

6 Fourth Class Day
13 Last day to drop or withdraw without penalty

14-16 Orientation – Session I
23 Comprehensive written examinations (except College of Business)

JUNE

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Biology 34

Chemistry 36

General Information

Location

[redacted]

[redacted]

[redacted]

Accreditation and Approval

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

Several departments and programs have been accredited by professional agencies. In the College of Engineering, the programs in Chemical, Civil, Electrical, Industrial and Mechanical Engineering are accredited by the Accreditation Board for Engineering and

[redacted]

[redacted]

[redacted]

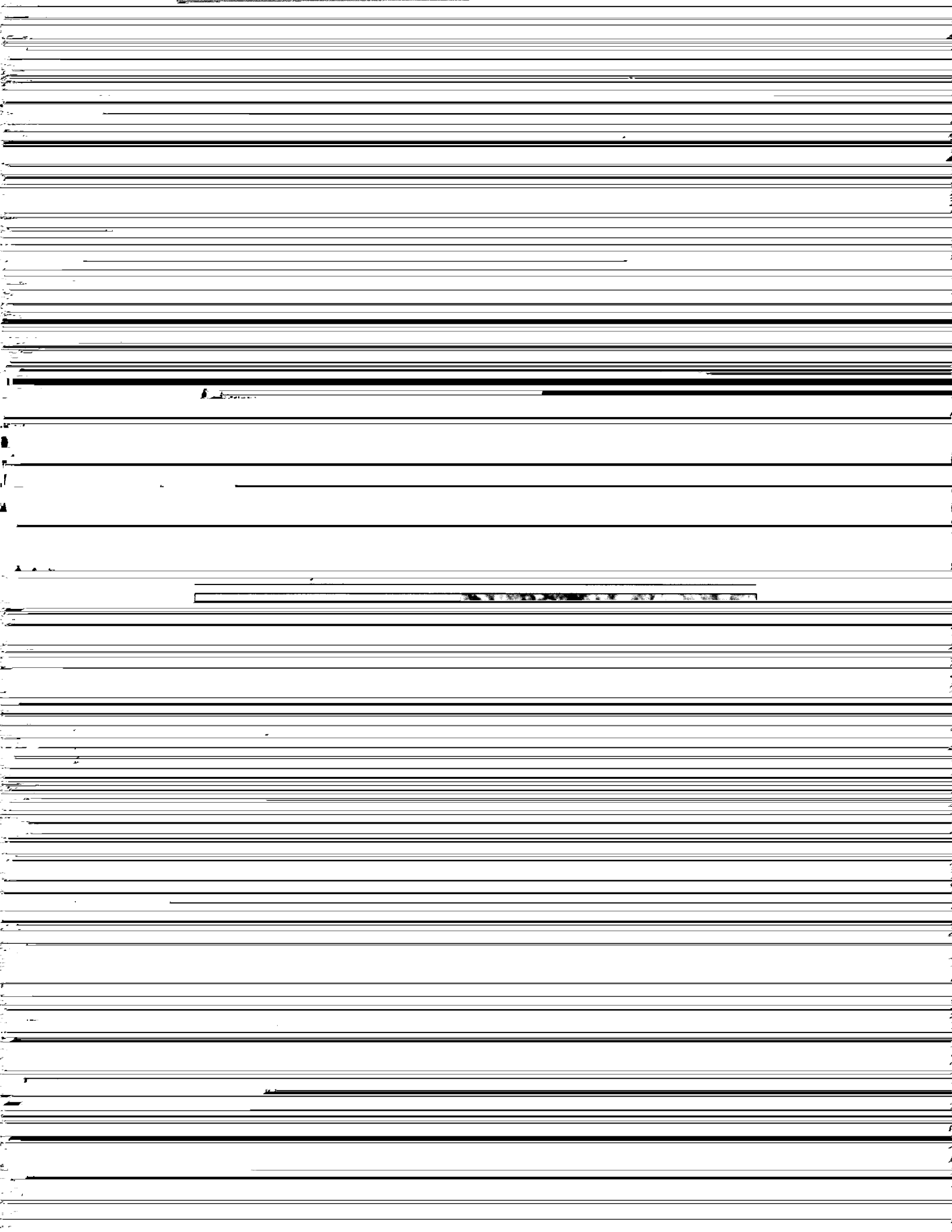
Health Center Director

[redacted]

