BULLETIN
of
TEXAS TECHNOLOGICAL COLLEGE

VOL. XXXIV APRIL, 1958 NO. 4

THIRTY-THIRD
ANNUAL CATALOG

With Announcement for 1958-59

Issued in January, February, March, April, May, June, August, October and December of each year by the College. Entered as second-class matter, December 24, 1924 at the Post Office, at Lubbock, Texas, under the Act of August 24, 1912.

CALENDAR

1958

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	24	25
26	27	28	29	30	31	

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

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

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

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

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

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

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

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

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

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

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

1959

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	24
25	26	27	28	29	30	31

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

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

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

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

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

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

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

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

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

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

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

TABLE OF CONTENTS

Campus Map 4-5

College Calendar 1957-58 6-10

Official Directory

- Board of Directors 11
- Officers of Administration 12-13
- Faculty 14-38
- Staff of Special Departments 38-42

General Information

- Instructional Schools and Departments 43
- The College 44
- Student Services 45-48
- Cultural and Scientific Resources 48-50
- Admission 50-54
- Expenses 55-62
- Recognition of Scholarship 62-81
- Loan Funds 81-82
- Student Life 83-92
- Academic Regulations 92-99
- Scholarship Regulations 99-103
- Requirements for Graduation 103-105

All-College Programs 105-110

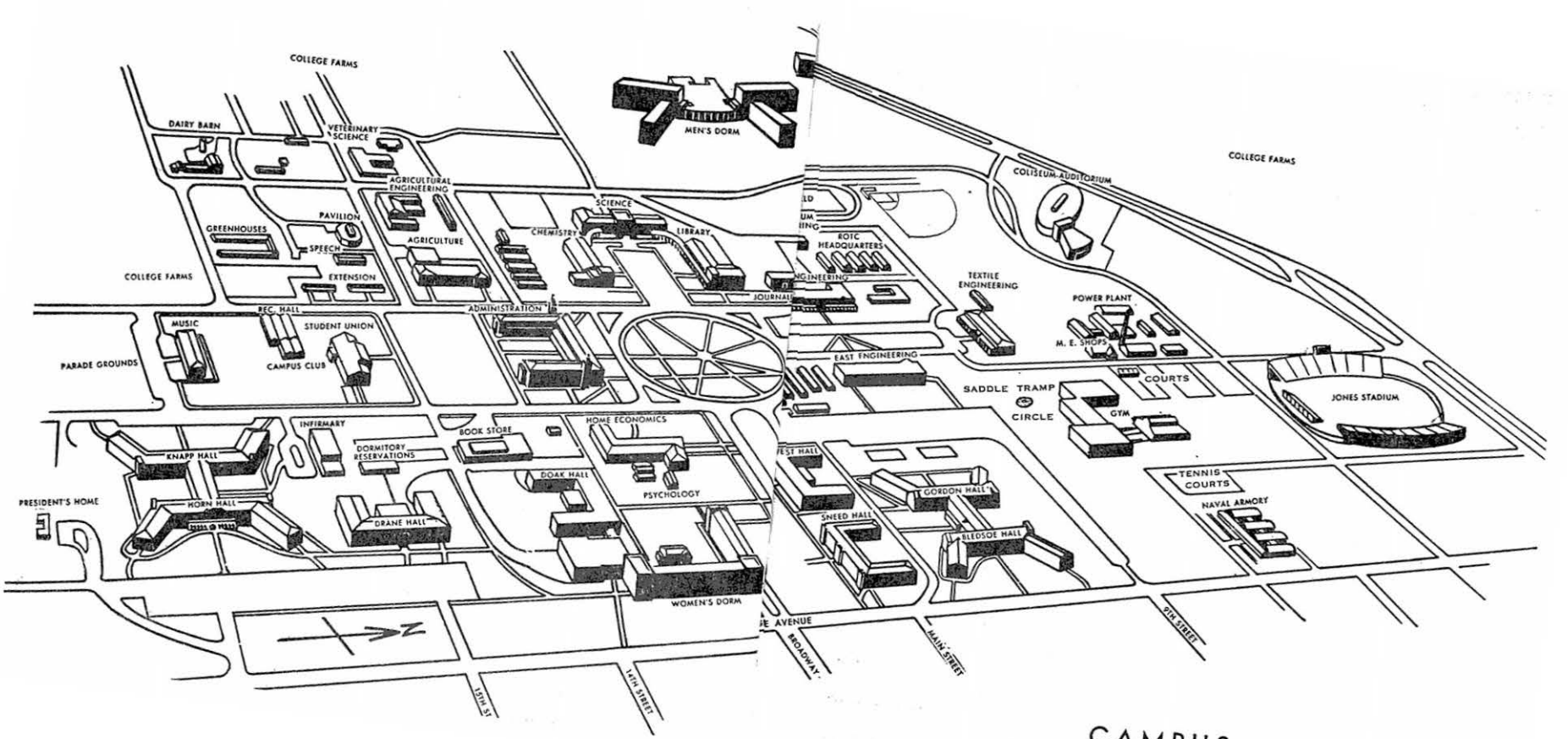
School Curricula and Courses of Study

- Agriculture 111-132
- Arts and Sciences 133-211
- Business Administration 212-231
- Engineering 232-270
- Home Economics 271-282
- Graduate 283
- Reserve Officer Training Corps 284-290
- Extension 291-292

Enrollment and Statistics 293-294

Appendix A 295-296

Index 297-304


COLLEGE FARMS
DAIRY BARN
VETERINARY SCIENCE
MEN'S DORM
COLLEGE FARMS
COLISEUM-AUDITORIUM
AGRICULTURAL ENGINEERING
SCIENCE
PAVILION
GREENHOUSES
SPEECH
CHEMISTRY
LIBRARY
AGRICULTURE
ROTC HEADQUARTERS
COLLEGE FARMS
EXTENSION
TEXTILE ENGINEERING
POWER PLANT
REC. HALL
ADMINISTRATION
MUSIC
STUDENT UNION
M. E. SHOPS
PARADE GROUNDS
CAMPUS CLUB
EAST ENGINEERING
SADDLE TRAMP CIRCLE
COURTS
JONES STADIUM
GYM
INFIRMARY
BOOK STORE
HOME ECONOMICS
KNAPP HALL
DORMITORY RESERVATIONS
DOAK HALL
PSYCHOLOGY
TENNIS COURTS
PRESIDENT'S HOME
HORN HALL
GORDON HALL
NAVAL ARMORY
SNEED HALL
DRANE HALL
BLEDSOE HALL
WOMEN'S DORM
AVENUE
BROADWAY
MAIN STREET
9TH STREET
15TH ST
16TH STREET

CAMPUS

COLLEGE CALENDAR, 1958-59

Thirty-Third Annual Session

SUMMER SESSION 1958

1958

First Term

June 3. Tuesday. Dormitories open for room occupancy at 10 A.M. Lunch served as first meal in dormitories. Summer session begins. 2-5 P.M. Registration for first term begins.

June 4. Wednesday. 8-12 A.M. and 1:30-5 P.M. Registration continued.

June 5. Thursday. Classes begin.

June 7. Saturday. Last day to register for the first term. Last day to add courses.

June 17. Tuesday. Last day on which a student may drop, without grade penalty, a course in which he is failing.

July 4. Friday. American Independence Day—College holiday.

July 14-15 Monday-Tuesday. Final examinations for first term.

July 15. Tuesday. Dormitory dining rooms close with serving of noon meal. First term ends. Students without room reservations for the second term must vacate dormitory rooms by 2 P.M. on this date.

Second Term

July 15. Tuesday. Dormitories open for room occupancy at 2 P.M. Evening meal served as first meal in dormitories. Second term begins.

July 16. Wednesday. 8-12 A.M. and 1:30-5 P.M. Registration for second term.

July 17. Thursday. Classes begin.

July 19. Saturday. Last day to register for the second term. Last day to add courses.

July 31. Thursday. Last day on which a student may drop, without grade penalty, a course in which he is failing.

Aug. 20-21. Wednesday, 1 P.M. and Thursday. Final examinations for the second term.

Aug. 23. Saturday. 7:15 P.M. Commencement exercises. Dormitory dining rooms close with serving of evening meal.

Aug. 24. Sunday. Students must vacate dormitory rooms by 10 A.M. on this date.

Thirty-Fourth Annual Session

LONG SESSION 1958-59

FALL SEMESTER

1958

Sept. 12. Friday, 10 A.M. General faculty meeting, Student Union Ballroom. 2 P.M. Meeting of faculty of each school.

Sept. 13. Saturday. Orientation of new faculty. 8 P.M. President's reception for the faculty.

Sept. 14. Sunday, 12 Noon. Dormitory rooms open for occupancy. First meal breakfast Monday, Sept. 15.

Sept. 15 Monday. Fall semester begins. 8 A.M. All entering freshmen assemble on Administration Building Green.

Sept. 15-17. Monday-Wednesday. Freshman orientation and counseling program.

REGISTRATION FOR THE FALL SEMESTER

Wed., Sept. 17 ..... 1 to 5 P.M.
Thurs., Sept. 18 ..... 8 A.M. to Noon and 1 to 5 P.M.
Fri., Sept. 19 ..... 8 A.M. to Noon.
Sat., Sept. 20 ..... 8 A.M. to Noon.

Special Registration for Evening and Saturday Classes

Wed., Sept. 17 ..... 4 to 6:30 P.M.
Thurs., Sept. 18 ..... 4 to 6:30 P.M.
Sat., Sept. 20 ..... 8 A.M. to Noon.

Last Day to Register for Any Classes
(Day, Evening, or Saturday)
and Last Day to Add Courses and Pay Fees

Wed., Sept. 24 ..... 8 A.M. to Noon and 1 to 4 P.M.

Sept. 18. Thursday. All-Church Night—Lubbock churches.

Sept. 22. Monday, 8 A.M. Classes begin.

Oct. 1. Wednesday, 10-12 A.M. Student convocation. Classes dismissed 10-12 A.M. Selection of class officers for the year.

Oct. 6-8. Monday-Wednesday. Period for filing Personnel Information Forms and photographs by degree candidates (January, June and August) at Placement Office.

Oct. 20. Monday, 5 P.M. Progress reports on all freshmen due at the Registrar's Office.

Oct. 30. Thursday. Last day on which a student may drop, without grade penalty, a course in which he is failing.

Nov. 13. Thursday. Last day to file Personnel Information Forms and photographs at the Placement Office by students planning to complete their work in January.

Nov. 15. Saturday, 5 P.M. Midsemester reports due at the Registrar's Office.

Nov. 22. Saturday. Homecoming Day. Classes dismissed at 10 A.M.

Nov. 25. Tuesday. A course cannot be dropped after this date without a grade of WF, unless drop is initiated by student's academic dean.

Nov. 26. Wednesday, 10 P.M. Classes dismissed for Thanksgiving holidays.

Dec. 1. Monday, 8 A.M. Classes resumed.

Dec. 20. Saturday, 12 Noon. Classes dismissed for Christmas holidays.

1959

Jan. 5. Monday, 8 A.M. Classes resumed.

Jan. 11-16. Sunday-Friday. Period of restricted social activities.

Jan. 17-24. Saturday-Saturday. Final examinations, fall semester.

Jan. 25. Sunday. Students without room reservations for the spring semester must vacate dormitory rooms not later than 12 Noon of this date.

SPRING SEMESTER

Jan. 26. Monday, 12 Noon. Dormitory rooms open to new occupants.

Jan. 27. Tuesday, 8 A.M. Spring semester begins. Entering freshmen assemble in Aggie Memorial Auditorium.

Jan. 29. Thursday. All-Church Night—Lubbock churches.

REGISTRATION FOR THE SPRING SEMESTER

Thurs., Jan. 29.....8 A.M. to Noon and 1 to 5 P.M.
Fri., Jan. 30.....8 A.M. to Noon and 1 to 5 P.M.
Sat., Jan. 31.....8 A.M. to Noon.

Special Registration for Evening and Saturday Classes

Thurs., Jan. 29.....4 to 6:30 P.M.
Fri., Jan. 30.....4 to 6:30 P.M.
Sat., Jan. 31.....8 A.M. to Noon.

Last Day to Register for Any Classes
(Day, Evening, or Saturday)
and Last Day to Add Courses and Pay Fees

Wed., Feb. 4.....8 A.M. to Noon and 1 to 4 P.M.

Feb. 2 Monday, 8 A.M. Classes begin.

Feb. 16-18. Monday-Wednesday. Period for filing Personnel Information Forms and photographs by degree candidates (June and August) at Placement Office.

Mar. 3. Tuesday, 5 P.M. Progress reports on all freshmen due in Registrar's office.

Mar. 12. Thursday. Last day on which a student may drop, without grade penalty, a course in which he is failing.
Last day to file Personnel Information Forms and photographs at the Placement Office by students planning to complete their work in June.
Last day to file with the student's academic dean the statement of intention to graduate on June 1, 1959.
Last day for degree candidates to file with academic dean statement to complete correspondence courses to apply on degree.

Mar. 25. Wednesday, 5 P.M. Midsemester reports due at the Registrar's Office.

Mar. 26. Thursday, 10 P.M. Classes dismissed for Easter vacation.

Mar. 31. Tuesday, 8 A.M. Classes resumed.

Apr. 1. Wednesday. Last day to order academic regalia and senior invitations at the College Bookstore.
Last day to pay $5 graduation fee.
Last day for refund of $5 graduation fee to candidates who cannot graduate on June 1, 1959. A student not graduating must notify his academic dean in writing.

Apr. 13. Monday. A course cannot be dropped after this date without a grade of WF, unless drop is initiated by the student's academic dean.

Apr. 22. Wednesday. Last day to complete correspondence courses by degree candidates. Students must complete final examination in time for it to reach the instructor by Apr. 27. Instructors are to file grades for correspondence work not later than May 6.
Last day to submit to academic dean a request to graduate *in absentia* and pay *absentia* fee.
Last day for degree candidates to remove grades of "Inc." and "Pr." Instructors are to send the change-of-grade card to the academic dean's office as soon as the work has been completed.

May 13-19. Wednesday-Tuesday. Period of restricted social activities.

May 16. Saturday. Last day to submit to the Graduate Dean the final draft of theses and dissertations and to pay the binding fee.

May 20-27. Wednesday-Wednesday. Final examinations for the spring semester.

May 27. Wednesday. Dormitory dining rooms close with serving of evening meal.

May 28. Thursday, 10 A.M. Dormitories close. Degree candidates may occupy rooms until 10 A.M., Tuesday, June 2.
2 P.M. Grades and absence reports through Wednesday, May 27, for all degree candidates due in the Registrar's Office.

May 29. Friday, 3 P.M. Final and official graduation lists are due at the Registrar's Office.

May 31. Sunday, 8:30 A.M. Graduation rehearsal.
3:30-5 P.M. President's reception for graduates.
8 P.M. Baccalaureate sermon.

June 1. Monday, 8 P.M. Commencement. Spring semester ends.

June 3. Wednesday, 11 A.M. All grades and absence reports due in the Registrar's Office.

SUMMER SESSION 1959

First Term

June 2. Tuesday, 10 A.M. Dormitories open for room occupancy. Lunch served as first meal in dormitories. Summer session begins.
2-5 P.M. Registration for first term begins.

June 3. Wednesday. 8-12 A.M. and 1:30-5 P.M. Registration continued.

July 13-14. Monday-Tuesday. Final examinations for first term.

July 14. Tuesday. Dormitory dining rooms close with serving of noon meal. First term ends. Students without room reservations for the second term must vacate dormitory rooms by 2 P.M. on this date.

Second Term

July 14. Tuesday. Dormitories open for room occupancy at 2 P.M. Evening meal served as first meal in dormitories. Second term begins.

July 15. Wednesday. 8-12 A.M. and 1:30-5 P.M. Registration for second term.

Aug. 22. Saturday. Commencement.

Aug. 23. Sunday. Dormitory rooms must be vacated by 10 A.M.

BOARD OF DIRECTORS

1957-1958

OFFICERS

WINFIELD D. WATKINS, Chairman
JAMES L. LINDSEY, Vice Chairman
J. ROY WELLS, Secretary

MEMBERS

Term Expires February 19, 1959

PARHAM C. CALLAWAY.....Corpus Christi
JAMES L. LINDSEY.....Midland
WINFIELD D. WATKINS.....Abilene

Term Expires February 19, 1961

J. EVETTS HALEY.....Canyon
TOM LINEBERY.....Kermit
DOUGLAS ORME.....Big Spring

Term Expires February 19, 1963

HAROLD HINN.....Plainview
C. I. WALL.....Amarillo
FLOYD A. WOOLDRIDGE.....Dallas

OFFICERS OF ADMINISTRATION

EDWARD NEWLON JONES, B.S., Ph.D., LL.D., President
121 Administration Building

CLIFFORD BARTLETT JONES, LL.D., President Emeritus

GUSTAV ERNST GIESECKE, A.B., M.A., Ph.D., Vice President
121 Administration Building

MARSHALL LEE PENNINGTON, B.B.A., Vice President and Comptroller
120 Administration Building

JAMES ROY WELLS, B.A., B.B.A., M.B.A., Assistant to the President and Secretary of the Board of Directors
121 Administration Building

JAMES GEORGE ALLEN, B.A., M.A., Dean of Student Life
167 Administration Building

JOHN ROSS BRADFORD, B.S., M.S., Ph.D., Dean of Engineering
105 West Engineering

JAMES B. CARVEY, B.S., Colonel, U. S. Army, Professor of Military Science and Tactics
1 Military Science Building

WARREN PERRY CLEMENT, B.A., M.A., Registrar and Director of Admissions
158 Administration Building

SETH THOMAS CUMMINGS, Purchasing Agent and General Services Supervisor
113 Administration Building

WILLIAM THOMAS GASTON, Business Manager Emeritus

WILLIAM BRYAN GATES, B.S., M.A., Ph.D., Dean of the Graduate School
251 Administration Building

ROBERT CABANISS GOODWIN, B.A., M.A., Ph.D., Dean of Arts and Sciences
206 Administration Building

GEORGE GAIL HEATHER, B.S., M.A., Ph.D., Dean of Business Administration
253 Administration Building

RAY CURTIS JANEWAY, B.A., B.S. in L.S., M.S., Librarian
215 Library

LEWIS NORTEN JONES, B.S., M.A., Dean of Men
163 Administration Building

SYLVAN JULIAN KAPLAN, B.A., M.A., Ph.D., Coordinator of Research
Psychology Building

JACOB HOMER MILLIKIN, B.A., M.A., Director of Extension
108 Extension Building

FLORENCE LOUISE PHILLIPS, A.B., M.A., Dean of Women
171 Administration Building

SHIRLEY FRANCES SCHULZ, B.S., Director of Food Service
Dormitory Administration Building

WENZEL LOUIS STANGEL, B.S., M.S., LL.D., Dean of Agriculture
201A Agriculture Building

JOHN GATES TAYLOR, Auditor
111 Administration Building

WILLA VAUGHN TINSLEY, B.S., M.S., Ph.D., Dean of Home Economics
151 Home Economics Building

CLAUDE ADRIAN VAUGHAN, B.A., M.J., Director of Public Information
105 Journalism Building

NEWTON B. WILKERSON, B.A., Lieutenant Colonel, U. S. Air Force, Professor of Air Science
M-1, Department of Air Science

* * * * * * * *

MARGARET RAGSDALE BIRKMAN, B.S., Assistant Director of Food Service
Dormitory Administration Building

FLORENCE EVELYN CLEWELL, B.A., Assistant Registrar—Statistics and Reports
158 Administration Building

GEORGE OLIVER ELLE, B.S., M.S., Ph.D., Assistant Dean of Agriculture
201A Agriculture Building

DOROTHY TAFT GARNER, B.A., M.A., M.Ed., Assistant Dean of Women in Charge of Dormitory Supervision for Women
171 Administration Building

WILLIAM HOSICK HASSLER, B.S., M.S., Assistant Dean of Men
Bledsoe Hall

DONALD LEE RENNER, B.B.A., Assistant Registrar, Schedule and Registration
156 Administration Building

SABE McCLAIN KENNEDY, JR., B.A., M.A., Ph.D., Assistant Dean of Arts and Sciences
206 Administration Building

ROBERT LEE NEWELL, B.S., M.S., Assistant Dean of Engineering
105 West Engineering

JAMES EDWARD PLATZ, B.A., B.S. in L.S., Associate Librarian
218 Library

ROBERT BYRON PRICE, B.B.A., C.P.A., Internal Auditor
111 Administration Building

JOE WALKER SEAY, B.B.A., Assistant Purchasing Agent
115 Administration Building

VIRGINIA LEE SNELLING, B.A., Assistant Auditor and Payroll Supervisor
109 Administration Building

LUTHER LEONARD STEGER, B.B.A., Assistant Auditor
111 Administration Building

JACQUELINE ANN STERNER, A.B., M.S., Assistant Dean of Women
171 Administration Building

VERNON EARL THOMPSON, B.B.A., Assistant Comptroller
118 Administration Building

JAMES BERLYN WHITEHEAD, A.B. Assistant Dean of Student Life
163 Administration Building

WILLIAM RICHARD TATUM, B.S., Assistant Director of Public Information
105 Journalism Building

FACULTY

First date indicates year of original appointment; second date, year of appointment to present position and rank.

EDWARD NEWLON JONES, President, 1948, 1952.
B.S., LL.D., Ottawa; Ph.D., Iowa.

BURL MONROE ABEL, Associate Professor of Finance, 1955.
B.S., M.B.A., Oklahoma

JOE ALFRED ADAMCIK, Assistant Professor of Chemistry, 1957.
B.S., M.A., Texas; Ph.D., Illinois.

OTTO VINCENT ADAMS, Professor of Civil Engineering, Emeritus, 1927, 1955; Dean of Engineering, 1932-1949.
B.S., in C. and I. E., Colo. A. & M.; M.S.E., Michigan;
D.Sc., Colo. A. & M.; Reg. Prof. Engr., (Texas).

VIVIAN JOHNSON ADAMS, Professor and Head Department of Home Economics Education, 1928, 1937.
B.S., Southwest Texas; M.A., Columbia.

BEATRICE WITTE ALEXANDER, Instructor in Foreign Languages, 1945.
B.A., T.S.C.W.; M.A., Texas.

THEODOR WALTER ALEXANDER, Assistant Professor of Foreign Languages, 1947, 1954.
B.S., M.S., Texas Tech.

JAMES GEORGE ALLEN, Professor of English and Dean of Student Life, 1927, 1950.
B.A., S.M.U.; M.A. Harvard.

LOUISE CRAWFORD ALLEN, Associate Professor of Journalism, 1928, 1957.
B.A., S.M.U.; M.A., Missouri.

HUGH ALLEN ANDERSON, Associate Professor of Economics, 1939, 1947.
B.A., M.A., Hardin-Simmons.

ROBERT PAUL ANDERSON, Assistant Professor of Psychology and Director of the Rehabilitation Counselor Training Program, 1955, 1956.
M.A., Ph.D., Chicago.

STANLEY EUGENE ANDERSON, Associate Professor of Animal Husbandry, 1948, 1954.
B.S., Iowa State; M.S., Texas Tech.

CALVIN RUSSELL ANDRESS, Part-time Instructor in Horticulture and Park Management, 1957.
B.S., M.S., Mississippi State.

BRUCE F. ARCHER, JR., Major, U. S. Army, Assistant Professor of Military Science and Tactics, 1956.

WILLIAM BURNSIDE ARPER, JR., Associate Professor of Geology, 1953, 1956.
B.S., M.S., Oklahoma; Ph.D., Kansas.

ELMER FORREST ARTERBURN, JR., Backfield Coach, 1956.
B.B.A., Texas Tech.

DONALD ASHDOWN, Professor of Horticulture and Park Management, 1952, 1956.
B.S., Utah State Agricultural College; Ph.D., Cornell.

JIM TOM ASIMOS, Part-time Instructor in Economics, 1957.
B.A., E.N.M.U.

MARGARET BRASHEARS ATKINSON, Associate Professor of Engineering Drawing, 1934, 1956.
B.S., T.S.C.W.

CAROLYN ADAMS LEWIS ATTNEAVE, Assistant Professor of Psychology and Child Development, 1957.
B.A., Chico State College; M.A., Ph.D., Stanford.

RONALD ALBERT AVERYT, Part-time Instructor in Government, 1956.
B.A., Texas Tech.

CECIL IRVY AYERS, Associate Professor of Agronomy, 1942, 1949.
B.S., M.S., Texas Tech.

MARGUERITE SIVELLS BAILEY, Instructor in Mathematics, 1942.
B.S., Southeastern State (Oklahoma); M.A., Texas.

BETTY JOE BALLARD, Part-time Instructor in Chemistry, 1957.
B.A., Howard Payne.

ALBERT BARNETT, Professor of Education and Professor of Psychology, 1933, 1957.
B.S., M.A., Ph.D., George Peabody.

THOMAS CALHOUN BARR, JR., Instructor in Biology, 1957.
A.B., Harvard; M.A., Columbia.

NOLAN ELLMORE BARRICK, Professor and Head Department of Architecture and Allied Arts, and Supervising Architect, 1953.
B.A., B.S. in Arch., M.A., Rice; Reg. Arch., (Texas).

OLIVER LOYD BASFORD, Assistant Professor of Physics, 1956.
B.A., M.A., Texas.

JOHN HENRY BAUMGARDNER, Associate Professor of Animal Husbandry, 1945, 1956.
B.S., M.S., Texas Tech.

JOHN LA RUE BEAR, Part-time Instructor in Chemistry, 1956.
B.A., M.A., Southwest Texas State.

ETHEL JANE BEITLER, Assistant Professor of Applied Arts, 1947.
B.S., Iowa State; M.Ed., Marquette.

JAMES WAYLAND BENNETT, Professor and Head Department of Agricultural Economics, 1948, 1957.
B.S., Texas Tech; M.S., Ph.D., L.S.U.

NELL WAYNE BENNETT, Part-time Instructor in English, 1957.
B.A., Texas Tech.

RAY VERNE BILLINGSLEY, Assistant Professor of Agricultural Economics, 1956.
B.S., M.S., Oklahoma State; Ph. D., North Carolina State.

EDGAR SAMUEL BIRKMAN, JR., Part-time Instructor in Psychology, 1957.
B.A., M.A., Texas Tech.

LOTUS BERRY BLACKWELL, Instructor in Marketing, 1948.[1]
B.A., M.A., Hardin-Simmons.

WILLIAM ALLEN BLACKWELL, Assistant Professor of Electrical Engineering, 1948, 1952.[2]
B.S., Texas Tech; M.S., Illinois; Reg. Prof. Engr., (Texas).

LOWELL LAWRENCE BLAISDELL, Assistant Professor of History, 1957.
B.A., Elmhurst College; M.A., Rochester; Ph.D., Wisconsin.

WILMER LLOYD BOHLMANN, Instructor in Government, 1957.
A.B., M.A., Western State College of Colorado.

ELAINE EMESETTE BONEY, Instructor in Foreign Languages, 1955.
A.B., Kansas; M.A., Wisconsin.

PAULINE MILLSPAUGH BOWERS, Instructor in Sociology, 1957.
B.A., Texas Tech; M.S.W., Tulane.

LAWRENCE EDWARD BOWLING, Associate Professor of English, 1952, 1957.
B.A., Berea; M.A., Vanderbilt; Ph.D., Iowa.

[1] On leave for military duty beginning Sept. 1., 1951.
[2] On leave, 1957-58.

JAMES WARREN BOWMAN, Part-time Instructor in Government, 1956.
B.A., Texas Tech; LL.B., Texas.

JOHN ROSS BRADFORD, Professor of Chemical Engineering and Dean of Engineering, 1943, 1955.
B.S. in Ch.E., M.S. in Ch.E., Texas Tech; Ph.D., Case Institute of Technology; Reg. Prof. Engr., (Ohio, Texas).

WELDON LEROY BRADSHAW, Professor of Architecture, 1938, 1943.
B.S. in Arch., Texas A. & M.; Reg. Arch., (Texas).

JOHN PAUL BRAND, Professor of Geology, 1948, 1957.
B.A., M.A., Miami (Ohio); Ph.D., Texas.

JIMMIE WATSON BRASCH, Part-time Instructor in Chemistry, 1957.
B.S., Texas Tech.

GEORGE LINDBERGH BREELAND, Instructor in Electrical Engineering, 1957[1]
B.S., Texas Tech.

JAMES BRENNAN, Instructor in Speech, 1956.
B.A., Texas.

LON CLYDE BROOKS, Part-time Instructor in Geology, 1957.
B.S., Texas Tech.

DELMER BROWN, Part-time Instructor in Health and Physical Education and Recreation and Track Coach and Trainer, 1955.
B.S., North Texas State; M.S., East Texas State.

BRUCE CORNELIUS BROWNING, Associate Professor of Education, 1954, 1957.
B.S., in Ed., M.Ed., Texas Tech; Ed.D., Texas.

CHARLES THOMAS BRUCE, Instructor in English, 1956.
B.A., M.A., Texas Tech

BILLY RAY BRUNSON, Instructor in History, 1955, 1957.
B.A., M.A., Texas Tech.

MARTHA LUAN BRUNSON, Part-time Instructor in English, 1957.
B.S., Northwestern.

HENRY EDSEL BUCHANAN, Instructor in Health and Physical Education and Recreation and Director of Intramural Sports (For Men), 1956.
B.S., M.A., Michigan.

CHARLES VICTOR BULLEN, Professor and Head Department of Electrical Engineering, 1932.
B.S. in E.E., Texas; M.S. in E.E., M.I.T.; Reg. Prof. Engr., (Texas).

FAYE LAVERNE BUMPASS, Assistant Professor of English, 1943, 1956.
B.A., M.A., Texas Tech; D. Litt., San Marcos University (Lima, Peru).

CLARENCE ALFRED BUNN, Visiting Professor of Architecture, 1957.
Graduate of Royal Melbourne Technological College; Reg. Prof. Arch., (Victoria, Australia).

LAWRENCE ORR BUNTON, Associate Professor of Mathematics, 1947, 1957.[2]
Diploma Textile Engineering, Clemson.

CHARLES LOUIS BURFORD, Instructor in Industrial Engineering and Engineering Drawing, 1957.
B.S. in M.E., Texas Tech.

HARRY RAY BURKHART, Assistant Professor of Animal Husbandry, 1948.[3]
B.S., Colo. A. & M.; M.S., Texas A. & M.

ROBERT CLYDE BURTON, Part-time Instructor in Geology, 1957.
B.A., Texas Tech.

---

[1] Appointed Feb. 1, 1958.
[2] Resigned Oct. 31, 1957.
[3] On leave for military duty beginning Sept. 1, 1951.

WILLIAM GASTON CAIN, JR., Associate Professor of Management, 1955.
B.S.C., M.A., Ph.D., Iowa.

CHARLOTTE BALLOW CAMP, Assistant Professor of Child Development and Family Relations, 1946, 1953.
B.S., M.S., Texas Tech.

EARL D. CAMP, Associate Professor of Biology, 1945, 1953.
B.S., Texas Tech; M.S., New Mexico; Ph.D. Iowa.

TRUMAN WILDES CAMP, Professor and Head Department of English, 1935, 1949.
B.A., Ph.D. Yale.

GERALINE PATTERSON CARAWAY, Instructor in Mathematics, 1956.
B.A., East Central State (Oklahoma); M.E., Texas Tech.

HERMAN ALVIN CARDWELL, JR., Instructor in Electrical Engineering, 1957.
B.S. in E.E., Texas Tech.

MARY SUE CARLOCK, Instructor in English, 1952.
B.A., S.M.U.; M.A., Texas.

ILA MAE CARPENTER, Instructor in Mathematics, 1956.
B.S., East Texas State; M.S., Texas Tech.

JAMES ALLEN CARTER, Instructor in Petroleum Engineering, 1957.
B.S., Texas Tech.

OLGA MELOY CARTER, Assistant Professor of English, 1939, 1945.
B.A., Dickinson; M.A., Chicago.

JAMES B. CARVEY, Colonel, U. S. Army, Professor of Military Science and Tactics, 1957.
B.S., U. S. Military Academy.

RICHARD E. CAVAZOS, Captain, U. S. Army, Assistant Professor of Military Science and Tactics, 1957.
B.A. Texas Tech.

WALDO EMERSON CECIL, JR., Part-time Instructor in Engineering Drawing, 1957.

RAY LEON CHAPPELLE, Professor and Head Department of Agricultural Education, 1936, 1937.
B.S., Texas A. & M.; M.S., Texas Tech.

SAMUEL WHITTEN CHISHOLM, Associate Professor of Accounting, 1957.
B.B.A., M.B.A. Texas Tech; C.P.A.

JESSE CLARDY, Instructor in History, 1955, 1957.
B.S., M.S., Texas A. & I.

CHARLES EDWARD CLARKE, Instructor in Geology, 1956.
B.S., Texas Tech.

VERNON THOMAS CLOVER, Professor of Economics, 1947, 1953.
B.S., M.S., Kansas State (Ft. Hays); Ph.D., Colorado.

CHARLES WENDELL COFFEE, Part-time Instructor in Mathematics, 1949.
B.S., Texas Tech; LL.B., Texas.

JESSE LAVERN COLBERT, Instructor in Mechanical Engineering, 1957.
B.S., Texas Tech.

JAMES JEROME COLE, Part-time Instructor in Physics, 1957.
B.S., Texas Tech.

PATRICIA DOROTHY COLEMAN, Part-time Instructor in Clothing and Textiles, 1957.
Graduate of the University of Otago, Dunedin, New Zealand.

HARRY F. COLLINS, Major, U. S. Air Force, Associate Professor of Air Science, 1954.
B.A., Birmingham Southern College.

SEYMOUR VAUGHAN CONNOR, Professor of History and Director of Southwest Collection, 1955, 1956.
B.A., M.A., Ph.D., Texas.

LARRY WAYNE COOK, Part-time Instructor in English, 1957.
B.A., Texas Tech.

LEWIS BRISCOE COOPER, Professor of Education, 1938, 1952.
B.S., North Texas State; M.A., Texas; Ph.D., Cincinnati.

MILDRED LUCILE CORHN, Instructor in Education, 1950.
B.A., Texas; M.Ed., Texas Tech.

RUTH EVANS COWART, Instructor in Government, 1957.
B.A., M.A., Texas Tech.

GILFORD WILLIAM COX, Assistant Professor of Accounting, 1955, 1956.[1]
B.B.A., Texas Tech; M.S., Texas A. & M.; C.P.A.

JOHN PAUL CRAIG, Assistant Professor of Electrical Engineering, 1957.
B.S. in E.E., Texas Tech.

WILLIAM MOORE CRAIG, Professor of Chemistry, 1926.
B.A., M.A., Southwestern; M.A., Texas; Ph.D., Harvard;
Reg. Prof. Engr., (Texas).

BILLY MAX CRAWFORD, Part-time Instructor in Psychology, 1957.
B.A., Oklahoma Baptist University; M.S., Oklahoma State.

DUANE AUSTIN CRAWFORD, Assistant Professor of Petroleum Engineering, 1958.[3]
B.S., Missouri School of Mines; M.S., Pennsylvania State.

HERBERT ROBERT CROOKSHANK, Associate Professor of Animal Husbandry, 1954.
B.S., Northeast Missouri State; M.S., Ph.D., Iowa.

JAMES CECIL CROSS, Professor and Head Department of Biology, 1948.
A.B., Southwestern; M.A., Ph.D., Texas.

ALBERT BENJAMIN CUNNINGHAM, Professor of English, Emeritus, 1929, 1949.
B.A., Muskingum; B.D., Drew; M.A., Ph.D., New York; Litt. D., Lebanon.

MARY BURWELL DABNEY, Professor and Head Department of Health and Physical Education and Recreation for Women, 1952, 1957.[2]
B.S., William & Mary; M.A., Ed.D., Columbia.

CHARLES EDWIN DALE, Assistant Professor of Finance, 1956.
B.A., Texas Tech; LL.B., Baylor.

WENDELL BUTLER DANIEL, Instructor in English, 1957.
B.A., Texas; M.A., Texas Tech.

WILLIAM LOUIS DAUTERMAN, Assistant Professor of Psychology, 1957.
A.B., M.A., Stanford.

MONTY EARL DAVENPORT, Instructor in Mechanical Engineering, 1956.[1]
B.S. in M.E., Texas Tech.

RAYMOND LEON DAVIDSON, Associate Professor of Education, 1949, 1955.
A.B., Clarendon College; M.A., Texas Tech; Ed.D., Texas.

JAMES WILLIAM DAVIS, Professor and Head Department of Government, 1938, 1944.
B.A., Texas A. & M.; M.A., Ph.D., Texas.

KENNETH WALDRON DAVIS, Instructor in English, 1955.
B.A., Texas Tech; M.A., Vanderbilt.

DONALD LEE DAY, Instructor in Agricultural Engineering, 1957.
B.S., Oklahoma State.

JAMES WENDELL DAY, Associate Professor of Physics, 1946, 1957.
B.A., Hardin-Simmons; M.A., Texas.

---

[1] On leave, 1957-58.
[2] On leave, Spring Semester, 1958.
[3] Spring Semester, 1958.

CHARLES GARFIELD DECKER, Professor of Civil Engineering, 1938, 1956.
B.S. in C.E., M.S. in E., Michigan; Reg. Prof. Engr., (Texas).

HARRY De La RUE, Assistant Professor of History, 1956.
A.B., Ohio; A.M., Chicago.

JOE DENNIS, Professor and Head Department of Chemistry and Chemical Engineering, 1938, 1950.
B.A., Austin College; M.A., Ph.D., Texas.

JOHN GORDON DENNIS, Assistant Professor of Geology, 1956.
B.Sc., University of London; M.A., Ph.D., Columbia.

LEO A. DIETRICH, Major, U. S. Army, Associate Professor of Military Science and Tactics, 1954.[1]
B.E.E., University of Detroit.

MERTON LYNN DILLON, Assistant Professor of History, 1956.
A.B., Michigan State Normal College; M.A., Ph.D., Michigan.

HOLLIS AUSTIN DIXON, Part-time Instructor in Accounting, 1957.
B.B.A., Texas Tech.

SAMUEL THEODORE DONALDSON, Part-time Instructor in Mathematics, 1957.
B.S., Texas Tech.

JOHN CLARKSON DOWLING, Professor and Head Department of Foreign Languages, 1953.[2]
B.A., Colorado; M.A., Ph.D., Wisconsin.

LOLA MARIE DREW, Associate Professor of Home Management, 1946, 1949.
B.S., T.S.C.W.; M.A., Columbia.

WILLIAM LYON DUCKER, Professor and Head Department of Petroleum Engineering, 1948.
B.S., Oklahoma; Reg. Prof. Engr., (Texas, Oklahoma).

ROY SYLVAN DUNN, Part-time Assistant Professor of Sociology and Associate Archivist of Southwest Collection, 1956, 1957.
B.A., M.A., Texas.

MARY FRANCES DURAN, Instructor in Biology, 1951, 1954.
B.S., Florida State; M.S., Texas Tech.

RICHARD DURAN, Associate Professor of Architecture, 1951, 1956.
B.A., Florida; M.S., Illinois Institute of Technology; Reg. Arch., (Texas).

BILLY HOWARD EASTER, Assistant Professor of Electrical Engineering, 1955.
B.S., Texas Tech; S.M., M.I.T.: Reg. Prof. Engr., (Texas).

CHARLES DUDLEY EAVES, Professor of History, 1925.
B.A., Texas; M.A., Chicago; Ph.D., Texas.

LUTA PELHAM EAVES, Assistant Professor of Accounting, 1942.
B.B.A., M.B.A., Texas Tech.

ANDREW JOSEPH EDMONDSON, Instructor in Mechanical Engineering, 1957.
B.S., Texas Tech.

THOMAS JEFFERSON EDWARDS, Part-time Instructor in Accounting, 1951.
B.B.A., Texas Tech; M.B.A., Texas; C.P.A.

JOHN ED EKELUND, Part-time Instructor in Mathematics, 1957.
B.S., Texas Tech.

DORIS IOLA ELKINS, Part-time Instructor in Clothing and Textiles, 1957.
B.S., Texas Tech.

GEORGE OLIVER ELLE, Professor of Horticulture and Park Management and Assistant Dean of Agriculture, 1938, 1956.
B.S., Oregon State; M.S., Texas Tech; Ph.D., Cornell.

---

[1] Transferred Oct.4, 1957.
[2] On leave, Fall Semester, 1957.

LYNN ELLIOTT, Part-time Instructor in Engineering Drawing, 1957.

RAYMOND PRUITT ELLIOTT, Associate Professor of Music, 1950, 1951.
B.M., M.S., Kansas.

JAMES ALVIS ELLIS, Part-time Instructor in Government, 1946, 1952.
B.A., Texas Tech.

PAUL RAYMOND ELLSWORTH, Instructor in Music, 1954, 1955.
A.B., Hillsdale; M.A., Columbia.

MABEL DEANE ERWIN, Professor of Clothing and Textiles, Emeritus, 1926, 1955.
B.S., Purdue; M.A., Columbia.

GEORGE K. ESTOK, Associate Professor of Chemistry, 1951, 1953.
B.S., St. Vincent; M.S., Pennsylvania State; Ph.D., Notre Dame.

LAURA KATHERINE EVANS, Associate Professor of Education, 1951.
B.S., Eastern Kentucky State; M.A., George Peabody.

CHARLOTTE KEITH EWING, Instructor in Business Education and Secretarial Administration, 1954.
B.A., M.A., T.S.C.W.

BERLIE JOSEPH FALLON, Associate Professor of Education, 1955, 1957.
B. A., Daniel Baker; M.Ed., Texas Tech; Ed.D., Colorado.

BERNARD EMMITT FARRELL, Instructor in Architecture and Allied Arts, 1956.
B.F.A., M.F.A., Cranbrook Academy of Art.

ZELDA CLARKSON FARRELL, Part-time Instructor in Architecture and Allied Arts, 1956.
B.F.A., M.F.A., Cranbrook Academy of Art.

WILLIAM BEATTIE FEATHERS, Assistant Football Coach and Head Baseball Coach, 1954.
B.S., in Phys. Ed., Tennessee.

NEIL CASEY FINE, Professor and Head Department of Animal Husbandry, 1935, 1957.
B.S., Texas Tech; M.S., Iowa State; Ph.D., Minnesota.

RAYMOND KENNETT FLEGE, Professor and Head Department of Textile Engineering, Associate Director for Textile Research Laboratories, 1954.
A.B., M.S., Kentucky; M.S., in Chem. Engr., M.I.T.

MAXINE FORD FOREMAN, Part-time Instructor in English, 1957.
B.A., Texas Tech; M.A., West Texas State.

STANLEY DALE FOREMAN, Instructor in Civil Engineering, 1956.
B.S., Texas Tech.

ELFRIEDA FRANK, Associate Professor of Foreign Languages, 1956, 1957.
Litt.D., Univ. of Milan; M.A., Bryn Mawr College; Ph.D., Virginia.

MARGARET NICHOLSON FRY, Part-time Instructor in Biology, 1956.
B.S., North Texas State.

GORDON FULLER, Professor of Mathematics, 1950.
B.A., West Texas State; M.A., Ph.D., Michigan.

STERLING HALE FULLER, Professor of Government, 1950, 1957.
B.S., M.A., Oklahoma; Ph.D., Texas.

ROSA LEE FULTON, Circulation Librarian, 1953.
B.A., B.S. in L.S., T.S.C.W.

NEVA ROGERS GAHRING, Instructor in English, 1947.
B.A., M.A., Oklahoma.

JAMES RANKIN GAMMILL, Assistant Professor of Education, 1952, 1956.
B.S. in Ed., M.S. in Ed., D.Ed., Texas Tech.

WILLIAM J. GARDNER, Sergeant, U. S. Army, Instructor in Military Science and Tactics, 1957.

WALLACE EARL GARETS, Professor and Head Department of Journalism, 1956, 1957.
B.S., M.S., Idaho.

RAYMOND ERNEST GARLIN, Professor of Education, 1927, 1943.
B.A., M.A., Ph.D., Texas.

DOROTHY TAFT GARNER, Assistant Dean of Women in Charge of Dormitory Supervision for Women, 1956.
B.A., M.A., M.Ed., Oklahoma.

EUNICE JOINER GATES, Professor of Foreign Languages, 1925, 1945.
B.A., M.A., Southwestern; M.A., Michigan; Ph.D., Pennsylvania.

WILLIAM BRYAN GATES, Professor of English and Dean of the Graduate School, 1925, 1950.
B.S., Millsaps; M.A., Vanderbilt; M.A., Michigan; Ph.D., Pennsylvania.

RICHARD DENNIS GEORGE, Instructor in Physics, 1956.
B.S., M.S., New Mexico.

MARY AGNES GERLACH, Assistant Professor of Clothing and Textiles, 1955.
B.Sc., M.A., Nebraska.

GUSTAV ERNST GIESECKE, Professor of Foreign Languages and Vice President, 1953.
B.A., M.A., Ph.D., Stanford.

WINNIFRED GARLAND GIFFORD, Assistant Professor of Child Development and Family Relations, 1949.
B.S., Illinois; M.S., Iowa State.

EVERETT ALDEN GILLIS, Professor of English, 1949, 1956.
B.A., M.A., T.C.U.; Ph.D., Texas.

ARTHUR FREDERICK GOHLKE, Part-time Instructor in Agronomy, 1957.
B.S., Texas Tech.

HOWARD ELDON GOLDEN, Associate Professor of Marketing, 1946.
B.S., West Texas State; Ph.D., Missouri.

BOB FRANK GOODSON, Instructor in Electrical Engineering, 1956, 1957.[1]
B.S., in E.E., Texas Tech; Reg. Prof. Engr., (Texas, New Mexico).

ROBERT CABANISS GOODWIN, Professor of Chemistry and Chemical Engineering and Dean of Arts and Sciences, 1930, 1945.
B.A., Howard Payne; M.A., Texas; Ph.D., Harvard.

JOSEPH F. GORDON, Part-time Instructor in History, 1957.
A.B., B.S., Southwest Missouri State; M.A., Missouri.

WILLIAM MARCUS GOSDIN, Part-time Instructor in Horticulture and Park Management, and Superintendent of Care and Maintenance of Grounds, 1949, 1953.[2]
B.S., M.S., Texas Tech.

EDNA MAYNARD GOTT, Part-time Instructor in Economics, 1954.
B.A., Texas; M.A., Texas Tech.

PRESTON FRAZIER GOTT, Associate Professor of Physics, 1949, 1957.
B.S., M.A., Texas.

L. M. GRAHAM, JR., Instructor in Engineering Drawing, 1956.
B.S., M.S., North Texas State.

LAWRENCE LESTER GRAVES, Associate Professor of History, 1955, 1957.
A.B., Missouri; M.A., Rochester; Ph.D., Wisconsin.

LOLA BETH GREEN, Assistant Professor of English, 1946, 1955.
B.A., M.A., Texas Tech; Ph.D., Texas.

RAYMOND ACKERLY GREEN, Instructor in Accounting, 1956.
B.S., A.C.C.; M.A., Hardin-Simmons.

---

[1] Effective Oct. 14, 1957.
[2] Spring Semester, 1958.

HORACE ERNEST GRIFFITH, Part-time Instructor in Government, 1952.
B.A., Texas Tech.; LL.B., Georgetown University.

LEONARD LEE GRIGSBY, Instructor in Electrical Engineering, 1957.
B.S. in E.E., Texas Tech.

ARNOLD L. GROVER, Captain, U. S. Air Force, Associate Professor of Air Science, 1956.
B.S., Minnesota.

JOHN CALDWELL GUILDS, JR., Associate Professor of English, 1956.
A.B., Wofford; A.M., Ph.D., Duke.

ALAN MURRAY FINLAY GUNN, Professor of English, 1939, 1949.
B.A., Huron; M.A, Denver; Ph.D., Princeton.

THOMAS EARLE HAMILTON, Professor of Spanish, 1940, 1955.
B.A., M.A., S.M.U.; Ph.D., Texas.

FRED GEORGE HARBAUGH, Professor of Veterinary Science and Animal Husbandry and Veterinarian, 1927, 1941.
B.S., D.V.M., Iowa State.

JOHN ELZIE HARDING, Assistant Professor of Management, 1937, 1941.
B.A., B.F.A., Howard Payne; M.A., Texas Tech.

LEVI MARLIN HARGRAVE, Associate Professor of Agricultural Education, 1946.
B.S., M.S., Texas Tech.

CHARLES STANLEY HARRIS, Part-time Instructor in Psychology, 1957.
B.S., Wayland; M.A., Texas Tech.

RAE LAWRENCE HARRIS, JR., Assistant Professor of Geology, 1957.
B.S., Oregon State College.

SHIRLEY ANN DeSHAZO HARRIS, Part-time Instructor in Mathematics, 1957.
B.S., Texas Tech.

EDWARD CLEGG HART, Instructor in Electrical Engineering, 1957.
B.S. in E.E., Texas Tech.

DELMAR DWIGHT HARTLEY, Part-time Instructor in Economics, 1957.
B.S., Texas Tech.

ROBERT LEROY HARTMAN, Instructor in Architecture and Allied Arts, 1955.
B.F.A., M.A., Arizona.

JAMES MONROE HARTSFIELD, Assistant Professor of Electrical Engineering, 1956.
B.S. in E.E., Rice; Reg. Prof. Engr., (Texas).

CLARK HARVEY, Associate Professor of Agronomy, 1954, 1956.
B.S., West Texas State; B.S., Texas A. & M.; M.S., Ph.D., Iowa State.

BARBARA ANN HAZLEWOOD, Instructor in Government, 1957.
B.A., Texas Tech; M.A., Texas; M.A., Yale.

EMMETT ALLEN HAZLEWOOD, Professor and Head of Mathematics, 1939, 1948.
B.S., West Texas State; M.A., Ph.D., Cornell.

GEORGE GAIL HEATHER, Professor of Economics and Dean of Business Administration, 1950.
B.S., Southwest Missouri; M.A., Ph.D., Iowa.

ELLIS RICHARD HEINEMAN, Professor of Mathematics, 1928, 1947.
B.A., M.A., Wisconsin.

DONALD JACOB HELMERS, Associate Professor of Mechanical Engineering, 1948, 1957.
B.S., Texas Tech; M.S., Michigan; Reg. Prof. Engr., (Texas).

GENE LeCLAIR HEMMLE, Professor and Head Department of Music, 1949.
B.Mus., S.M.U.; M.A., Ed.D., Columbia.

GAIL TYSON HENDERSON, Instructor in Biology, 1956, 1957.
B.S., Texas Tech.

EARL DONALD HENDRICKS, Part-time Instructor in Engineering Drawing, 1957.

RICHARD ALLAN HENDRY, Assistant Professor of Chemistry and Chemical Engineering, 1957,
B.A., Santa Barbara College (California); M.A., College of the Pacific; Ph.D., Baylor.

CARL HENNINGER, Associate Professor of Foreign Languages, Emeritus, 1926, 1954.
B.A., Indiana; M.A., Illinois.

JOHN F. HENRY, Major, U. S. Army, Assistant Professor of Military Science and Tactics, 1957.
B.S., Utah.

NOLON HENSON, JR., Instructor in Physics, 1957.
B.S., West Texas State.

LYLE EDWARD HESSLER, Research Associate and Professor, Textile Research Laboratories, 1949, 1951.
B. of Chem., M.S., Ph.D., Minnesota.

JOSEPH McCRIGHT HILL, Part-time Instructor in Accounting, 1957.
B.B.A., Texas Tech.

PAUL LYON HILL, Part-time Instructor in Accounting, 1957.
B.B.A., Texas Tech.

GLADYS KEEN HOLDEN, Assistant Professor of Food and Nutrition, 1955.
B.A., Simmons; M.S., Texas Tech.

NARCISSA JANE HOLDEN, Part-time Assistant Professor of Anthropology, 1957.
B.A., Texas Tech; M.A., Texas.

WILLIAM CURRY HOLDEN, Professor of History, Anthropology, and Sociology and Director of The Museum, 1929, 1954.[1]
B.A., M.A., Ph.D., Texas.

ERVAN JOHN HOLTMANN, Instructor in Business Education and Secretarial Administration, 1956.
B.S., M.S., Oklahoma State.

CECIL HORNE, Professor and Head Department of Journalism, Emeritus, 1926, 1951.
B.A., Baylor; B.A., Yale.

VIOLET MARY HORVATH, Instructor in Foreign Languages, 1956.
B.A., Stanford; M.A., Radcliffe.

EDNA NAWANNA HOUGHTON, Associate Professor of Architecture, 1932, 1957.
B.S. in A.E., Texas Tech; B.A. in F.A., U.S.C.

CHARLES ERNEST HOUSTON, Professor of Electrical Engineering, 1932, 1957.
B.S. in E.E., M.A., Texas Tech.

AMOS H. HOWARD, JR., Part-time Instructor in Finance, 1950.
B.A., Texas Tech; LL.B., Texas.

DOROTHY HOYLE, Assistant Professor of Health and Physical Education and Recreation, 1951, 1953.
B.S., M.A., T.S.C.W.

CHESTER BURL HUBBARD, Assistant Professor of Management, 1947, 1952.
B.S., Texas Tech.

WILLIAM JOHN HUGHES, Instructor in History, 1950, 1956.
B.A., Colorado; M.Sc.Ed., Western Illinois.

[1] On leave from teaching, 1957-58.

ALEXANDER POPE HULL, JR., Assistant Professor of Foreign Languages, 1956, 1957.
B.S., Ph.D., Virginia.

RUSSELL BRIGGS IRVIN, Part-time Instructor in Finance and Consultant, 1951, 1952.
A.B., Simmons; M.A., LL.B., Texas.

DOYLE DAVID JACKSON, Professor of Education, 1934, 1941.[1]
B.A., M.A., Texas; Ph.D., Arizona.

J. W. JACKSON, Professor of Government, 1929, 1946.
B.A., M.A., Texas Tech.

WILLIAM ALBERT JACKSON, Part-time Instructor in Government, 1955.
B.A., Texas Tech; LL.B., Georgetown University.

MARGARET JAMES, Part-time Instructor in Foreign Languages, 1955.
B.A., M.A., Texas Tech.

RAY CURTIS JANEWAY, Librarian, 1949.
B.A., Kansas; B.S. in L.S., M.S., Illinois.

EDGAR RAY JARMAN, Instructor in Dairy Industry, 1955.
B.S., M.S., Tennessee.

CHESTER CARTWRIGHT JAYNES, Assistant Professor of Agronomy, 1951, 1957.
B.S., M.S., Texas Tech.

WILLIAM LOYD JENKINS, Assistant Professor of Industrial Engineering and Engineering Drawing, 1946, 1956.
B.S., Texas Tech; M.S. in S.E., Georgia Tech.

WILLIAM MORLEY JENNINGS, Professor of Health and Physical Education and Recreation, 1941.
B.S., Mississippi A. & M.

CECIL EARL JOHNSON, Assistant Professor of Government, 1955, 1957.
B.A., M.A., Baylor; Ph.D., Texas.

JOSEPH L. JOHNSON, Master Sergeant, U. S. Army, Instructor in Military Science and Tactics, 1956.

PHILIP JOHNSON, Associate Professor of Petroleum Engineering, 1947, 1957.
B.S., Texas Tech; Reg. Prof. Engr., (Texas).

MEDA PARKER JOHNSTON, Assistant Professor of Applied Arts, 1954.
B.S., T.S.C.W.; M.F.A., Cal. College of Arts & Crafts.

BILLY RAY JONES, Part-time Instructor in Geology, 1956.
B.S., Texas Tech.

LEWIS NORTEN JONES, Dean of Men, 1948, 1953.
B.S., M.A., Texas Tech.

SYLVAN JULIAN KAPLAN, Professor and Head Department of Psychology and Coordinator of Research, 1954, 1956.
B.A., M.A., Texas; Ph.D., Stanford.

CLIFF HUTCHINSON KEHO, Associate Professor of Civil Engineering, 1957.
B.S., Swarthmore; M.S., Harvard.

NAOMI RUTH KEITH, Part-time Instructor in Business Education and Secretarial Administration, 1956.
B.B.A., M.Ed., Texas Tech.

JOHN NELSON KELLEY, JR., Instructor in English, 1952.
B.A., San Diego State; M.A., California.

WILLIAM HALE KELLY, Assistant Professor of Agronomy, 1957.
B.S.A., M.S., Florida; Ph.D., Rutgers.

SABE McCLAIN KENNEDY, JR., Professor of Government and Assistant Dean of Arts and Sciences, 1946, 1957.
B.A., M.A., Texas Tech; Ph.D., Colorado.

[1] On leave, Fall Semester, 1957.

GENE KENNEY, Instructor in Music, 1957.
B.S., Emporia State Teachers College; M.M., S.M.U.

ERNST WILLIE KIESLING, Instructor in Civil Engineering, 1956.
B.S. in M.E., Texas Tech.

ERNESTINE DOLORES KILCHENSTEIN, Part-time Instructor in Business Education and Secretarial Administration, 1957.
B.B.A., Texas Tech.

LILA ALLRED KINCHEN, Associate Professor of Clothing and Textiles, 1939, 1945.
B.S., M.S., Texas Tech.

OSCAR ARVLE KINCHEN, Professor of History, 1929, 1939.
B.A., M.A., Oklahoma; Ph.D., Iowa.

KENETH KINNAMON, Instructor in English, 1956.
B.A., Texas; A.M., Harvard.

RAMON WALTER KIREILIS, Professor and Head Department of Health and Physical Education and Recreation for Men and Swimming Coach, 1950.
B.S., M.S., Illinois; Pe.D., Indiana.

FLORIAN ARTHUR KLEINSCHMIDT, Professor of Architecture and Allied Arts, 1928, 1953.
B.S. in Arch., Minnesota; M. in Arch., Harvard; Reg. Arch., (Texas).

ELMER MYLER KNOWLES, Professor and Head Department of Child Development and Family Relations, 1957.
B.S., M.S., Utah State Agricultural College; Ph.D., Cornell.

JAMES EDWARD KUNTZ, Associate Professor of Psychology and Acting Director, Testing and Counseling Center, 1951, 1957.
B.S., M.S., Fort Hays K.S.C.; Ph.D., Purdue.

ROY CLEM LACY, Instructor in English, 1955.
B.A., A.C.C.; M.A., T.C.U.

FRANK RICHARD LaMAR, Instructor in Music, 1956.
B.M., M.M., Florida State.

MINA WOLF LAMB, Professor and Head Department of Food and Nutrition, 1940, 1955.
B.A., M.S., Texas Tech; Ph.D., Columbia.

ROY EUGENE LAMBERT, Assistant Professor of English, 1957.
B.A., M.A., Washington; Ph.D., Illinois.

BERNARD ALTER LANDES, Assistant Professor of Speech, 1957.
B.S., M.S., Purdue.

MILTON FREDERIC LANDWER, Professor of Zoology, 1927, 1949.
B.S., Northwestern; M.A., Nebraska; Ph.D., Michigan.

JOHNNYE GILKERSON LANGFORD, Professor of Physical Education, Emeritus, 1925, 1955.
B.B.A., Texas; M.A., U.S.C.

PAUL MERVILLE LARSON, Professor and Head Department of Speech, 1950.[1]
B.S., M.S., Kansas State; Ph.D., Northwestern.

JAMES HAROLD LAWRENCE, JR., Instructor in Mechanical Engineering, 1956.
B.S. in M.E., Texas Tech.

CHARLES ALFRED LAWRIE, Instructor in Music, 1957.
B. Mus., M.Mus., Northwestern.

THOMAS LUTHER LEACH, Professor of Agricultural Education, 1937, 1948.
B.S., M.S., Texas Tech.

ALVA RIDJELL LEE, Part-time Instructor in Mathematics, 1955.
B. of Arch., Texas Tech.

SAMUEL HUNT LEE, JR., Associate Professor of Chemistry, 1951, 1953.
B.S., Texas; Ph.D., Ohio State

[1] On leave, 1957-58.

ARCHIE LEROY LEONARD, Associate Professor of Agricultural Economics, 1947.
B.S., M.S., Oklahoma State.

LESTER SAMUEL LEVY, Assistant Professor of Economics, 1955.
B.A., Rutgers; M.A., Ph.D., Cornell.

QUANAH BELLE LEWIS, Instructor in English, 1946.
B.F.A., Oklahoma; M.A., Texas Tech.

TRUMAN ORVILLE LEWIS, Part-time Instructor in Mathematics, 1957.
B.S., Texas Tech.

HELEN ALMA LINDELL, Assistant Professor of Speech, 1948, 1949.
B.A., Washburn; M.A., Wisconsin.

LEE CLAIR LINDENMEIER, Associate Professor of Engineering Drawing, 1957.[1]
B.S. in C.E., Colorado State; M.A. in Ed., Colorado State College of Education.

JONATHAN WATTAM LINDSAY, Assistant Professor of Mathematics, 1948, 1954.[2]
B.A., M.A., Texas.

IVAN LEE LITTLE, Associate Professor of Education and Philosophy, 1946, 1953.
B.A., Texas Tech; M.A., Ph.D., Nebraska.

BOYD ANTHONY LITZINGER, JR., Assistant Professor of English, 1956.[2]
B.S., M.A., South Carolina; Ph.D., Tennessee.

THOMAS BROOKS LIVINGSTON, Professor of Education, 1949, 1957.
B.S., M.S., North Texas State; Ed.D., Stanford.

ROBERT IVAN LOCKARD, Professor of Architecture, 1935, 1953.
B.S., M.S., Kansas State; Reg. Arch., (Texas).

TROY ALLEN LOCKARD, Assistant Professor of Applied Arts, 1937, 1948.
B.S., M.A., T.S.C.W.

BILLY CLARENCE LOCKHART, Associate Professor of Applied Arts, 1955.
B.S., West Texas State; M.Ed., D.Ed., Pennsylvania State.

CHARLES VERNIE LOFTON, Part-time Instructor in Textile Engineering and Research Principal in the Textile Engineering Laboratories, 1956, 1957.
B.S., Texas Tech.

EDWIN KEITH LONGPRE, Instructor in Biology, 1956.[2]
B.S., M.S., Michigan.

RICHARD LOREN LOWERY, Instructor in Mechanical Engineering, 1957.
B.S., Texas Tech; M.S., Oklahoma State.

LAURA LOUISE LUCHSINGER, Instructor in Marketing, 1954, 1956.
B.S., B.A., Arkansas; M.B. A., Texas Tech.

GLORIA RUTH LYERLA, Periodicals Librarian, 1952, 1953.
B.S., M.S., North Texas State.

WILLIAM C. LYONS, First Lieutenant, U. S. Army, Assistant Professor of Military Science and Tactics, 1957.
B.S., Alabama.

RAYMOND DeELMONT MACK, Assistant Professor of Government, 1946, 1957.
B.A., T.C.U.; M.A., Texas.

HORACE JURS MacKENZIE, Associate Professor of Industrial Engineering and Engineering Drawing, 1949, 1956.
B.S. in I.E., Texas Tech; M. S., Oklahoma State; Reg. Prof. Engr., (Texas).

---

[1] Effective Dec. 1, 1957.
[2] On leave, 1957-58.

ANN AMELIA ROBERT MADDEN, Part-time Instructor in Mathematics, 1952.[1]
B.S., East Texas State.

THOMAS GREEN MANNING, Associate Professor of History, 1956.
B.A., Ph.D., Yale.

SLYVIA DELIA MARINER, Assistant Professor of Speech, 1956.
B.A., Des Moines; M.A., Iowa.

KEITH ROBERT MARMION, Assistant Professor of Civil Engineering, 1955, 1957.
B.S. in C.E., Denver; Reg. Prof. Engr., (Texas).

HILBERT GRADY MARTIN, Assistant Professor of Engineering Drawing, 1958.[2]
B.S., M.S., East Texas State.

ROBERT E. MARTIN, Associate Professor of Mechanical Engineering, 1957.
B.S., Texas Tech; M.S., Wisconsin; Reg. Prof. Engr., (Texas).

RUBY CANNON MARTIN, Part-time Instructor in Food and Nutrition, 1957.
B.S., M.S., Texas Tech.

ROBERT LOUIS MASON, Associate Professor of Mechanical Engineering and College Engineer, 1942, 1957.
B.S. in M.E., Texas Tech; M.S. in M.E., Kansas State; Reg. Prof. Engr., (Texas).

RICHARD BENJAMIN MATTOX, Professor of Geology, 1954, 1957.
B.A., M.S., Miami (Ohio); Ph.D., Iowa.

LIDA BELLE MAY, Assistant Professor of Mathematics, 1938, 1946.
B.A., Alabama; M.A., Texas.

ELMER LEON McBRIDE, Professor of Agricultural Economics, 1935, 1956.
B.S., M.S., Oklahoma State.

DARRELL KEITH McCARTY, Instructor in Music, 1953.
B.S., B.M., M.M., Illinois.

HENRY ROSAMOND McCARTY, JR., Director of the West Texas Cooperative Audio-Visual Services, 1952.
B.S. in Ed., East Central State (Oklahoma); M.Ed., Texas Tech.

BILLY IRVING McCLURE, Part-time Instructor in Mathematics, 1957.
B.A., Texas Tech.

JOSEPH THOMAS McCULLEN, JR., Professor of English, 1949, 1955.
B.A., M.A., Ph.D., North Carolina.

KENNETH S. McCUTCHAN, Associate Professor of Psychology, 1954, 1955.
B.A., B.S., PhD., Texas.

JERRY LEO McFARLAND, Part-time Instructor in Electrical Engineering, 1957.

JOHN CONGER McGRAW, Instructor in History, 1955, 1957.
B.A., Howard Payne; M.A., Hardin-Simmons.

LILLIAN ETTA McGLOTHLIN, Instructor in Mathematics, 1947.
B.A., M.A., Texas.

SETH SHEPARD McKAY, Professor of History, 1928.
B.A., M.A., Texas; Ph.D., Pennsylvania.

VERNON REID McLAMORE, Instructor in Geology, 1956, 1957.
B.S., Oklahoma.

CLYDE McLANE, JR., Part-time Instructor in Accounting, 1957.
B.B.A., Texas Tech.

WILLIAM GENE McMINN, Instructor in Architecture and Allied Arts, 1956.
B.A., B. of Arch., Rice; M. of Arch., Texas.

---

[1] Effective Nov. 1, 1957.
[2] Effective Feb. 1, 1958.

JAMES FABER McNALLY, Instructor in Health and Physical Education and Recreation, 1952, 1957.
B.S., Oklahoma; M,Ed., Texas Tech.

CLARA MUELLER McPHERSON, Part-time Instructor in Food and Nutrition, 1947, 1955.
B.S., M.S., Texas Tech.

CLINTON M. McPHERSON, Instructor in Chemistry, 1956.
B.S., M.Ed., Texas Tech.

PAUL McWHORTER, Professor of Marketing, 1957.
B.S., Oklahoma State; LL.B., M.B.A., Ph.D., Ohio State.

SUZANNE SCHIRRMAN McWHORTER, Assistant Professor of Marketing, 1957.
B.A., M.B.A., Arkansas; Ph.D., Ohio State.

GEORGE PEYTON MECHAM, Professor of Education, 1951, 1957.
B.S., North Texas State; M.A., Columbia; Ph.D., George Peabody.

WILLIAM HOWARD MELCHING, Associate Professor and Assistant Head Department of Psychology, 1954, 1957.
A.B., Indiana; M.A., Ph.D., U.C.L.A.

WILLIAM WALTER MERRYMON, Professor of Physics, 1948, 1957.
B.A., Missouri; M.A., Illinois; Ph.D., Chicago.

JAMES NEWTON MICHIE, Professor of Mathematics, Emeritus, 1925, 1951.
B.S., Virginia; M.A., Michigan.

JONNIE McCRERY MICHIE, Professor of Food and Nutrition, Emeritus, 1925, 1955.
B.S., M.A., Columbia.

MARIE AGNES MILES, Assistant Professor of English and Administrative Assistant in the Graduate School Office, 1946, 1955.
B.A., West Texas State; M.A., Texas.

RICHARD NEWTON MILLER, Part-time Instructor in Engineering Drawing, 1957.

RUFUS ARTHUR MILLS, Professor of English, Emeritus, 1926, 1951.
B.A., M.A., Texas.

WILLIAM WRIGHT MILSTEAD, Research Associate in the Department of Biology, 1958.[1]
B.S., Houston; M.A., Ph.D., Texas.

RAYMOND WILLIAM MIRES, Instructor in Physics, 1957.
B.S., Texas Tech.

GEORGE RAYMOND MITCHAM, Part-time Instructor in Civil Engineering, 1957.
B. of Arch., Texas Tech.

FREEDIS LLOYD MIZE, Professor and Head Department of Management, 1946, 1950.
B.S., Sul Ross; M.Ed., Ed.D., Oklahoma.

MICHAEL W. MODIS, Master Sergeant, U. S. Army, Instructor in Military Science and Tactics, 1955.

ALFRED OTTO MONASCH, Assistant Professor of Mechanical Engineering, 1949.
Diplom-Ingenieur, Technical Univ. of Berlin-Charlottenburg.

CHARLOTTE MONASCH, Assistant Catalog Librarian, 1951, 1956.

R. A. MORELAND, JR., Instructor in Mathematics, 1953, 1955.
B.S., M.S., Texas Tech.

JAMES NEWMAN MOREY, Instructor in English, 1958.
A.B., Ohio; A.M., Columbia.

BILLY B. MORGAN, First Lieutenant, U. S. Air Force, Assistant Professor of Air Science, 1957.
B.S., Murray State College.

JAMES NORMAN MORGAN, Instructor in Dairy Industry, 1958.
B.S., Texas Tech.

SIBYL PIRTLE MORRISON, Reference Librarian, 1949, 1956.
B.S., Texas Tech; B.S. in L.S., California.

[1] Spring Semester, 1958.

ELWYN WADE MORTON, Instructor in Mathematics, 1955.
B.S., West Texas State; M.A., Texas.

JOSEPH CHARLES MOSS, Assistant Football Coach, 1957.
B.S., Maryland.

RAY CLIFFORD MOWERY, Professor of Animal Husbandry, 1926, 1954.
B.S., Texas A. & M.; M.S., Iowa State.

JAMES HAROLD MURDOUGH, Professor and Head Department of Civil Engineering, 1925, 1927.
S.B., M.I.T.; M.S.E., Michigan; Reg. Prof. Engr., (Texas).

DONALD VAN DALE MURPHY, Associate Professor of English, 1926, 1935.
B.A., Tulsa; M.A., Columbia.

CHARLES ERNEST MYRES, Instructor in Government, 1956.
B.A., Rice; M.A., North Texas State.

KLINE ALLEN NALL, Associate Professor of English and Chairman of Freshmen English, 1944, 1956.
B.A., M.A., Texas Tech; Ph.D., Texas.

KOY L. NEELEY, Associate Professor of Animal Husbandry, 1948, 1955.
B.S., Texas Tech; M.S., Texas A. & M.

DORIS NESBITT, Associate Professor of Home Economics Education, 1943, 1957.
B.A., Oklahoma; M.S., Iowa State.

ROBERT LEE NEWELL, Professor of Mechanical Engineering and Assistant Dean of Engineering, 1941, 1956.
B.S. in M.E., Texas Tech; M.S. in M.E., Georgia Tech; Reg. Prof. Engr., (Texas).

SARAH ANN NIX, Part-time Instructor in Mathematics, 1957.
B.S., Texas Tech.

CHARLES EDWARD NOLAN, JR., Part-time Instructor in Architecture and Allied Arts, 1957.
B. of Arch., Texas Tech.

FRED WAYLAND NORWOOD, Professor of Accounting, 1950, 1955.
B.B.A., M.B.A., Mississippi; Ph.D., Texas; C.P.A

LILLIAN NORWOOD, Associate Catalog Librarian, 1951, 1953.
A.B., M.A., S.M.U.; B.S. in L.S., T.S.C.W.

AARON GUSTAF OBERG, Professor of Chemical Engineering, 1936, 1949.
B.S., M.S., Ph.D., Colorado.

COLEMAN ART O'BRIEN, Assistant Professor of Animal Husbandry, 1947, 1955.
B.S., M.S., Texas A. & M.

WILLIAM EUGENE ODEN, Associate Professor of Government, 1948, 1957.
B.A., M.A., Oklahoma; Ph.D., Indiana.

OSCAR B. OGLETREE, JR., Captain, U. S. Air Force, Associate Professor of Air Science, 1957.
B.B.A., Florida.

RICHARD KANE O'LOUGHLIN, Part-time Professor of Psychology, 1954.[1]
M.D., Georgetown Medical School.

CECIL THOMAS OVERBY, Professor of Civil Engineering, 1946, 1957.[2]
B.S. in C.E., Texas Tech; M.S. in C.E., Texas; Reg. Prof. Engr., (Texas).

[1] Spring Semester, 1958.
[2] Absent on leave. Spring Semester, 1958.

ROBERT D. PALMQUIST, First Lieutenant, U. S. Air Force, Assistant Professor of Air Science.
B.S., Utah.

ROBERT MARSHALL PARKER, Associate Professor of Mathematics, 1946, 1957.
B.A., M.A., Texas Tech.

RODERICK PARKINSON, Assistant Professor of Architecture, 1948, 1954.
B.S., M.S. in Ed., Texas Tech.

CLIFFORD MARION PARRISH, Part-time Assistant Professor of Civil Engineering, 1949, 1957.
B.S. in C.E., Texas Tech; M.S., Illinois.

L. E. PARSONS, Professor of Textile Engineering, 1942, 1945.
B.S., Texas Tech; Reg. Prof. Engr., (Texas).

WILLIAM ROBERT PASEWARK, Professor and Head Department of Business Education and Secretarial Administration, 1956, 1957.
B.S., M.A., Ph.D., New York University.

WILLIAM MARTIN PEARCE, Professor and Head Department of History, Anthropology and Sociology, 1938, 1955.
B.A., S.M.U.; M.A., Texas Tech; Ph.D., Texas.

MILTON LESTER PEEPLES, Assistant Professor of Dairy Industry. and Creamery Superintendent, 1951, 1955.[1]
B.S., M.S. in Agri., Texas Tech.

ANNAH JOE PENDLETON, Professor of Speech, 1927, 1942.
B.A., T.C.U.; M.A., Iowa.

ANDREW CLINTON PEREBOOM, Assistant Professor of Psychology, 1956.
B.A., M.A., Ph.D., U.C.L.A.

WILLIAM MORRIS PEREL, Assistant Professor of Mathematics, 1956.
A.B., M.A., Ph.D., Indiana.

JANE LAMAR PERRY, Instructor in Health and Physical Education and Recreation, 1957.
B.S., T.S.C.W.

CONNER COLUMBUS PERRYMAN, Professor of Engineering Drawing, 1929, 1947.
B.S., North Texas State; Reg. Prof. Engr., (Texas).

GEORGE REX PHILBRICK, Associate Professor of Health and Physical Education and Recreation, and Tennis Coach, 1947, 1949.
B.S., Texas Tech; M.Ed. in P.Ed., Texas.

AUBREY CLYDE PHILLIPS, JR., Line Coach, 1955, 1956.
B.S., Texas Tech.

FLORENCE LOUISE PHILLIPS, Dean of Women, 1954.
A.B., Marshall College; M.A., Michigan State.

LYNN A. PHILLIPS, Part-time Instructor in Mathematics and Supervisor of Doak Hall, 1954, 1957.
B.S., Hamilton; M.A., Northwestern.

CHARLES WILLIAM PHILPOTT, Part-time Instructor in Biology, 1957.
B.A., Texas Tech.

HENRI DEANE PIERCE, Part-time Instructor in Architecture and Allied Arts, 1957.
B. of Arch., Texas Tech.

CHARLES W. PINNELL, Assistant Professor of Civil Engineering, 1954, 1957.[2]
B.S. in C.E., Texas Tech; Reg. Prof. Engr., (Texas).

PAULINE DAWN PITTS, Assistant Catalog Librarian, 1956.
B.A., Okla. Southeastern; B.A. in L.S., Oklahoma; M.S., Illinois.

[1] On leave, Spring Semester, 1958.
[2] On leave, Fall Semester, 1957.

JAMES EDWARD PLATZ, Associate Librarian, 1949.
B.A., Lawrence; B.S. in L.S., Illinois.

CHARLES W. POST, Instructor in Music, 1957.
B.Mus., B.S., Colorado State.

CEDRIC JACK POUNDERS, Instructor in Economics, 1957.
B.S., M.B.A., Oklahoma; M.A., Baylor.

JAMES DANIEL POWELL, Part-time Instructor in Geology, 1956.[1]
B.S., Texas Tech.[1]

NOBLE GILBERT POWELL, Part-time Instructor in Mathematics, 1955.
B.S., Nebraska State College; M.Ed., Texas Tech.

BILLY KEITH POWER, Part-time Instructor in Textile Engineering and Research Principal, Textile Research Laboratories, 1951, 1952.
B.S. in T.E., Texas Tech; M.S. in Textile Technology, M.I.T.

RUBY STEWART POWER, Instructor in Mathematics, 1956, 1957.
B.S. in T.E., M.S., Texas Tech.

LOUIS JOHN POWERS, Professor and Head Department of Mechanical Engineering, 1942, 1952.
B.S. in M.E., Texas Tech; M.S. in E.M., Texas; Reg. Prof. Engr., (Texas).

PAUL VERDAYNE PRIOR, Assistant Professor of Biology, 1956.
B.A., M.S., Ph.D., Iowa.

EDWARD PUGH PRICE, Assistant Professor of Electrical Engineering, 1955.
B.S. in E.E., Texas; M.S. in E.E., Illinois; Reg. Prof. Engr., (Texas, New Mexico).

WILLIAM TAYLOR PROBANDT, Part-time Instructor in Geology, 1957.
B.S., Texas.

VERNON WILLARD PROCTOR, Assistant Professor of Biology, 1956.
A.B., A.M., Ph.D., Missouri.

CHARLES BLAISE QUALIA, Professor of Foreign Languages, 1925, 1953.
B.A., M.A., Ph.D., Texas.

SUE AVA RAINEY, Associate Professor of Health and Physical Education and Recreation, 1945.[2]
B.S., George Peabody; M.A., Columbia.

WILMER L. RALLS, Master Sergeant, U. S. Army, Instructor in Military Science and Tactics, 1956.

CELIA RUTH RALSTIN, Part-time Instructor in Biology, 1957.
B.S., A.C.C.

GERALD GLEN RAMBO, Captain, U. S. Air Force, Assistant Professor of Air Science, 1955.
B.S., Texas Tech.

ARNE WILLIAM RANDALL, Professor and Head Department of Applied Arts, 1953.
B.A., Central Washington; M.A., Columbia.

MYRA JOYCE RATTAN, Assistant Circulation Librarian, 1957.
B.S., Mississippi State College for Women.

ROBERT RENTOUL REED, Instructor in Horticulture and Park Management, 1957.
B.S., Pennsylvania State.