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

Fall 1987

No. of Semester Hours	Tuition		Student Service Fee	General Use Fee	Setzer Center Fee	Health Center Fee	Total Charge	
	Texas Resident	Non-Texas Resident*					Texas Resident	Non-Texas Resident
2	100	240	33	20	20	5	178	318
3	100	360	40	20	20	5	185	445
4	100	480	47	24	20	5	196	576



Academic Information

Course Numbering

Semesters of a course are numbered separately and each number contains three or

Enforced Withdrawal Due to Illness

The director of the Health Center and the vice president for student affairs, on the advice of competent medical personnel, may require withdrawal of or deny admission to

Academic Records

Academic records are in the permanent custody of the Records Office. Transcripts of

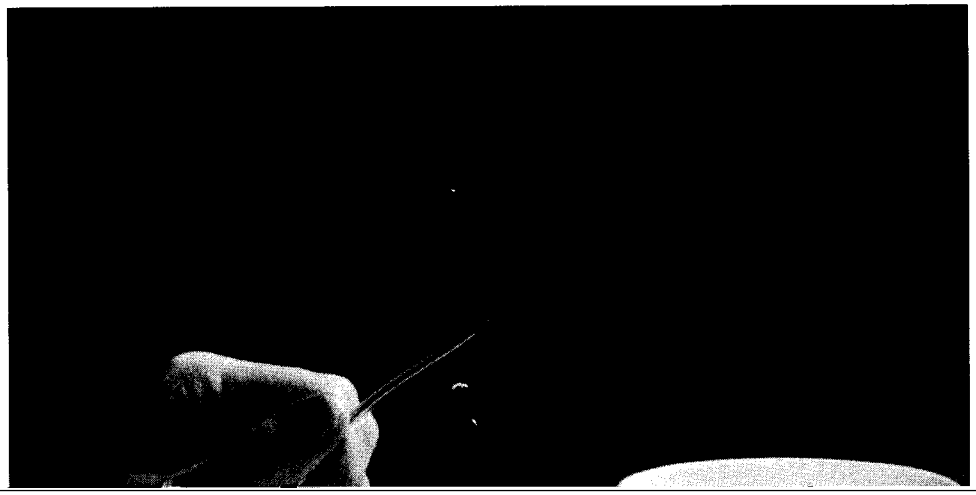
Official Summons

An official summons takes precedence over other university activities of the student

Discipline

later than the 15th day after the first day of the semester, the student notifies the instructor

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



The College of Graduate Studies

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

ary education; in 1968, in health and physical education, political science, speech, guid-

Enrollment

Admission to a Degree Program

1. For admission to a degree program the applicant must meet the following mini-

the GRE; appropriate test will be determined by the department in which the graduate program is offered. In the case of students applying to the College of Education, scores at or above the 25th percentile on the

priate Area Exam of the National Teachers Examination. Students admitted under this option must submit GRE

reate program.

attended.

F. The hearing shall be open to any interested parties. Following a full hearing,

graduate credit on a degree program.