ROBERT BALDRIDGE REEDY, Part-time Instructor in Management, 1954.
B.A., Illinois.

JOHN HAYES REESE, Instructor in Finance, 1957.
B.B.A., LL.B., S.M.U.

CORWIN C. REEVES, JR., Instructor in Geology, 1957.
B.S., M.S., Oklahoma.

EMMA CORNELIA REEVES, Instructor in English, 1953.
B.A., Hardin-Simmons; M.A., Texas Tech.

---

[1] Resigned Jan. 31, 1958.
[2] Acting Head, Spring Semester, 1958.

JOHN J. REID, Assistant Professor of Civil Engineering, 1958.[1]
B.S. in C.E., New Mexico; M.S., Oklahoma State.

LEVERN ANTHONY REIS, Part-time Instructor in Mechanical Engineering, 1957.

ROBERT GEORGE REKERS, Assistant Professor of Chemistry, 1955.
B.S., Rochester; Ph.D., Colorado.

JULES ALEXANDER RENARD, Associate Professor of Chemical Engineering, 1951, 1953.
Licencie en Sciences Chimiques, Universite Paul Pastur, Belgium.
Ingeneiur-Chimiste, Universite de Nancy, France.

CARL BUCKNER REXROAD, Assistant Professor of Geology, 1955.
B.A., M.S., Missouri; Ph.D., Iowa.

VICKERS STEELE RHETT, Part-time Instructor in Chemistry, 1956.
B.S., M.S., South Carolina.

CHARLES LATHAN RIGGS, Associate Professor of Mathematics, 1953.
B.A., T.C.U.; M.A., Michigan; Ph.D., Kentucky.

VIRGINIA CASTERTON RIGGS, Instructor in Biology, 1953, 1956.
B.S., Mount Union College; M.S., Texas Tech.

WILLIAM HOYT RILEY, Part-time Instructor in Mathematics, 1957.
B.S., University of Houston.

ARTHUR THEOPHILE ROBERTS, Associate Professor of Accounting, 1955, 1957.
B.S. in B.A., Boston College; M.B.A., Boston University; Ph.D., L.S.U.; C.P.A.

JACK FRANCIS ROBERTS, Part-time Instructor in Architecture, 1957.
B.S. in M.E., Texas; Reg. Prof. Engr., (Texas, New Mexico).

VIRGINIA BOWMAN ROBERTS, Assistant Professor of Mathematics, 1945, 1957.
B.A., M.A., Texas Tech.

POLK FANCHER ROBISON, Assistant Director of Athletics, Associate Professor of Health and Physical Education and Recreation and Basketball Coach, 1942, 1956.
B.A., Texas Tech.

JAMES ELWOOD RODGERS, Part-time Instructor in Accounting, 1957.
B.B.A., Texas Tech.

ETHEL TODD ROLLO, Instructor in Health and Physical Education and Recreation, 1956.
B.S., Arizona.

ROBERT LYLE ROUSE, Professor of Economics and Finance, 1950, 1957.
B.A., Coe; M.A., Ph.D., Iowa.

NEILON JOYCE ROWAN, Instructor in Civil Engineering, 1957.
B.S., Texas Tech.

CHESTER MORRISON ROWELL, JR., Assistant Professor of Biology, 1957.
B.A., Texas; M.S., Texas A. & M.

ANNIE NORMAN ROWLAND, Assistant Professor of Mathematics, 1942, 1957.
B.S., M.S., Texas Tech.

ROBERT HENRY RUCKER, Associate Professor of Horticulture and Park Management, 1956.
B.S., M.S., Texas A. & M.

JAMES ARTHUR RUSHING, Instructor in English, 1952.[2]
B.S., M.A., S.M.U.

REGINALD RUSHING, Professor and Head Department of Accounting and Finance, 1939, 1948.
B.A., Southwestern; M.B.A., Ph.D., Texas; C.P.A.

RUTH WILSON RUSSELL, Instructor in English, 1948.
B.S., M.A., Oklahoma.

---

[1] Spring Semester, 1958.
[2] On leave, 1957-58.

JOHN ALLEN RYAN, Professor and Head Department of Marketing, 1957.
B.S., U.S.C.; M.B.A., Ph.D., Texas.

OSCAR ALLEN ST. CLAIR, Professor of Industrial Engineering and Engineering Drawing and Assistant to the Dean of Engineering, 1934, 1954.
B.S. in E.E., Illinois Institute of Technology; Reg. Prof. Engr., (Texas).

ROY JOHNSON SAMPSON, Assistant Professor of Economics, 1955.
B.S., Tennessee Polytechnic Institute; M.B.A., Ph.D., California.

ELISABETH ANNE SANDERS, Part-time Instructor in English, 1957.
B.A., Texas.

BILLY JOE SANDLIN, Assistant Professor of Physics, 1955.[1]
B.S., M.S., East Texas State.

ALBERT J. SANGER, Associate Professor of Civil Engineering, 1956, 1957.
C.E., Cincinnati; M.S. in C.E., Illinois Institute of Technology.

ELIZABETH SKIDMORE SASSER, Associate Professor of Architecture and Allied Arts, 1949, 1953.
B.F.A., M.A., Ph.D., Ohio State.

DONNA ANN SCHAEFER, Instructor in English, 1957.
B.A., Minnesota.

CLARENCE CARL SCHMIDT, Professor and Head Department of Physics, 1927, 1943.
B.A., Cornell College; M.A., Ph.D., Illinois.

RONALD EDWARD SCHULZ, Assistant Professor and Acting Head Department of Speech, 1952, 1957.
B.S., M.A., Northwestern.

HERBERT H. SCHULZE, JR., Part-time Instructor in Education, 1957.
B.A., Northeastern State; M.A., George Peabody.

WILLIAM FREDERICK SCHWIESOW, Assistant Professor of Agricultural Engineering, 1957.
B.S., South Dakota State; M.S., Illinois; Reg. Prof. Engr., (Illinois).

JESSE Q. SEALEY, Professor of Biology, 1928, 1955.
B.A., M.A., Ph.D., Texas.

A. B. SEGARS, Part-time Instructor in Accounting, 1953.[2]
B.B.A., M.B.A., Texas; C.P.A.

ELWIN REED SETLIFF, Part-time Instructor in Mathematics, 1957.
B.A., A.C.C.

DEAN CHARLES SEVERANCE, Assistant Professor of Physics, 1956, 1957.
B.S., M.S., Vermont.

CHARLOTTE EVELYN SEWELL, Part-time Instructor in Chemistry, 1957.
B.S., Texas Tech.

JOHN BRYSON SEWELL, Part-time Instructor in Chemistry, 1954, 1955.
B.S., M.S., Texas Tech.

ROY F. SHARP, Sergeant First Class, U. S. Army, Instructor in Military Science and Tactics, 1957.

HOMER LADON SHEATS, Part-time Instructor in Management, 1957.
B.B.A., Texas Tech.

MARTHA GENE SHELDEN, Professor and Head Department of Clothing and Textiles, 1955.
A.B., Wichita; M.S., Kansas State; Ph.D., T.S.C.W.

HORACE MONROE SHERROD, JR., Assistant Football Coach, 1953.
B.S., Tennessee.

HENRY JOSEPH SHINE, Assistant Professor of Chemistry, 1954.
B.Sc., (Hons.) U. College, London; Ph.D., Bedford College, London; A.R.I.C.

[1] On leave, 1957-58.
[2] Fall Semester, 1957.

MYRTLE DUNN SHORT, Part-time Instructor in Music, 1941.
B.Mus., Chicago Musical College.

DESKIN HUNT SHURBET, JR., Assistant Professor of Geology and Director of the Seismological Observatory, 1956.
B.S., M.A., Texas.

GERALD LYNN SHURBET, Instructor in Mathematics, 1956, 1957.
B.A., Texas; M.S., Texas Tech.

FLOY GLENN SIDES, Instructor in Child Development and Family Relations, 1954, 1956.
B.S., M.Ed., Texas Tech.

WILLIAM MACKEY SLAGLE, Professor of Chemistry, 1926, 1949.
B.A., Southwestern; M.A., Texas.

MARY JANET SLIFER, Instructor in Health and Physical Education and Recreation, 1958.[1]
B.A., Texas Women's University

BURNETT T. SMITH, Instructor in Mathematics, 1948.
B.S., M.Ed. Texas Tech.

JACK R. SMITH, Sergeant First Class, U. S. Army, Instructor in Military Science and Tactics, 1954.[2]

MABEL BROOKS SMITH, Assistant Professor of Sociology, 1945, 1955.
B.A., M.A., Texas.

ROBERT GRIFFIN SMITH, JR., Associate Professor of Psychology, 1957.
B.A., M.A., Florida; Ph.D., Illinois.

MAUDE JOHANNA SORENSON, Instructor in Mathematics, 1956.
B.S., Iowa State; M.A., Arizona State.

CAREY THOMAS SOUTHALL, JR., Assistant Professor of Education, 1957.
B.S., M.A., Ed.D., Florida.

OSCAR CLARENCE SOUTHALL, Assistant Professor of Chemistry, 1944.[1]
B.A., Hardin-Simmons; M.A., Texas Tech.

JERRY MADISON SOWDER, Part-time Instructor in Government, 1955.
B.A., Texas Tech; LL.B., Texas.

GENE LYLE SPAIN, Instructor in Agronomy, 1955.
B.S., Texas Tech; M.S., Wisconsin.

FRED WINCHELL SPARKS, Professor of Mathematics, 1926, 1928.
B.A., M.A., Southwestern; M.S., Ph.D., Chicago.

WENZEL LOUIS STANGEL, Professor of Animal Husbandry, Dean of Agriculture, and Director of Farms, 1925, 1945.
B.S., Texas A. & M.; M.S., Missouri; LL.D., Texas A. & M.

WINFRED GEORGE STEGLICH, Associate Professor of Sociology, 1957.
B.A., Concordia Seminary; M.A., Ph.D., Texas.

TOM BASIL STENIS, Associate Professor of Electrical Engineering, 1947, 1956.
B.S. in E.E., M.S. in E.E., Texas; Reg. Prof. Engr., (Texas).

JACQUELINE ANN STERNER, Assistant Dean of Women, 1955.
A.B., M.S., Indiana.

DOROTHY ANN STEWART, Part-time Instructor in Chemistry, 1956.
B.S., North Texas State.

LEWIS MOORE STEWART, Part-time Instructor in Finance, 1957.
B.S., Harding College.

MARY RUTH STRANDTMANN, Instructor in Mathematics, 1951.
B.A., Southwest Texas State; M.A., Texas Tech.

---

[1] Spring Semester, 1958.
[2] Transferred Dec. 13, 1957.

RUSSELL WILLIAM STRANDTMANN, Professor of Biology, 1948.
B.S., Southwest Texas State; M.S., Texas A. & M.; Ph.D., Ohio State.

ALFRED BELL STREHLI, Associate Professor of Foreign Languages, 1928, 1953.[1]
B.A., B.S., M.A., Ohio State.

ALAN LANG STROUT, Professor of English, 1928, 1937.
B.A., Dartmouth; M.A., Chicago; M.A., Wisconsin; Ph.D., Yale.

MARY GRAVES STROUT, Instructor in English, 1942, 1951.
B.L., Northwestern: M.A., Texas Tech.

MARGRET RUSSELL STUART, Assistant Professor of Chemistry, 1946, 1952.
B.A., M.A., Texas Tech.

RICHARD ARTHUR STUDHALTER, Professor of Botany, 1925.
B.A., Texas; M.A., Washington (St. Louis); Ph.D., Chicago.

ARA BROOCKS COX SULLENBERGER, Part-time Instructor in Mathematics, 1956.
B.A., Texas Tech.

WELDON FRANK SWINSON, Instructor in Mechanical Engineering, 1956.[2]
B.A., Rice; B.S. in M.E., Texas Tech.

HASKELL GRANT TAYLOR, Professor of Accounting and Finance, 1937, 1948.
B.B.A., M.A., Texas Tech; C.P.A.

HELEN MAY KNAUF TAYLOR, Part-time Instructor in Music, 1953.
B.S., Julliard.

ROBERT BOYNTON TAYLOR, Instructor in Music, 1953.
B.S., Julliard; M.A., Columbia.

GUSSIE LEE TEAGUE, Associate Professor of English, 1926, 1943.[3]
B.A., Oklahoma; M.A., Colorado.

JAMES OTIS TEAGUE, JR., Part-time Instructor in Accounting, 1953.[4]
B.B.A., Texas Tech; C.P.A.

FRANK MILLETT TEMPLE, Catalog Librarian, 1951, 1953.
B.S., Boston; B.S. in L.S., North Texas State.

DAHLIA JEWEL TERRELL, Instructor in English, 1956.
B.A., M.Ed., Texas Tech.

VINCENT C. THACKER, Sergeant First Class, U. S. Army, Instructor in Military Science and Tactics, 1957.

JOHN WARREN THOMAS, Assistant Professor of Agricultural Economics, 1957.
B.S., M.S., Ph.D., Iowa State.

EARL L. THOMPSON, Professor of Mathematics, Emeritus, 1928, 1951.
B.A., Kansas State Teachers; M.A., Kansas; Ph. D., Chicago.

NOEL EDGAR THOMPSON, Part-time Instructor in Speech, 1951.
B.A., Texas Tech.

POLLY COOK TILTON, Instructor in Biology, 1947, 1955.
B.A., M.S., Texas Tech.

DONALD WARD TINKLE, Assistant Professor of Biology, 1957.
B.S., S.M.U.; M.S., Ph.D., Tulane.

JAMES ORWIN TINSLEY, Part-time Instructor in Marketing, 1958.[5]
B.B.A., Texas Tech.

WILLA VAUGHN TINSLEY, Professor of Home Economics, Head Department of Home Management, and Dean of Home Economics, 1953.
B.S., T.S.C.W.; M.S., Colorado A. & M.; Ph.D., Minnesota.

---

[1] Acting Head of Department, Fall Semester, 1957.
[2] On leave, Fall Semester, 1957.
[3] Deceased (Dec. 26, 1957).
[4] Fall Semester, 1957.
[5] Spring Semester, 1958.

RICHARD KRAUSE TRACY, Assistant Professor of Architecture and Allied Arts, 1949, 1955.
B.F.A., Alfred.

RUTH DONALD TRACY, Instructor in English, 1946.
B.A., Texas Tech; M.A., Oklahoma.

FERRELLINE TUCKER, Documents Librarian, 1942, 1949.
B.A., Texas Tech; B.S. in L.S., California.

SCOTTI MAE TUCKER, Associate Professor of Spanish, 1945, 1957.
B.A., M.A., Ph.D., Texas.

LENORE M. TUNNELL, Instructor in English, 1954.
B.A., M.A., Texas Tech.

KIRK B. TURNER, Associate Professor of Animal Husbandry, 1948, 1955.
B.S., Utah State; M.S., Oklahoma State.

RALPH SYLVESTER UNDERWOOD, Professor of Mathematics, 1927, 1931.
B.A., M.A., Minnesota; Ph.D., Chicago.

ELO JOE URBANOVSKY, Professor and Head Department of Horticulture and Park Management and College Landscape Architect, 1949, 1951.
B.S., Texas A. & M.

MARY JEANNE van APPLEDORN, Assistant Professor of Music, 1950, 1955.
B.Mus., M.Mus., Rochester.

DAVID MARTELL VIGNESS, Associate Professor of History, 1955, 1957.[1]
B.A., M.A., Ph.D., Texas.

WINIFRED WOODS VIGNESS, Part-time Assistant Professor of History, 1956.[1]
B.A., M.A., Texas Tech.

FRANKLIN ALTON WADE, Professor and Head Department of Geology, 1954.
B.S., M.A., Kenyon College; Ph.D., Johns Hopkins.

GEORGIA TERHUNE WALDRON, Part-time Instructor in Mathematics, 1954.
B.A., Illinois College.

HARRY STUART WALKER, Assistant Professor of Economics, 1953, 1956.[2]
B.A., M.B.A., Denver.

LEONARD CLIFTON WALKER, Part-time Instructor in Marketing, 1956.
B.A., Texas Tech.

ERNEST WALLACE, Professor of History, 1936, 1945.
B.S., East Texas State; M.A., Texas Tech; Ph.D., Texas.

MORRIS SHEPPARD WALLACE, Professor and Head Department of Education, 1955.
B.S., M.A., North Texas State; Ed.D., Teachers College, Columbia.

HSING-YONG WANG, Part-time Instructor in Mathematics, 1957.
B.S., National Taiwan University.

CLYDE OLEN WATERS, Part-time Instructor in Engineering Drawing, 1957.

WILLIAM EVANS WATKINS, Part-time Instructor in Geology, 1957.
B.A., Texas Tech.

DeWITT THOMPSON WEAVER, Director of Athletics and Head Football Coach, 1951.
B.S. in Ed., Tennessee.

[1] On leave, Fall Semester, 1957.
[2] On leave, 1957-58.

JOHN B. WEBB, Lieutenant Colonel, U. S. Army, Associate Professor of Military Science and Tactics, 1954.
B.E., Moorhead.

MARGARET WATSON WEEKS, Dean of Home Economics, Emeritus, 1925, 1953.
B.S., M.S., Columbia.

GRACE PLEASANT WELLBORN, Instructor in English, 1947.
B.A., M.A., Hardin-Simmons; B.S., Howard Payne.

WESLEY WILLIAM WENDLANDT, Associate Professor of Chemistry, 1954, 1957.
B.S., Wisconsin State (River Falls); M.S., Ph.D., Iowa.

DENVER FRED WENDORF, JR., Associate Professor of Anthropology and Acting Director of The Museum, 1956, 1957.
B.A., Arizona; M.A., Ph.D., Harvard.

CHARLES WILLIAM WENDT, Instructor in Agronomy, 1957.
B.S., Texas A. & M.; M.S., Texas Tech.

CHIEN WENJEN, Assistant Professor of Mathematics, 1956.
B.A., National Central University (China); Ph.D., U.C.L.A.

BARNEY EDWARD WHEELER, Part-time Instructor in Chemistry, 1957
B.S., Centenary College.

OLIVE BOONE WHEELER, Assistant Professor of Education, 1953, 1956.
A.B., Howard Payne; M.A., T.C.U.; Ed.D., Texas Tech.

PAUL LELAND WHELAN, Part-time Instructor in Mathematics, 1955.
B.S., Texas Tech.

GEORGE ARTHUR WHETSTONE, Professor of Civil Engineering, 1946, 1955.
B.S., M.S., Ph.D., Washington.

JAMES BERLYN WHITEHEAD, Assistant Dean of Student Life, 1951, 1953.
A.B., Indiana.

BILLY JOE WHITTED, Instructor in Journalism, 1956, 1957.
B.J., M.J., Texas.

THOMAS FERDINAND WIESEN, Professor and Head Department of Economics, 1940, 1942.
B.S., Texas A. & M.; M.B.A., Pennsylvania.

DEWEY O. WILEY, Professor of Music and Director of Bands, 1934, 1941.
B.Mus., Hardin-Simmons; D.Mus., Southwestern Conservatory of Fine Arts.

NEWTON B. WILKERSON, Lieutenant Colonel, U. S. Air Force, Professor of Air Science, 1956.
B.A., Texas Tech.

BILLY HUGHEL WILKINS, Instructor in Economics, 1957.
B.B.A., M.S., Texas A. & I.

IRA LAWSON WILLIAMS, Professor and Head Department of Agricultural Engineering, 1952, 1953.
B.S., Texas A. & M.; M.S., Iowa; Reg. Prof. Engr., (Texas).

STANLEY DAVID WILLIAMS, Part-time Instructor in Physics, 1956.
B.S., Texas Tech.

WENDELL WILFRED WILLIAMS, Assistant Professor of Education and Sociology, 1955, 1957.
A.B., College of Emporia; M.A., Kansas; M.S., George Williams College; Ph.D., Indiana.

BILLIE FRANCES WILLIAMSON, Associate Professor of Home Economics Education, 1956.
B.S., M.A., T.S.C.W.

CARL HAMMEL WILLINGHAM, Assistant Professor of Mathematics, 1955, 1957.
B.A., M.A., Texas Tech.

JUDDIE JOHNSON WILLINGHAM, Professor and Head Department of Dairy Industry, 1948, 1949.
B.S., Texas A. & M.; M.S., Ph.D., Iowa State.

LAURA LOUISE WILLWATER, Order Librarian, 1954, 1956.
B.S., B.A., T.S.C.W.

CHARLES EDWARD WILSON, SR., Part-time Instructor in Chemistry, 1957.
A.B., Missouri.

GUY WARNER WILSON, Part-time Instructor in Engineering Drawing, 1957.

RAYMOND WILLARD WILSON, Part-time Instructor in Biology, 1957.
B.S., Southwestern State (Oklahoma).

JARVIS WITT, Instructor in Economics and Acting Director of Business Research Bureau, 1953, 1957.[1]
B.A., M A., Texas Tech.

WILLIE MAY WOLFE, Assistant Professor of Home Management, 1955.
B.S., M.S., Texas.

JOHN WILLIAM WOOD, Instructor in Geology, 1954, 1955.
B.S., Mississippi State; M.S., Texas Tech.

OPAL LANIER WOOD, Instructor in Food and Nutrition, 1926, 1946.
B.S., T.S.C.W.

GEORGE H. WOODRUFF, Part-time Instructor in Mathematics, 1956.
B.S., Alabama Polytechnic; M.Ed., A.C.C.

HORACE EUGENE WOODWARD, JR., Associate Professor of Mathematics, 1937, 1956.
B.A., M.A., Texas Tech.

WARREN WATSON YOCUM, Professor of Horticulture and Park Management, 1937, 1943.
B.S., Northeast Missouri; M.A., Missouri; Ph.D., Nebraska.

ARTHUR WESLEY YOUNG, Professor and Head Department of Agronomy, 1935, 1938.
B.S., M.S., Ph.D., Iowa State.

VERA BERG YOUNG, Part-time Instructor in Mathematics, 1952.
B.S., M.S., Iowa State.

EDWARD WILLIAM ZUKAUCKAS, JR., Assistant Professor of Horticulture and Park Management and Greenhouse Manager, 1952, 1955.
B.S., M.S., Rutgers.

Biblical Literature

LOUIS R. COBBS, A. B., B. D., Th.M., Biblical Literature, under auspices of the Baptist General Convention of Texas.

ROBERT ALBERT FUDGE, B.A., B.D. Biblical Literature, under auspices of the Christian Churches. (Disciples of Christ).

HUBERT J. HALFMANN, Biblical Literature, under auspices of the Roman Catholic Church (Amarillo Diocese).

CECIL RAYMOND MATTHEWS, B.A., B.D., Biblical Literature, under auspices of Northwest Texas Conference of the Methodist Church.

GOEBEL GENE MUSIC, B.A., M.A., Biblical Literature, under auspices of Churches of Christ.

[1] On leave from teaching duties, 1957-58.

DAVID MILES HUME RICHMOND, A.B., B.D., Biblical Literature, under auspices of the Presbyterian Church.
GEORGE H. SALLAWAY, A.B., S.T.B. S.T.L., Biblical Literature, under auspices of the Roman Catholic Church (Amarillo Diocese).

Textile Research Laboratories

RAYMOND KENNETT FLEGE, Associate Director and Professor.
LYLE EDWARD HESSLER, Research Associate and Professor.
BILLY KEITH POWER, Research Principal.
CHARLES VERNIE LOFTON, Research Principal.

Student Health Service

EMBREE RECTOR ROSE, B.A., M.A., M.D., Professor and Director of Student Health Service, 1947.
FREDERICK PAUL KALLINA, B.S., M.D., College Physician, 1948.
IRIS JANE NORMAN, R. N., Superintendent.
ERLENE BLAKNEY, R.N., Clinic Supervisor.
OPAL M. BOND, R.N.
HATTIE M. CHILDRESS, R.N.
JEANETTE KARR, R.N.
DOROTHY A. KENNEDY, R.N.
ZELMA MIKOLAJCZYK, R.N.[1]
JOAN C. ROBERTS, R.N.
HAZEL A. STUART, R. N.[2]
BILLIE JOYCE WARD, R.N.
NELL HEFNER, Medical Technologist.

Museum Staff

W. C. HOLDEN, Director, 1949.[3]
DENVER FRED WENDORF, JR., Acting Director, 1956, 1957.
FRANCES MAYHUGH HOLDEN, Acting Assistant Director, 1953, 1957.
DOROTHY JANE RYLANDER, Secretary, 1953.
PATSY ANN GERSTNER, Curator of Collections, 1957.
MARJORE ALICE MAGNESS, Curator of Education, 1957.

Southwest Collection

SEYMOUR VAUGHAN CONNOR, Director of Southwest Collection, Professor of History, 1955, 1956.
B.A., M.A., Ph.D., Texas.
ROY SYLVAN DUNN, Associate Archivist of Southwest Collection, 1956.
B.A., M.A., Texas.

[1] Resigned effective Oct. 20, 1957.
[2] Appointed Oct. 21, 1957.
[3] On leave, 1957-58.

Other Staff Members

NOLAN ELLMORE BARRICK, Supervising Architect, 1953.
B.A., B.S. in Arch., M.A., Rice; Reg. Arch., (Texas).

JOSEPH ADRIEN BLANCHARD, JR. Assistant Director, Student Union, 1956, 1957.
B.S., Southeastern Louisiana College; M.Ed., Texas Tech.

FLOSSIE BURKHOLDER BROWN, Cashier, 1933, 1937.
B.A., Texas Tech.

WARREN CANTRELL, Golf Coach, 1954.
B.S., Illinois Institute of Technology.

WILLIAM CONNER COLE, Bookstore Manager, 1927.
B.B.A., Texas.

GEORGINA CONNER, Administrative Assistant, Office of the Dean of Engineering, 1932.
B.A., New Mexico.

BENGE ROBERT DANIEL, Manager of the Texas Tech Press, 1951.
B.S., M.S., North Texas State.

CHARLOTTE L. DOUGHTIE, Secretary to the Dean of Agriculture, 1951.

OLAN R. DOWNING, Superintendent of the Heating Plant and Utilities, 1936, 1954.

KATHRYN S. DURHAM, Administrative Assistant, School of Arts and Sciences, 1942, 1957.
B.A., Texas Tech.

ELLIS R. FORMAN, Assistant Manager of College Bookstore, 1934, 1939.
B.A., Texas Tech.

ANNA BURT GIBSON, Administrative Assistant, Office of the President, 1933, 1942.

EUGENE F. GIBSON, Freshman Basketball Coach, 1954.
B.S., Texas Tech.

BOB FRANK GOODSON, Electrical Engineer, 1956.[1]
B.S. in E.E., Texas Tech; Reg. Prof. Engr., (Texas and New Mexico).

WILLIAM MARCUS GOSDIN, Superintendent of Grounds, 1949.
B.S., M.S., Texas Tech.

THOMAS OCIE HAMM, JR., Freshman Football Coach, 1956, 1957.
B.S., Tulsa.

LARKE ANN HARRINGTON, Program Director, Student Union, 1957.
Ph.B., North Dakota.

WILLIAM WALKER HOLMES, JR., Sports News Director, 1951.
B.A., Texas A. & I.; M.A., Colorado.

RUSSELL BRIGGS IRVIN, Consultant, 1951, 1953.
A.B., Simmons; M.A., LL.B., Texas.

JEAN AYRES JENKINS, Placement Service Director, 1935, 1947.
B.A., Texas Tech.

NAOMI RUTH KEITH, Secretary to the Dean of Business Administration, 1953.
B.B.A., M.Ed., Texas Tech.

CHARLES F. LIBBY, Supervising Custodian, 1949.

NELSON HENRY LONGLEY, Director, Student Union, 1955, 1956.
B.A., Southeastern Louisiana College.

ROBERT LOUIS MASON, College Engineer, 1942, 1957.
B.S.in M.E., Texas Tech; M.S. in M.E., Kansas State; Reg. Prof. Engr., (Texas).

MILTON LESTER PEEPLES, Creamery Superintendent, 1951, 1954.
B.S., M.S., Texas Tech.

---

[1] Resigned Oct. 4, 1957.

MARION GAY PRICE, Secretary to the Dean of Home Economics, 1956.

MARY ELIZABETH RANDAL, Secretary to the Academic Vice President, 1928, 1950.

WILLIAM HOPKINS RODGERS, Superintendent of Farms, 1943.

CLEO PETE SELLERS, IBM Supervisor, 1949.

JOHN PHILLIP SMITH, Manager and Animal Husbandman, PanTech Farms, 1947, 1957.
B.S., Texas Tech.

IRENE F. TEMPLE, Secretary to the Dean of the Graduate School, 1953.

C. P. WEST, Director of Building Maintenance, 1957.[1]
B.S., Clemson.

JAMES RUSSELL WILSON, Business Manager of Athletics, 1949.

Dormitory Staff

Food Service

SHIRLEY FRANCES SCHULZ, Director of Food Service, 1948, 1951.
B.S., Southwest Texas.

MARGARET RAGSDALE BIRKMAN, Assistant Director of Food Service, 1948, 1956.
B.S., Texas Tech.

BESS A. BANKS, Assistant to Director of Food Service, 1950, 1951.

IDA GAYE BATES, Dietition, West Hall, 1956.
B.S., Texas Tech.

SHIRLEY EURE BROOKS, Assistant Dietitian, Weeks Hall, 1957.

ALENE SELF CRAWFORD, Assistant Dietitian, Horn, Knapp, Drane, Doak and Weeks Halls, 1957.
B.S., Texas Tech.

MARY ELIZABETH ELLIOTT, Dietitian, Bledsoe and Gordon Halls, 1950, 1956.
B.S.. M.S., Texas Tech.

GWENDOLYN GOWENS GENTRY, Assistant Dietitian, Bledsoe, Gordon, West, and Sneed Halls, 1957.
B.S., Texas Tech.

RUBY MAE HALE, Food Production Manager, Horn and Knapp Halls 1957.

FRANCES H. HORNE, Food Service Manager, Sneed Hall, 1956, 1957.

JEAN S. PRIDEAUX, Dietitian, Sneed Hall, 1957.
B.S., Texas Tech.

EDITH W. SHELTON, Dietitian, Drane Hall, 1956, 1957.
B.S., E.T S.C.

RUTH SMALLEY SMITH, Dietitian, Doak and Weeks Halls, 1954, 1957.
B.S., Texas Tech.

E. LOIS WILLMUTH TUCKER SWINDLE, Assistant Dietitian, Bledsoe and Gordon Halls, 1957.
B.S., Texas Tech.

[1] Appointed Sept. 30, 1957.

Room Reservations

HUBERT LEE BURGESS, Supervisor of Dormitory Reservations, 1934, 1947.

JOHN EARL BEDINGFIELD, Cashier, 1957.
B.S., Howard Payne.

Supervisory Staff

DOROTHY TAFT GARNER, Assistant Dean of Women in Charge of Dormitory Supervision, Horn Hall, 1956.
B.A., M.A., M.Ed., Oklahoma.

WILLIAM HOSICK HASSLER, Head Supervisor of Men's Dormitories and Assistant Dean of Men, 1957.
B.S., Grove City College; M.S., Pennsylvania State.

ALVIN ENOCH HOLCOMBE, Supervisor of West Hall, 1957.
B.S., M.S., Arkansas.

IRENE JEAN KOHNER, Counselor, Horn Hall, 1957.
B.A., M.A., Wayne State.

ALICE MAY, Counselor, Weeks Hall, 1954, 1957.

MADALINE UNGER MOORE, Relief Resident Hostess, 1956, 1957.[1]

ERNEST EUGENE MORRISON, Supervisor of Gordon Hall, 1957.
B.B.A., Texas Tech.

LYNN A. PHILLIPS, Supervisor of Doak Hall, 1954.
B.S., Hamilton; M.A., Northwestern.

CAROL LOUISE SITTLER, Counselor, Drane Hall, 1957.
B.S., Purdue; M.A., Ohio State.

EVELYN LOVE STOVALL, Counselor, Knapp Hall, 1957.
B.S., M.A., George Peabody.

JOHN HARLAND WORLEY, Supervisor of Sneed Hall, 1957.
B.A., Wabash College; M.A., Northwestern.

Testing and Counseling Center

JAMES EDWARD KUNTZ, Acting Director of the Testing and Counseling Center and Associate Professor of Psychology, 1951, 1957.
B.S., M.S., Fort Hays K.S.C.; Ph.D., Purdue.

Ex-Students Association

LEONARD CLIFTON WALKER, Executive Secretary, Ex-Students Association, 1952.
B.A., Texas Tech.

[1] Effective Nov. 15, 1957.

INSTRUCTIONAL SCHOOLS AND DEPARTMENTS

Agriculture

Agricultural Economics
Agricultural Education
Agricultural Engineering
Agronomy (Crops, Range Management, Soils)
Animal Husbandry (Animal Industry, Dairy Husbandry, Poultry Husbandry, Pre-Veterinary Medicine)
Dairy Industry
Horticulture and Park Management

Arts and Sciences

Biology (Bacteriology, Botany, Zoology)
Chemistry (Pre-Medicine, Pre-Dentistry)
Education and Philosophy
English
Foreign Languages (French, German, Latin, Spanish)
Geology
Government (Pre-Law)
Health and Physical Education and Recreation for Men
Health and Physical Education and Recreation for Women
History, Anthropology and Sociology
Journalism
Mathematics (Astronomy)
Music
Physics
Psychology
Speech
Biblical Literature

Business Administration

Accounting and Finance
Business Education and Secretarial Administration
Economics
Management
Marketing

Engineering

Architecture and Allied Arts
Chemical Engineering
Civil Engineering
Electrical Engineering
Engineering Physics
Industrial Engineering and Engineering Drawing
Mechanical Engineering
Petroleum Engineering
Textile Engineering

Home Economics

Applied Arts
Child Development, Family Relations, and Home Management
Clothing and Textiles
Food and Nutrition
Home Economics Education

Graduate School

Degrees Offered:
- Master of Arts
- Master of Arts in Teaching
- Master of Business Administration
- Master of Education
- Master of Science
- Master of Science in Agriculture
- Master of Science in Chemical Engineering
- Master of Science in Electrical Engineering
- Master of Science in Home Economics
- Doctor of Education
- Doctor of Philosophy

Reserve Officers Training Corps

Air Force
Army

Extension

Correspondence Courses
Extension Classes

THE COLLEGE

Location

Texas Technological College is a state-supported coeducational college. It is located at Lubbock in the South Plains area, approximately 200 miles from the northern line of the Panhandle of Texas and 400 miles northwest of the state capital at Austin. The elevation is 3,200 feet above sea level.

The city and suburbs have a permanent population of approximately 145,000. Excellent churches, schools, hotels, and shopping centers are available. Two railway systems, an interstate bus line, an excellent highway system, and two airlines operate through the city.

History

Texas Technological College was created by an act of the Thirty-Eighth Legislature of the State of Texas, passed in 1923. The act authorized establishment of a coeducational college "of the first class" west of the ninety-eighth meridian and north of the twenty-ninth parallel.

Nearly 1,000 students registered when the College opened its doors on Sept. 30, 1925, a first-semester enrollment record that endured for more than 25 years. The College's growth during its first three decades has been extraordinary.

From an original student body of 1,043, enrollment has spiralled upward to a present total of 9,004 students.

In 1926, after one year's operation, the total value of the plant was $1,424,000. Today, Texas Technological College has one of the largest campuses in America, containing 52 permanent buildings, of a modified Spanish Renaissance architecture style, and 2,008 acres of land—valued at $24,596,729. In addition, it has 5,910 acres in PanTech farms—valued at $1,500,000.

Academic development has kept pace with enrollment and physical growth. Beginning with four academic divisions—Agriculture, Arts and Sciences, Engineering and Home Economics—the College has since added The Graduate School (1935) and a Division of Business Administration (1942). All academic divisions are now called schools.

The College currently has 40 academic departments, and offers work leading to the master's degree in 30 areas, the doctor's degree in five.

The first president was Paul Whitfield Horn (1925-32). He was followed by Bradford Knapp (1932-38), Clifford Barlett Jones (1938-44), President Emeritus (1944-), William Marvin Whyburn (1944-48), Dossie Marion Wiggins (1948-52), and Edward Newlon Jones (1952-).

Government

The government of the College is vested in a board of nine directors appointed by the Governor and approved by the Senate for terms of six years. The immediate regulations and direction of academic affairs are delegated by the Board of Directors to the President, administrative officers, and faculty.

STUDENT SERVICES

Testing and Counseling Center

The Testing and Counseling Center located on the campus is designed primarily to aid the student who needs help in deciding on the choice of a major, an occupational objective, or procedures in meeting problems of a personal nature.

All cases are handled on an individual basis in the strictest confidence. Typical procedure includes one or more interviews, in order to acquaint the client with the services he may use, and to obtain data for analyzing his background in general. Standard tests may then be administered at the client's convenience for a total period of six to eight hours, although longer or shorter periods may be employed in some cases. Following this, an appointment is made for the client to be counseled in terms of general background and test results. The final conference or conferences may require one to four hours.

The tests used are selected to fit the needs of the individual client, but usually cover the areas of general intelligence, achievement in school subjects, interests, personality and special aptitudes. The purpose of each test is explained to the client.

Persons desiring the services of the Testing and Counseling Center should call PO5-8541, Ext. 331, for an appointment. Appointments may be made for any day, Monday through Friday, 8 A.M. to 5 P.M. and Saturday forenoons.

All service is on a fee basis, payable to the College. Students of Texas Technological College are charged $7.50. Extended follow-up counseling usually requires some additional fee.

An IBM test-scoring service for the various departments of the College and for school systems in the area is also maintained. Further information regarding this feature may be had upon request.

Laboratory facilities are also furnished students in courses in counseling and guidance, especially those enrolled in tests and measurements. Facilities for a limited number of Internships in Counseling and Guidance for doctoral candidates (Psychology 5331-32) are available.

The counseling staff meets accepted professional standards. All are members of the American Psychological Association, the Texas Psychological Association, and some hold professional membership in the National Vocational Guidance Association.

Dormitory Supervisory Service

In the 13 dormitories on Texas Tech campus, housing approximately 4,500 students, a carefully selected staff of trained personnel direct a program designed to provide living conditions consistent with the best kind of college experience. This program, under the direction of the Assistant Dean of Men and the Assistant Dean of Women, points in a well-balanced program toward the best learning processes in group living. For a more complete statement on this service, see section entitled "Dormitory Supervisory System".

Student Health Service

The College Infirmary, an 18-bed unit, provides accommodations for those regularly enrolled students ill enough to require constant supervision, and not in such physical condition as to require surgery or the services of specialists. Students judged to be in need of infirmary care by the College Physician may be admitted to the Infirmary, where they are under the constant supervision of the physician and a registered nurse. Neither the Out-Patient Clinic nor the Infirmary is financially able to give students unlimited medical service. The cost of special expensive medications, examinations, treatments, special X-ray examinations, and special laboratory tests must be paid by the student. Except for the above special services, no charge is made for infirmary care up to a maximum of seven days in each semester; a minimum fee to cover the cost of food, drugs, supplies, and any special services is charged the student for each additional day in the Infirmary.

In case the Infirmary is filled to capacity, the College is not under obligation to provide students with hospital service elsewhere.

Students who become acutely ill or are injured when the Out-Patient Clinic is closed may receive emergency treatment by reporting to the nurse on duty in the Infirmary, which is open day and night. The Infirmary nurse cannot give routine clinical treatments and students are urged to come to the out-patient service during the regular clinic hours, except in cases of emergency.