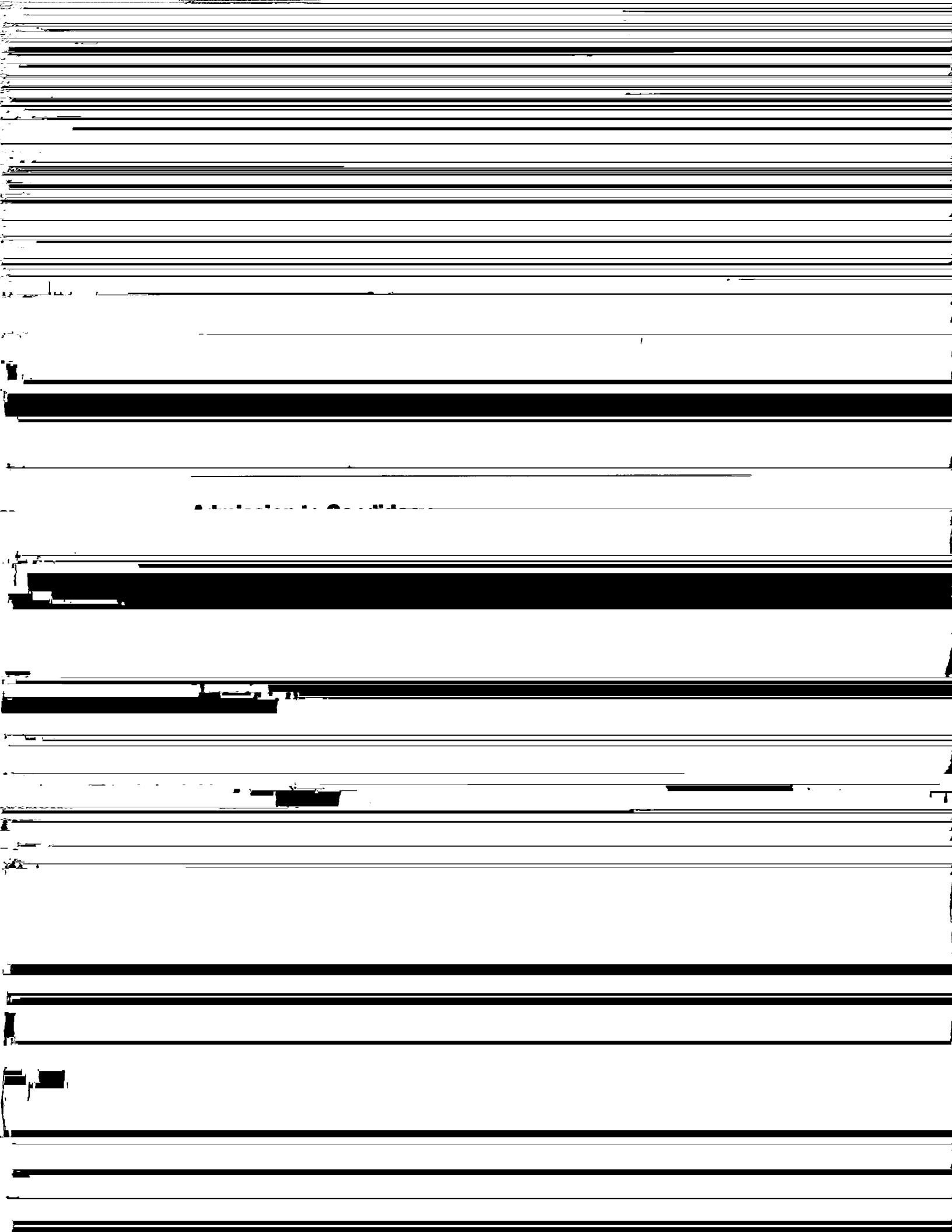
toward a second master's degree with the approval of the department in which the

Master of Engineering Science

1. Meet all general degree requirements.
2. Complete 30 semester hours of graduate work as follows: a minimum of 18 semester hours in 500 level engineering courses, including six semester hours in thesis; a

Master of Music (Performance)

1. Meet all general degree requirements.



appoint a three member Review Committee. In the event the Review Committee fails to effect an agreement between the student and the original committee, a new committee may be selected for the student by the Graduate Dean, the dean of the student's academic college and two members of the graduate faculty of the student's academic college chosen

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

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

NOTE: The College of Business will give written examinations only once in the

College of Arts and Sciences

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

Biology Courses

510 Materials and Techniques of Research **1:1:0**

Survey of laboratory and library research techniques, instrumentation and materials requisite to scientific

531 Seminars in Biological Sciences **3:3:0**

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

Department of Chemistry

The Department of Chemistry offers a program of study leading to the Master of Science degree in Chemistry. Those seeking admission to this program must meet the general requirements as set forth in this catalog for admission to the College of Graduate Studies. In addition, the applicant must offer the substantial equivalent of the course in

537 **Advanced Physical** 3:3:0

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

Professional Certification Requirements (Texas) in English

The plan for the Professional Certificate—Secondary requires the completion of 36 semester hours of graduate work: 18 in English, six in resource areas and twelve in an-

bered 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

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

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

539 Special Topics in American Literature **3:3:0**
An intensive study of an author or related authors selected from the period. Course may be repeated for a

Department of Geology

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

Graduate Faculty

Paleontology, meteorology, stratigraphy

Geology Courses

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

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

Britain

United States history, diplomatic

4314G The American Civil War

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

Department of Political Science

The faculty of the Department of Political Science, committed to research and scholarly publication which support excellence in graduate programs, is actively engaged in research on the following topics: Southern politics; congressional leadership; administrative accountability in state government; empirical normative links between voting and

532 Directed Reading **3:3:0**

the instructor.
Prerequisite: Graduate standing and approval of head of the Department of Political Science.

534 Seminar in American Government and Politics **3:3:0**

and Criminal Justice

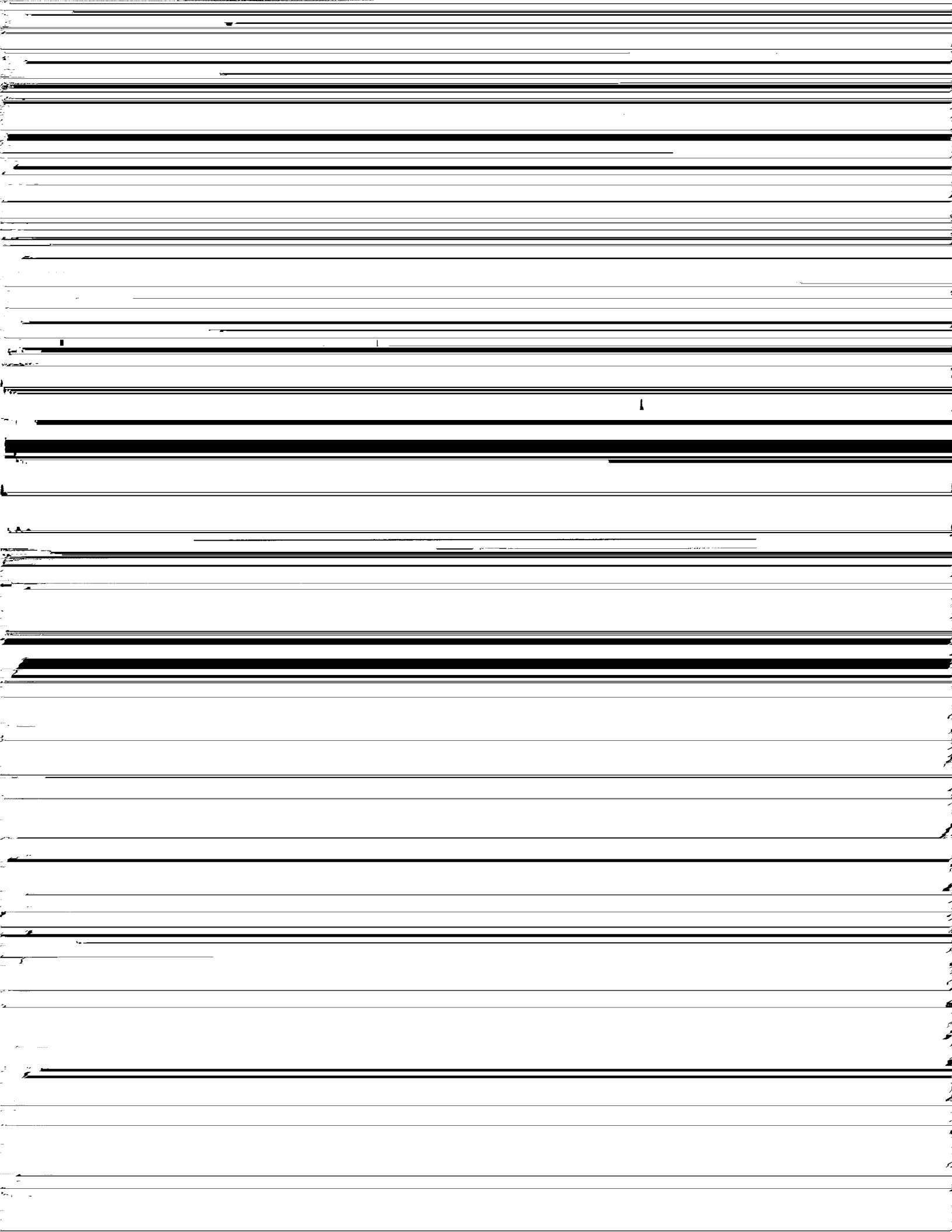
The department of Sociology, Social Work, and Criminal Justice offers Soc 532, Sociol-