The Health Service is staffed and equipped for treating the acute illnesses and minor injuries which commonly occur while the student is in residence at the College. It is not organized, however, to provide for the care of students requiring the services of specialists or treatment in a general hospital. Every effort will be made to notify the parents, guardian or nearest relative when a patient is believed to be threatened with a serious illness or is believed to be in need of an emergency surgical operation. The Health Service will provide such cases with emergency treatment and assist as far as it can by arranging for the patient to be transferred to the general hospital of the patient's choice.

The College cannot assume the responsibility for the continued medical care of students suffering from chronic diseases, such as epilepsy, heart disease, severe asthma, rheumatic fever, diabetes, nephritis, peptic ulcer, etc. It advises that such students make arrangements to be under supervision of a private physician as soon as they arrive in Lubbock. The College Physician will be glad to recommend competent doctors and specialists to those students who are in need of special care and who are unacquainted with the physicians in Lubbock.

Health Service physicians and nurses are not at liberty to make outside calls or to treat students in their rooms or homes where the facilities for proper treatment are usually inadequate. Students when ill should report immediately to the Health Service, where they will be under the supervision of those especially trained for the care of illness.

It is the aim of the Health Service to screen out all students who have communicable diseases and to control such diseases on the campus. Students may be required to have a chest X-ray and skin tests before registration. The College requires that all students with communicable diseases be isolated until the danger of transmission has passed. Students are expected to obey the laws of the sanitary code

of the city and state, and the College Physician may recommend the dismissal of any student who refuses medical advice or who willfully exposes his associates to a contagious disease.

The College is not responsible for the care of students during vacation periods and the Health Service will be closed during the time the College dormitories are closed. Special arrangements may be made for the continued care of students who were sick before the vacation period began.

West Texas Cooperative Audio-Visual Services

Since 1938 the Extension Division has rendered film distribution service to schools of the West Texas area. During the summer of 1952 the administration of Texas Technological College and the school administrators of the area agreed upon pooling their resources to provide increased educational film distribution services. Increased film distribution, housing and preview facilities, and audio-visual consultant service have been provided to enrich education in West Texas through cooperative effort.

The WTCAVS provides on-campus service for the schools and departments of Texas Technological College. Room 11 of the Library Building has been set aside for on-campus viewing of films. These services may be scheduled by calling phone number PO3-5014 or contacting the audiovisual personnel in the Library Building, Room 5.

Film distribution from the College campus is currently reaching 60,000 students in the public schools. Schools of West Texas desiring to participate in the Cooperative Audio-Visual program may obtain further information by writing the Director of the WTCAVS, P. O. Box 4380, Texas Technological College, Lubbock, Texas.

The Placement Service

The Placement Service is a central agency which brings together employers, students, and faculty. Its facilities are at the disposal of all students of the College, regardless of major field of study or professional interest. It offers placement service to alumni and ex-students.

For those students who find it necessary to earn a portion of their expenses while attending college, The Placement Service is able to assist in finding part-time positions with Lubbock business firms and on the campus.

Employers, representing schools or business and industry, should file requests with the Placement Office for needed personnel. All details and coverage offered may be received from the Director, The Placement Service, Room 150, Administration Building.

The College Bookstore

The College Bookstore, situated on the campus, is a self-supporting enterprise owned and operated by the College. It is maintained to enable students to purchase textbooks, books for extension courses, supplies, and other equipment needed for laboratory and class work. The bookstore handles second-hand books, purchasing them at the end of the year from students who desire to dispose of such books.

College Bulletins

The General Catalog is the principal bulletin publication of the College and one with which all prospective students should be familiar. Beginning in the fall of 1958, the General Catalog will be supplanted by a General Information Bulletin, with separate bulletins on the Schools of Agriculture, Arts and Sciences, Business Administration, Engineering and Home Economics.

Reissued this year is the student handbook, *T-ing Off at Texas Tech.* This and the Code of Student Affairs give exact information on matters related to student life, customs and traditions, particulars of student housing, dormitory regulations, student services, student recognition, student self-government, eligibility requirements, regulations on hazing, the student constitution and general aspects of student life.

CULTURAL AND SCIENTIFIC RESOURCES

West Texas Museum Association

The Plains Museum Society, which was originated in 1929, was changed to the West Texas Museum Association in 1936. The object of this association is to foster, increase, and diffuse among the people of this section and of the state a knowledge and appreciation of history, science, and art. Membership is open to any person actively interested in the work of the association.

The Museum building, representing an investment of approximately $500,000, houses collections of more than that amount. The latest addition has been the Peter Hurd historical fresco mural on the walls of the Rotunda. The total value of The Museum's assets is now over $1,000,000.

A good beginning has been made in collecting objects of scientific, historic, and artistic value. The facilities of The Museum are open for the use of students, faculty, school children of the area, women's clubs, civic organizations, and all other persons and groups interested in the cultural history of the region.

A Spitz Planetarium has been installed in a temporary "Theatre of the Skies" behind The Museum. Special demonstrations on weekdays are given by appointment with The Museum secretary.

The Southwest Collection

The Southwest Collection, which is housed in The Museum and is sponsored by the West Texas Museum Association, was established as a separate department of the College in 1955 for the acquisition and preservation of books and archival material of significance to the history of the American Southwest. The long-range purpose of the collection is the development of a great research center in history, making Texas Technological College the foremost institution in the nation in southwestern materials.

The Southwest Collection now includes an excellent library of books dealing with the history of this area, a fine group of manuscript ranch records of such important ranches as the Matador and Spur,

some early colonization papers, area newspapers, microfilms, collections of private papers of individuals and business firms, and other archival materials. The project is supported by the College and augmented by private donations of money and materials.

The material in the Southwest Collection is primarily for research purposes and is open to students, faculty, visiting scholars, and other interested persons; but as one of the chief purposes is preservation of the material, use must be made of it in the room.

The Library

The Library of Texas Technological College, consisting of 160,513 catalogued volumes, 41,597 periodicals, and 136,509 documents, is housed in a separate building near the center of the campus. Among the facilities for student services are the reserve reading room, a general reading room, and areas devoted to the use of periodicals and documents. Individual study space is available for graduate students engaged in research. The Library also provides readers for microfilm and microcard publications.

The Library Staff is made up of 13 professionally trained librarians and 21 sub-professionals, providing service all hours the Library is open.

The Library offers its services to the students and faculty of the College, to the citizens of the State of Texas, and to other friends of the College.

Hours of Service: 8 A.M. to 10 P.M., Monday through Friday; 8 A.M. to 5 P.M. Saturday; 2 to 5 P.M. Sunday, except during vacation periods. Closed holidays. Summer term: 7:30 A.M. to 9.30 P.M. Monday through Friday; 7:30 A.M. to 4:30 P.M. Saturday. Closed Sundays and holidays.

Art Institute

The Texas Technological College Art Institute was originated during 1932 and is an organization composed of students, faculty members, and people of the community who are interested in sponsoring an active art program. The Art Institute sponsors traveling exhibitions of works of art and lectures on art. It sponsors local adult and children's art exhibitions. It has acquired a permanent collection of original oils, watercolors, and prints valued at $25,000.

The Seismological Observatory

The Seismological Observatory of Texas Technological College was installed in June, 1948. Being the only observatory of its type within a considerable area of several contiguous states, it is in a particularly strategic position, especially for the detection of earth disturbances in Central and South America. Five seismometers, together with their associated equipment, constitute the Observatory, which is housed in an especially designed building.

Seismology, in addition to the detection and location of earthquakes, is useful in other ways. It is the one and only method of investigating the interior of the earth. Seismology is also useful in geophysical prospecting, in the design of buildings, in tracking hurricanes and typhoons, in measuring the thickness of polar ice caps and in

the generation, transmission, refraction, reflection, diffraction, polarization, and adsorption of elastic waves. In these and in perhaps other fields, the Observatory may prove to be a center of experimental work.

Textile Research Laboratories

A program of research has been initiated which is expected to be far-reaching in its influence on the development of the textile industry in Texas.

The scope of the work contemplated will embrace fundamental and applied research in the broad field of textile fiber properties and their utilization in yarn and fabric manufacture.

Services of the laboratories are available for conducting both privately and publicly sponsored research.

Funds have been made available by the Cotton Research Committee of Texas for a number of years, for conducting research designed to provide data and information which will result in the use of Texas cotton in a more effective manner, and on a broader scale in textile manufacturing operations.

Facilities of the Textile Engineering Department are made use of by the Textile Research Laboratories, located in the Textile Engineering Building.

ADMISSION

Responsibilities Assumed by Student Upon Admission. The student by virtue of his admission to Texas Technological College assumes a responsibility to do satisfactory work in his courses, to observe not only college regulations but also the proprieties of society. Serious violations of citizenship rarely occur. When they do the student is subject to disciplinary action.

Selective Admissions. The College reserves the right to establish a system of selective admission should the forecast of enrollment increase sufficiently to indicate the inability of the College to maintain high standards of teaching with the financial and space resources available.

Application and Credentials. The Registrar is the Director of Admissions and has charge of all matters pertaining to admission into any school of the College.

In order to become a student in the College, an applicant must take following steps:

1. Obtain an application for admission. The Director of Admissions will be glad to provide application blanks in response to requests received by mail, by telephone, or in person.

2. Provide the Admissions Office with an official transcript of his record in high school and his record at *each* college which he has attended since leaving high school. The applicant must assume responsibility of having these records forwarded to the Director of Admissions, Texas Technological College, Lubbock, Texas. Transcripts and application blanks should be sent in immediately following the close of the last semester in high school or another college. No advantage will be

gained by sending partial or incomplete records unless there is some question regarding admission.

New students applying for admission for the fall semester are urged to submit their application and transcripts to the Admissions Office by Sept. 1. While an early application cannot assure preferential treatment, it is a fact that late applicants are more likely to have difficulty in enrolling in certain areas for which the demand is very heavy.

3. File the Health Data Blank if an entering freshman. The blank will be sent to the student after the formal application is received. The Health Data Blank must be filled in by the family physician and must include a statement of successful smallpox vaccination within five years prior to registration, as prescribed by the College Physician.

4. Decide which school or curriculum in the College he desires to enter. If advice or counseling is necessary, the student may come to the campus in advance of registration day and consult with the dean of his school or with the Director of Admissions who will direct the student to the proper office for counseling.

When an applicant's case is complete, that is, after his completed application blank and all necessary supporting transcripts and records have been received, the case will be evaluated. On approval of the application, the applicant will be sent an admission sheet with instructions for registration. If the application is not approved, a letter will be sent to the applicant concerning this action, explaining his deficiencies and containing suggestions as to the manner in which he may remove deficiencies and qualify for admission.

5. Report to the College campus as indicated in the official College Calendar and in notices sent to the student in reply to his application. All entering freshmen must report at the beginning of the freshman orientation period.

6. Register, pay tuition and fees, and start classes, No student is regarded as registered until fees are paid on the days indicated for registration. Proper notice concerning orientation and registration will be sent to each applicant.

Freshman Pre-registration Guidance Testing and Orientation. All entering freshmen are required to assemble at the College a few days in advance of registration for a period of testing, guidance and orientation (see College Calendar). This program is followed with a view to assisting the student in the selection of a program of study and to aid the faculty and administration in the guidance of the individual student. Tests will be given to all entering freshmen during this period, but the results of the tests are not to be used as a basis for admission, except in the case of adult students who are seeking admission on the basis of maturity and experience. The freshman who does not report for the pre-registration testing and orientation will be delayed in his ultimate enrollment in college.

Uniform Requirements for Admission

Admission by High School Certificate

Graduation from an accredited high school with a minimum of 15

units is required for admission. The following units are the uniform minimum requirements.

English	3
Mathematics	2*
Social Science	2
Laboratory Science	1
Electives	7
Total	15

Recommendations for Particular Curricula

The student with the above minimum pattern of high school units will be admitted but with conditions where indicated. All course work and curricula are based upon the assumption that the student has a background and proficiency acquired in high school which will permit him to pursue the courses required in his curriculum. Any student who is shown to be deficient in English or mathematics either in his high school program or the Pre-Registration Testing Program will be assigned to a schedule designed to remove these deficiencies during the first two semesters or full-time equivalent.

Engineering. The study of engineering requires a through background of preparation in English, mathematics, physics, and chemistry. It is highly desirable, therefore, for the prospective engineering student to present a high school record which includes 4 units of English. 2 units in algebra, 1 unit in plane geometry, and 2 units in science, one of which must be physics. The student deficient in one of the units in algebra, plane geometry, or physics will be classified as a pre-engineer with conditions. A deficiency in plane geometry may be removed by the successful completion of Mathematics 032. A deficiency in algebra may be removed by successful completion of Mathematics 052 or Mathematics 031, depending upon the freshman test score. The student deficient in physics shall enroll for Physics 031. Students must begin the removal of deficiencies during the first long session.

Admission to the School of Engineering will be based on an acceptable high school transcript. However, completion of enrollment and assignment to class in English, mathematics, and physics will not be made until the results of the freshman testing program are available. Students showing deficiencies in English, mathematics, and physics as indicated by the freshman tests must register as pre-engineers in the School of Engineering until such deficiencies shall have been removed.

Physics is not required for admission for majors in commercial art or the design option in architecture.

Applicants for admission to the School of Engineering who have entrance deficiencies are strongly urged to use the summer session immediately preceding the freshman year as the time for removing deficiencies. Otherwise, the ultimate date of graduation may be delayed.

Sciences. The student planning to major in mathematics, chemistry, physics, or geology should present a high school program which includes two units in algebra and one in plane geometry. If these subjects are required for a curriculum, deficiencies may be removed as indicated above for majors in engineering.

Agriculture, Business Administration and Home Economics. Applicants for admission to the Schools of Agriculture, Business Admin-

* General mathematics may not be accepted as one of the required units for the School of Engineering or for admission to certain scientific curricula in Arts and Sciences. (See Special Requirements for Engineering).

istration, and Home Economics will be admitted on a certificate of high school graduation with a pattern of units as outlined above under Uniform Requirements for Admission.

Admission from Other Colleges and Universities

Undergraduate students who have attended another college, and who are not under disciplinary or scholastic suspension, may be admitted on presentation of an official transcript which will meet the following admission requirements *in each of the last two semesters of attendance* or on the total attendance if less than two semesters. Grade points are computed as follows: for each hour of A—3; B—2; C—1; D, E, and F—none.

A. New Students:

A student taking 12 or more semester hours, if a first-year student, must have passed at least 9 semester hours with 3 or more grade points; if a second-year student, at least 9 semester hours with 6 or more grade points. A third-year student or above, taking 12 or more semester hours, must have passed in a minimum of 12 semester hours with 9 grade points or must have passed in 9 semester hours with 12 or more grade points. Any student taking less than 12 semester hours must have passed in approximately three-fourths of the courses taken and made 3 or more grade points if a first-year student, or as many grade points as hours undertaken if a second-, third-, or fourth-year student.

B. Former Students:

A former student who has attended another college after leaving this College must meet the appropriate quality requirements as indicated above. The restrictions will not be applied to work done in a summer session only at another college.

Since the College offers a number of degrees which require the fulfillment of widely differing curricula, the acceptance of credits from another college by the Registrar does not guarantee the use of all these credits in a given curriculum. After admission and acceptance of transferred credit by the Registrar, the student should consult the dean of the school in which he plans to enroll. The usefulness of transferred credit is determined by whether or not the work is equivalent to work in the curriculum or as permissible electives. At the option of the academic dean, transferred courses with a grade of D or equivalent may not be accepted as meeting degree requirements.

Credit in physical education activity courses, or substitutes therefor, is accepted in transfer to the extent that it meets degree requirements, but grade points accumulated in such courses above a C average may not be applied to reduce a deficiency of grade points in other subjects.

Admission of Mature Students on Condition. The mature student (21 years of age or over) who has not attended another college may be admitted as a freshman on condition without having met the formal admission requirements. A request for such admission must be accompanied by a complete transcript of the high school record. The applicant should first apply for an interview at the Registrar's Office

before the opening of the semester and he then may be directed to the Testing and Counseling Center to take the tests required of all freshmen at the beginning of the semester. At a designated time he will have a conference with the Faculty Committee on Admissions; and in the light of his test scores and an analysis of his past training and experience, the Faculty Committee on Admissions may recommend his admission. Admission in this manner is allowed only in the case of an applicant who shows that he is above average in his ability and has not recently attended high school.

Admission of a mature student on condition does not confer special privileges, but, on the contrary, puts the applicant under special obligation. Neglect of work or other evidence of lack of serious purpose on the part of the student thus admitted is sufficient cause for withdrawal of approval of his continuing as a student. The student admitted as a mature student on condition will be assigned to his chosen curriculum. A grade-point average of at least a C (1.00) on the first 30 semester hours will absolve all admission requirements for that curriculum.

Specific conditions in mathematics and physics for students in the School of Engineering must be removed as indicated previously.

Credit for Educational Achievements During Military Service. A limited amount of credit may be obtained on military programs. For information concerning credit on specific training programs, the student should communicate with the Registrar.

Any student who has been honorably dismissed from any branch of the Armed Forces with a minimum of 90 days of service will receive credit for 2 semester hours of physical education normally required as a part of his curriculum. With not less than one year of active service he will receive credit for 4 semester hours in physical education normally required. A former commissioned officer may receive credit for 12 semester hours in advanced military science. These may be used as elective credits insofar as such electives are appropriate to a given curriculum.

Admission of Graduate Students. General Admission to the Graduate School—Applicants with a bachelor's degree from a recognized college or university may be admitted as unclassified graduate students on the basis of a complete transcript of their previous work. The formal application and the transcripts must be in the hands of the Director of Admissions well in advance of registration. Mere permission to enroll for courses either in residence or by extension, does not carry with it official admission to the Graduate School, even as an unclassified student.

Admission as Applicants for Graduate Degrees—Everyone (including graduates of Texas Technological College) who seeks admission to the Graduate School with the intention of working toward a master's or doctor's degree will be required to take the Aptitude Test of the Graduate Record Examinations either prior to registration or at the first suitable examination date thereafter.

Students enrolling in the Graduate School without a degree objective are not required to take the Aptitude Test, but if they later decide to work toward a degree, they will become subject to the usual requirements with respect to it, and only limited credit will be allowed for graduate work completed prior to the taking of the test.

Further details concerning the Graduate Record Examinations may be obtained from the Dean of the Graduate School.

EXPENSES

The question of expense while attending college is of importance to every student. In a large student body, there are so many different tastes, as well as such a wide range of financial resources, that each student must determine his own budget in keeping with his own needs and financial condition. It is possible to live simply and to participate moderately in the life of the college community on a modest budget. The best help the college authorities can offer the student in planning his budget is to furnish information on certain definite items of expense and acquaint him with others for which he, in all probability, will have to make provisions.

**Payment of Fees.* All fees are payable in full at the time of registration, and a student is not registered until all his fees are paid in full. Payment may be made by cash, check, or money order payable to Texas Technological College. All checks, money orders, and drafts are accepted subject to final payment.

Registration Fee for Resident Students. For each resident student enrolled for 12 or more semester credit hours the registration fee is $50 per semester. For those enrolled for less than 12 semester hours there is a reduction in the amount of the fee charged, as follows:

For 11 semester hours—$47.00	6 semester hours—$27.00
10 semester hours— 43.00	5 semester hours— 23.00
9 semester hours— 39.00	4 semester hours— 19.00
8 semester hours— 35.00	3 semester hours
7 semester hours— 31.00	or less— 15.00

Registration Fee for Non-resident Students. Under the authority of House Bill 265 enacted into law by the 55th Legislature, each non-resident student† is required to pay a non-resident registration fee of $200 per semester of the long session. For the non-resident student enrolled

*Texas Technological College reserves the right to change fees in keeping with acts of the Texas State Legislature or the Board of Directors.

†The Board of Directors has adopted the following non-resident regulations:

1. A non-resident student is hereby defined to be a student of less than twenty-one (21) years of age, living away from his family and whose family resides in another state, or whose family has not resided in Texas for the twelve (12) months immediately preceding the date of registration; or a student of twenty-one (21) years of age or over who resides out of the State or who has not been a resident of the State twelve (12) months subsequent to his twenty-first birthday or for the twelve (12) months immediately preceding the date of registration.

2. The term "residence" means "legal residence" or "domicile"; and the term "resided in" means "domiciled in."

3. The legal residence of one who is under twenty-one (21) years of age is that of the father. Upon death of the father, the legal residence of the minor is that of the mother. Upon divorce of the parents, the residence of the minor is determined by the legal residence of the person to whom custody is granted by the court until the minor shall have reached the age of 14. After the minor has attained the age of 14, the residence of the minor shall be determined by the residence of the parent with whom the minor has made his home for the 12 months immediately preceding his registration. If the custody of the minor has been granted to some other than a parent, the residence of the person shall continue to control for so long as the minor actually makes his home with such person. In the absence of any grant of custody, the residence of the parent with whom the minor has made his home for the 12 months immediately preceding his registration shall govern. If the minor has not made his home with either parent, the residence of the father shall control.

4. A student under twenty-one (21) years of age shall not be classified as a resident student until his parents shall have maintained legal residence in this State for at least twelve (12) months. A student under twenty-one (21) years of age whose parent leaves the State and establishes residence in another state shall be classified

in the long session for less than 12 semester hours, there is a reduction in the amount of the fee charged, as follows:

For 11 semester hours—	$184.00	6 semester hours—	$100.00
10 semester hours—	167.00	5 semester hours—	84.00
9 semester hours—	150.00	4 semester hours—	67.00
8 semester hours—	134.00	3 semester hours	
7 semester hours—	117.00	or less—	50.00

The responsibility of registering under the proper residence is placed upon the student, and it is his duty, at or before registration, if there is any possible question of his residence in Texas under the State law and College rules, to raise the question with the Registrar and have such question settled prior to registration. There can be no change of residence except upon express authorization by the Registrar. Regulations on the non-resident fee are enforced strictly.

Any student who wrongfully pays the Texas rather than the non-resident fee may be assessed a penalty not to exceed $10.

Registration Fee for Evening Program. The following tuition schedule presents fees to be charged resident and non-resident students.

	Resident	Non-Resident
Each Course of 3 hrs. or less	$15.00	$50.00
Each Course of 4 hours.	19.00	67.00

as a non-resident student. It shall be the responsibility and duty of the student to submit legal evidence of any change of residence.

5. All individuals who have come from without the State of Texas and who are within the State primarily for educational purposes are classified as non-residents. Registration in an educational institution in the State is evidence that residence is primarily for educational purposes even though such individuals may have become qualified voters, have become legal wards of residents of Texas, have been adopted by residents of Texas, or have otherwise attempted to establish legal residence within the State.

6. The residence of a wife is that of her husband; therefore, a woman resident of Texas who marries a non-resident shall be classified as a non-resident and shall pay the non-resident fee for all semesters subsequent to her marriage. (Exception: A woman student of Texas Technological College who is classified as a resident student and who marries while a student, a non-resident student of Texas Technological College, shall be permitted to continue to pay the resident fee for the two long sessions semesters immediately following her marriage). A non-resident woman student who marries a resident of Texas is entitled to be classified immediately as a resident student and is entitled to pay the resident fee for all subsequent semesters.

7. All aliens shall be classified as non-resident students except that an alien who has applied for naturalization in the United States and has received his first citizenship papers shall have the same privilege of qualifying as a resident student as a citizen of the United States. The twelve (12) months' residence required to establish the status of a resident student shall not begin until after such citizenship papers have been issued to the alien.

8. Officers, enlisted men and women, selectees or draftees of the Army, Army Reserve, National Guard, Air Force, Air Force Reserve, Navy, Naval Reserve, or the Marine Corps of the United States, who are stationed in Texas by assignment to duty within the borders of this State, shall be permitted to enroll themselves, their husband or wife as the case may be, and their children in State institutions of higher learning by paying the tuition fees and other fees or charges provided by regular residents of the State of Texas, without regard to the length of time such officers, enlisted men, selectees or draftees have been stationed on active duty within the State. This does not apply to students, their husbands or wives as the case may be, who are in attendance under contractual arrangements between the College and the Armed Forces of the United States, whereby the student's tuition is paid by the Armed Forces. Any student claiming the benefits of this section must submit at each registration a statement by the Commanding Officer of the student or the Commanding Officer of the student's father, mother, husband or wife, verifying the fact of their military status.

9. Appointment as a member of the teaching or research staffs or the holding of a fellowship, scholarship, or assistantship shall not affect a student's residence status or the tuition fee to be paid.

10. A student who claims that he has no permanent residence but who has not been a bonafide resident of the State of Texas for at least one year immediately preceding the date of his original or subsequent enrollment in the College may not claim exemption from the non-resident fee.

Laboratory fees will be assessed in appliable Evening Program courses.

All Evening Program students are required to make a $7 general property deposit.*

Visitor's Fee. A fee of $10 for each course is required for the privilege of visiting any course. No credit may be obtained for auditing courses in this manner.

Matriculation Fee. This is a $10 fee that each student must pay each semester of the long session.

****Student Union Fee.* This is a $5 fee that each student must pay each semester of the long session. The fee is $2.50 for each summer term.

General Property Deposit. Each student enrolled in the College must make a general property deposit of $7. This deposit is subject to charges for property loss, or damages, or breakage, or violation of rules in Library or laboratories. If the charges incurred for any semester reduce the deposit by 50 per cent, the student, upon notice from the Auditor, will be required to restore the deposit to its original amount by paying the charges at once; pending payment, no credit will be allowed on the work of that semester or term, and the student will be ineligible to re-enter college. This deposit, less charges, will be returned to the student at his request upon termination of his tenure here as a student.

***Deposits which remain without call for refund for a period of four (4) years from the date of last attendance shall be forfeited and are transferred to the Student Property Deposit Scholarship Account.

Laboratory Fees. For all courses in which the combined credit of lecture and laboratory is from 1 to 3 semester hours, a laboratory fee of $2 is charged for each semester. For courses in which the semester credit is 4 semester hours or more, the laboratory fee is $4 per semester. A laboratory fee of $2 is charged for each freshman student participating in the early registration counseling and testing program to cover laboratory materials and supplies.

Miscellaneous Special Fees

Ceramics Fee:

Architecture 4316, 4317	$5.00
Allied Arts 238, 239, 4311, 4312, (421 ceramics only)	$5.00

Model Fee:

Architecture 326, 327, 423, 424	$5.00
Allied Arts 426, 427	$5.00

Course Fees:

Education 4315	$3.00
Journalism 3313, 3315, (Photography) 330 (Typography)	$2.00
Management 110, Testing Fee	$ 4.00
Physics 237, Photography Fee	$20.00
P.E. 4321, Driver Instruction	$10.00
Applied Arts 333	$5.00
Swimming 012, 013, 014, 2112	$5.00

Service Fees:

Accounting 246, 247	$4.00

* See paragraph General Property Deposit.
** S.B. No. 232 Regular Session, Fifty-third Legislature.
*** H.B. No. 583 Regular Session, Fifty-fifth Legislature.

Secretarial Administration 120, 121, 122, 321, 421 ..... $4.00
Secretarial Administration 131, 132, 235, 331, 333 ..... $2.00

Music Fees for Private Instruction. The following costs are not covered by the College Registration Fee for individual instruction in voice, wind and string instruments offered by the Department of Music. They are payable in full at the time of registration.

For each one of the following courses in applied music:

Private Instructions

Applied Music 115, 116, 215, 216, 315, 316 ..... $15.00
Applied Music 025, 026, 125, 126, 225, 226, 235, 236, 325, 326, 345, 346, 425, 426, 435, 436, 445, 446 ..... $30.00

Practice room and piano rental is payable at the College Business Office:

One hour per day per semester $5.00
Each additional hour $2.50
Musical instrument rental for class strings, woodwinds, brasses (each class) $2.50

Locker or Gym Fee. Students who are not enrolled in a physical education laboratory course will pay a $1 fee per semester for use of a locker, if a locker is available.

Towel Fee and Deposit. Students and faculty desiring towel service may obtain this service by paying the $1 fee each semester and a $1 deposit, which will be refunded upon return of the towel.

Faculty Fee. Faculty members who wish to use the Gymnasium laboratory facilities will pay $2 fee for each fiscal year or any part of a fiscal year.

Graduation Fee: Graduating students will be charged a graduation fee of $5 for each degree granted. The fee will be refunded provided the student cancels his graduation intentions before the diploma has been printed and before other related steps are taken.

If the student does not cancel his intention to graduate in time, he must pay $2 for reordering the diploma insert only. If both the insert and the cover have to be reordered, the charge will be $5, as in the initial order.

Students who graduate *in absentia* will pay a fee of $1.50.

Change In Class Schedule Fee. $3 each time a student initiates one or more changes in his previously approved class schedule. There will be no charge when the change is made for the convenience of the College.

Duplicate Receipt Fee. A fee of 50 cents will be charged for each duplicate registration receipt issued.

Refund of Fees. Any student withdrawing officially during either semester will receive a refund on registration and activity fees according to the following schedule:

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.
5. During the sixth week of the semester or thereafter, nothing.

The official College Calendar near the front of this catalog indicates the official date of the beginning of each semester.

In the summer session any student withdrawing officially during the first week of either term will receive a refund of 60 per cent of any registration and activity fees paid, and during the second week 20 per cent. A student who withdraws during the third week and thereafter of either term will receive no refund.

Refund of tuition and fees will be made when the College is at fault. Refund of tuition or fees will not be made on courses of less than six-week duration. No refund on unused balance of deposits will be made until at least 30 days after the student terminates his tenure here as a student. In no case will fees be refunded to a student suspended from college by college authorities. If the student is permitted to re-enter school during the same semester in which he is suspended, a Re-entrance Fee of $5 will be charged. Once a student has registered for a laboratory class and has attended the class, no refund of the laboratory fee will be made unless the College is at fault.

Exemption from Fees Because of Honorable Discharge from the Armed Forces. Men and women who have been legal residents of Texas for a period of not less than twelve months immediately preceding their registration in Texas Technological College and who hold an honorable discharge from the Armed Forces of the United States during the Spanish-American War, World War I, World War II, or the Korean War are by State law exempt from the payment of all fees except library and laboratory fees or similar deposits and fees or charges for room and board. The provisions of this act shall apply to the benefit of all nurses, members of the Women's Auxiliary Corps and Women's Auxiliary Volunteer Emergency Service. The benefits and provisions of this act shall also apply to the benefit of the children of members of the United States Armed Forces where such members of the Armed Forces were killed in action or died while in the service during World War II or the Korean War. The provisions of this act shall not apply to or include any member of such United States Armed Forces, or other persons herein above named, who were discharged from the service because of being over the age of 38 or because of a personal request on the part of such person to be discharged from such service.

Discharge papers must be presented by the student to the Coordinator of Veterans' Affairs, who will in turn certify the student's eligibility to the Business Office.

Veterans are not eligible to the above outlined benefits under State law until their eligibility to educational benefits from Federal funds through the Veterans' Administration has expired.

Summary of Registration Expenses

Each student should have available at the time of his first enrollment approximately $240 in traveler's checks, cashier's checks, or money orders. All registration expenses must be paid in full at the time of registration. Room and board may be paid by partial payments made from the first to the fifth of each month.

To enable the resident student to approximate his expense at the time of entering college, the following estimates are offered:

	Fall	Spring
Registration Fee	$50.00	$50.00
Laboratory Fees (estimated)	4.00	4.00
Matriculation Fee	10.00	10.00
Student Union Fee	5.00	5.00
General Property Deposit (new student)	7.00	7.00
Books and Incidentals (estimated)	50.00	35.00
First payment of room and board in the college dormitory (New Dormitories $124.25)	112.25	86.25
Total (estimated)	$238.25	$197.25

The cost of books and supplies will vary with the different curricula of the College from a minimum of $20 to a maximum of $50. Engineering students are required to purchase their own drawing equipment, slide rule, etc., which, plus books, cost approximately $100 the first year, or an average of $50 per semester.

Estimate of Annual Cost. An estimate of the annual expense by semester for one long session is as follows:

	Fall	Spring
Registration Fee	$ 50.00	$ 50.00
Laboratory Fees (estimated)	4.00	4.00
Matriculation Fee	10.00	10.00
Student Union Fee	5.00	5.00
General Property Deposit (new student)	7.00	7.00
Books and Incidentals (estimated)	50.00	35.00
Room and Board in College Dormitory (New Dormitories)	296.00 (329.40)	294.25 (326.25)
Total (estimated)	$422.00	$405.25
Grand Total		$827.25

The College approves the housing of all students and requires that student residence be in the College dormitories to their total capacity. These dormitories, accommodating approximately 4,500 students, are owned and operated by the College.

Students who live with their parents, students who are married and live with their wives or husbands in the City of Lubbock and vicinity, students whose health condition demands special services and living conditions, and students whose part-time employment prohibits their securing meals regularly in a dormitory, may be approved for off-campus residence.

Students who cannot be accommodated in the dormitory and who are not excepted on the bases listed above will be asked to take residence in the dormitory upon notification from the College.

Change of Address. The student is urged to confer with the Dean of Men or the Dean of Women before making a change in his residence. He is required to file change of address information with the Dean of Men or the Dean of Women as the final step of approval of change in residence. Failure to notify the College of his change of address may subject the student to being dropped from the rolls of the College.

Charges for Room and Board in College Dormitories. All prices indicated below are subject to change without notice prior to registration date and with 10 days' notice thereafter. It is hoped that the following prices will provide for dormitory service during the 1958-59 year.

Charges for room and board in West, Sneed, Drane, Doak, Horn, Knapp, Bledsoe and Gordon Halls will be $590.25 per nine-month period for the regular double rooms occupied by two students.

Charges for room and board in the new dormitories will be $655.65 per nine-month period for the regular double rooms occupied by two students.

The payment will be as follows:

		Old Dormitories		New Dormitories
September	$40.00		$44.00	
October	72.25		80.25	
		$112.25		$124.25
November		72.25		80.25
December		58.00		64.90
January 1-26		53.50		60.00
		$296.00		$329.40
January 26-31	$14.00		$15.55	
February	72.25		80.25	
		86.25		95.80
March		72.25		80.25
April		72.25		80.25
May		63.50		69.95
		$294.25		$326.25
		$590.25		$655.65

In some dormitories there are a few rooms with private bath for which there will be an additional charge of $7.50 per month per person. Corner rooms will be $1.50 per person per month additional.

If facilities are available, one student may occupy a double room for an additional charge of $7.50 per month.

Board and room is due in advance and is payable from the first through the fifth of each month with the exception of the beginning of a semester, at which time it is due the first five days of the semester. An additional charge of 25 cents per day will be made after the fifth day of the pay period.

Dormitory Reservations. Application for dormitory reservations will be made to the Office of Dormitory Reservation. A check for $20 must accompany the request. This will serve as a reservation fee, and will be held as a dormitory property deposit. It will be refunded, less any breakage charges, at the end of the year. If a student moves from the dormitory during the semester, the $20 deposit will not be refunded.

Should a student find it impossible to enroll in the College, he will receive a refund of his reservation fee if application is made not later than Aug. 31 for the fall semester, Jan. 15 for the spring semester, May 15 for the first term of summer session, and June 30 for the second term of summer session. All unclaimed rooms in the dormitories

will be declared vacant at 8 A.M. on the first day of classes and the $20 deposit will be forfeited.

All arrangements for housing accommodations in private dormitories and residences off the campus should be made through the Office of Dean of Student Life.

Casa Linda, Cooperative House. Casa Linda houses 18 women students under the direction of senior or graduate students. The work entailed in running the house is done cooperatively by the resident students. The house is completely furnished except for bedding and linens, which the students are expected to furnish. The charge made covers the actual cost of operation which varies with rising prices, but is in line with a carefully worked out budget. Casa Linda operates under regular dormitory standards. The cooperative house, operating at 2501 19th Street as long as this property is owned by the College, furnishes a fine opportunity for cooperative living in a dignified and pleasant environment. Application for residence in Casa Linda must be made through the Office of the Dean of Women.

RECOGNITION OF SCHOLARSHIP

Scholarship Honors

Honor Roll. At the close of each semester the Registrar's Office issues an honor roll which includes the names of all undergraduate students, who, during the semester, have been registered for not less than 12 semester hours of work and who have ranked in the upper 5 per cent of the student body in the quality of grades made in such work, without having received any failing or incomplete grades.

Graduation With Honors. Those members of the graduating class who complete their work with a grade-point average of 2.80 or above are graduated *With High Honors* and those who complete their work with a grade-point average of 2.50 or above but less than 2.80 are graduated *With Honors.* Appropriate designation of this distinction is made on the diploma and the commencement program. No person shall be considered for honors unless at least one-half of the work is done at this institution, and the half shall include the senior year. Only grades earned in this College will be counted.

Fellowships, Scholarships, Awards, Loans

All undergraduate fellowships, scholarships, and awards are administered by the College through its Faculty Committee on Scholarships and Awards by designated faculty members or organizations. Only those grants in which the Committee has final choice in selecting recipients, and where there is a reasonable expectation of continuation, are considered to be scholarships for catalog and recognition purposes.

Scholarships are awarded to students on various bases, such as academic achievement, financial need, and/or high personal qualities of character and citizenship. A student shall be eligible for only one College-administered fellowship or scholarship, amounting to more than tuition during any one semester. In event of multiple awards to the same student, he may have his preference. This shall not apply to scholarships for honor graduates of Texas high schools. The payment of all scholarships, fellowships, and awards is subject to the necessary

funds being made available by the donors and to the recipient's having continued to meet the eligibility prerequisites at the time each installment is due. Correspondence concerning a particular fellowship, scholarship, or award should be addressed as directed in each case.

Graduate Assistantships, Scholarships, and Fellowships

To encourage students to continue graduate study, the College provides a number of awards for which students with outstanding records and high scores on the aptitude test are eligible to apply. All stipends are for a long session (nine months). A student who is not a resident of Texas who receives one of these grants may also be awarded a scholarship to provide the difference between the fee for residents and that for non-residents.

Grants-in-aid for Candidates for the Doctorate—$1,000. Restricted to students who have finished all course work for the doctorate and are completing the dissertation.

Teaching Fellowships—$1,200 to $2,000. The stipend varies with the qualifications of the applicant and the amount of service he renders.

Graduate Assistantships—$1,000. Primarily, though not exclusively for applicants for a master's or doctor's degree in the humanities and social sciences.

Research Fellowships—Chiefly in chemistry and psychology. The stipend varies.

Applications for any of these awards are to be addressed to the head of the student's proposed major department and should be submitted before March 1 of any year for the following long session.

Dormitory Counselors—Room and board, tuition (in-state-only) and $20 to $60 per month. The monthly stipend varies with the qualifications of the applicant. Applications should be addressed to the Dean of Student Life.

Special Awards

In addition to the College fellowships and scholarships listed above, the following awards, made possible by friends of the institution, are available to students who qualify for unconditional admission to the Graduate School:

William L. Ellwood Fellowship. This fellowship consists of income from $10,000, established in 1943 by Mrs. F. H. Chappell, New London, Conn., and Mrs. Harriet E. Keeney, Somerville, Conn., in memory of their father, the late William L. Ellwood. It is to be awarded, when sufficient funds are available, to a graduate student majoring in animal husbandry. Applications should be addressed to the Head of the Department of Animal Husbandry.

Paul Whitfield Horn Fellowship. The Quarterly Club, an organization of women connected with Texas Technological College, has begun a fellowship fund to honor the first president of the College, the late Paul Whitfield Horn. The amount and frequency of the award will be determined by earnings of the investment. The fellowship will be awarded to a young woman, preferably a Texas Tech graduate, who has been accepted as an applicant for a graduate degree at this institution. Applications will be considered by a committee of the Quarterly Club and by the Committee on Scholarships and Awards. Appli-

cations should be addressed to the Dean of the Graduate School prior to June 1.