Graduate Faculty

Associate Professor Wayne C. Seelbach
Gerontology, The Family

Associate Professor Kevin B. Smith
Social Inequality, Sociology of Education

Sociology Courses



in first year courses. Any exceptions must have the prior approval of the Coordina-

4. First year courses may not be taken as second year course electives.

Second Year Courses

Note:

Professor Kathryn White — Professor Bob E. Wooten

Office administration — Management

Business Courses

Accounting courses must be selected from the following list:

problem approach.
Prerequisite: Graduate standing.

537 Managerial Accounting **3:3:0**
Application of accounting data in decision making: cost analysis as applied in the development of budgets

Marketing courses must be selected from the following:

530 Marketing Concepts **3:3:0**
Marketing orientation and concepts; marketing programs incorporating the societal perspective in formu-

vices to various customers.
Prerequisite: Graduate standing, Acc 530, Eco 530.

531 Seminar in Marketing **3:3:0**

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

An advanced course in statistical theory and application of the quantitative techniques commonly used in business research and analysis. Topics include basic concepts of modern decision analysis, probability, [illegible] and non-linear, simple and multiple regression and correlation; and time-series analysis. *Prerequisite: Graduate standing, BAC 530 or equivalent.*

[illegible]

College of Education

The College of Education offers graduate programs of study leading to the Master of

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

SpEd 5361 Survey of Learning Potentials of Exceptional Children
SpEd 5364 Behavior Modification and Contingency Management of Disabled Learners
SpEd 5365 Interpersonal Processes With Exceptional Children

the degree are not identical. By selecting a program and with careful planning, a student may fulfill concurrently requirements for the Master's degree and requirements for a Pro-

Secondary

The Texas Education Agency issues a Professional Teaching Certificate to the candi

date recommended by the college when he/she has completed an approved 30 semester hour program of credit beyond the bachelor's degree. This program must include work in

Degree Plan in Supervision

Requirements for a Master of Education in Supervision may be met by completing a 36 semester hour non-thesis program or by completing a 30 semester hour plan including

Three semester hours selected from the following:
Eco 534 Collective Bargaining

Gov 535 Seminar in Theory and Practice in Public Administration
Gov 5351 Seminar in Personnel Administration

3. **Specialized Preparation for School Administrators:** 18 semester hours
Edu 5317 Organization and Administration of Special Programs (required)
Edu 5318 School Management and School Service (required)
Edu 5339 The Public School Principal (required)
Edu 5348 Practicum in Educational Administration (required)
Six semester hours to be selected from:
Edu 539 Foundations of Reading
Edu 5334 Tests and Measurements

SpEd 5313 Learning Potentials in the Mentally Retarded
SpEd 5314 Instructional Processes with the Mentally Retarded

Students may obtain provisional certification in the above listed areas. A combination

Associate Professor Andrea Karlin
Curriculum and Instruction: reading
Assistant Professor James E. Lane
Curriculum and Instruction: special education
Professor Mildred A. Lowrey
Health, Physical Education and Dance: physical education, motor learning, sports psychology
Professor William H. Stanley
Professional Development and Graduate Studies: educational administration, supervision
Assistant Professor Rita L. Stevens
Professional Development and Graduate Studies: counseling
Professor Bob Thompson
Professional Development and

Home Economics: clothing and

supervision

510, 5201, 5401, 5601 Institute in Education **1-6:1-6:0**

Designed to advance the professional competence of participants. For each institute, a description of the

[redacted]

[redacted] will be indicated. May be repeated for credit when nature of institute differs suffi-

[redacted]

[redacted] hours in institutes may be applied toward a Master's

[redacted]

An analysis of the strategies for individualizing instruction, including the techniques of diagnosis and pre-

[redacted]

scription for learning problems. Studies of the open classroom, team teaching, independent study, learning modules, nongraded programs and other organizations for instruction are included.

5322 Organization and Administration of the Guidance Program **3:3:0**

Essential services and management functions of guidance and counseling services for schools.

[redacted]

5323 Occupational and Vocational Guidance **3:3:0**

Concepts and delivery of vocational guidance and career education.

5324 Group Counseling **3:3:0**

Processes of individual study. Counseling procedures and techniques for individuals and groups.

5325 Pupil Personnel Management **3:3:0**

[redacted]

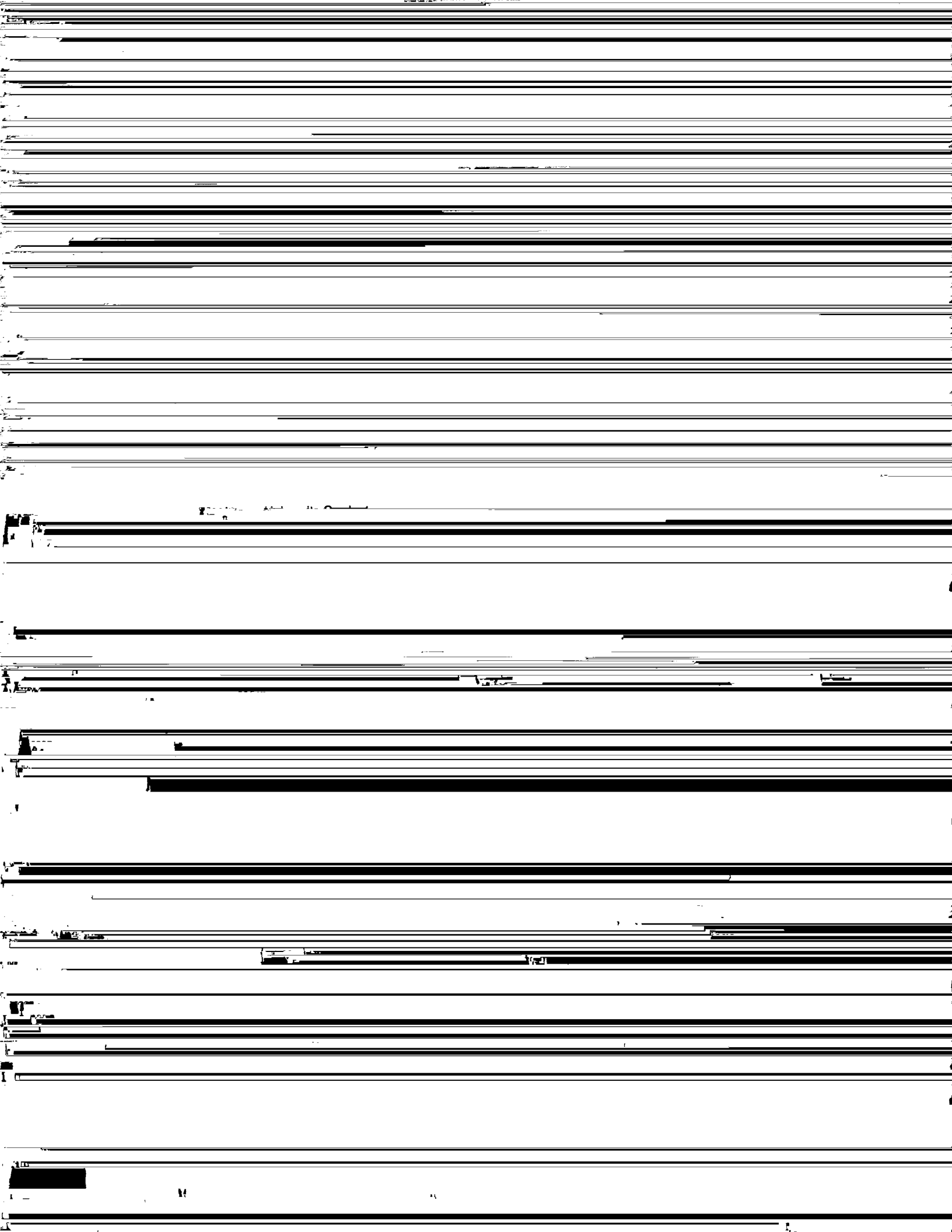
[redacted]