The Lubbock Auto Company Fellowship. This fellowship is restricted to students who have already completed a considerable amount of their doctoral study. The entire sum of $1,000 may be awarded to one individual, or it may be divided into two $500 grants, depending on the circumstances. Applications are to be addressed to the Dean of the Graduate School.

James Newton Michie Graduate Fellowship in Mathematics. Professor Emeritus James Newton Michie, head of the Department of Mathematics from the opening of the College to his retirement, has made available a fellowship of $350 for graduate students in mathematics. Applications should be addressed to the Head of the Department of Mathematics.

Jonnie McCrery Michie Graduate Fellowship in Food and Nutrition. Professor Emeritus Jonnie McCrery Michie, head of the Department of Food and Nutrition from the opening of the College to her retirement, has made available a fellowship of $350 for graduate students in Food and Nutrition. Applications should be addressed to the Head of the Department of Food and Nutrition.

The Texas Cottonseed Crushers' Graduate Fellowship. This research fellowship was established in 1937, and when available is awarded to a graduate student majoring in animal husbandry. For 1957-58 it amounted to $1,500. Applications should be addressed to the Head of the Department of Animal Husbandry.

As will be noted in the following list, some other fellowships are available to graduate students as well as undergraduates.

Fellowships and Scholarships

The stipends of all fellowships and scholarships are paid one-half during the fall semester and one-half during the spring semester unless other method of payment is specified. After the registration period has officially closed, fellowships and scholarships which are unassigned because the awardee has not enrolled or has resigned will be regarded as open and may be reassigned.

Scholarships for Honor Graduates of Texas High Schools. The Legislature of the State of Texas has granted a scholarship for the one highest honor graduate of each accredited high school of the state. This scholarship is awarded to the high school to be presented to the highest-ranking graduate for the entire year. The scholarship is not transferable. The name of the scholarship holder must be filed by the superintendent or high school principal direct with the State Department of Education at Austin, and an official list of high school scholarship holders is furnished by the State Department of Education to each of the state-supported colleges. The student may attend the college of his choice and claim the scholarship. The scholarship must be used during the long session immediately following graduation and is worth $100 in the remission of tuition charges for the year. Correspondence regarding this scholarship should be addressed to the Registrar.

AIME Scholarship in Petroleum Engineering. Mr. Leif Olson of the Olson Drilling Company has established 10 scholarships for students majoring in petroleum engineering. One scholarship in the amount of $250 will be granted each semester. The objectives of the

scholarships are to encourage and assist outstanding undergraduate petroleum engineering students in recognition of demonstrated achievements in combination with exceptional promise of superior attainments. In the selection of the recipient, consideration shall be given to each candidate's needs, scholastic record, evidence of leadership, character, and sincerity of purpose. The scholarship is available to students in their junior or senior year of the regularly scheduled petroleum engineering course of study, and candidates must be members of the petroleum student branch of the AIME during the period of the award. Application for the scholarship should be made by March 10 of the spring semester, and should be addressed to the Dean of Engineering.

Alpha Lambda Delta (Lubbock Chapter) has made available an annual scholarship of $100 for a sophomore woman student. The recipient must have a minimum grade-point average of 2.50, and must maintain at least a 2.00 average for the fall semester. Participation and leadership in campus organizations and activities shall be an important consideration in awarding the scholarship. Applications should be made to the faculty sponsor of the Texas Technological College chapter of Alpha Lambda Delta.

The Barton Foundation Scholarship. Col. T. H. Barton, chairman of the board of the Lion Oil Company, has made available a limited fund for scholarships for the payment of tuition of undergraduates above the freshman level in the School of Arts and Sciences. The scholarships will be awarded on the basis of financial need, outstanding scholastic achievement, and citizenship. Applications should be made to the Dean of Arts and Sciences.

Lawrence D. Bell Memorial Scholarship. The Bell Helicopter Corporation of Fort Worth, through the Bell Foundation, has established two annual scholarships of $500 each. These scholarships are available to freshmen engineering students who have had outstanding high school records. The award will be renewed yearly if the student's record justifies. Need, scholarship achievement and character will be the bases for awarding the scholarship. Bell Helicopter Corporation employees' children will be given preference in making this award. Applications for this award should be made to the Dean of Engineering after the completion of high school and during the period between June 1 and September 1 of each year. Selection of recipients will not be made until the receipt of freshman progress reports each fall.

The Block and Bridle Scholarships. The Block and Bridle Club of Texas Technological College has made available to the College the income from a special trust fund for scholarships to be awarded annually to senior and graduate students majoring in animal husbandry. The recipient of either must have and must maintain not less than a 2.00 grade average, and is ineligible for any other similar scholarship during the same academic year. For further information, inquire of the Head of the Department of Animal Husbandry.

The Borden Company Foundation Scholarship in Agriculture. The Borden Company Foundation, in a desire to stimulate and recognize scholastic achievement by undergraduate students of agriculture, has established an annual scholarship of $300. The award is to be made in the fall to the senior student of agriculture who has achieved the highest average grade in all college work preceding the senior year. Eligibility for consideration requires the successful completion of two or more dairy subjects. This award may be withheld any year if condi-

tions are inappropriate. Correspondence concerning this scholarship should be addressed to the Dean of Agriculture.

The Borden Company Foundation Scholarship in Home Economics. The Borden Company Foundation, in a desire to stimulate and recognize scholastic achievement by undergraduate students of home economics, has established an annual scholarship of $300. All senior students majoring in home economics in Texas Technological College who have included in their curricula two or more courses in food and nutrition shall be eligible for the scholarship. The scholarship shall be presented to that eligible student who has achieved the highest average grade of all other similarly eligible students in all college work preceding the senior year. This scholarship may be withheld any year if conditions are inappropriate, but in such case only one award shall be made in the succeeding year. Correspondence concerning this scholarship should be addressed to the Dean of Home Economics.

Bowling Scholarship in Agronomy. In appreciation for the work of those individuals and agencies who have made possible the development, production, and distribution of high-quality planting seed in Texas, Mr. John I. Bowling has established a $600 annual scholarship for an undergraduate student majoring in agronomy. Selection will be based upon need, scholastic achievement, character, and evidence of leadership. Applications should be made to the Head of the Department of Agronomy prior to July 1.

J. S. Bridwell Scholarship. Mr. J. S. Bridwell of Wichita Falls has made available an annual scholarship of $400 for a senior student majoring in animal husbandry who is in need of financial assistance and who is planning to engage in practical cattle production. The recipient must have not less than a 1.50 grade average, and shall be ineligible during the same academic year for any other major scholarship administered by the College. Applications should be addressed to the Dean of Agriculture.

The Brownfield State Bank & Trust Company has made available three scholarships in the amount of $300 each to be awarded to outstanding junior or senior students majoring in banking who shall maintain a minimum grade-point average of 2.00. Preference will be given to students from Terry and Yoakum Counties. In the event no qualified applicants are available from these counties, other applicants may be considered. Application should be made to the Head of the Department of Accounting and Finance.

Business and Professional Women's Club Scholarship. The sum of $100 will be awarded annually to the outstanding junior woman majoring in business administration. Correspondence concerning this scholarship should be addressed to the Head of the Department of Business Education and Secretarial Administration.

Cabot Scholarship. The Cabot Foundation, Inc., has established a scholarship to be awarded to a male student of junior standing with a major in chemical, civil, mechanical, or petroleum engineering. The stipend is $400 per year, plus actual tuition and required fees up to $400 per year. The award will be renewed for the senior year, if the student's record justifies. Need, scholastic achievement, and character will be the bases for awarding the scholarship. Application for the scholarship should be made by March 10 of the spring semester, and should be addressed to the Dean of Engineering.

The Caprock Chapter (Lubbock) *of the National Secretaries Association Scholarship.* The sum of $50 will be awarded annually to the

outstanding junior woman majoring in secretarial administration. Correspondence concerning this award should be addressed to the Head of the Department of Business Education and Secretarial Administration.

Dan Carpenter Memorial Scholarship. The Plains Nurserymen's Association and the New Mexico Nurserymen's Association have established an annual scholarship in the amount of $200 for a sophomore or junior student majoring in horticulture and park management. The recipient must have at least a 1.5 grade average, which, if maintained, will permit a renewal of this scholarship for one additional semester. Applications should be made to the Head of Horticulture and Park Management.

Inez Carter Scholarships. Mrs. Inez Carter of Pampa has made available three annual scholarships in the amount of $200 each for worthy undergraduate students pursuing any officially recognized major. Preference will be given to applicants residing in Gray County or any of the eight counties bordering upon it, but other applicants will be considered should a sufficient number of students from these counties fail to qualify. Recipients must have excellent character and citizenship records, and must have a minimum grade-point average of 2.00. (Entering freshmen must have finished in the upper quartile of their high school class). A recipient is eligible for the scholarship during the succeeding year, but renewal shall be on a competitive basis with other applicants. Applications must be made by July 15 to the Chairman of the Committee on Scholarships and Awards.

Cities Service Oil Company Scholarship in Engineering. This scholarship is open to outstanding undergraduates majoring in any field of engineering who have evidenced a well-balanced personality, ability to participate as a member of a team, good character, and above average scholastic performance. Applicants must be within two years of graduation and must be enrolled as full-time students. The scholarship is valued at $600 and is payable in two installments of $300 each. The recipient must maintain a satisfactory record during the fall semester in order to retain the scholarship during the spring semester. Application should be made by March 10 of the spring semester, and should be addressed to the Dean of Engineering.

The Clayton Fund Scholarship. In order to stimulate and recognize outstanding attainment by West Texas undergraduate students in cotton production, the Clayton Fund will award annually a scholarship of $500 to an entering freshman who designates agronomy as his major. The scholarship will be continued in the amounts of $500 each for the sophomore, junior, and senior years of the same student, provided he maintains a satisfactory record. In order to qualify, the applicant must provide evidence of a good background and experience in the growing of cotton, and he must be a resident of a West Texas county. (A list of the qualifying counties may be obtained by writing the Dean of Agriculture.) This scholarship is awarded only upon written application which must be made to the Dean of Agriculture before Aug. 1, prior to the freshman year.

Continental Oil Company Scholarship. The Continental Oil Company has established an annual scholarship in the amount of $500 to be awarded to an undergraduate student majoring in chemical engineering. Entering freshmen must have graduated in the upper quartile of their high school class. Sophomores, juniors, or seniors must

have a minimum 2.00 grade average. Evidence of outstanding character and need must be established. Applications should be addressed to the Head of the Department of Chemistry and Chemical Engineering prior to July 1.

District 1 Garden Club Scholarship. District I, Texas Garden Club, Inc., has established an annual scholarship in the amount of $250 for a sophomore or junior student majoring in horticulture and park management. The recipient must have at least a 2.00-point grade average and a good character and citizenship record. Applications should be addressed to the Head of the Department of Horticulture and Park Management.

District 2 4-H Girls Scholarship. The Home Demonstration Club women of District 2 and other interested individuals and firms, in cooperation with the Extension Service of the Agricultural and Mechanical College of Texas, award an annual scholarship in the amount of $500 to a worthy 4-H girl residing in Extension District 2 who is ready for college, and who will study home economics or related subjects.

The Mary W. Doak Scholarship. Alpha Sigma Chapter of Delta Kappa Gamma has established the Mary W. Doak Scholarship to help in the recruitment of promising young women for the teaching profession. The scholarship covers tuition and other entrance fees to the amount of $40 each semester for one year and is to be awarded to a sophomore or junior who has been in residence at Texas Technological College for at least one year. Applications should be addressed to the Chairman, Committee on Scholarships and Awards.

The Dow Chemical Company Scholarships. The Dow Chemical Company has made available two scholarships of $250 each to be awarded annually to students majoring in chemical engineering. The recipients must be persons of good character and possess the attributes and achievement in scholarship and other characteristics which contribute to successful work in the field of chemical engineering. Applications should be addressed to the Head of the Department of Chemistry and Chemical Engineering.

Dunlap Scholarships. The Dunlap Stores, Lubbock, contribute annually a sum of money to be used for 15 scholarships for high-ranking high school graduates who qualify from the high schools in Lubbock, Crosby, Floyd, Hale, Lamb, Hockley, Terry, Lynn, and Garza counties. These scholarships are for $200, to be paid $100 shortly after mid-semester each of the regular semesters. Full information on these scholarships can be obtained from the Dean of Student Life.

Eastern States Petroleum Company, Inc., Scholarship in Engineering. A $600 scholarship has been established by Eastern States Petroleum Company, Inc., and Eastern States Chemical Corporation to encourage promising students in chemical engineering and chemistry. The student selected is to be a senior beginning his last two full semesters. Selection will be based on scholarship (at least 2.00 grade average), interest in a career in chemical engineering or chemistry, financial need, character, and personality. Applications should be addressed to the Head of the Department of Chemistry and Chemical Engineering.

Ex-Students Association Scholarships. A small number of scholarships in the amount of $75 each per semester are available to undergraduate students with excellent citizenship and character records who

can establish evidence of financial need. The applicant must have a grade average of 1.75 or better for both his entire college work and the semester preceding. An entering freshman must have graduated in the upper quartile of his high school class to be eligible. The scholarships are awarded for one semester only, but requests for renewal will be considered on an equality basis with other applications. The original application must be made not later than July 1 for consideration for the fall semester following and Dec. 1 for the spring semester following. Requests for renewal must be submitted at least one month prior to the opening of the semester. Applications should be addressed to the Chairman, Committee on Scholarships and Awards.

The Ethel Foster Scholarships in Home Economics. Miss Ethel Foster of Sterling City makes available annually the sum of $1,000 for scholarships to students of the School of Home Economics. The scholarships in varying amounts are administered by the School's Scholarship Committee on the basis of character, personality, scholarship, and financial need. Since it is the intent of the donor to assist young women to remain in college until graduation, the scholarships may be repeated as long as the recipient continues to qualify.

The Frontier Chemical Company Scholarship. The Frontier Chemical Company, a division of Union Chemical and Materials Corporation, has made available a scholarship of $300 to be awarded annually to a student majoring in chemistry or chemical engineering. The student selected must have either junior or senior standing and be within four semesters of graduation. Selection will be based on need, scholastic achievement, and character. Applications for the scholarship should be made by March 10 of the spring semester and should be addressed to the Dean of Engineering.

Gardner - Denver Company Scholarships. The Gardner - Denver Company of Quincy, Ill., has established two scholarships in the amount of $1,000 each for undergraduate students majoring in petroleum engineering. The scholarships are available to junior and senior students. However, the renewal of the scholarship for the second year is dependent on satisfactory results on the part of the recipient during the first year. In addition to meeting the general scholarship requirements of the College, the recipient must acquire an adequate knowledge of the Spanish language to enable him to speak and fully understand such language. This knowledge may be acquired prior to or during his college career. Application for the scholarship should be made by March 10 and should be addressed to the Dean of Engineering.

Frank Goldthwaite Horticulture and Park Management Scholarship. The Goldthwaite Tex Toro Company of Fort Worth has established a $375 scholarship for an outstanding junior student majoring in horticulture and park management. The recipient must have not less than 1.50 grade average. The scholarship is renewed for the senior year provided outstanding performance continues. Applications should be made to the Head of the Department of Horticulture and Park Management.

J. W. Gordon, Jr., Scholarship. An annual scholarship of $200 has been donated by J. W. Gordon, Jr., to be made available without restriction as to major. Freshmen applicants must have graduated in the upper quartile of their high school class. Sophomore, junior or senior applicants must have a 2.00 grade average. Applications should

be addressed to the Chairman of the Committee on Scholarships and Awards before July 1.

D. D. Harrington Freshman Engineering Scholarships. Mr. D. D. Harrington, president of the Panoma Corporation of Amarillo, has established several scholarships totaling $1,500 for the College. The scholarships are valued from $300 to $500 each. These scholarships are available to outstanding high school graduates who desire to study engineering at Texas Technological College. They are awarded on the basis of scholastic records, character, and financial need. Applications should be addressed to the Dean of Engineering.

C. N. Hilton Scholarships. Mr. C. N. Hilton, President of Hilton Hotels, Inc., has made available to the students in business administration four scholarships of $100 each, to be awarded annually to the applicants in that school who make the highest scholastic average for the two previous long semesters in the freshman, sophomore, junior, and senior years. A recipient of a Hilton Scholarship shall not be eligible for any other similar award. These scholarships are awarded upon application only, but in no case will an award be made to an applicant with less than a 2.00 grade average. Applications should be made to the Dean of Business Administration.

John A. and Pauline Hughes Scholarships. Mr. and Mrs. John A. Hughes of Lubbock have established five scholarships to be awarded to one student majoring in business administration from each of the following high schools: Monterey (Lubbock), Hale Center, Petersburg, Muleshoe, and Crosbyton. The stipend is $250 per year and students may not receive any other awards or waiver of fees during the period covered. Selection will be made by a committee consisting of the Chairman of the Committee on Scholarships and Awards and designated bankers and school officials from the districts involved. Applications should be forwarded to the Chairman of the Committee on Scholarships and Awards prior to July 1.

The Hughes Tool Company Scholarship. This scholarship has been established by the Hughes Tool Company for the purpose of fostering interest and ability in the design field of mechanical engineering as applied to product and production engineering. The recipient will be selected on the basis of the above-mentioned purpose as well as on the basis of his ability to work well and dependably with others and to accept responsibility. The scholarship is valued at $500 for the year, and is payable at the rate of $250 at the beginning of each semester. The recipient is expected to maintain satisfactory progress during the fall semester to be eligible for continuation of the scholarship during the spring semester. The scholarship is open to qualified mechanical engineering students who are beginning their last two full semesters of work, or equivalent thereof, toward the Bachelor of Science Degree in Mechanical Engineering. Application for the scholarship should be made by March 10 and addressed to the Dean of Engineering.

Junior College Scholarships. Texas Technological College offers a scholarship in the amount of $100 to the highest honor graduate of each of the public-supported, accredited junior colleges of Texas. The scholarship must be used during the long session immediately following graduation, and is payable in amounts of $50 each semester upon registration as a regular full-time student with an officially recognized major field of study. The name of the eligible student shall be officially certified to the Registrar of Texas Technological College by the

proper authorities of the junior college from which the recipient graduated.

Junior Scholarship. Funds for a scholarship in the amount of $100 annually are available to a young man of junior classification who has evidenced outstanding growth in scholarship during his first two college years. The scholarship will be awarded on the bases of high moral character, sound citizenship, evidence of continuing improvement and future success, leadership, group activities, need, and scholastic record. Applications should be addressed to the Dean of Student Life.

Kent County Scholarships. The Dodge Jones Foundation has made available funds to provide four scholarships for students attending a wholly state-supported institution of higher learning in Texas. Applicants must be from Kent County, must have graduated in the top quartile of their high school class, and must possess outstanding qualities of character, citizenship, and leadership. To be eligible for renewal, students must maintain a minimum 2.00 grade average for the academic year preceding the award. The stipend is $300 per year except for students in the School of Engineering, who receive $350. Students from Kent County who plan to attend Texas Technological College and wish to apply for scholarships should contact the Chairman of the Committee on Scholarships and Awards prior to July 1.

Kuykendall Foundation Scholarships. The Kuykendall Foundation of Lubbock, has established an annual scholarship fund of $2,000 from which 8 to 12 scholarships shall be awarded. These scholarships are for freshmen students of the South Plains territory and will be awarded on the bases of scholarship, citizenship, and character, with consideration given to need. Applications for these scholarships should be made to the Dean of Student Life.

The LaVerne Noyes Scholarships. The LaVerne Noyes Foundation has approved Texas Technological College as a participant in the funds of a foundation created by the late LaVerne Noyes of Chicago. The income allotted to the College is used for payment of tuition of veterans of World War I, or the blood descendants of such veterans, provided need of assistance can be established and provided enlistment occurred prior to May 11, 1918, or, if later, led to service overseas prior to Nov. 11, 1918. Only a limited number of scholarships are available. They are open to entering freshmen who graduated in the first quartile of their high school class, and to other students who have a grade-point average of at least 1.50. Scholarships, once awarded, are good for the normal remaining time required for the awardee to complete his degree curriculum, provided funds are available and the holder of the scholarship maintains a satisfactory scholarship and citizenship record and needs financial assistance; but they must be renewed by application each semester. Applications should be addressed to the Assistant Dean of Arts and Sciences.

Lubbock Avalanche-Journal Freshman Scholarships in Journalism. The Avalanche-Journal Publishing Company has made available two freshman scholarships of $150 each to be awarded to the outstanding journalism students of Tom S. Lubbock and Monterey High Schools. Students must have graduated in the upper quartile of their class. Applications should be addressed to the Head of the Journalism Department.

Lubbock Bar Auxiliary Scholarship. An annual scholarship of $80 is available to a junior or senior woman majoring in pre-law. The

applicant must have completed a minimum of 30 semester hours in residence and have at least a 2.00 grade average. If no woman student qualifies, the scholarship may be awarded to a male student majoring in pre-law. Applications should be made to the Head of the Department of the Government.

The Lubbock Kiwanis Club Scholarships for Sophomores. The Lubbock Kiwanis Club has made available two scholarships to sophomore students. These students must have completed the freshman year at Texas Technological College, with credit for 30 semester hours or more, and must have maintained a 2.00 or better grade average on this work. They must have exemplified a high quality of citizenship and evidence of financial need in order to continue their education. These scholarships are for $150 each, $75 to be paid each of the regular semesters at midsemester. Applications for these scholarships should be initiated by the student and addressed to the Dean of Student Life.

Lubbock Mortgage Bankers Association. The Lubbock Mortgage Bankers Association has created a scholarship fund to encourage the study of financing in general and mortgage financing in particular. The current stipend is $50 per year and is limited to junior and senior students majoring in finance. For further information, contact the Head of the Department of Accounting and Finance.

Lubbock Panhellenic Society Scholarship. Approximately $75 will be awarded to a junior or senior student in the School of Home Economics making a grade average of 2.00 or above. Correspondence concerning this scholarship should be addressed to the Dean of Home Economics.

Lubbock Real Estate Board Scholarship. The Lubbock Real Estate Board makes available the sum of $250 each year for a scholarship to be awarded to a junior student who has expressed an interest in the real estate business. The recipient preferably shall be a resident of Lubbock County and preferably a graduate of a high school in Lubbock County. The recipient is selected in the spring and the award is announced at the Real Estate Board's annual banquet. Applications should be made to the Dean of Business Administration.

Lubbock Traffic Club Scholarship. The Lubbock Traffic Club has made available an annual scholarship in the amount of $150 for a student majoring in traffic management. The scholarship is awarded on the bases of scholastic achievement, character, need, and interest in traffic management. Applications should be addressed to the Head of the Department of Management.

Melba Mae Maxey Scholarships. Mr. and Mrs. Homer G. Maxey of Lubbock make available annually three scholarships in the amount of $350 each, to outstanding students in the School of Home Economics. Scholarships are to be awarded by the School's Scholarship Committee on the bases of scholastic attainment, financial need, character, and personality. Applications should be addressed to the Dean of Home Economics.

The Men's Inter-Dormitory Council Scholarship. The Men's Dormitory Association has established an annual scholarship in the amount of $250 to be granted a resident of one of the men's dormitories. An entering freshman must have graduated in the upper quartile of his high school class, and must make a 2.00 grade average to receive the second half of the stipend. Sophomore, junior or senior applicants

must have maintained a 2.00 grade average during the preceding semester. Character, leadership, and need are also qualifying conditions. The awardee may apply for renewal. Applications should be addressed to the Assistant Dean and Head Supervisor of Men's Dormitories.

Monsanto Chemical Company Scholarship. The Monsanto Chemical Company contributes $500 annually to be awarded to a student majoring in chemistry or chemical engineering. The recipient must be a person of good character who possesses the attribute of scholarship and other talents which contribute to successful work in the field of major interest. Applications should be addressed to the Head of the Department of Chemistry and Chemical Engineering.

Music Scholarships. The following organizations have made available small funds to be used as scholarships for deserving students who desire to study music: The Allegro Music Club of Lubbock, The Lubbock Music Club, The Lubbock Symphony Association, and the Society for the Preservation and Encouragement of Barber-Shop Quartet Singing in America. For further information, inquire of the Head of the Department of Music.

Mr. and Mrs. Hiram Parks Scholarships. Through the provision of Mr. and Mrs. Hiram Parks of Lubbock, four scholarships of $500 each are available for students of Mexican descent. One scholar is chosen each year from graduates of high schools in the Panhandle and South Plains areas of Texas. Scholarships, once awarded, are good for four years, provided funds are available and provided the scholar maintains a satisfactory scholastic and citizenship record. Inquiries should be addressed to the Head of the Department of Foreign Languages.

D. D. Payne Scholarship. D. D. Payne has donated an annual scholarship of $200 to be awarded to a student from the Texas Panhandle. Freshmen applicants must have graduated in the upper quartile of their high school class. Sophomores and upperclassmen must have a 2.00 grade average. Applications should be addressed to the Chairman of the Committee on Scholarships and Awards by July 1.

Phi Eta Sigma Scholarship. The local chapter of Phi Eta Sigma, national scholastic honorary for freshmen men, has made available a scholarship in the amount of $60 for a male sophomore student. The recipient must have a minimum grade average of 2.00 for each semester of his freshman year at Texas Tech and is expected to maintain a 2.00 or better average while holding this scholarship. Participation and leadership in campus organizations and activities will be an important consideration in awarding this scholarship. Applications should be addressed to the Dean of Student Life.

Plains Ginners' Association Scholarship. The Plains Ginners' Association has established an annual scholarship of $150 to be granted to a senior majoring in agricultural engineering who plans to complete the cotton ginning engineering curriculum. Applicants must have completed one semester at Texas Technological College and must maintain a 1.50 grade average. Selection will be based on scholastic attainment, character, leadership, and need. Applications must be made to the Dean of Agriculture before July 1.

The Robert B. Price Dairy Production Scholarships. Mr. Robert B. Price of El Paso, because of his interest in dairy production, has established four $100 scholarships to be awarded annually as follows:

(1) To the freshman student majoring in animal husbandry or dairy industry who completes a minimum of 17 semester hours in the fall semester with the highest scholastic average; (2) the sophomore student majoring in animal husbandry or dairy industry having the highest scholastic average; (3) the junior student majoring in animal husbandry with a dairy husbandry option having the highest scholastic average; (4) the senior student majoring in animal husbandry with a dairy husbandry option having the highest scholastic average. The scholarships are awarded in the fall for the long semester, except the freshman, which is awarded about March 1. The awards may be withheld whenever conditions are inappropriate. These awards will be made upon recommendation of the Dean of Agriculture.

Purchasing Agents Association of Texas Panhandle Scholarship in Business Administration. The Purchasing Agents Association of the Texas Panhandle has made available $150 per year for a scholarship in business administration. To be eligible for consideration, a student must be a junior or senior majoring in industrial or office management with preference to a student preparing to enter the field of purchasing, and a minimum grade average of 2.00 must have been maintained during the preceding academic year. Additional qualities of leadership, character, citizenship shall be considered. Applications should be addressed to the Head of the Department of Management.

The Rowan Company Scholarships. The Rowan Drilling Company, Inc., has established two scholarships in the amount of $250 each to be awarded to male students majoring in business administration, mechanical, electrical, or petroleum engineering. An entering freshman must have graduated in the upper quartile of his high school class. Sophomores, juniors, or seniors must have maintained a 2.00 grade average. Applicants must demonstrate academic qualifications, leadership, citizenship, and need. Recipients are to apply for renewal provided high-level performance is maintained. Applications should be addressed to the Chairman of the Committee on Scholarships and Awards before July 1 of each year.

Schlumberger Collegiate Awards. The Schlumberger Foundation of Houston has made available a scholarship in the amount of $500 to provide educational assistance to college students of special promise in engineering and scientific fields. The recipient must be a full-time junior or senior student working toward a bachelor's degree, and have outstanding academic and character records. The scholarship will be available to an Arts and Sciences student majoring in physics or geology, or to an Engineering student majoring in electrical, mechanical or petroleum engineering. In either case, 12 hours of study in electricity is a prerequisite, and the recipient may not simultaneously hold any other major scholarship administered by Texas Technological College. Applications should be addressed to the student's academic dean and should be filed before April 1 for the following academic year.

Scholarships for Qualified Citizens of Latin-American Countries and Possessions of the United States. The Board of Directors of the College has made available scholarships not to exceed five in either semester or term for qualified citizens of Latin-American countries and possessions of the United States, each scholarship providing funds not to exceed $125 per semester of the long session and $35 per six-week term of the summer session. These scholarships may be used for tuition only. To be eligible for Latin-American-United States Possessions Scholarships, a student must be a graduate of a secondary

school equivalent to the high school in the United States; be able to speak, read, and write English well enough to permit successful pursuit of regular college courses (in case of doubt, the student being required to pass oral and written examinations prescribed by the Latin-American-U. S. Possessions Scholarships Committee); satisfy the same committee that sufficient progress is being made to justify continuance of the scholarship into the second semester of the first year in residence, should the grade average of the first semester fall below a C; and make a C average on a minimum course load of 12 semesters hours during each semester thereafter, to receive the scholarship in the semester immediately following. In awarding these scholarships the committee considers the financial need of the student and the quality of his grades. Application should be initiated by the student and should be made to the Assistant Dean of Student Life.

Sears-Roebuck Foundation Scholarships in Agriculture. Sears-Roebuck Foundation has approved at Texas Technological College certain scholarships for the benefit of students in the School of Agriculture. A graduate scholarship is also available to a graduate student majoring in vocational agriculture. The scholarships are awarded for the long session, being renewed for the second semester provided the holder of the scholarship maintains a satisfactory record. Applications should be made to the Head of the Department of Agricultural Education.

Sears-Roebuck Foundation Scholarships in Home Economics. Sears-Roebuck Foundation has approved Texas Technological College to receive certain scholarships for the benefit of students in the School of Home Economics. The scholarships are awarded for the long session, being renewed for the second semester provided the holder of the scholarship maintains a satisfactory record. Applications should be made to the Dean of Home Economics.

Seventh District, Texas Federation Music Clubs Scholarship. The Seventh District of the Texas Federation of Music Clubs has established a scholarship of $200 annually for a talented student desiring to major in music. The applicant must be a resident of the Seventh District, be in need of financial aid, and present creditable scholastic standing. Preference will be given to applicants who have been active in a Federated Junior Music Club. The scholarship shall be awarded for one college year only, but recipients who maintain a 2.00 or better grade average may apply for renewal. The stipend is payable in two installments of $100 each with the payments due at fall and spring registration. Applications should be mailed by July 1 each year to the Head of the Music Department.

Socony Mobil Oil Company Scholarship. This scholarship is open to outstanding undergraduate students in the Department of Petroleum Engineering who have evidenced a well-balanced personality, strong character, ability to participate as a member of a team and who have maintained an above-average scholastic record. Applicants must be within one year of graduation and be enrolled as full-time students. The scholarship is valued at $400, plus the student's tuition not to exceed $500 per year. The scholarship is payable in installments of $200 at the beginning of each semester. The recipient must maintain a satisfactory record during the fall semester in order to retain the scholarship during the spring semester. Application for the scholarship should be made by March 10 and addressed to the Dean of Engineering.

Sophomore Scholarships. Several scholarships are available to

sophomore students who have completed the freshman year at Texas Technological College, with credit for 30 semester hours or more, with a minimum grade average of 2.00, and who have evidenced a high quality of citizenship. The funds for these scholarships, the amount of which ranges from $100 to $250 each, are made available from funds diverted from the Student Emergency Loan Fund. One-half of the scholarship will be paid each of the regular semesters at mid-semester. Applications shall be initiated by the student and shall be made to the Dean of Student Life.

The South Plains Chapter of the American Petroleum Institute Scholarship in Engineering. The South Plains Chapter of the American Institute has established a scholarship valued at $500 yearly for students majoring in the field of engineering. The geographic area from which the recipient will be selected shall comprise 15 counties in the West Texas area, as follows: Lamb, Hale, Floyd, Motley, Cochran, Hockley, Lubbock, Crosby, Yoakum, Terry, Lynn, Garza, Gaines, Dawson, and Borden. This scholarship is open to junior and senior students and is to be granted on a yearly basis. Previous recipients are eligible to reapply for the scholarship for succeeding years, but renewal is not automatic as all applicants will be considered each year. Any student who maintains a 2.00 or better grade average may apply for this scholarship. The selection of the recipient will be made before the beginning of the fall semester. The recipient is expected to maintain satisfactory progress during the fall semester, otherwise the scholarship will be withdrawn for the spring semester. Applications for the scholarship should be made by March 10 and addressed to the Dean of Engineering.

The Southwestern Public Service Company Scholarship in Electrical Engineering. The Southwestern Public Service Company has established a scholarship valued at $750 for students majoring in the field of electrical engineering. The scholarship is open to junior, senior, and graduate students, and is granted on the bases of scholastic ability, character, and financial need. The scholarship is granted on a yearly basis and previous recipients are eligible to reapply for the scholarship in succeeding years, but renewal is not automatic and all applicants will be considered each year. The recipient shall be ineligible during the same year for any other major scholarship administered by the College. The stipend is payable in six installments of $80 each and installments of $135 on Oct. 1 and Feb. 1. Applications for the scholarship should be made by March 10 and addressed to the Dean of Engineering.

The Southwestern Public Service Company Scholarship in Mechanical Engineering. The Southwestern Public Service Company has established a scholarship valued at $750 for students in mechanical engineering. The scholarship is open to junior and senior students, and is granted on the bases of scholastic ability, character, and financial need. The scholarship is granted on a yearly basis and previous recipients are eligible to reapply for the scholarship in succeeding years, but renewal is not automatic as all applicants will be considered each year. The recipient shall be ineligible during the same year for any other major scholarship administered by the College. The stipend is payable in six installments of $80 each and installments of $135 on Oct. 1 and Feb. 1. Applications for the scholarship should be made by March 10 and addressed to the Dean of Engineering.

Speech Scholarships. Local citizens and organizations have made

available a small fund to be used as scholarships of $100 each annually for outstanding students who desire to study speech. Most of the scholarships derived from this fund will be awarded to entering freshmen on the bases of academic record, quality of participation in high school speech, school citizenship activities, and financial need. One or more may be awarded each year when sufficient funds are available to students above the freshman year, on the bases of academic achievement and quality of participation in the speech program. Applications should be addressed to the Head of the Department of Speech.

Standard Oil Company of Texas Scholarship in Engineering. The Standard Oil Company of Texas makes available from time to time a scholarship in the amount of $500 for a senior engineering student at Texas Technological College. The scholarship will be awarded on the bases of outstanding scholastic achievement, interest in extra-curricular activities, and citizenship. Inquiries as to availability should be addressed to the Dean of Engineering before March 10.

Standard Oil Company of Texas Scholarship in Geology. The Standard Oil Company of Texas has made available a scholarship in the amount of $500 for senior geology majors at Texas Technological College. The scholarship will be awarded on the bases of outstanding scholastic achievement, interest in extra-curricular activities, and citizenship. Applications should be addressed to the Dean of Arts and Sciences.

Tarrant County Texas Tech Parent Club Scholarship. The Tarrant County Texas Tech Parent Club has established an annual scholarship of $150 for a worthy undergraduate student with any officially recognized major. The applicant must be a resident of Tarrant County, show evidence of financial need, and have a minimum grade average of 2.00. (Entering freshmen must have finished in the upper quartile of their high school class.) The recipient may not hold another College-sponsored major scholarship simultaneously. Applications should be made to the Chairman, Committee on Scholarships and Awards.

The Texas Concrete Block Company Scholarship. The Texas Concrete Block Company has established a scholarship with a stipend of $250 annually. An entering freshman must have graduated in the top quartile of his high school class. A sophomore, junior or senior must have maintained a 2.00 minimum grade average during the preceding semester. Need, character, and citizenship are also considered. Applications should be addressed on the Chairman of the Committee on Scholarships and Awards before July 1.

The Texas Electric Service Company Scholarship in Electrical Engineering. The Texas Electric Company, with general offices at Fort Worth, has established a $750 annual scholarship. The scholarship is open to a graduate, senior, or junior student majoring in electrical engineering, and is awarded on the basis of scholastic record, character, and financial need. Applications for the scholarship should be made by March 10 and addressed to the Dean of Engineering.

Texas Pacific Coal and Oil Company Scholarships. The Texas Pacific Coal and Oil Company has established two scholarships of $750 each annually for sons and daughters of its employees, its retired employees, or of persons who died while employed by the company. Preference will be given to applicants with the best scholastic records who are majoring in courses considered to be of value to the petroleum

industry. Applicants who are entering freshmen must furnish certificates from their high school principal that they were in the upper quartile of their graduating class. The scholarship shall be awarded for one college year only, but recipients who maintain a 2.00 or better grade average may apply for renewal. The stipend is payable in 10 installments of $75 each, distributed equally between the fall and spring semesters. Applications must be mailed by July 1 each year to the Dean of Arts and Sciences.

Texas Society for Crippled Children Scholarships. The Texas Society for Crippled Children has made available a limited number of scholarships to apply on summer session tuition for students interested in special education for exceptional children. Applications should be addressed to the Head of the Department of Speech.

The Texas Technological College Foreign Student Scholarships. The Board of Directors of the College has made available scholarships not to exceed five in each semester or term for qualified citizens of foreign countries, each scholarship providing funds not to exceed $125 per semester of the long session and $35 per six-week term of the summer session. The applicant must have been enrolled in Texas Technological College a minimum of one semester and must have established a grade average of 1.50, which he must maintain if the scholarship is continued for the second semester of the year in which it has been granted. These scholarships may be used for tuition only. In awarding these scholarships, the Committee on Foreign Students considers the financial need of the student and the quality of his grades. Application must be initiated by the student and should be addressed to the Assistant Dean of Student Life.

The Texas Technological College Panhellenic Scholarship. The Texas Technological College Panhellenic Council has established a scholarship in the amount of $100 per year to be available to a woman graduate of a high school in Lubbock. To be eligible the applicant must have graduated in the top quartile of her high school class. Character and need are also factors in making the award. Applications should be addressed to the Dean of Women prior to May 1.

Western Compress and Storage Company Scholarships in Agriculture. Western Compress and Storage Company of Abilene, has provided a $3,000 scholarship which will be awarded to a needy student to study agronomy with emphases upon cotton, irrigation, and possible sources of water supply. The scholarship will be equally distributed over four years. Eligibility for scholarship is limited to students from Taylor, Nolan, Jones, Haskell, Fisher, Scurry, Knox, Mitchell, and Callahan Counties. This scholarship is awarded only upon written application made before Aug. 1, prior to the freshman year. Application should be addressed to the Dean of Agriculture.

Western Electric Scholarship in Engineering. The Western Electric Company has provided a $400 scholarship for undergraduate students in engineering. Preference is given to an upperclassman. Applications should be addressed to the Dean of Engineering prior to March 10.

West Texas and Eastern New Mexico Cotton Ginners Scholarships. The Bigham Gin Supply Company and The Anderson and Bigham Sheet Metal Works have established four $300 scholarships for agromomy students. Applicants must be from the West Texas and Eastern New Mexico area. They must have participated in the growing of cotton

in this area and must be presently engaged in study of improved cotton production. Scholarships will be available for one freshman, one sophomore, one junior, and one senior each year. Grants are renewable provided standards of scholarship are maintained. Freshmen must be recommended by a vocational agriculture teacher and a ginner. They must make a 1.50 grade average to be eligible for consideration for a sophomore scholarship. Applicants for junior and senior grants must maintain a 2.00 grade average. Applications should be addressed to the Head of the Agronomy Department prior to July 1 of each year.