5381 Advanced Seminar in Counselor Relations **3:0:0**
An intensive exploration of the dynamics of interpersonal relationships. A critical analysis of various approaches to counseling will be established. Development and demonstration of personal counseling skills

5365 Instructional Processes with Exceptional Children **3:3: 0**

5366 Modification of Curriculum and Instruction for the Atypical Learner **3:3:0**

College of Graduate Studies and must meet the necessary undergraduate prerequisites.



Graduate Faculty in Home Economics

Associate Professor Virginia Anderson
Family life education, housing

Associate Professor LeBland McAdams
Clothing, fashion merchandising and

Professor Jane S. Davidson
Home economics education, nutrition, child development and management

retailing

Home Economics Courses

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

531 Recent Advances in Foods and Nutrition **3:3:0**
Readings in and discussion of selected studies and recent developments in the field of nutrition and foods.

College of Engineering

Graduate degree programs are offered as follows:

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

Master of Science in Mathematics (M.S.)

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

Core Courses

1.	EGR	5369	Engineering Management
2.	EGR	5362	Decision Making Processes
			or
	IE	432G	Statistical Decision-Making for Engineers
3.	EGR	5302	Administrative Control Systems
			or
	EGR	5321	Quality Control Systems
4.	EGR	5366	Advanced Engineering Economics
5.	ACC	530	Financial Accounting
			or
	ECO	530	Foundations of Economics

Typical Program Options

Each student in consultation with an advisor should design a program tailored to

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

EGR	5311	Heat Transfer Analysis
EGR	5341	Mass Transfer Operations
EGR	535	Advanced Process Control
EGR	5347	Manufacturing Analysis
EGR	5366	Advanced Engineering Economics
EGR	5316	Operations Research I
EGR	532	Instrumentation
EGR	5306	Linear Systems Control Theory
EGR	5310	Stress Analysis
EGR	5309	Problems in Design and Analysis
EGR	5308	Cost and Optimization Engineering
EGR	5312	Thermal Analysis
EGR	537	Thermodynamics
EGR	5310	Numerical Analysis

3. A minimum of 15 semester hours* (5 courses) of electives. Additional core courses may satisfy part of this requirement.
4. Satisfactory completion of a final comprehensive examination.

Field Study Preparatory Requirements

Design, Analysis, and Control

EGR	538	Sampled Data Control Systems
EGR	611***	Professional Seminar

EGR	6346	Advanced Engr. Analysis
	15	Semester Hours
	15	Semester Hours Related Electives
	30	Semester Hours Total

Energy Systems

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

Associate Professor Narayan R. Joshi
Metallurgical engineering, material science
Professor Enno Koehn

Professor Bruce G. Rogers
Ultimate load characterstics of structures, analysis
Associate Professor James L. Thomas

5316 Operations Research I **3:3:0**

5332 Operations Research II 3:3:0

Advanced topics in operations research-linear programming, non-linear programming, advanced topics

5333 Production Control 3:3:0

5351, 5352, 5353 Electric Power Systems Analysis I, II, III **3:3:0**

(3) Non-linear vibrations; (4) Protective construction; (5) Transients in engineering systems; (6) Stagewise

6343 Reactor Design II **3:3:0**

Prerequisite: 6341 and 6342. Application of principles of chemical reaction engineering to 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.

6345 Professional Practice **3:3:0**

CE 432G Planning, Scheduling and Estimating
CE 433G Environmental Health Engineering
CE 434G Soil Engineering
CE 435G Water and Waste Water Treatment

CE 438G Reinforced Concrete Design
CE 439G Structural Steel Design
CE 4310G Soil-Structure Interaction
CE 4312G Advanced Structural Design
CS 439G Scientific Computer Application
CS 4101G Special Topics

CS 4301G Special Topics
CS 4302G System Analysis and Design
CS 4305G Introduction to Information Structure

ME 4313G Transport Theory II
ME 4315G Thermodynamics III

ME 4317G Engineering Analysis II

Department of Computer Science

[redacted]

5334 Pattern Recognition 3:3:0

An introduction to the problems, potential, and methods of patt[illegible] recognition systems.

[redacted]

presentation of different methodologies and practical [redacted]

[redacted]

ity measures, statistical classification, minimum [redacted]

Admission to the Program

In order to be admitted to the Graduate Degree Program, a student must

1. Meet the general requirements as set forth in this catalog for admission to the College of Graduate Studies.

Mathematics Courses

531 Theory of Functions of Real Variable **3:3:0**

Analytical functions, pathological functions, set functions, Riemann integral, measure theory, Lebesque integral, Riemann-Stieltjes and Lebesque-Stieltjes integral.

Prerequisite: Graduate standing and Mathematics 338

533 Modern Algebra

Groups, rings and the theory of fields. The theory of fields includes the study of subfields, prime fields, algebraic fields extensions and Galois fields.

Prerequisite: Graduate standing and Mathematics 335 or its equivalent

534 Topology **3:3:0**

535 Introduction to Advanced Analysis

5328 History of Mathematics **3:3:0**
Historical origin and development of mathematical concepts. The lives and achievements of great mathematicians.
Prerequisite: Graduate standing and Mathematics 335 or 338.

5330 Enrichment Topics in Mathematics **3:3:0**
A potpourri of important mathematical ideas not normally covered in other courses.
[redacted]

5331 Special Topics **3:3:0**
[redacted]

mum of six semester hours credit when the topic varies.
[redacted]

College of Fine Arts and Communication

The College of Fine Arts and Communication offers graduate programs of study leading to the Master of Science degree in Speech with majors in public address, theatre,

Department and College of Graduate Studies. All other applications must be reviewed by a committee of the graduate faculty of the Communication Disorders Program. The com-

[redacted]

Acoustic nature of speech perceptual processes. Project on spectrography required.

[redacted]

Advanced diagnostics and therapy. May be repeated for credit, and must be taken on [redacted]

[redacted]

531 Advanced Public Relations 3:3:0

Theory, research and contemporary [redacted]