Mrs. A. M. Williams Memorial Scholarship in Dairy Industry. A scholarship of $100 each year for five years has been made available by Mr. Fulton Williams of the Fulton Supply Company, Fort Worth, in memory of his grandmother. This scholarship will be awarded to a junior student majoring in dairy industry on the bases of scholarship, citizenship, and financial need at the annual Dairy Industry Banquet each year. Information regarding this scholarship may be obtained from the Head of the Department of Dairy Industry.

Roscoe Wilson Memorial Scholarship in Foreign Languages. From the estate of the late Roscoe Wilson, former member of the Board of Directors of Texas Technological College, a sum of $500 annually is made available by his widow to the Department of Foreign Languages. From this sum, beginning in 1939, the Department has awarded a scholarship (payable in nine monthly installments) of $270 to a student majoring in foreign languages. The remainder of the money is used chiefly for the purchase of library books. Applications for the scholarship should be addressed to the Head of the Department of Foreign Languages.

Zeta Tau Alpha Fraternity Scholarship. Gamma Tau Chapter of Zeta Tau Alpha has established a $200 scholarship to be awarded annually to a woman student possessing high character, citizenship, and grades, and in financial need. Academic standing must include high school graduation in the highest quartile for entering freshmen or a minimum 2.00 grade average for sophomores, juniors, or seniors in college. Recipients may apply for renewal, provided standards are maintained. Applications should be addressed to the Dean of Women.

Awards

The following awards are offered annually:

The Agronomy Club annually awards individual gold medals to all members of the senior judging teams participating in international and national judging contests in crops. Awards are also made by this club to winners in the freshman-sophomore and advanced contests in agronomy.

The Alpha Zeta Scholarship Plaque is awarded annually to the sophomore student in agriculture who had the highest grade-point average in his freshman year.

The American Association of Teachers of German annually awards certificates of merit to the outstanding students enrolled in sophomore and advanced German.

American Society of Mechanical Engineers awards a book to the

most valuable member of the local branch of the American Society of Mechanical Engineers for the past year's activities.

Avalanche-Journal Award. The sum of $50 will be awarded annually to the student of junior standing majoring in journalism who does the best work in reporting in the first semester. This award is given by the Avalanche-Journal Publishing Company, Lubbock.

Chain Award in Horticulture and Park Management. This award in the amount of $200 annually, payable 50 per cent each semester, will be made largely on the basis of financial need to a junior or senior student having a good scholastic, citizenship, and character record, and a major in horticulture and park management. Correspondence concerning it should be addressed to the Head of the Department of Horticulture and Park Management.

The Dairy Industry Club annually awards individual gold medals to the members of the senior dairy products judging teams who participate in the international collegiate dairy products judging contest.

The Delta Sigma Pi Scholarship Key is awarded annually by the faculty to the senior male student who upon graduation ranks highest in scholarship for the entire course in business administration.

The French Embassy Award is given annually to the most outstanding student of first-year, of second-year and of third-year French.

The History Award for Women is given annually to the woman student majoring in history with the highest scholastic record.

The Home Economics Club Award. The Home Economics Club annually awards a $25 defense bond to a sophomore student, who, during her freshman year, showed outstanding qualities in leadership, scholastic standing, and interest in extra-curricular activities. This award is made providing the student continues to major in home economics.

The Local Chapter of the National Block and Bridle Club awards gold medals to the six members of the international livestock judging team, to the four members of the national dairy cattle judging team, and to the four members of the national meats judging team. Awards are made also to winners in the freshman, sophomore, and junior livestock judging contests, and to winners fitting and exhibiting livestock in the Block and Bridle "Little International" livestock show.

Mortar Board annually awards a medal to the woman student making the highest grade in her freshman year.

National Association of Cotton Manufactures award annually a medal to the highest ranking senior student in textile engineering.

The National Block and Bridle Club awards a properly engraved plaque to the senior student who has contributed the greatest achievement to the local chapter of the Block and Bridle Club. The club also awards gold and silver medals to the junior students who rank first and second in the junior livestock judging contests, held annually at the College, and a gold medal to the winner in the Block and Bridle "Little International" livestock show.

Phi Psi Certificate is awarded annually by the Phi Psi National Honorary Textile Fraternity to the outstanding graduating textile engineering student.

The Reed and Hefner Scholarship Plaque is awarded each semester to the pledge of Beta Upsilon Chapter of the International Fraternity of Delta Sigma Pi having the highest scholastic standing during the semester of pledgeship.

The Fred W. Standefer Trophy is awarded to the student among the varsity football lettermen making the highest scholastic standing for the year. The student's name is to be inscribed on the bronze football plaque in the athletic trophy room. In addition, he is to receive a gold football properly inscribed.

LOAN FUNDS

Texas Technological College has a number of funds from which loans may be made to assist worthy students in paying their college expenses. Several of these loan funds operate on the interest derived from the investment of the principal with which the loan fund was established. Some are small and are available only to certain groups of students. Listed here also are some of the loan funds made available and administered by recognized student organizations at Texas Tech to a membership determined by academic interest.

Agricultural Club Loan Fund. The Agricultural Club has established a loan fund to aid agricultural students in emergencies. Applications for loans should be made to the Agricultural Club sponsor.

Robert K. Allen Loan Fund. This fund was established in 1946 by Mr. Robert K. Allen, an alumnus of the College, and loans are available to students of the School of Agriculture. Application should be made to the Dean of Agriculture.

The American Institute of Industrial Engineers Loan Fund. This loan fund, made up from the general property deposit refunds donated by graduating seniors of the Industrial Engineering Department, is available to any industrial engineering student. Application should be made to the faculty sponsor of the campus chapter of A.I.I.E.

The American Society of Mechanical Engineers Loan Fund. The American Society of Mechanical Engineers has established a small loan fund for students in the School of Engineering. Application should be made to the Assistant Dean of Student Life.

The Brown Memorial Trust Loan Fund. This loan fund was made available from funds of the Brown Memorial Trust, a division of the T. J. Brown and C. A. Lupton Foundation, Inc., Fort Worth. Application should be made to the Assistant Dean of Student Life.

Engineering Society Loan Fund. The Engineering Society maintains a loan fund which is available to engineering students who have completed at least 50 per cent of the required work toward graduation. Approximately two weeks are required to process a loan. Application should be made to Prof. C. C. Perryman.

Dr. R. J. Hall Loan Fund was established by bequest of the late Dr. R. J. Hall of Lubbock. The fund is available to undergraduate students. Application should be made to the Assistant Dean of Student Life.

Will C. Hogg Loan Fund of $25,000 was made available to the College by the will of the late Will C. Hogg of Houston. It is administered by the Board of Directors appointed in accordance with the directions of Mr. Hogg's will. The fund is available to upperclassmen only. Application should be made to the Assistant Dean of Student Life.

Home Economics Club Loan Fund. This fund, known as the Margaret W. Weeks Loan Fund, was established during the first year of

the College by the Home Economics Club. This fund is open to home economics students. Application should be made to the Dean of Home Economics.

The Houston City Panhellenic Association Loan Fund. This association has an available fund from which loans may be made to junior or senior women students who are residents of Harris County. Students interested in applying for a loan should see the Dean of Women.

Mrs. Harry Morris Foreign Students Loan Fund. This loan fund is available to foreign students enrolled in the College. It is primarily designed to meet financial emergencies of foreign students who have been enrolled in Texas Technological College. Applications for foreign student loans should be made in person to the Assistant Dean of Student Life.

George T. Morrow Loan Fund of $20,000 was left to the College by the late George T. Morrow, prominent businessman of Lubbock for a number of years. The fund is available to upperclassmen only. Application should be made to the Assistant Dean of Student Life.

Kenneth M. Renner Memorial Loan Fund. This fund was established by donations from alumni, former students, industry, friends of the late Professor Renner, and funds from the Dairy Industry Club. This fund is available to junior and senior students majoring in dairy industry. Application should be made to the Head of the Department of Dairy Industry.

Rotary Student Loan Fund. This loan fund, established by the Lubbock Rotary Club, is available to upperclassmen, primarily of late junior and senior classification. Applications for Rotary student loans should be made to the Dean of Student Life.

Seminole AAUW Branch Loan Fund. This loan fund was established by the Seminole AAUW branch to aid a young woman graduate of the Seminole High School or a woman teacher of the Seminole school faculty. Application should be made to the Dean of Women.

Student Emergency Loan Fund. This loan fund is available to any student in the College who has need of a short-time, small loan. This loan fund is made possible through the proceeds from the sale of freshman caps. Application for a Student Emergency Loan should be made to the Assistant Dean of Student Life.

The Kathryn Sowder Whatley Loan Fund was established by request of the late Mrs. Eppie Sowder of Lubbock. The fund was established for deserving boys and girls who wish to attend Texas Technological College. Application should be made to the Assistant Dean of Student Life.

Vocational Rehabilitation Aid

The Texas Education Agency through the Vocational Rehabilitation Program offers assistance for tuition and fees to students in Texas colleges who have certain physical disabilities. Application for services of this division should be made to the nearest Office for Vocational Rehabilitation under the Texas Education Agency. The local office is located in the Lubbock County Courthouse.

Assistance for this phase of the program of vocational rehabilitation is based on physical disabilities resulting in a vocational handicap and on established financial or economic need.

STUDENT LIFE

JAMES G. ALLEN, *Dean of Student Life*
JAMES B. WHITEHEAD, *Assistant Dean of Student Life*
LEWIS N. JONES, *Dean of Men*
WILLIAM H. HASSLER, *Assistant Dean of Men and Head Supervisor, Men's Dormitories*
FLORENCE PHILLIPS, *Dean of Women*
DOROTHY T. GARNER, *Assistant Dean of Women*
JACQUELINE STERNER, *Assistant Dean of Women*
NELSON H. LONGLEY, *Director of Tech Union and Assistant to the Dean of Student Life*
JOSEPH A. BLANCHARD, *Assistant Director of Tech Union*
LARKE ANN HARRINGTON, *Program Director of Tech Union*

The office of the Dean of Student Life is concerned with the general welfare of the student. The staff exerts its efforts toward seeing that every phase of the college experience represents an opportunity for the growth of the student; it bases its program on the premise that all of college life, both in and out of class, represents a real and significant part of educational development.

The office of the Dean of Student Life affords counseling and guidance service to all students enrolled in the College. Through conferences, staff members are in a position to refer the student to the many service agencies interested in his welfare. In addition to giving counsel and guidance on personal, social and individual problems, the staff is prepared through training and experience to bring the student to full understanding of himself as a part of the rich and full opportunity which is a college education.

The philosophy of the staff of the Dean of Student Life is built upon the fundamental idea of giving the student the greatest opportunity for growth as he makes the many important decisions that are a part of college life. Through its program the staff of the Dean of Student Life seeks to provide the student with the maximum opporunity for the development of his full intellectual, social, moral, and spiritual potentialities.

It is the philosophy of the staff that their purpose is to assist the student in meeting his problems in an intelligent and constructive way; and in such a manner as to give him the greatest opportunity of individual growth and development in reaching his own solutions. Through its program the staff of the Dean of Student Life seeks to make possible the student's maximum opportunity for academic achievement.

Dormitory Supervisory System

Texas Technological College houses approximately forty-five hundred of its students on campus in 13 dormitories well designed for the purpose. The main objective of the dormitory system is to provide an atmosphere of living consistent with and conducive to the best academic achievement. The College believes that the experience in group living is an important part of the development of the mature person and that the self-discipline inherent in dormitory life is wholesome.

The dormitories are supervised by a staff of trained and experienced personnel. The eight men's dormitories are under the direction of the assistant dean of men; the five women's dormitories, of the assistant dean of women. The supervisors in the men's dormitories and the counselors and graduate assistants in the women's dormitories are selected on the basis of their professional training for, experience in, and special qualifications for the counseling and guidance of college students. The dormitory program encourages the full development of the student as an individual and as a member of the group.

Each of the dormitories, both men and women, has its own student government which sets the pattern of living and sponsors a program of cultural, social, and recreational events. Texas Technological College is dedicated to the precept that the most productive group relationship is that which affords the maximum opportunity to learn how to live with others.

Student Activities

The program of student activities at Texas Technological College is sufficiently large and well-rounded to present an opportunity for the constructive expression and development of all types of student interests and abilities. The College believes that a carefully selected and balanced program of activities not only will stimulate the student to his best achievement academically but will so develop and direct his interests and abilities as to make his experience both in college and after graduation happy and successful.

The activities program is patterned in a manner which encourages democratic processes and develops leadership and citizenship. Through student leadership these activities are geared to the best development of the individual student both as a leader and as a member of a group functioning together democratically.

Eligibility for Participation in Extracurricular Activities

The program of student activities at Texas Technological College is designed to supplement the student's academic program and to provide him with an opportunity for the investment of time and talent not utilized in his course of studies. It assumes that the student is making satisfactory progress in his courses and toward his degree. His eligibility for participation is set forth in the constitution under which the activity is recognized by the College or in a procedure approved by the College. The basic requirement for eligibility for participation in extracurricular activities is summarized here.

Any undergraduate student not on scholarship or disciplinary probation, who is regularly registered for 12 or more semester credit-hours, is eligible to become a candidate for or to hold student office, or may represent the College in any extracurricular activity, provided such student has a grade average of at least 1.00 for both the whole of his college work completed at Texas Technological College and that of the preceding semester on the complete scholastic load.* A student whose average during his last preceding semester in residence before

* The average grade is determined by multiplying the grade points by the number of hours in each subject as shown by the grades; the total of all grade points is then divided by the total of all the hours in which the student has received grades of A,B,C, D, Incomplete and F and including repeatedly each re-registration in the same course with a grade of F in the total. A transfer student may establish eligibility by having a C (1.00) average on all courses at the midsemester of his first semester in residence.

a summer session is less than 1.00, may establish eligibility for extracurricular activity during the following fall semester by attending one or both terms of the summer session and making grades that will bring his average for the preceding semester and the summer term or terms together to 1.00.

A student who has established this eligibility may represent the student body or any recognized organization, department or activity in the College, or may hold an elective or appointive position or office. This eligibility must be satisfied by a student who serves as a College or class officer or representative, or as an officer or representative of a recognized club or organization, or as a member of an academic, departmental or intramural athletic squad or committee.

To be eligible to participate in out-of-town trips or field trips which require absence from any other class than that for which the trip is assigned, a student must have the grade average of 1.00 as outlined above, must not be on either scholastic or disciplinary probation, and must have a current academic standing which is satisfactory to his academic dean.

The requirement for Eligibility for Participation in Extracurricular Activities is basic for all college activities with exception of those for intercollegiate athletics, which are set by the athletic conference of which Texas Tech is a member. Other eligibility requirements as determined by student organizations and agencies operate within the framework of the eligibility requirement set by the statement made here.

Eligibility for Intercollegiate Athletics

An undergraduate student not on scholarship or disciplinary probation may compete in intercollegiate athletics if he is regularly enrolled, and if he satisfies Southwest Conference eligibility requirements. Participation in intercollegiate athletics is governed by the athletic conference rules followed by the College and administered by the Athletic Council. No student may make a public appearance in an intercollegiate athletic activity unless he has been certified by the Faculty Committee of the Athletic Council. The responsibility for securing this certification shall rest with the student concerned and with the Faculty Committee of the Athletic Council.

Student Association

All undergraduate students enrolled in the College are automatically members of the Student Association of Texas Technological College. The Student Council is the executive council of the Student Association.

Through the funds its receives from the student activities fee the Student Council supports worthy student enterprises and organizations. It also plans, publicizes, and supervises student elections.

The Student Council sponsors, directs, and supervises deserving student activities in the administration of student affairs. It appoints from its membership representatives on the Althletic Council, the Executive Council of the Board of Student Organizations, the Campus Planning Committee, the Discipline Committee, the Student Welfare Committee, the Student Publications Committee, the Tech Union Board, the Committee on Student Organizations, and the Student Traffic Court.

Association of Women Students

Every woman who is regularly enrolled in Texas Tech automatically becomes a member of the Association of Women Students. The purposes of the association are: to stimulate a spirit of unity and fellowship among all the women students, to further a sense of responsibility and awareness in campus and community affairs, to formulate and maintain those high standards that are conducive to living together on campus, and to serve as a coordinating body in all activities concerning women students.

The governing body is composed of elected officers and representatives from every women's organization. The Texas Tech Association of Women Students is a member of the Intercollegiate Association of Women Students, a national organization made up of member schools throughout the United States.

Through the Big Sister — Little Sister program and the Howdy Party, the Association assumes responsibility for assisting the new freshmen to become oriented to college life. Other activities include Women's Day and Dad's Day programs, and various community service projects.

Board of Student Organizations

The Board of Student Organizations is composed of the presidents, or their representatives, of all recognized student organizations on Texas Tech campus. The function of this organization is fourfold: It furthers the welfare of student organizations on Texas Tech campus and encourages and inspires the highest levels of student organization functioning and achievement; it coordinates in making effectual in a practical way all things important to student organizations and the student body of Texas Technological College; it serves as a medium of communications between the administration and the students in recognized College organizations, between the Student Council and members in recognized College organizations, and between the students in recognized organizations and the Student Council; and it trains, encourages, and inspires student leadership in recognized College organizations, as a service to the student body and administration.

The function of the Executive Council of the Board of Student Organizations is to set policies, plan the meetings of the board and determine the agenda for each meeting, and in general direct the business of the organization.

Tech Union

Tech Union Building is the campus facility designed to provide the college population with the maximum in recreation and leisure-time activities. In physical facilities Tech Union provides food service, lounge space, meeting room space, ballroom, games room, and many special services. In addition, the Union program provides a planned schedule of activities for the student body. These activities are selected, planned and executed by volunteer students with the help of a full-time program director. This group of students is co-ordinated by a Program Council made up of an executive committee and chairmen from the following committees: Arts and Exhibits, Building Decorations, Dance Decorations, Friday-Night Dance, Games and Tournaments, Hos-

pitality, Lecture and Debates, Movies, Music, Record Dance, Special Events, Square Dance, and World Traveler.

Tech Union is under the operation of a full-time director with a staff consisting of an assistant director, a program director, food supervisor, bookkeeper, secretary, and student assistant.

The entire operation of Tech Union is aimed at providing students with the opportunity to advance in leadership, social skills, and organization in the belief that it will enable them better to assume the responsibilities of their community.

Intramural Sports Program

Under supervision of the directors of intramural sports, the Department of Health and Physical Education and Recreation for Men and the Department of Health and Physical Education and Recreation for Women offer an intramural program with attractive opportunities for participation in recreative physical activities. Participation is voluntary and open to all students enrolled in the College. The objective of this program is to make available to every student a sport he enjoys, a team on which to play, and fair and even competition.

Publications

The Toreador, the college newspaper, is published by officers chosen from the student body. *La Ventana,* the college yearbook, is a student-assembled record of the events and activities of the year. The editors and business managers of La Ventana and The Toreador are selected on the basis of applications made to the Committee on Student Publications, a faculty-student committee. These two college publications afford valuable training in reporting, editing, and business management.

Musical Organizations

All musical organizations are open to any student officially enrolled in the College who meets academic requirements. Each organization is under the direction of a faculty member of the Department of Music.

The official touring musical organizations for the College are the Choir, the Madrigal Singers, and the Concert Band. Other musical groups in which students may participate are the Festival Chorus, the "B" Band, and the Lubbock and Tech Symphony Orchestras. Most of these ensembles allow 1 semester-hour credit per semester. Each group performs a broad repertoire and makes a number of public performances annually.

Forensic and Dramatic Activities

Opportunities are open to all students in the College, meeting general eligibility requirements, for participation in both intramural and intercollegiate forensic activities. These include group discussions, debate, extempore speaking, impromptu speaking, oratory, radio speaking, after-dinner speaking, and similar events. Both contest and non-contest events are held on campus and at other colleges. The *Tech Forensics Union* and *Delta Sigma Rho* are active in sponsoring campus-wide speech activities.

Every College student meeting general eligibility requirements is invited to participate in the plays presented by the Speech Department and its related organizations, *Sock and Buskin* and *Alpha Psi Omega*. Participation may include acting, stage make-up, lighting, scene design and construction, publicity, ticket sales, and other necessary activities in the production of plays. Usually three full-length plays and several one-act plays are produced each season.

Cultural Opportunities

Through such agencies as Civic Lubbock, Lubbock Symphony, Lubbock Little Theatre, Tech Union program, Texas Tech Museum, and the Texas Tech Music and Speech Departments, the students of Texas Tech have access to many artistic and cultural experiences. During the past year Texas Tech students have had the opportunity of attending programs, mostly at special student rates, presenting: Fred Waring, Roberta Peters, Ballet Russe de Monte Carlo, "No Time for Sergeants," Dorothy Kirsten, Richard Ellsasser, Eugene List and Carroll Glenn, Carmen Amaya, and the Houston Symphony Orchestra. Concerts by the Lubbock Symphony presented Dorothy Kirsten, Richard Ellsasser, Eugene List and Carroll Glenn.

The resources of the College and the community of which it is a part give Texas Tech students ample opportunity for cultural development.

Religious Emphasis

With the income from an endowment set up by Mr. and Mrs. J. M. Willson of Floydada, a lecturer of national distinction in the fields of science and religion is brought to Texas Technological College each year for a series of four lectures. These lectures highlight a week in the fall during which the Student Religious Council regularly sponsors a program of student-directed panel discussions on topics suggested by the Willson lecturer.

One week in the spring semester is designated at Texas Tech as Religious Emphasis Week, during which period the Student Religious Council, made up of representatives of the recognized student religious organizations on the campus, directs a campus-wide religious program.

Varsity Show

Each spring the Tech Union sponsors a musical review, known as *The Varsity Show*. This production is student-directed and produced. Although this show draws heavily upon the trained and experienced student talent on the campus, especially that in the Speech and Music Departments, any student who is particularly interested in this project will find an opportunity to participate in some capacity.

Engineers' Show — Home Economics Open House

Each spring the Engineering Society sponsors a two-day showing of engineering exhibits to the public. Annually some 10,000 visitors see this student-planned and produced display of engineering talent.

On the same week end the Home Economics Club holds Open House for all visitors to the campus. Demonstrations in all fields of home economics are on display on this occasion.

Recognition Service

Recognition Service each spring honors those students who rank scholastically in the upper 3 per cent of their class within their school during either of the preceding two regular semesters and have a 2.25 or better average in the other semester. Students being recognized for the first time receive Individual Honors; those recognized for the second time receive Class Honors; those recognized for the third time receive School Honors; and those recognized for the fourth time receive College Honors. Students recognized with College Honors are presented a gold key by the College.

Student organizations two-thirds of whose membership make a 2.00 or better average during these semesters are also honored on this occasion. Athletic letters and other athletic awards are presented by the Athletic Council at this service Undergraduate students granted scholarships by the College are recognized on the basis of having made an all-college average of 2.00 or better for the spring and fall period.

As a part of the Recognition Service the Student Council honors those students who have made significant contributions in leadership to the student body.

Clubs and Societies

Recognition of student clubs and societies and the plan under which they function is the assignment of the Committee on Student Organizations, a student-faculty committee appointed by the President of the College. Recognition of a student organization automatically gives it the right and responsibility to schedule on the Social Calendar, and entitles it to the sponsorship of College faculty and administration, and to the use of such College facilities as may be designated for that purpose. The recognition of a club or society on Texas Technological College campus is based on the assumption of the Committee on Student Organizations that such an organization satisfies a student need for professional, scholastic, social, religious, service, or common-interest expression consistent with the best college achievement.

Professional, scholastic, and honorary organizations are responsible also to the dean of the school with which (by virtue of their nature) they are associated.

The Board of Student Organizations, composed of the presidents of all recognized clubs, serves as a coordinating agent for student organizations recognized by the College, the chairman of the executive committee of the Board serving as a member of the Committee on Student Organizations. The Inter-fraternity Council and the Panhellenic Council serve as governing boards for the national social fraternities and sororities. The Student Religious Council serves to coordinate the activities of those student religious groups who are active on the campus and who elect to participate in campus-wide student religious activities.

Detailed information on the procedure by which a student group may be recognized by the College is available through the chairman of the Committee on Student Organizations.

The Code of Student Affairs is a bulletin stating the College policies on procedures and regulations as they affect both individual students and recognized student organizations.

I. *Honorary Organizations*: An honorary organization is an organization, local or national in scope, whose membership is based on selec-

tivity, either by scholarship, leadership, service, high moral character, or some combination of the four. Those whose selection is based on academic excellence alone usually must meet a minimum requirement of from 2.25 to 2.50. The departmental honoraries usually require a 1.00-1.50 overall average but establish higher requirements in the academic area of the honorary. Many of the honoraries are restricted to electing to membership a certain percentage of a class or department. Selection may be based on certain minimum requirements but meeting them does not automatically insure membership. Vote of the members and extension of an invitation are necessary for membership in most of the following:

Departmental Honoraries

Alpha Epsilon Delta (Pre-Medicine)
Alpha Pi Mu (Industrial Engineering)
Alpha Psi Omega (Speech)
Alpha Zeta (Agriculture)
Eta Kappa Nu (Electrical Engineering)
Kappa Mu Epsilon (Mathematics)
Phi Alpha Theta (History)
Phi Upsilon Omicron (Home Economics)
Pi Delta Phi (French)
Pi Epsilon Tau (Petroleum Engineering)
Pi Omega Pi (Business Education)
Pi Sigma Alpha (Government)
Sigma Delta Pi (Spanish)
Sigma Gamma Epsilon (Geology)
Sigma Pi Sigma (Physics)
Sigma Tau Delta (English)
Tau Beta Pi (Engineering)
Theta Sigma Phi (Women's Journalism)

Scholastic Honoraries

Alpha Lambda Delta (Freshman Women)
Phi Eta Sigma (Freshman Men)
Phi Kappa Phi (Junior, Senior, and Graduate Men and Women)

Service Honoraries

Junior Council (Junior Women)
Mortar Board (Senior Women)

II. *Department, School, and/or Professional Organizations*: Departmental and school clubs are defined as those clubs which are sponsored by a department or school and are means of disseminating information concerning fields of activity to be found in the department or school. They may or may not have professional standards which are requirements for membership. The constitution of a departmental, school, or professional club will determine the basis of membership.

Agricultural Club (School)
Agricultural Economics Club (Departmental)
Agronomy Club (Departmental)
American Chemical Society (Student Branch — Departmental)
American Institute of Architects (Student Branch — Departmental)
American Institute of Chemical Engineers (Student Branch — Departmental)
American Institute of Electrical Engineers (Student Branch — Departmental)
American Institute of Industrial Engineers (Student Branch — Departmental)
American Institute of Mining and Metallurgical Engineers (Student Branch — Departmental)
American Institute of Physics (Student Branch — Departmental)
American Society of Agricultural Engineers (Student Branch — Departmental)
American Society of Civil Engineers (Student Branch — Departmental)
American Society of Mechanical Engineers (Student Branch — Departmental)
Applied Arts Workshop (Departmental)
Arnold Air Society (Air Force ROTC — Departmental)
Association of the United States Army
Block and Bridle (Agriculture — Departmental)
Capa y Espada (Spanish — Departmental)
Dairy Industry Club (Departmental)
Delta Sigma Pi (Business Administration — Professional)
Delta Sigma Rho (Speech — Departmental)

Department of Music Student Executive Council — (Departmental)
Der Liederkranz (German — Departmental)
Engineering Society (School)
Future Farmers of America (School)
Future Teachers of America (Departmental)
Gargoyle Club (Architecture — Departmental)
Home Economics Club (School)
International Relations Club (Departmental)
Kappa Kappa Psi (Band — Professional)
La Cercle Francais (French — Departmental)
Major-Minor Club (Women's Physical Education — Departmental)
Mu Phi Epsilon (National Women's Music Fraternity — Professional)
Optimates (Latin — Departmental)
Phi Gamma Nu (Business Administration-Women — Departmental)
Phi Mu Alpha (Men's Music Fraternity — Professional)
Phi Psi (Textile Engineering — Departmental)
Pre-Med Club (Departmental)
Psychology Club (Departmental)
Sam Houston Rifles (Departmental)
Scabbard and Blade (Departmental)
Sigma Iota Epsilon (Management-Professional)
Society of American Military Engineers (Departmental)
Society of Economic Paleontologists and Mineralogists (Departmental)
Sock and Buskin (Dramatics — Professional)
Speech Pathology Club (Departmental)
Tau Beta Sigma (Women's Band — Professional)
Texas Tech Accounting Society (Departmental)
Texas Tech Ad Club (Departmental)
Texas Tech Biology Club (Departmental)
Texas Tech Geology Club (Departmental)
Texas Tech Horticulture Club (Departmental)
Texas Tech Sports Club (Departmental)
Textile Engineering Society (Departmental)

53

III. *Mutual Interest*: A mutual-interest club is any organization whose members are brought together on the basis of common interest in an activity consistent with the objectives of a college education.

Air Force ROTC Association
Alpha Chi Omega (Greek Letter Social Sorority)
Alpha Phi (Greek Letter Social Sorority)
Alpha Phi Omega (Men's Service Organization)
Alpha Tau Omega (Greek Letter Social Fraternity)
Amateur Radio Club
Angel Flight
Army ROTC Association
Baptist Student Union
Book Reviewers Club
Canterbury Club (Episcopal)
Christian Science Organization
Church of Christ Bible Chair
Circle "K" Club (Service)
Cosmopolitan Club (Foreign Students)
Delta Delta Delta (Greek Letter Social Sorority)
Delta Gamma (Greek Letter Social Sorority)
Delta Tau Delta (Greek Letter Social Fraternity)
Disciples Student Fellowship (Christian Church)
Dolphin Fraternity (Swimming)
Double "T" Association (Athletic Lettermen)
Gamma Delta (Lutheran)
Gamma Phi Beta (Greek Letter Social Sorority)
Kappa Alpha Theta (Greek Letter Social Sorority)
Kappa Kappa Gamma (Greek Letter Social Sorority)
Kappa Sigma (Greek Letter Social Fraternity)
KTTC (College Radio Station)
Lutheran Students Association
Newman Club (Catholic)
Modern Dance Club
Phi Delta Theta (Greek Letter Social Fraternity)
Phi Gamma Delta (Greek Letter Social Fraternity)
Phi Kappa Psi (Greek Letter Social Fraternity)
Pi Beta Phi (Greek Letter Social Sorority)
Pi Kappa Alpha (Greek Letter Social Fraternity)
Saddle Tramps (Men's Service Organization)
Sigma Alpha Epsilon (Greek Letter Social Fraternity)
Sigma Chi (Greek Letter Social Fraternity)
Sigma Kappa (Greek Letter Social Sorority)
Sigma Nu (Greek Letter Social Fraternity)
Texas Tech Forensics Union
Texas Tech Rifle Club
Texas Tech Rodeo Association
Texas Tech Sabre Air Command

Texas Tech Ski Club
Texas Tech Sociology Club
Texas Tech Veterans Club
Town Girls Club
Wesley Foundation (Methodist)
Westminster Student Fellowship (Presbyterian)
Zeta Tau Alpha (Greek Letter Social Sorority)

IV. *Student Organization Coordinating Agencies*: Ten agencies for the coordination of the activities of student organizations in the same classifications are recognized by the Committee on Student Organizations.

Association of Women Students
Board of Student Organizations
Junior Panhellenic
Men's Inter-Dorm Council
  Bledsoe Hall Association
  Gordon Hall Association
  Sneed Hall Association
  West Hall Association
Women's Inter-Dorm Council
  Doak Hall Association
  Drane Hall Association
  Horn Hall Association
  Knapp Hall Association
  Weeks Hall Association
Inter-Fraternity Council
Panhellenic Council
Student Associatoin
Student Religious Council
Tech Union Council

ACADEMIC REGULATIONS

Absence Regulations

1. The primary regulation concerning absences is that students are expected to be regular and punctual in class attendance.
2. The process of education should provide practical and everyday opportunities for self-management. Responsibility for class attendance is one of the most important and regularly recurring of such opportunities.

The Schools of the College are Agriculture, Arts and Sciences, Business Administration, Engineering, Home Economics, and Graduate. The deans of these schools are responsible for all matters pertaining to the students' academic work. The student is urged to confer regularly with his academic dean.

Matters requiring the academic dean's approval include the following:

Official absence from class.
Honorable dismissal.
Withdrawal from college.
Scholarship requirements.
Scholarship reports.
Scholarship probation.
Change in schedule.
Dropping and adding courses.
Approval of registration and assignment to classes.
Student load.
Curriculum requirements.
Guidance programs and assignment to advisers.
Graduation requirements and candidacy for degree.

3. Absence regulations are based upon the principle of reward for merit on one hand and definite accountability for deficiencies in class attendance and quality of work on the other.

4. Instructors will send absence notices to the dean of the student's school according to the following outline:

For a Student Whose Class Work is Satisfactory

a. When the number of **consecutive** absences in the course equals the equivalent of one week of classes, laboratories or other meetings. (In classes meeting only once per week the equivalent shall be two weeks instead of one.)

b. When the total number of absences accumulated becomes sufficient, in the opinion of the instructor, to jeopardize the student's standing in the course.

For a Student Whose Class Work is Not Satisfactory

a. When the total number of absences in the course, consecutive or otherwise, equals the equivalent of one week of classes, laboratories or other meetings. (In classes meeting only once per week the equivalent shall be two weeks instead of one.)

b. When the total number of absences in the course equals the equivalent of two weeks of classes, laboratories or other meetings. (In classes meeting only once per week the equivalent shall be four weeks instead of two.) Unless an explanation satisfactory to the instructor and the dean can be made by the student he will be dropped from the course with a grade of WF (*withdrawal failing.*)

5. Being dropped from a course or courses may result in a load of less than 12 semester hours which would deprive the student of extracurricular privileges or even result in his being dropped from the rolls of the College at the request of his dean. When dropped for such reason, the rules pertaining to suspension from college shall apply.

6. Absences are counted from the first day of class meeting. Late registration should therefore be avoided. Instructors will keep a daily record of **all** absences, including those due to illness and official extracurricular activities. Cumulative totals will be reported for each student at midsemester and at the end of the semester on the grade reports of the respective courses.

7. The trip sponsor will secure a "Record of Eligibility for Out-of-Town Trip" card at the office of the academic dean for each student who is to be absent on an official off-campus trip. After being signed by the trip sponsor this card may be used by the student to show his instructor as evidence of the official nature of his absence and his eligibility to make up examinations, laboratory work, and written reports.

8. Since each student is responsible for all the work of a course, including that which he may have missed while absent, the use of the term "excused absence" is being discontinued. The term "explained absence" is more in keeping with the principles upon which the absence regulations are based. There are no excused absences. Rather the student may and should **explain** his absence to his instructor in order that the instructor may determine whether the student will be permitted to make up examinations, laboratory work, and written reports.

Adding Courses and Changing Sections

After the completion of his registration a student may add a course or change from one section to another in the same course only with the approval of the dean of his school and the instructor (or head of the department concerned). Normally such adjustments are to be requested by the student within the period of the time indicated in the college calendar. The dean, however, may find it advisable to make such changes at a later date. This would apply particularly to changes predicated upon the freshman progress reports. In any event these changes must be made by the student himself and do not become effective until all necessary steps have been taken. The student will secure the required forms for such changes from the office of his academic dean. All students must complete any adds, drops, or changes of sections within a period of two days from date of issuance of Change of Registration form. Each time a student initiates one or more changes in his previously approved class schedule a fee of $3 will be charged. There will be no charge when the change is made for the convenience of the College, or to correct errors. Any possible change in fees will be determined by the Business Office.

Dropping a Course

A student may drop a course only with the consent of his academic dean. If the course is dropped within five weeks of the beginning of either semester, the grade of W is received; if after the first five weeks, the grade of WP or WF will be given as provided in the paragraph entitled **Grades.**

Dropping a course must be done by the student in person and not by a friend or by mail. The student must complete all details necessary for dropping a course in order for the drop to be official.

Academic Classification of Students

Freshman: A student who has an insufficient number of hours to be classified as a sophomore.

Sophomore: A student who has completed not less than 32 semester hours.

Junior: A student who has completed not less than 64 semester hours.

Senior: A student who has completed not less than 96 semester hours with a minimum grade average of 1.00. In case of question, the student's academic classification will be determined by his dean.

Eligibility to participate in extracurricular activities is defined on Pages 84-85.

Numbering System

The course number indicates in general the academic level of the course. The second digit in the course number indicates the credit hour value of the course. Courses numbered in the "0" series (031, 032, 051) are deficiency courses and hours credited for these courses will be added to the normal degree requirement. Courses numbered in the 100 series are primarily for first-year students; 200 series for second-year students; 300 series for third-year students; 400 series for fourth-year students; 500 series and above for graduate students exclusively. Certain 300 and 400 courses, as indicated, may apply toward graduate degrees.

Hyphenated Courses

A course which extends over two semesters carries a course number joined by a hyphen. Those courses joined by a hyphen must be taken as a unit in order to receive credit toward graduation. The department offering the course has the responsibility for determining whether, in exceptional cases, a student may receive credit toward graduation for part of the sequence.

Semester Hour

The unit of measure for credit purposes is the **semester hour,** which means one hour of recitation or equivalent in laboratory work per week for one semester of 18 weeks. For each classroom hour, two hours of preparation are expected.

The unit of measure for instructional purposes is the course. Most courses meet three hours a week, having a credit value of 3 hours for one semester or 6 hours for both semesters.

Number of Semester Hours Allowed

The number of semester hours which may be carried by a student is regulated by his academic dean. The scholastic standing of the student and the amount and character of outside work are the primary factors considered by the dean. A student who has demonstrated his ability will be allowed a heavier load. Conversely, a student of low scholastic standing will have his load decreased. In general, a student whose outside duties demand as much as three hours per day may not be allowed to carry a full load.

A student who has part-time employment is required to supply his academic dean with information on his job at registration, so that an adjustment may be worked out between his scholastic load and his employment. The student beginning part-time employment during the semester should file information on his job with his academic dean immediately. The working student should avail himself of the assistance of the academic dean in the determination of the relationship between his scholastic load and his work load.

Enrollment Without Credit

There are two ways of enrolling in courses without credit when permission is granted.

Visiting the Course as an Auditor. The first method, that of visiting the course as an auditor, is open to persons not regularly enrolled

in the College and consists of the privilege of hearing or observing only, and not of handing in papers, taking part in class discussions, laboratory field work, or receiving credit for the course. This permission may not be granted in case the class is crowded and is not granted to students enrolled in the evening courses nor in summer school courses which are scheduled for less than the regular six-week term.

Any person desiring to audit a course should first secure the necessary letter of permission from the dean of the school in which the course is given. After he secures the dean's approval he will report to the Cashier's Office and pay a fee of $10 per course. This letter, properly stamped by the Cashier's Office, is the student's permit to visit the course.

Enrolling for No Grade. The other method is for students regularly enrolled in the College, either in the summer session or the long session, and entitles them to register for residence courses for no grade and therefore for no credit. Such registrations are to be considered on the same basis as registrations in credit courses in making the student's schedule, both in payment of fees and in consideration of the amount of work to be carried. Class cards for such students shall be indicated by the Registrar as "no grade"; such registrations shall not be changed to carry grades after the designated date for adding or dropping a course. A student registered in a course for no grade shall have the privilege of taking part in class discussions, submitting class exercises, and taking quizzes and examinations if he desires.

Grades

The grades used, with their interpretations, are A, *Excellent;* B, *Good;* C, *Fair;* D, *Inferior* but passing; Pr., *In Progress;* Inc., *Incomplete;* W, *Withdrawal* during the first five weeks; WP, *Withdrawal* after the first five weeks, *passing;* WF, *Withdrawal* after the first five weeks, *failing;* F, *Failure;* R, *Repeated to Remove Inc.*

Transfer grades from other colleges are accepted according to the letter of the grade recorded rather than the numerical equivalent.

Grades are given by semesters, but where the student's published curriculum requires the completion of a two-semester course, one semester of a course will not count for a degree until credit has been received for the entire required course.

Semester grades are recorded by instructors on grade sheets and are filed with the Registrar. The Registrar reports all grades to the student's parents or guardian, to the student and to the student's dean. All students regularly enrolled in any given course must receive a grade at the end of the semester. No grade may be given to a student not regularly enrolled in a course during the semester covered. No grade may be corrected or changed without inquiry as to the reason and necessity for the change, except in the grade Inc., for the changing of which definite regulations are provided. A student may not receive a passing grade in a course unless he is regularly enrolled in that course at the end of the semester or term.

Grade of In Progress

The grade, *In Progress,* (Pr.), is used to indicate the continuance of a student's work (1) in a course which continues through more than

one semester or summer term, including thesis and dissertation courses, and (2) in a course which by the nature of its offering precludes the giving of a grade at an assigned time, such as for the midsemester reports in specified courses.

The grade of *In Progress* means that the student's standing in the course is satisfactory and that the work will be completed at the end of a subsequent semester, summer term, or other grade-giving period.

This grade is not to be confused with or used in lieu of the grade of *Incomplete*. *In Progress* connotes a satisfactory rate of progression, both qualitatively and quantitatively, over that portion of the work to be completed in a given semester or term. *Incomplete* connotes inability, for approved reasons beyond the student's control, to complete all work at the time assigned for the conclusion of the course at the end of a semester or term.

Grade of Incomplete

If, at the final grade period, the work in a given course is deficient in quantity and not in quality and the reasons are beyond the student's control, the dean may approve the giving of the grade of Incomplete (Inc.). The grade of Inc. is not to be given in lieu of the grade of F. The instructor must secure the advance approval on forms secured from the office of the dean of the school in which the student is enrolled.

Completion of the work: Within four weeks after the beginning of the next regular semester of residence after the grade of Inc. is given, the student shall file a petition with the dean for permission to complete the work and receive a grade. If the Inc. remains on a student's record without action for a period of one year, it shall be interpreted as the grade of F.

Grade of R: If, because of long absence from the campus or other good reason, the student is unable to complete the semester's work and remove the grade of Inc., the dean may grant permission for a registration and completion of the same course as a means of removing the Inc. In such case, the Inc. shall become R and the student shall receive the appropriate grade on the second registration. The grade of R shall be disregarded in computing the student's grade-point average.

The responsibility for clearing the record of Inc. rests upon the student.

Grade of W, WP or WF

A student who withdraws from a course or from College within five weeks from the beginning of either semester or an equivalent time in summer school in a manner prescribed by College regulations, receives a grade of W and his name and grade are to be entered on the final grade sheet.

A grade must be entered for all courses which are dropped. After the fifth week, the grade shall be WF or WP depending upon quality of work being done. After the tenth week, the grade shall be WF unless the drop has been initiated by the dean.

Grade of F

The grade of F is given when a student fails in a course. When the student withdraws from the course in a manner prescribed by College

regulations after five weeks from the beginning of either semester and is not then passing in the course, the grade shall be WF.

Grade Points and Official Grades

In order to encourage students to do the best work of which they are capable, the College considers not only the number of semester hours taken by students but also the grades received in the various subjects and assigns a definite number of grade points for each grade. For the grade of A, the student receives 3 grade points for each semester hour; for the grade of B, 2 grade points for each semester hour; for the grade of C, 1 grade point for each semester hour. The grade of D is a passing grade, but does not entitle the student to any grade points. The grades of F, **failure,** or WF, **withdrawal failing,** reduce the grade-point average both for a given semester and over-all since all hours in which grades of F or WF have been made are included in the divisor in the calculation of grade-point averages. (See also Page 84.)

A student who has the number of semester credit hours required for graduation, but not the corresponding number of grade points, may satisfy the requirements by completing additional courses until the grade-point requirements have been met as set forth under **Requirements for Graduation.** Courses used to meet these requirements must have the approval of the student's dean. In the case of a student transferring credits from other institutions, the number of semester hours in this College required for graduation is the required total in his curriculum less the transferred hours accepted in that curriculum. The usual grade-point requirement must be met on work taken in this College only.

Courses in which grades of F or WF have been received may be repeated by the student in residence courses at this College. Courses in which the grade of D has been received may be repeated with permission of the academic dean provided that the repetition is made at the first opportunity after the grade of D was received. In the case of repetition of a course, the last grade recorded will be in the official grade and will be counted, along with corresponding grade points, for meeting graduation requirements.

Physical Education Required

With the exceptions noted below, physical education activity work is a required course for all freshmen and sophomores, both men and women, in addition to the minimum number of hours required in academic subjects for a degree. Four semesters of physical education constitute part of the requirements for all degrees unless one of the following conditions prevails:

1. When approved by the dean, band may be substituted for physical education.
2. Air science and military science, the basic courses, may be taken in place of physical education by any qualified male student. Once entered upon, the satisfactory completion of these basic courses, two years, becomes a requirement for graduation, unless specifically excused by the Department of Air Science or Military Science and Tactics and the academic dean.

3. Veterans of the Armed Forces may receive credit for this required work on time spent in military service. See **Credit for Educational Achievements During Military Service.**
4. Students who have a doctor's recommendation for limited physical education must enroll in Physical Education 011 (men) or 2113 (women). Students may receive 4 semester hours' credit for these courses by repetition.
5. A student over 25 years of age may of his own volition prefer not to take physical education activity courses. In such cases 3 semester hours of academic work in physical education. preferably Physical Education 133, must be completed by the student.

Credit in physical education activity courses or substitutes therefor is accepted in transfer to the extent that it meets degree requirements. but grade points accumulated in such courses above a C average may not be applied to reduce a deficiency in grade points in other subjects.

SCHOLARSHIP REGULATIONS

Satisfactory Scholastic Progress

A student is considered to be making satisfactory scholastic progress when he is carrying an approved schedule, is not on probation, is failing no courses, and in both the present semester and his over-all average to date has a grade average of 1.00, which is C.

Scholarship Probation

A. *To Avoid Being Placed on Probation*:
To avoid being placed on probation a student registered for 9 or more semester hours must pass in at least 9 hours and make at least 3 grade points during a semester. If registered for less than 9 semester hours, he must pass in all of his courses and make at least 3 grade points. In event of withdrawal before the end of the semester, the number of semester hours carried with a passing grade will be the basis for determining whether the student is to be placed on probation. A student who fails to attain the above minimum levels shall be placed on scholarship probation not later than 20 days after the end of the semester in which the deficiency develops. He will then drop courses in excess of a total load of approximately 12 semester hours, and make any other adjustments expressed or implied in section B below. This 20-day period is necessary to provide for the proper correlation of all grade reports.

B. *Probation Status Shall Mean That*:
1. The student may not register for more than four courses. approximately 12 semester hours, except upon the approval of his academic dean.
2. In order to allow more time for his studies, he shall not be permitted to represent the College in any intercollegiate contest, hold any collegiate office or elective collegiate position during his period of probation, and he shall attend all

classes for which he is registered without fail except when prevented by illness. See section on **Eligibility for Extra-curricular Activities.**

3. Lack of interest in his studies as evidenced by unnecessary absences or by unsatisfactory grades will result in his being dropped from the rolls of the College by the Registrar at the request of his dean.

4. The student may, while on probation, transfer from one school to another only by mutual agreement of the deans concerned.

5. The probation status may not be removed during the semester. A student who withdraws from college, while on scholarship probation shall, upon returning, be under the same probationary status as at the beginning of the semester during which he withdrew, provided that at the time of withdrawal he is complying with the regulations under item numbered A of this section on **Scholarship Probation,** If his record at the time of withdrawal is below these requirements, he shall be subject to enforced academic withdrawal for failing to remove scholarship probation.

C. *To Remove Probation*

The requirements for removing probation in semester hours passed and grade points made are increased upward according to the length of time the student has been in college at Texas Technological College and elsewhere. The column at the left in the following table refers to the semester in which the student is attempting to clear his probation.

1. *During the long session*

If the Student Is in His:	*He Must Pass in 9 Hours and Make a Minimum of:*
2nd semester	3 grade points
3rd or 4th semester	6 grade points
5th or 6th semester	9 grade points
7th or following semester	12 grade points

2. *During a summer session*

For the purpose of calculating the number of semesters in college, a six-week term of the summer session is equivalent to one-third of a semester.

3. *Combination of a spring semester and a summer session.* A student who fails to remove probation during a long session may make a second attempt during the following summer session.

Probation will be removed if the following conditions are met:

(a) The student must pass a minimum of 17 hours in the combination of the spring semester and summer session.

(b) In addition, he must earn the total number of grade points required for his two semesters as indicated in the table above. For example, a student in his fourth semester in the spring must earn the equivalent of 6 grade points for the spring semester, plus 9 for the summer session or a total of 15 grade points during the spring semester and summer session combined.

Scholarship Regulations Applicable to the Summer Session

1. *Student on Probation*
   A student may remove probation by attending during a full summer session and by passing a minimum of two-thirds of the work he is permitted to take, and earning a minimum of two-thirds of the required number of grade points set forth in the preceding table. Failure to remove probation will cause the student to be dropped under **Enforced Academic Withdrawal.** However, the failure of a single course during either term of the summer session will not cause him to be dropped.

2. *Students Who Are Not on Probation*
   A student not on probation at the time of summer registration, who registers for either or both terms of the summer session and takes such work as approved by the dean, is not subject to the penalties listed under **Scholarship Regulations,** except the summer version of the Six--Hour Rule (See below), if he enrolls during the regular session semester before again seeking to register during a summer session.

Enforced Academic Withdrawal

A student shall be dropped for a period of one semester if his record places him in any one of the three categories listed below.

1. *Six-Hour Rule.* A student who fails to pass 6 semester hours of residence work in any semester or 4 semester hours in a 12-week summer session shall not be permitted to re-enter until after the lapse of one semester. Any student registered for less than 6 hours during a long session semester or 4 hours during an entire summer session must pass in all his work.

2. *Failing to Remove Scholarship Probation.* A student who is on scholarship probation during a given semester or complete summer session, and fails to remove it according to Section C above, shall be dropped for a period of one or more semesters as determined by the regulations under **Readmission of Students Who Have Been Dropped.**

3. *Repeated Probationary Status.* If a student has been on probation and has removed it and again makes a record which places him on probation, he shall be dropped for one or more semesters as determined by the regulations under **Readmission of Students Who Have Been Dropped.**

Readmission of Students Who Have Been Dropped

A student who has been dropped for failure to meet academic standards (see **Enforced Academic Withdrawal** above) may apply for readmission after the time intervals have elapsed which are specified below:

Dropped for the first time — One semester.
Dropped for the second time — Two semesters.
Dropped for the third time — Three semesters.
Summer sessions may not be counted in computing these periods

of enforced withdrawal. If a student is dropped during a semester, the fraction of the semester remaining shall not constitute a part of this period of enforced withdrawal. A student who has been dropped for the third time may be readmitted only with the approval of the Council of Deans.

A student desiring readmission must consult with his academic dean at least two weeks before the opening of the semester for which he seeks readmission.

As a condition of his readmission, the student may be required to undergo such testing and counseling as the dean considers necessary.

Freshman Progress Reports

At the close of the fourth week of any semester, grades will be reported on all freshmen. An entering freshman who is not passing 9 semester hours may withdraw as of that date with the privilege of re-entering for the next semester. If he elects to remain in college and is not passing in 9 hours at midsemester he may be dropped from the rolls of the College. In case the student is dropped or if he withdraws under these conditions, he will not be allowed to re-enter until after the lapse of one entire semester. However, if the student continues until the end of the semester the usual Six-Hour Rule applies.

Mid-Semester Reports

The Registrar's office will mail to all parents a midsemester grade report. This is an informatory report and does not become a part of the student's permanent record. Students will likewise receive a copy of this report.

Withdrawal From College

A student who finds it necessary to withdraw from the College before the close of the semester should apply to the dean of the school in which he is registered for permission to withdraw with honorable dismissal. A student under 21 years of age should first consult his parents and should bring with him a written statement showing that he has the permission of his parents to withdraw. If the dean is convinced that withdrawal is necessary, the student will be given honorable dismissal from the College, and his parents will be notified. Such withdrawal protects the student's record in case he desires to return to the institution or transfer to another institution at some future time. The grades recorded are given in accordance with the grade requirements in the preceding paragraphs, and the grades, whether W, WP or WF, will be based on the student's standing on the last day of enrollment in each of the specific courses in which he is registered. The fact that the student may have withdrawn does not alter the scholarship probation requirements.

A student who withdraws from a residence course with a grade of WP may complete the course by reregistration through correspondence, provided the work is given by the same instructor who taught the residence course and provided also that the course is regularly taught by correspondence. The credit recorded will be correspondence credit.

Transfer from One School to Another

A student desiring to transfer from one school of the College to another must apply to his dean **before** the beginning of any registration period. Transfers are made in writing from the dean to the Registrar. If a student has failed to pass in the number of hours required under the scholarship probation regulations, he may be transferred to, or enrolled in, another school of the College only by mutual agreement of the deans concerned.

REQUIREMENTS FOR GRADUATION

Undergraduate Degrees

To receive any undergraduate degree in Texas Technological College, the student must meet certain uniform requirements together with certain other requirements that may vary with the different schools of the College.

1. The minimum residence requirement is 30 semester hours which must apply toward the degree sought. Among these must be the final, advanced courses in the major and minor fields.

A student who has already met the minimum residence and work requirements must also complete the last 30 hours at this College, as stated above, but may complete a maximum of 6 semester hours of the last 30 hours by correspondence* provided such courses are normally offered by correspondence and provided further that these courses will not be the final courses in the major and minor fields.

2. A minimum grade average of 1.00 is required in all courses completed at this College. When students transfer from one school to another within the College, grades of F and WF are disregarded, provided they were made prior to the first such transfer. Grades of F or WF earned subsequent to the first transfer are recognized unless they have been removed.

3. A candidate may not receive a degree prior to the semester following his application for the degree. This application should be completed not less than two semesters in advance of graduation.

4. Any work taken through the Division of Extension of Texas Technological College or other approved colleges will not be counted as residence work required for a degree in this College.

5. Certain departments in the Schools of Arts and Sciences, Business Administration, and Engineering have established additional standards which students must meet in order to graduate with majors in these fields. Students majoring in these departments are expected to familiarize themselves with these regulations which are published at appropriate places in this catalog.

6. Implementing action of the Texas Legislature, 6 semester hours of work in government, covering the Federal and the Texas constitutions, are required of (1) all freshmen students entering the College

* A candidate who is completing degree requirements by correspondence courses during the spring semester must file a statement with the dean of his school by March 12, stating his intention to complete the correspondence courses and become a candidate for a degree. If the statement is not filed the student will not be considered a June candidate and his name will not appear on the June graduating list.

on or after Sept. 1, 1954, and (2) all students receiving a Bachelor's Degree from the College after Sept. 1, 1957.

Students who receive a bachelor's degree from Texas Technological College after July 1, 1956, are required by action of the Texas Legislature to pass 6 semester hours of work in American history in addition to the 6 hours in government. A student who absolves this requirement in the junior or senior year will take History 3321 and 3322; a student below junior rank will take History 231 and 232. Credit cannot be earned for both History 231 and 3321, nor for both History 232 and 3322. For 3 of the 6 hours in American history a student may elect to offer 3 hours in Texas history. Students who exercise the option will take History 235.

These requirements apply to all detailed statements of curricula published in this catalog.

7. No second bachelor's degree will be conferred until the candidate has completed at least 24 semester hours in addition to courses counted toward the first bachelor's degree.

8. Graduating seniors are required to complete Personnel Information Forms and present two 2" x 3" glossy photographic prints for filing with the Placement Office prior to receipt of degrees for the purpose of completing the personnel files of the College. This requirement applies to all students whether seeking a position or not.

9. Graduating students will be charged a graduation fee of $5 for each degree granted. The fee will be refunded provided the student cancels his graduation intentions before the diploma has been printed and before other related steps are taken.

If the student does not cancel his intention to graduate in time, he must pay $2 for reordering the diploma insert only. If both the insert and the cover have to be reordered, the charge will be $5 as in the initial order.

10. Diplomas are awarded at the regular commencement in June and again at the end of the summer session. Students completing requirements for a degree at the end of the fall semester will be awarded diplomas at the following June commencement.

11. To receive a degree, a student must either attend commencement exercises or receive approval for graduating *in absentia*. Application for *in absentia* graduation must be filed in writing with the dean of his school within the time specified in the College Calendar. Each student graduating *in absentia* will be charged an *in absentia* fee of $1.50 to cover the cost of special handling required.

Graduation Under a Particular Catalog

A student registering in Texas Technological College for the first time may, except for the seven-year limitation described below, complete his work for the degree according to the requirements of the catalog of the year in which he entered Texas Technological College; or the catalog of the year at the end of which he graduates; or that of any intervening catalog with the approval of his dean. When a student transfers from one school to another within the College, the earliest catalog applicable will be that of the year in which the student transfers to the school from which he plans to receive his degree.

The catalog year shall be considered as beginning with the long

session in September. Students entering for the first time in the summer session will be subject to the catalog for the long session immediately following.

Failure to complete the requirements for the degree within seven years after the date the student enters Texas Technological College will subject him to graduation under the regulations effective for the current graduating class.

Texas Technological College reserves the right to institute and make effective, after due notice, during the course of a student's work toward a degree, any new ruling which may be necessary for the general good of the College, and to substitute courses currently offered for those no longer offered.

Admission to Candidacy for Graduation

Any student who enters the semester or summer session at the end of which all work for the degree will be completed, with less than the entire number of grade points required for the degree for which he is a candidate, shall be admitted to *qualified candidacy only.* Since under these conditions failure to graduate may result, ordering the diploma and making other plans for graduation may be done by the student entirely on his responsibility.

A formal notice will be sent to each student who is admitted to qualified candidacy only and to his parents by the dean of his school.

Graduate Degrees

For requirements for graduate degrees, see the **Graduate Bulletin.**

ALL-COLLEGE PROGRAMS

Realizing that each and all of the various departments and schools of the College can contribute to the education af all students, programs of a more general nature are being developed which are not limited to the specific departmental areas.

Teacher Education

The preparation and in-service improvement of teachers is an important function at Texas Technological College, both at the graduate and undergraduate level. With the critical shortage of qualified teachers, and the rapidly increasing birth rate, the problem of providing qualified teachers for the classrooms of Texas communities becomes of critical importance to all institutions with programs in teacher education. At Texas Technological College, teacher education is an all-college responsibility in which many departments and offices cooperate. The responsibility for advisement leading to degrees in the various schools resides in the offices of the respective deans. The advisement and guidance in the Professional Education Curriculum leading to certification to teach is the responsibility of the Department of Education. The advisement in various teaching majors and minors is the responsibility of the appropriate subject matter departments. The resulting program is both varied and integrated and draws its strength from the total resources of the College.

Undergraduate and graduate programs are offered in the Schools of Agriculture, Arts and Sciences, Business Administration, Home Economics, and the Graduate School.

Teaching Certificates

Under the new teacher certification laws of Texas which became effective Sept. 1, 1955, there are two general types of teaching certificates: The permanent provisional and the permanent professional. The permanent provisional certificate is based on a bachelor's degree and certain prescribed work constituting a State-approved certification program. The professional certificate is based on a provisional certificate, three years' teaching experience, and a minimum of an approved fifth year of graduate college work beyond the bachelor's degree. In many instances, but not in all, this graduate course work can coincide with master's degree requirements.

Please note that under the new laws teaching certificates are issued only to persons holding a bachelor's degree. Emergency teaching permits can be obtained for non-degree persons, but such permits are obtained only through the superintendent of the local school system which employs the non-degree person. These permits are valid only for the remainder of the scholastic year in which they are issued and only in the school system through which the application for the permit was made.

The Texas Education Agency, the administrative agency for teacher certification in Texas, no longer analyzes the college transcripts of individual students for specific courses as a basis for issuing teaching certificates. Certificates are now issued by the Agency only upon receiving from the certifying agent of a particular college (1) verification that the student has completed a program approved for that college and (2) recommendation from the college that the applicant possesses personal attributes indicative of a successful teacher.

The Texas Education Agency has approved specific programs in teacher certification for the various colleges of the State of Texas. Certificates can be obtained through a particular college only in those areas and fields so approved for that college. A student no longer can complete the elements of a particular program as set forth in State bulletins on teacher certfication requirements and obtain a teaching certificate. These bulletins are now directed to colleges to guide the colleges in developing their certification programs. They are not directed to individual students or to individual applicants for teaching certificates.

Texas Technological College has approved provisional certificate programs at both the elementary and the secondary school levels. In certain highly specialized fields, Texas Tech has approved programs which will qualify the individual for teaching his special subject at both the elementary and the secondary school levels. This special subject teaching certificate carries what is known as an all-level endorsement. The specific areas and teaching fields in which Texas Tech has approved provisional certificate programs are as follows:

1. *Elementary education.* The specific courses required in the approved program for elementary teachers will be found in the Department of Education section of this catalog.
2. *Secondary education.* There are two general types of subject teaching fields within the secondary program. One requires both first and second teaching fields in subjects taught

in the secondary school. Content areas in which Texas Tech has approved first and second teaching fields are:

(a) Art
(b) Biology
(c) Chemistry
(d) English
(e) Spanish
(f) French
(g) German
(h) Government
(i) Health & Physical Education
(j) History
(k) Journalism
(l) Mathematics
(m) Music
(n) Physics
(o) Speech

The student must consult the heads of the departments in which he plans to do his first and second teaching fields about the specific courses to be taken in these two fields if the student is following the above certification plan. The Department of Education must be consulted about the specific courses in professional education which are required.

The second type of teaching field under the secondary program is the broad field (composite) type. This type involves a minimum of 36 hours of course work in a broad field such as social science or business education but in most instances 42 or more hours will be required. For certification purposes such broad field programs do not require a second teaching field; for degree purposes, however, minors may be required. Tech has approved provisional certificate programs in the following broad fields.

(a) Agricultural Education
(b) Business Education
(c) Home Economics Education
(d) Foreign Language
(e) Science
(f) Social Science

If the student plans to teach in one of the first three broad fields named above, he should consult the department in which he plans to do his teaching field for the details of his entire program. If the student plans to teach in one of the three latter broad fields, he must consult the departments within that broad field in which he plans to do the major portion of his work. This department will advise the student concerning all the specific courses he needs in the broad teaching field. The Department of Education must be consulted in regard to the specific courses required in professional education.

3. Approved programs leading to provisional all-level certification are available in the following fields:

(a) Art Education
(b) Health and Physical Education
(c) Music Education
(d) Speech Correction

If the student is working toward all-level certification endorsement in either Health and Physical Education or in Music Education, he should consult the head of that department for the details of the entire program. A person working towards all-level certification endorsement in Speech Correction must confer with the Department of Speech for the details of his course work in that area and with the Department of Education for his required professional education courses. Courses leading toward all-level provisional certification in Art Education are available in both the Department of Allied Arts and the Department of Applied Arts. The student working toward this

special teaching field must consult either of these departments for the required work in art and must consult the Department of Education for the required work in professional education.

At Texas Technological College, teaching certificates are obtained through the Director of Teacher Certification, who must verify to the Texas Education Agency, along with other required information, that the applicant for a certificate has completed the program approved for that particular certificate. Since certification programs and degree programs do not necessarily coincide, and since in some endorsement areas there is multiple school and department involvement, it is necessary that a certification plan be filed in the office of the Director of Teacher Certification. This plan is distinct from the degree plan which is filed in the office of the student's academic dean. This certification plan, if followed, is a safeguard to the student that he will not be deficient in some particular requirement at the time he applies for his teaching certificate. All students, with the exception of those in Agricultural Education and Home Economics Education, should obtain the proper certification plan forms from the Director of Teacher Certification and have these forms filled out by the proper college officials. This action should be taken as soon as the student has decided to work toward a teaching certificate. Students in Home Economics Education and Agricultural Education should consult their respective department heads as to the proper time to file their certification plans with the Director of Certification.

Texas Technological College has approved professional certificate programs in numerous areas. A student wishing to work toward a professional certificate in any area should first contact the office of the Director of Teacher Certification in order to:

1. Determine whether this college has an approved professional certificate program in that area.
2. Establish whether he meets the State requirements for working toward a professional certificate in that area.
3. Obtain the certification plan forms for the particular program in which he will be working.
4. Secure advice as to which departments he will need to contact in order to execute the certification plan form.

Persons who want to work toward a graduate degree as well as toward a professional certificate should contact the Graduate School for information regarding degree requirements.

Preparation for The Study of Law

In general the schools of law do not require specific courses for the completion of admission requirements, but rather these schools expect a student of intellectual maturity and one well grounded in the fundamentals of a liberal education. While many schools of law admit students who have completed only three years of preprofessional work, it is to be noted that a high percentage of those students admitted have their baccalaureate degrees. Hence the prelaw student should constantly keep in mind the various requirements for the bachelors' degrees.

For the student who may be admitted after only three years of college work, a combination is allowed which will permit the student to secure the bachelor's degree from this College upon graduation from a standard three-year college of law. To be eligible for this bachelor's

degree, the student must have completed a minimum of 96 semester hours of which at least the junior year must have been completed at this College. In addition, the work must have included all requirements for the bachelor's degree with the exception of the completion of the major requirements. Upon completion of these requirements and certification of graduation from the law school the student may petition for the baccalaureate degree from this College.

Counseling and guidance of prelegal students is given by the Head of the Department of Government who is the official College adviser for prelaw students and through whom recommendations to the law schools should pass. Prelegal students, regardless of their major field of interest, should consult with him in planning their programs of work.

Latin American Area Studies

This course of study is planned to give students a well-rounded liberal education in several interrelated fields and also basic training for various occupational opportunities in export-import houses, manufacturing concerns, shipping companies, airway systems, banking insitutions, government offices, or for journalism, teaching, translating, or interpreting. The course of study also gives students excellent preparation for graduate work in area studies.

Students following this course of study will fulfill the standard requirements for the B.A. Degree. They will take 18 hours in the following designated area courses: Economics 339, Latin America and the United States; Government 3314, Latin American Governments; History 3331, Colonial Spanish South America; History 3332, South America Since Independence; History 438, History of Texas: the Colonial Period; History 4323, Spanish Colonial North America; History 4324, History of Mexico Since Independence; Sociology 336, Social Life and Culture of Mexico; Economics 3315, Economic Geography of Latin America.

In Spanish, students will complete 12 hours in 400 courses, 6 in language and 6 in literature, except that students who have had no high school Spanish may be permitted to take only 6 hours in 400 courses.

Students in this course of study will complete a major. Suggested majors are: anthropology, economics, education, foreign languages, government, history, journalism, sociology.

A field course in Mexico, Spanish 4328-29, is offered in alternate summers. It is highly recommended but is not required.

The special adviser for the course of study is Professor Raymond D. Mack. Students will be referred to him by any of the cooperating departments and should consult him for further information.

Bilingual Secretarial (Spanish or French) Program

This course of study is offered jointly by the Department of Foreign Languages and the Department of Business Education and Secretarial Administration (in the School of Business Administration). It

is designed for students who wish to enjoy the benefits of a liberal education and at the same time prepare themselves in an occupational field.

Students following this course of study receive the Bachelor of Arts Degree by fulfilling the basic requirements in that degree. They major in Spanish, or, if they wish to go farther afield, in French, and complete a minor in an academic subject.

In addition they take up to 25 hours in Secretarial Administration in the following courses: 121-122, 131-132, 235, 321, 331, 333, 328, 421. Credit is allowed in typing and shorthand only for those completing the course of study and upon demonstration of competence in both fields.

Students interested in this course of study should consult the Head of the Department of Foreign Languages for information concerning it and future employment opportunities.

The Liberal Arts Approach to Engineering

Students desiring a broader approach upon which to base their studies in engineering may receive the Degree of Bachelor of Arts by completing three years' work in the School of Arts and Sciences with a minimum of 100 semester hours' work and by completion of the requirements for one of the various degrees of Bachelor of Science in Engineering at this College. Details of these programs are given in the section of this catalog describing the work in the School of Engineering. The three years' work must satisfy all graduate requirements for the Degree of Bachelor of Arts at Texas Technological College with the exception of the major requirements. Students who are transfers, provided they have satisfactorily completed the work outlined in the freshman and sophomore years, or its equivalent, may meet the three-year requirement by the completion of the junior year in residence in this school.

Recreation

Other less clearly defined combinations may be effected. For example, the program in recreation makes use of work offered by several departments and schools. For the details of this program see "Department of Health, Physical Education and Recreation" (for Men or Women) in the School of Arts and Sciences.

SCHOOL OF AGRICULTURE

WENZEL L. STANGEL, *Dean*

The School of Agriculture consists of the Departments of Agricultural Economics, Agricultural Education, Agricultural Engineering, Agronomy, Animal Husbandry, Dairy Industry, and Horticulture and Park Management.

Purpose. The aim of the School of Agriculture is to offer its students a liberal education, including instruction in the scientific and technical subjects which are fundamental to an understanding of the agricultural industry. Purpose of the courses of study is to meet the needs of those who desire to prepare themselves for service and life in some part of the field of agriculture.

Scientific and agricultural subjects are fundamental. In the latter years of the student's work, these subjects have a more specific application to certain special fields of work which the student may desire to pursue as a life work.

Field for Graduates. There is a demand for college-trained men in specialized fields of agriculture, as well as for professional men with an agricultural education. Among the fields of work usually open to graduates are the following:

Farmers, ranchers, and farm or ranch managing; marketing agents; managers of cooperative associations; teachers in colleges and high schools; extension agricultural agents and specialists in agricultural colleges, banks, land companies, and railroads; federal and state research workers; dairy plant operators and managers; milk distributors; milk and food sanitarians; dairy equipment and supply representatives; agricultural journalists for farm journals; radio farm editors; seedsmen; horticulturists; plant quarantine inspectors; plant pathologists; entomologists; city park superintendents; farm machinery specialists: field men for livestock associations and milk plants; poultrymen; livestock feeders; feed salesmen; employees of the Soil Conservation Service, Agricultural Stabilization and Conservation, and Farmer's Home Administration.

Service. Instruction in all the subjects offered in the various courses is available to all students in the College. To the end that the agricultural equipment and facilities may serve the greatest number, contests are conducted for vocational agriculture students and boys' 4-H Club members, as well as short courses and demonstrations of one to three days each.

Trips and Judging Teams. To enable students to secure a better conception of the agricultural industry, the School of Agriculture recommends and fosters trips of inspection and intercollegiate judging contests for advanced students. These trips are not required, and the college does not pay the expenses of the students.

Academic Counseling. Each freshman student is assigned a faculty adviser in the School of Agriculture following his registration. The faculty adviser is responsible for counseling the student on academic problems during his freshman year, and until such time thereafter as the student selects a field of specialization. Responsibility for counseling is then transferred to the head of the department of the student's specialization.

Electives. Prior to the beginning of the junior year, the student

shall designate his electives. These electives must be approved by his department head and the Dean of Agriculture.

Requirements for Graduation. All agricultural students follow a definite course of study in the first year. This is to allow the student to become familiar with the courses of instruction and to decide fully about his qualifications before selection of a specific major. The uniform requirements include a series of orientation lectures, survey courses in various departments of agriculture and basic courses in biology, chemistry, and English.

Undergraduate Degree. The Degree of Bachelor of Science in Agriculture is conferred upon the student who satisfactorily completes the requirements for graduation outlined on the following pages. This degree is given with majors in agricultural economics, agricultural education, agricultural engineering, agronomy, animal husbandry, dairy industry, and horticulture and park management.

Master's Degree. The Graduate School offers graduate work leading to the Degree of Master of Science. Discussion of graduate work will be found in *The Graduate Bulletin.*

CURRICULA IN THE SCHOOL OF AGRICULTURE

BACHELOR OF SCIENCE IN AGRICULTURE

Uniform Freshman Year for Students in Agriculture

Freshman Year

First Semester	Credit	Second Semester	Credit
Ag. Ed. 111—Orientation	1	Biol. 134— Zoology	3
Agron. 131—Fund. of Agron.	3	Chem. 142—Gen. Chem.	4
A.H.—Gen. Anim. Husb.	3	Eng. 132—Eng. Comp.	3
Biol. 133—Botany	3	D.I. 131—Prin. of Dairying	3
Chem. 141—Gen. Chem.	4	Hort. 131—Prin. of Hort.	3
Eng. 131—Eng. Comp.	3	P.E., Band, or Basic ROTC	1-2
P.E., Band, or Basic ROTC	1-2		
	18-19		17-18

BACHELOR OF SCIENCE IN AGRICULTURE

AGRICULTURAL ECONOMICS MAJOR

For Uniform Freshman Year See Above

Sophomore Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 235—Fund of Ag. Eco.	3	Ag. Eco. 236—Mktg. Ag. Prod.	3
Chem. 341—Org. Chem.	4	Agron. 241—Soils	4
Eng. 234—Tech. Writ.	3	Bact. 231—Bacteriology	3
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Math. 230—Ag. Math.	3	Hort. 231—Veg. Gard.	3
P. E., Band, or Basic ROTC	1	P. E., Band, or Basic ROTC	1
	17		17

Junior Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 325—Farm Law	2	Ag. Eco. 322—Mktg. Ag. Prod.	2
Ag. Eco. 331—Ag. Stat.	3	Ag. Eco. 324—Ag. Prices	2
Ag. Eco. 333—Coop. Mktg.	3	A.H. 331—Anim. Nutr.	3
Ento. 231—Intro. Entomol.	3	R. Soc. 331—Rural Sociol.	3
Electives	8	Speech 338—Bus. & Prof. Spch.	3
	19	Electives	6
			19

Senior Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 411—Seminar	1	Ag. Eco. 412—Seminar	1
Ag. Eco. 433—Farm Mgt.	3	Ag. Eco. 421—Land Eco.	2
Ag. Eco. 435—Ag. Pol & Org.	3	Ag. Eco. 432—Meth. in Ag. Res.	3
Ag. Eco. 436—Trade in Ag. Prod.	3	Hist. 3322—Heritage of Amer.	3
Ag. Eco. 437—Farm Fin.	3	Electives	9
Hist. 3321—Heritage of Amer.	3		18
Electives	3		
	19		

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

BACHELOR OF SCIENCE IN AGRICULTURE

AGRICULTURAL EDUCATION MAJOR

For Uniform Freshman Year See Page 112.

Sophomore Year

First Semester:	Credit	Second Semester:	Credit
Ag. Eco. 235—Fund of Ag. Eco.	3	Ag. Eco. 236—Mktg. Ag. Prod.	3
Ag. Engr. 222—Agric. Surv.	2	Agron. 241—Soils	4
Chem. 341—Org. Chem	4	Ag. Eng. 220—Farm Shop Woodwork	2
Hist. 231—Hist. of U.S.	3	Eng. 234—Tech. Writ.	3
Math. 230—Ag. Math	3	Ento. 231—Intro. Entomol.	3
Ed. 130—Foun. of Educ.	3	Hist. 232—Hist. of U.S.	3
P. E., Band, or Basic ROTC	1	P. E., Band, or Basic ROTC	1
	19		19

Junior Year

First Semester:	Credit	Second Semester:	Credit
Ag. Eng. 221—Farm Shop Metal Work.	2	Ag. Ed. 311—Intro. to Ag. Ed.	1
A. H. 231—Breeds of Livestock	3	Ag. Eng. 335—Irrigation	3
A. H. 331—Anim. Nutr.	3	Agron. 331—Forage Crops or	
P. H. 231—Farm Poultry	3	Agron. 333—Range Plants	3
Ento. 324—Applied Entomol.	2	Agron. 341—Prin. of Genetics	4
Gov. 233—Amer. Govt., Org.	3	Educ. 232—Educ. Psy.	3
Electives	3	Gov. 234—Amer. Govt., Func.	3
	19		17

Senior Year

First Semester:	Credit	Second Semester:	Credit
Ag. Ed. 322—FFA	2	Ag. Eco. 433—Farm Mgt. and Rec.	3
Ag. Ed. 424—Org. & Admin.	2	A. H.—Two Production Courses	5
Ag. Ed. 432—Meth. in Adult Ag. Ed.	3	Agron. 441—Crop Prod.	4
Ag. Ed. 443—Meth. in High Sch. V.A.	4	Electives	6
Ag. Ed. 461—Stud. Tch.	6		18
	17		

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

Note: First and second semesters of senior year are interchangeable. Approximately 50 per cent of the senior students qualifying to teach vocational agriculture will take the agricultural education work the first semester and the other 50 per cent will take it the second semester.

BACHELOR OF SCIENCE IN AGRICULTURE

AGRICULTURAL ENGINEERING MAJOR

Freshman Year

First Semester	Credit	Second Semester	Credit
Ag. Ed. 111—Orientation	1	Agron. 131 Fund. of Agron.	3
Chem. 141—Gen. Chem.	4	Chem. 142—Gen. Chem.	4
Eng. 131—Eng. Comp.	3	Eng. 132—Eng. Comp.	3
E. Dr. 131—Engr. Draw.	3	E. Dr. 132—Descr. Geom.	3
Math 133—Algebra	3	Math 132—Anal. Geom.	3
Math 131—Trigonometry	3	P. E., Band, or Basic ROTC	1-2
P. E., Band, or Basic ROTC	1-2		17-18
	18-19		

Sophomore Year

First Semester	Credit
Ag. Eco. 235—Fund. of Ag. Eco.	3
Ag. Engr. 223—Farm Utilities	2
C. E. 231—Surveying	3
Math. 231—Calculus	3
Phys. 215—Phys. Meas.	1
Phys. 235—Engr. Phys.	3
P. E., Band, or Basic ROTC	1
	16

Second Semester	Credit
Agron. 241—Soils	4
C. E. 233—Statics	3
Math. 232—Calculus	3
M. E. 237—Metallurgy	3
Phys. 216—Phys. Meas.	1
Phys. 236—Engr. Phys.	3
P. E., Band, or Basic ROTC	1
	18

Junior Year

First Semester	Credit
Ag. Engr. 335—Irrig. Prin. & Prac.	3
C. E. 332—Kinematics & Kinetics	3
Govt. 233—Amer. Govt., Org.	3
Hist. 3321—Heritage of Amer.	3
Math. 332—Diff. Equat.	3
M. E. 330—Thermodynamics	3
	18

Second Semester	Credit
Ag. Engr. 336—Farm Mach. & Power Mgt.	3
C. E. 312—Fluid Mech. Lab.	1
C. E. 339—Fluid Mech	3
C. E. 333—Strength of Mat.	3
Eng. 233—Tech. Writ.	3
Govt. 234—Amer. Govt., Func.	3
Speech 338—Speech	3
	19

Senior Year

First Semester	Credit
Ag. Engr. 331—Func. Des. of Farm Bldg.	3
Ag. Engr. 432—Engr. for Soil & Water Cons.	3
Ag. Engr. 436—Cotton Gin Engr.	3
E. E. 338—Elem. of Elec. Engr.	3
Hist. 3322—Heritage of Amer.	3
Elective	4
	19

Second Semester	Credit
Ag. Engr. 411—Seminar	1
Ag. Engr. 433—Elem of Tractor Des.	3
Ag. Engr. 434—Rural Elect.	3
Ag. Engr. 437—Des. of Farm Irrig. Sys.	3
Ag. Engr. 438—Struc. Des. Farm Bldgs.	3
E. E. 339—Elem. of Elec. Engr.	3
Elective	3
	19

Cotton gin engineering specialists take M.E. 329—Mechanics of Machinery, M.E. 412 (E. Seminar) Lab., Textile Engr. 439—Marketing & Evaluation, Agron. 433—Cotton Production; arrange substitutions with Head of Department.

Students desiring to specialize in irrigation (soil and water), machine design, structures, or electric power and processing should consult with their advisers for appropriate electives.

Hours required for graduation exclusive of P.E., Band or Basic ROTC—140.

BACHELOR OF SCIENCE IN AGRICULTURE

AGRICULTURAL SCIENCE MAJOR

For Uniform Freshman Year* See Page 112.

Sophomore Year

First Semester	Credit
**Chem. 341—Org. Chem.	4
Math. 130—Algebra	3
English (200 level or above)	3
P. E., Band or Basic ROTC	1
Ag. courses and electives	7
	18

Second Semester	Credit
**Chem. 342—Phys. Chem.	4
Math. 131—Trigonometry	3
English (200 level or above)	3
P. E., Band, or Basic ROTC	1
Ag. courses and electives	8
	19

* Those students who claim proficiency in basic courses in the School of Agriculture may be excused from taking those courses, but may not be given credit for them, upon successful completion of a comprehensive examination of the courses.

**May substitute Chem. 353, 354.

Junior Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 235—Fund. of Ag. Eco.	3	Bact., Biol., Bot. or Zool. (200 level or above)	3
Bact., Biol., Bot., or Zool. (200 level or above)	3	Govt. 234—Amer. Govt., Func.	3
Govt. 233—Amer. Govt., Org.	3	Physics 142—Gen. Phys.	4
Physics 141—Gen. Phys.	4	Ag. courses and electives	9
Ag. courses and electives	6		19
	19		

Senior Year

First Semester	Credit	Second Semester	Credit
Hist. 3321—Heritage of Amer.	3	Hist. 3322—Heritage of Amer.	3
Ag. courses or basic science and electives	16	Ag. courses or basic science and electives	16
	19		19

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—144. 45 hours of total must be taken in the School of Agriculture.

Note: Students who expect to do graduate work in preparation for teaching agricultural science in colleges and universities, for research work in experiment stations, or for other work in specialized fields of basic agricultural science, may register for the curriculum in agricultural science. Only those students who by their freshman entrance test records are placed in the top 10 per cent of their class or are capable of maintaining an average of "B" or above should follow this curriculum, which is administered by the Dean of Agriculture. Students electing this curriculum must agree to be available for summer employment for two years, the place of employment to be approved by the curriculum adviser.

BACHELOR OF SCIENCE IN AGRICULTURE

AGRONOMY MAJOR

For Uniform Freshman Year See Page 112.

Range Management Option

Sophomore Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 235—Fund. of Ag. Eco.	3	Ag. Eco. 236—Mktg. Ag. Prod.	3
Agron. 241—Soils	4	Ag. Engr. 222—Ag. Surv. & Map	2
Bact. 231—Bacteriology	3	Bot. 232—Taxonomy	3
Chem. 341—Org. Chem.	4	Ento. 231—Intro. to Entomol.	3
Math. 230—Ag. Math	3	Eng. 234—Tech. Writ.	3
P. E., Band, or Basic ROTC	1	Govt. 233—Amer. Govt., Org.	3
	18	P. E., Band, or Basic ROTC	1
			18

Junior Year

First Semester	Credit	Second Semester	Credit
Agron. 331—Forage Crops	3	Agron. 333—Range Plants	3
Agron. 435—Soil Genesis	3	Agron. 341—Genetics	4
A. H. 331—Anim. Nutr.	3	Agron. 434—Soil Cons.	3
Biol. 333—Bio-Ecology	3	Bot. 331—Plant Physiol.	3
Ento. 321—Field Crop Insects	2	Vet. 331—Anat. of Farm Anim.	3
Electives	3	Electives	3
	17		19

Senior Year

First Semester	Credit	Second Semester	Credit
Agron. 422—Dry Farm Soils	2	Agron. 410—Seminar	1
Agron. 437—Range Plant Mgt.	3	Agron. 431—Plant Breed.	3
A. H. 431—Beef Cattle Prod.	3	Agron. 438—Adv. Range Plant Mgt.	3
Govt. 234—Amer. Govt. Func.	3	A. H. 433—Sheep Prod.	3
Hist. 3321—Heritage of Amer.	3	A. H. 438—Range Anim. Mgt.	3
Electives	4	Hist. 3322—Heritage of Amer.	3
	18	Electives	3
			19

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

BACHELOR OF SCIENCE IN AGRICULTURE
AGRONOMY MAJOR

For Uniform Freshman Year See Page 112.

Crops Option

Sophomore Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 235—Fund. of Ag. Eco.	3	Ag. Eco. 236—Mktg. Ag. Prod.	3
Agron. 241—Soils	4	Ag. Engr. 222—Ag. Surv. & L.Map	2
Bact. 231—Bacteriology	3	Eng. 234—Tech. Writ.	3
Chem. 341—Org. Chem.	4	Govt. 234—Amer. Govt. Func.	3
Govt. 233—Amer. Govt., Org.	3	Hort. 231—Veg. Gard.	3
P. E., Band, or Basic ROTC	1	Math. 230—Ag. Math.	3
	18	P. E., Band or Basic ROTC	1
			18

Junior Year

First Semester	Credit	Second Semester	Credit
Agron. 331—Forage Crops	3	Agron. 341—Genetics	4
Agron. 332—Grain Crops	3	Agron. 342—Crop Ident. Judg. Grad.	4
A.H. 331—Anim. Nutr.	3	Agron. 433—Cotton Prod.	3
Bot. 332—Plant Path.	3	Bot. 331—Plant Physio.	3
Electives	6	Ento. 231—Intro. to Entomol.	3
	18	Electives	2
			19

Senior Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 433—Farm Mgt.	3	Agron. 410—Seminar	1
Ag. Engr. 335—Irrig. Prin.	3	Agron. 434—Soil Cons.	3
Agron. 422—Dry Farm Soils	2	Agron. 423—Soil Fertil.	2
Ento. 321—Field Crop Insects	2	Agron. 425—Seed Tech.	2
Hist. 3321—Heritage of Amer.	3	Agron. 431—Plant Breed.	3
Text. Engr. 234—Cotton Classing	3	Hist. 3322—Heritage of Amer.	3
Electives	3	Electives	3
	19		17

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

BACHELOR OF SCIENCE IN AGRICULTURE
AGRONOMY MAJOR

For Uniform Freshman Year See Page 112.

Soils Option

Sophomore Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 235—Fund. of Ag. Eco.	3	Ag. Eco. 236—Mktg. Ag. Prod.	3
Agron. 241—Soils	4	Ag. Engr. 222—Ag. Surv. & Map	2
Bact. 231—Bacteriology	3	Eng. 234—Tech. Writ.	3
Chem. 341—Org. Chem.	4	Hort. 231—Veg. Gard.	3
Govt. 233—Amer. Govt. Org.	3	Govt. 234—Amer. Govt. Func.	3
P.E., Band, or Basic ROTC	1	Math. 230—Ag. Math.	3
	18	P.E., Band, or Basic ROTC	1
			18

Junior Year

First Semester	Credit	Second Semester	Credit
Agron. 331—Forage Crops	3	Agron. 341—Genetics	4
Agron. 435—Soil Genesis	3	Agron. 342—Crop Ident. Judg. Grad.	4
A.H. 331—Anim. Nutr.	3	Bot. 331—Plant Path.	3
Bot. 332—Plant Path.	3	Ento. 231—Intro. to Entomol.	3
Hist. 3321—Heritage of Amer.	3	Hist. 3322—Heritage of Amer.	3
Electives	4		
	19		17

Senior Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 433—Farm Mgt.	3	Agron. 410—Seminar	1
Ag. Engr. 335—Irrig. Prin.	3	Agron. 423—Soil Fertil.	2
Agron. 422—Dry Farm Soils	2	Agron. 431—Plant Breeding	3
Agron. 439—Soil Microbiol.	3	Agron. 434—Soil Cons.	3
Ento. 321—Field Crop Insects	2	Agron. 436—Soil Chem.	3
Electives	6	Electives	6
	19		18

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

BACHELOR OF SCIENCE IN AGRICULTURE

ANIMAL HUSBANDRY MAJOR

For Uniform Freshman Year See Page 112.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 235—Fund. of Ag. Eco.	3	Ag. Eco. 236—Mktg. Ag. Prod.	3
Agron. 241—Soils	4	A.H. 322—Farm Meats	2
A.H. 231—Breeds of Livestock	3	Bact. 231—Bacteriology	3
Chem. 341—Org. Chem.	4	Math. 230—Ag. Math.	3
Eng. 234—Tech. Writ.	3	P.H. 231—Intro. Poultry Husb.	3
P.E., Band, or Basic ROTC	1	Vet. 331—Anat. of Farm Anim.	3
	18	P.E., Band, or Basic ROTC	1
			18

Animal Industry Option

Junior Year

First Semester	Credit	Second Semester	Credit
*Agron. 331—Forage Crops	3	Agron. 341—Prin. of Genetics	4
**A.H. 321—Livestock Judging	2	A.H. 331—Anim. Nutr.	3
Ento. 231—Intro. to Entomol.	3	Govt. 234—Amer. Govt., Func.	3
Govt. 233—Amer. Govt., Org.	3	Hist. 3322—Heritage of Amer.	3
Hist. 3321—Heritage of Amer.	3	Vet. 334—Anim. San., Dis. Control	3
Vet. 332—Physiol. of Farm Anim.	3	Electives	3
Electives	2		19
	19		

Senior Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 431—Livestock Mkt.	3	Ag. Eco. 433—Farm Mgt.	3
A.H. 427—Swine Prod.	2	A.H. 411—Seminar	1
A.H. 431—Beef Cattle Prod.	3	A.H. 433—Sheep Prod.	3
A.H. 432—Anim. Breeding	3	A.H. 436—Adv. Anim. Nutr.	3
Speech 338—Bus. and Prof. Sp.	3	Electives	7
Electives	4		17
	18		

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

---

* Or Agron. 333—Range Plants. Cr. 3, by special permission.
** Or A.H. 325—Meat Grading and Judging. Cr. 2.

Dairy Husbandry Option

Junior Year

First Semester	Credit	Second Semester	Credit
Agron. 331—Forage Crops	3	Agron. 341—Prin. of Genetics	4
A.H. 335—Art. Insem., Ped., Records	3	A.H. 323—Dairy Cattle Judging	2
D.I. 313—Dairy Prod. Judging	1	A.H. 331—Anim. Nutr.	3
D.I. 241—Market Milk	4	D.I. 335—Dairy Bact.	3
Hist. 3321—Heritage of Amer.	3	Hist. 3322—Heritage of Amer.	3
Vet. 332—Physiol. of Farm Anim.	3	Vet. 334—An. San., Dis. Cont.	3
Electives	2		
	19		18

Senior Year

First Semester	Credit	Second Semester	Credit
A.H. 432—Anim. Breeding	3	Ag. Eco. 433—Farm Mgt.	3
A.H. 435—Dairy Cattle Prod.	3	A.H. 411—Seminar	1
Ento. 231—Intro. to Entomol.	3	A.H. 436—Adv. Anim. Nutr.	3
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Speech 338—Bus. and Prof. Sp.	3	Electives	8
Electives	3		
	18		18

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

Poultry Husbandry Option

Junior Year

First Semester	Credit	Second Semester	Credit
Agron. 331—Forage Crops	3	Agron. 341—Prin. of Genetics	4
Ento. 231—Intro. to Entomol.	3	A.H. 331—Anim. Nutr.	3
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Hist. 3321—Heritage of Amer.	3	Hist. 3322—Heritage of Amer.	3
P.H. 332—Broiler Prod.	3	P.H. 331—Pullet Brooding and Prod.	3
Vet. 332—Physiol. of Farm Anim.	3	Vet. 334—An. San., Dis. Control	3
	18		19

Senior Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 322—Mktg. Ag. Prod.	2	Ag. Eco. 433—Farm Mgt.	3
A.H. 432—Anim. Breeding	3	A.H. 411—Seminar	1
A.H. 435—Dairy Cattle Prod.	3	A.H. 436—Adv. Anim. Nutr.	3
P.H. 432—Turkey Prod.	3	A.H. 439—Hormones in Anim. Prod.	3
Speech 338—Bus. and Prof. Sp.	3	P.H. 431—Poultry Prod.	3
Electives	5	Electives	4
	19		17

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

PRE-VETERINARY MEDICINE

This curriculum is designed to qualify students for entrance to schools of veterinary medicine. Texas Technological College offers only the two-year pre-veterinary medicine curriculum. Students who complete this curriculum may either apply for admission to a school of veterinary medicine or change to one of the four-year curricula in the School of Agriculture.

Freshman Year

First Semester	Credit	Second Semester	Credit
Ag. Ed. 111—Orientation	1	Biol. 134—Zoology	3
A.H. 131—Gen. Anim. Husb.	3	Chem. 142—Gen. Chem.	4
Biol. 133—Botany	3	D.I. 131—Prin. of Dairying	3
Chem. 141—Gen. Chem.	4	Eng. 132—Eng. Comp.	3
Eng. 131—Eng. Comp.	3	Math. 131—Trig.	3
Math. 130—Algebra	3	P.E., Band, or Basic ROTC	1-2
P.E., Band, or Basic ROTC	1-2		
	18-19		17-18

Sophomore Year

First Semester	Credit	Second Semester	Credit
*Chem. 231—Qual. Anal.	3	Ag. Eco. 235—Fund. of Ag. Eco.	3
Chem. 353—Org. Chem.	5	Chem. 354—Org. Chem.	5
Eng. 234—Tech. Writ.	3	P.H. 231—Farm Poultry	3
Phys. 141—Gen. Phys.	4	Phys. 142—Gen. Physics	4
Zool. 336—Comp. Invertebr. Morph.	3	P.E., Band, or Basic ROTC	1
P.E., Band, or Basic ROTC	1		
	19		16

BACHELOR OF SCIENCE IN AGRICULTURE

DAIRY INDUSTRY MAJOR

For Uniform Freshman Year See Page 112.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 235—Fund. of Ag. Eco.	3	Ag. Eco. 236—Mkt. Agr. Prod.	3
Bact. 231—Bacteriology	3	D.I. 231—Testing Dairy Prod.	3
Chem. 341—Org. Chem.	4	Eng. 234—Tech. Writ.	3
D.I. 241—Market Milk	4	Hist. 232—Eco. & Pol. Hist. of U.S.	3
Hist. 231—Eco. & Pol. Hist. of U.S.	3	Math. 230—Ag. Math.	3
P.E., Band, or Basic ROTC	1	Speech 338—Bus. & Prof. Sp.	3
	18	P.E., Band, or Basic ROTC	1
			19

Junior Year

First Semester	Credit	Second Semester	Credit
Acct. 244—Elem. Acct.	4	D.I. 314—Adv. Judging	1
A.H. 331—Anim. Nutr.	3	D.I. 321—Dairy Plant Equip.	2
D.I. 313—Dairy Prod. Judging	1	D.I. 334—Fund. Dairy Science	3
D.I. 337—Dairy Plant Equip.	3	D.I. 335—Dairy Bact.	3
Govt. 233—Amer. Govt., Org.	3	D.I. 339—Mktg. Dairy Prod.	3
Electives	4	Govt. 234—Amer. Govt., Func.	3
	18	Electives	3
			18

Senior Year

First Semester	Credit	Second Semester	Credit
A.H. 435—Dairy Cattle Prod.	3	D.I. 411—Seminar	1
D.I. 412—Starters & Cult. Milk	1	D.I. 422—Cond. & Powd. Milk	2
D.I. 437—Mgt. & Merchandising	3	D.I. 433—Ice Cream Making	3
D.I. 451—Butter & Cheese Making	5	D.I. 435—Dairy & Food Insp.	3
Electives	6	Electives	9
	18		18

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

BACHELOR OF SCIENCE IN AGRICULTURE

HORTICULTURE AND PARK MANAGEMENT MAJOR

For Uniform Freshman Year See Page 112.

General Horticulture Option

Sophomore Year

First Semester	Credit	Second Semester	Credit
Ag. Eco. 235—Fund. of Ag. Eco.	3	Agron. 241—Soils	4
Chem. 341—Org. Chem.	4	Eng. 234—Tech. Writ.	3
Ento. 231—Intro. Entomol.	3	Hort. 231—Veg. Gard.	3
Hort. 232—Trees and Shrubs	3	Hort. 233—Annuals & Perennials	3
Hort. 234—Comm. Propag.	3	Hort. 3311—Landscape Planning	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	17		17

* Superior students in chemistry may take Chem. 231 parallel with Chem. 142. Others will find it advisable to take Chem. 231 following Chem. 142 and before Chem. 353, to which it is prerequisite.

Junior Year

First Semester	Credit
Ag. Engr. 222—Ag. Surv. & Land Map.	2
Bact. 231—Bacteriology	3
Govt. 233—Amer. Govt., Org.	3
Hort. 333—Fruit Culture	3
Hort. 334—Floriculture	3
Math. 230—Ag. Math.	3
Electives	2
	19

Second Semester	Credit
Ag. Eco. 236—Mktg. Ag. Prod.	3
Agron. 341—Prin. of Genetics	4
Bot. 331—Plant Physiol.	3
Ento. 323—Hort. Pests	2
Govt. 234—Amer. Govt., Func.	3
Hort. 338—Turfgrass Mgt.	3
	18

Senior Year

First Semester	Credit
Bot. 332—Plant Path.	3
Biol. 333—Bio-ecology	3
History 3321—Heritage of Amer.	3
Electives	10
	19

Second Semester	Credit
History 3322—Heritage of Amer.	3
Hort. 410—Seminar	1
*Electives	15
	19

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

Park Management Option

For Uniform Freshman Year See Page 112.

Sophomore Year

First Semester	Credit
Ag. Eco. 235—Fund. of Ag. Eco.	3
Arch. 141—Elem. Drawing	4
Ento. 231—Intro. Entomol.	3
Geol. 143—Gen. Geol.	4
Hort. 232—Trees & Shrubs	3
P.E., Band, or Basic ROTC	1
	18

Second Semester	Credit
Agron. 241—Soils	4
Arch. 142—Elem. Drawing	4
Eng. 234—Tech. Writ.	3
Hort. 233—Annuals & Perennials	3
Hort. 3311—Landscape Planning	3
P.E., Band, or Basic ROTC	1
	18

Junior Year

First Semester	Credit
Ag. Engr. 222—Ag. Surv. & Land Map.	2
Govt. 233—Amer. Govt., Org.	3
Hort. 234—Comm. Prop.	3
Math. 230—Ag. Math.	3
Electives	6
	17

Second Semester	Credit
Arch. 436—City Planning	3
Ento. 323—Hort. Pests	2
Govt. 234—Amer. Govt. Func.	3
Hort. 231—Veg. Gard.	3
Hort. 338—Turfgrass Mgt.	3
Mgt. 331—Indus. Mgt.	3
Electives	2
	19

Senior Year

First Semester	Credit
Bus. Law 338	3
Hist. 3321—Heritage of Amer.	3
Hort. 333—Fruit Culture	3
Hort. 422—Des. & Op. of Parks & Rec. Sys.	2
Hort. 441—Landscape Des.	4
Electives	3
	18

Second Semester	Credit
Acct. 231—Indus. Acct. for Engr.	3
Hist. 3322—Heritage of Amer.	3
Hort. 410—Seminar	1
Hort. 423—Des. & Op. of Parks & Rec. Sys.	2
Hort. 442—Lanscape Design	4
Electives	6
	19

Hours required for graduation exclusive of P.E., Band, or Basic ROTC—140.

* Six hours of electives must be taken from two of these three courses: Hort. 431, 435 and 436.

Department of Agricultural Economics

PROFESSORS J. W. BENNETT, MCBRIDE.
ASSOCIATE PROFESSOR LEONARD.
ASSISTANT PROFESSORS BILLINGSLEY, THOMAS

The objective of this department is to provide training in the solution of basic economic problems and the business aspects of production and marketing agricultural products. Courses are provided for students who are preparing for county agent work or vocational agriculture teaching, employment with federal or private agencies dealing with problems of rural life, or for commercial and industrial vocations closely allied with agriculture.

AGRICULTURAL ECONOMICS

For Undergraduates

235. Fundamentals of Agricultural Economics. Cr. 3.
Analysis of fundamental economic principles and their application to farm and ranch problems.

236. Principles of Marketing Agricultural Products. Cr. 3.
Prerequisite: Ag. Eco. 235. Analysis of the various agents performing the functions in the purchase, sale, and distribution of agricultural products.

322. Marketing Agricultural Products. Cr. 2.
Prerequisite: Ag. Eco. 236. Problems and practices involved in the marketing of specific agricultural commodities.

324. Agricultural Prices. Cr. 2.
Prerequisite: Junior standing or permission of the instructor. Study of agricultural prices. Individual research applied to an agricultural commodity of the student's choice.

325. Farm Laws. Cr. 2.
Prerequisite: Ag. Eco. 236 or permission of the instructor. Legal problems and practices affecting the farmer in his business relations with neighbors and the business agents with whom he deals.

331. Agricultural Statistics. Cr. 3. (2-3).
Prerequisites: Junior standing and 3 hours of mathematics. Principles involved in the collection and interpretation of agricultural data.

333. Cooperation in Agriculture. Cr. 3.
Prerequisite: Ag. Eco. 236. Organization and operation of agricultural cooperatives.

For Undergraduates and Graduates

411. Agricultural Economics Seminar. Cr. 1.
Prerequisite: Senior standing in agriculture. Round table discussion of current economic problems.

412. Agricultural Economics Seminar. Cr. 1.
Prerequisite: Senior standing in agriculture. Round table discussion of current economic problems.

421. Land Economics. Cr. 2.
Prerequisite: Junior standing in agriculture. Land as a factor of production; classification and utilization; land income, tenure, property rights, deeds, credit, and taxation.

431. Livestock Marketing. Cr. 3.
Prerequisite: Junior standing in agriculture including Ag. Eco. 236. Livestock marketng practices and problems.

432. Statistical Methods in Agricultural Research. Cr. 3.
Prerequisite: Approval of the instructor. Advanced work in the field of statistical research using tests of significance and variability, Fisher's tests correlation (multiple and curvilinear relationships), chi-square, regression and analysis of variance and covariance. Application of statistical methods to the field of agricultural research.

433. Farm Management and Records. Cr. 3. (2-3).
Prerequisite: Junior standing in agriculture. The organization and management of the individual farm. Field trips to nearby farms.

434. Advanced Farm Management. Cr. 3.
Prerequisite: Ag. Eco. 433. Functions, organizations, and operations of professional farm management services—research, extension, appraisal, consultation and management.

435. Agricultural Policies and Organizations. Cr. 3.
Prerequisite: Junior standing or permission of the instructor. An examination of the history of the present farm organizations both public and private. An investigation of current public policies of these organizations in operation in the field of agriculture.

436. World Trade in Agricultural Products. Cr. 3.
Prerequisite: Senior standing or permission of the instructor. An economic analysis of the trade policies under which the world's supplies of agricultural products are obtained, An analysis of foreign and domestic relationships in world trade affecting agriculture.

437. Farm Appraisal and Finance. Cr. 3. (2-3).
Prerequisite: Junior standing. Valuation of farm real estate and potential income. Farm credit. Functions and practices of lending institutions.

For Graduates

511. Seminar. Cr. 1.
A study of agricultural outlook and similar material. May be repeated for credit.

533. Marketing Problems. Cr. 3.
Prerequisite: Consent of major professor. Advanced study in the problems and practices in marketing of some selected farm products.

534. Research in Agricultural Economics. Cr. 3.
A selected research problem in agriculture economics, farm management, or rural sociology. May be repeated for credit upon the approval of the major professor.

631-632. Thesis. Cr. 6.

RURAL SOCIOLOGY

For Undergraduates

331. Rural Sociology. Cr. 3.
Prerequisite: Junior standing. A study of rural society and its institutions. Rural leadership and community organizations.

Department of Agricultural Education

PROFESSORS CHAPPELLE, LEACH, STANGEL
ASSOCIATE PROFESSOR HARGRAVE.

The curriculum in the Department of Agricultural Education is designed to qualify the student to teach vocational agriculture under the Federal Vocational Education (Smith-Hughes) Act, and to supplement the student's instruction in technical and professional agriculture.

Upperclass students in agriculture, regardless of major, who plan to qualify to teach vocational agriculture should observe the following two rules: (1) As soon as decision to qualify is made, fill out necessary forms in the Department of Agricultural Education; (2) check with the Department of Agricultural Education to see that full advantage is being taken of electives.

Graduate students who desire to qualify to teach vocational agriculture under the Smith-Hughes Act should so state in submitting application for admission to the Graduate School. A statement of courses to be completed for this certification will be furnished upon request.

For Undergraduates

111. Orientation for Agriculture Students. Cr. 1.
Relationship of the student to the college; habits of study. Survey of the field of agriculture, vocational guidance. Required of all freshmen students in the School of Agriculture.

311. Introduction to Agricultural Education. Cr. 1.
Prerequisite: Junior standing. An introduction to the study of agricultural education, designed to acquaint the student with the history, organization and purpose of agricultural education.

322. Methods in Future Farmer Work. Cr. 2.
Prerequisite: Junior standing in agriculture. Methods of organizing and administering a high school Future Farmer chapter: local, state, and national constitutions, leadership activities, chapter programs of work, advance degrees, national and state FFA awards and contests.

424. Organization and Administration of Vocational Agriculture. Cr. 2.
Prerequisite: Senior standing in agriculture. Organization and administration of vocational agriculture in the high school and its relation to all phases of the high school program. State and national school laws, policies and regulations as they are related to vocational agriculture.

432. Methods in Adult Agricultural Education. Cr. 3. (2-3).
Prerequisite: Senior standing in agriculture. Young farmer, adult farmer and community activities. Preparation of teaching materials. Plans for summer activities and professional improvement.

443. Methods of Teaching Vocational Agriculture in the High School. Cr. 4. (2-6).
Prerequisite: Senior standing in agriculture. Analyzing the vocational agriculture teacher's job. The project method of teaching. The long-time annual teaching plan, supervised farming program, equipment, reports, daily lesson planning, exhibits, and displays.

461. Student Teaching. Cr. 6. (0-18).
Prerequisite: Senior standing in agriculture. Six weeks' off-campus supervised observation and student teaching in high school vocational department approved by the Agricultural Education Department. Opportunity for participation in all-day, young farmer, and adult classes.

For Undergraduates and Graduates

423. Problems. Cr. 2.
Prerequisite: Senior standing. An investigation and study of problems in the field of vocational agriculture of special interest to the individual student. May be repeated for credit.

426. Advanced Methods in Future Farmer Work. Cr. 2.
Advanced methods of teaching Future Farmer work.

For Graduates

511. Problems. Cr. 1.
Current problems of the teacher in the field of vocational agriculture. May be repeated for credit.

522. Advanced Methods in High School Vocational Agriculture. Cr. 2.
Advanced methods of teaching vocational agriculture in all-day classes in the high school.

523. Advanced Methods in Adult Agricultural Education. Cr. 2.
Advanced methods of teaching vocational agriculture in part-time and evening schools.

531. Investigation in the Field of Agricultural Education. Cr. 3.
Prerequisite: Consent of the Head of the Department. Investigation of a problem in the field of vocational agriculture of special interest to the student; presentation of a paper. May be repeated for credit.

631-632. Thesis. Cr. 6.

Department of Agricultural Engineering

PROFESSOR I. WILLIAMS,
ASSISTANT PROFESSOR SCHWIESOW,
INSTRUCTOR D. DAY

The curriculum in agricultural engineering is under the joint supervision of the Schools of Agriculture and Engineering.

Agricultural engineering is the application of engineering principles to the solution of mechanical and physical problems of agriculture. Solutions are obtained through engineering design and research where required.

Courses offered in agricultural engineering are designed to give the student a conception of modern methods of agricultural production; farm processing and storage; the conservation and utilization of land, buildings, and equipment.

A variety of occupations are open to agricultural engineers, such as research with experiment stations; extension service; positions with land grant colleges and with the government. Also, many agricultural engineers are employed in land reclamation, drainage, soil conservation, and irrigation enterprises; designing, advertising, sales and promotional work with the manufacturers of farm machinery, irrigation and drainage implements, building equipment and materials, crop processing and handling, and electrical equipment; rural electrification work with public or privately owned utilities; editorial work with publishers; ap-

praisal; teaching; farming; cotton gin manufacturers and agricultural engineering consultant work.

Students planning to prepare themselves for agricultural engineering work should consult with members of the staff and the curriculum in agricultural engineering.

For Undergraduates

220. Farm Shop Woodwork. Cr. 2. (1-3).
Selection, use and care of hand tools and power woodworking equipment, Estimating and selection of building materials. Construction techniques and wood projects.

221. Farm Shop Metalwork. Cr. 2. (1-3).
Use of hand and machine tools; cold metal work; arc and oxy-acteylene welding; pipe fitting; concrete work.

222. Agricultural Surveying and Land Mapping. Cr. 2. (1-3)
Techniques in measuring distances and areas; determining elevations and profiles; plotting cross-sections; traversing; use of the planimeter; running grade lines; laying out and checking terraces, irrigation and drainage ditches; area and topographic mapping; use of aerial photographic maps.

223. Farm Utilities. Cr. 2. (1-2)
Domestic water supply and its distribution; plumbing sewage, refuse, and garbage disposal; fundamentals of electricity and wiring of farm buildings; electrical appliances and equipment; lighting; heating, ventilating, and cooling of farm homes.

331. Functional Design of Farm Buildings. Cr. 3. (2-3).
Prerequisite: M.E. 330. Functional design of farm and ranch structures; Materials and methods of use; types of framing and foundations; building requirements as related to heat, water vapor and ventilating; functional design of buildings for special uses (dairy, poultry, storage of grain, vegetables and fruits, farm home); planning for process efficiency. Field inspection trip.

333. Farm Power and Machinery. Cr. 3. (2-2).
Development of farm mechanization. Operation and adjustment of tractors and different types of farm machinery. Cost of use.

334. Farm Tractors. Cr. 3. (2-2).
Principles of operation of spark ignition and diesel engines. Study of construction, adjustment operation. Horsepower, efficiency, safety, and cost of operation. Fuels and lubricants. Transmission of power.

335. Irrigation Principles. Cr. 3. (2-2).
Prerequisite: Ag. Engr. 222 or C.E. 231. Principles and practices of irrigation; irrigation methods, land preparation, movement and storage of water in soils, salinity and its control, quality of water, use of water by plants, irrigation of specific crops, water rights, elements of pumping and costs.

336. Farm Machinery and Power Management. Cr. 3. (2-3).
Prerequisite: Junior standing in engineering. Mechanics and materials of farm machinery construction. Adjustment, selection, capacity, and cost of use of farm machinery. Transmission, measurement, and cost of use of farm power.

For Undergraduates and Graduates

411. Seminar. Cr. 1.
Prerequisite: Senior standing and approval of Head of Department. Assigned readings, written and oral reports, informal discussions relating to agricultural engineering.

430. Agricultural Engineering Problems. Cr. 3.
Prerequisite: Senior standing and approval of Head of Department. The work for this course may be individual study, investigation or design problems of a technical nature for agricultural engineering or engineering students. May be repeated for additional credit.

432. Engineering for Soil and Water Conservation and Drainage. Cr. 3. (2-3).
Prerequisite: C. E. 339. The engineering aspects and design of soil and water conservation structures including terraces, diversion ditches, outlet channels, drop-structures and chutes, and small dams. Design of drainage systems. Field trip.

433. Elements of Tractor Design. Cr. 3. (2-3).
Prerequisite: M.E. 329 or C.E. 332. Kinematics and dynamics of tractor power application. Drawbar, power take-off, and traction mechanisms. Thermodynamic principles and construction of the internal combustion engine, fuels and carburetion, ignition.

434. Rural Electrification. Cr. 3. (2-3).
Prerequisite: E.E. 328 or 338. Application of electricity to farm processes: refrigeration, heat, pumping, ventilating, etc. Rates and costs of electricity for farm uses. Community service plants and facilities. Special uses of lighting. Farm electric distrbution system, proper wiring and controls.

435. Farm Mechanics Problems. Cr. 3.
Prerequisite: Senior standing and approval of Head of Department. Individual study of an advanced phase of some agricultural engineering application of special interest to the student, development of techniques in teaching farm shop work, or a special construction project. Open to students in the School of Agriculture. May be repeated for additional credit.

436. Cotton Gin Engineering. Cr. 3. (2-3).
Prerequisite: Senior standing in engineering or approval of instructor. Basic principles of cleaning, ginning, conditioning, and compressing of cotton, including plant management. Fiber quality evaluation and processing.

437. Design of Farm Irrigation Systems. Cr. 3. (2-3).
Prerequisite: C.E. 339 and Ag. Engr. 335. Principles of design and gravity and sprinkler irrigation systems for the farm. Drilling, development and hydraulics of wells; pumping. Water conveyance structures. Irrigation system efficiency determinations.

438. Structural Design of Farm Buildings. Cr. 3. (2-3).
Prerequisite: C.E. 333. Structural design of farm buildings, involving economic aspects and estimating construction costs; estimating loads; stress analysis, design of axial loading; design of columns, beams, connections, foundations, floors and roofs.

Department of Agronomy

PROFESSOR A. W. YOUNG.
ASSOCIATE PROFESSORS AYERS, HARVEY.
ASSISTANT PROFESSORS JAYNES, KELLY.
INSTRUCTORS SPAIN, WENDT.
PART-TIME INSTRUCTOR GOHLKE.

The Department of Agronomy provides a curriculum leading to the Degree of Bachelor of Science in Agriculture with major work in agronomy. Courses are offered to provide the student with information in the following fields:

1. The development, production, and utilization of field crops.
2. The origin, conservation, and proper management of the soil.
3. The development, conservation, and management of range lands.

The student may select an option in any one of these fields.

Information is provided on operations for dry, humid and irrigation farming. The agronomy farm with areas of soil under both dry and irrigated farming conditions is maintained for field study and demonstrations. An extensive grass and legume crop nursery with many different species and selections of plants is maintained for studying the identifying and growth characteristics of forage and grassland crops.

Field trips to nearby experiment stations and other points of interest are included as a regular part of many courses to assist in broadening the student's training.

The three options offered by this department permit students to qualify for positions with the Extension Service, the Soil Conservation Service, soil and land management, range management, the seed industry, farm operations and many similar fields of work.

For Undergraduates

131. The Fundamentals of Agronomy. Cr. 3. (2-2).
A survey course. Crops, their classification, identification, distribution, production and use. Tillage and elementary soils. Diseases and pests.

241. Soils. Cr. 4. (3-2).
Prerequisite: Chem. 141, sophomore standing in agriculture. Origin, formation, classification of soils; physical, chemical, and biological requirements; maintenance of soil fertility. Field study of soil-forming materials, soil texture classification, identification and mapping.

331. Forage and Pasture Crops. Cr. 3. (2-2).
Prerequisite: Agron. 131, 241, junior standing in agriculture. The production, harvesting, storage and uses of forage and pasture crops.

332. Grain Crops. Cr. 3. (2-2).
Prerequisite: Agron. 131, 241, junior standing in agriculture. The production, harvesting, storage and use of grain crops. Adaption, identification, and general improvement.

333. Range Plants. Cr. 3. (1-4).
Prerequisite: Junior standing in agriculture and approval of instructor. The economic value of the range grasses, non-grass forage plants, and poisonous plants. Identification, habitat, palatability, and regions of growth.

341. Principles of Genetics. Cr. 4. (3-2).
Prerequisite: Junior standing. Heredity and variation in plants and animals. History. The chromosome theory in plants, higher animals, poultry, and insects. Biometry as applied to genetic data.

342. Crop Identification, Judging and Grading. Cr. 4. (0-8).
Prerequisite: Agronomy major or approval of instructor. Identification of field crops, important diseases which attack them, weed seeds, practice in judging quality and values of seeds and crop products, commercial grain grading.

410. Seminar. Cr. 1.
Prerequisite: Senior standing in agronomy. Assigned readings, current advances. Informal discussions, oral reports, and papers.

441. Crop Production. Cr. 4. (2-4).
Prerequisite: Agron. 131, 241, and junior standing in agriculture. Not open to agronomy majors. A modified course composed of applied production of fiber, grain and forage crops applicable to Texas. Problems in seed and feed production. Special emphasis on needs of vocational agriculture teachers, county agents, etc.

For Undergraduates and Graduates

422. Dry Farm Soil Management. Cr. 2.
Prerequisite: Agron. 241, 331 or 333, senior standing in agriculture. Soil moisture conservation, supplemental water supply, permanent farming under the conditions of light or wide seasonal variations of rainfall.

423. Soil Fertility. Cr. 2.
Prerequisite: Agron. 241, 331 or 333, senior standing in agriculture. The nature and sources of plant nutrients, their liberation and conservation. Use of supplements and fertilizers. Irrigation and drainage, inspection trips.

425. Seed Technology. Cr. 2. (1-2).
Prerequisite: Agron. 342. The analysis of planting seed, including identification, germination, and purity. Methods of producing, processing, storing and marketing pure seed with special emphasis on registered and certified seed; study of state and federal seed laws.

430. Agronomy Problems. Cr. 3.
Prerequisite: Open to all students having satisfactory scholastic records. An investigation of an assigned problem and individual instruction in the field of special interest to the individual student concerned. May be repeated for credit with approval of Head of Department.

431. Plant Breeding and Improvement. Cr. 3.
Prerequisite: Agron. 341. Practical application of genetics in the breeding and improvement of plants.

433. Cotton Production. Cr 3.
Prerequisite: Junior standing in agronomy or approval of instructor. Culture, improvement, and classification of cotton. Diseases and insect pests of cotton.

434. Soil Conservation and Land Use Planning. Cr. 3. (2-3).
Prerequisite: Agron. 241, 331. Junior standing. A study of types of erosion causes and controls. Inspection trips in soil conservation. Land use planning and conservation management.

435. Soil Morphology and Genesis. Cr. (2-3).
Prerequisite: Agron. 241, advanced standing in agriculture. The origin and classification of soils of the world and particularly of the United States.

436. Soil Chemistry. Cr. 3.
Prerequisite: Agron. 241, 12 hours of chemistry, advanced standing in agriculture. Chemistry of the soil as affected by cultivation, crop rotation, fertilizers, and moisture relationships.

437. Range Plant Management. Cr. 3. (2-3).
Prerequisite: Senior standing in agriculture. Agron. 333 or 331 and A.H. 331. Management problems and use of plants and soils under range conditions.

438. Advanced Range Plant Management Cr. 3. (2-3).
Prerequisite: Agron. 333 or 331, 437 and senior standing in agriculture. Advanced problems of native grassland management involving a study of range history, range research, economic factors of utilization, and systems of range grassland management.

439. Soil Microbiology. Cr. 3.
Prerequisite: Agron. 241, Bact. 231, 12 hours of chemistry, advanced standing in agriculture. Micro-organisms in the soil with emphasis upon the functions of the soil bacteria and their influence upon decomposition of organic matter and soil fertility in general.

For Graduates

511. Agronomy Seminar. Cr. 1, each time taken.
Review and discussion of current literature in the field. May be repeated for credit upon approval of major professor.

534. Agronomy Research. Cr. 3, each time taken.
Prerequisite: Approval of major professor. A specific problem in line with the major interest of the student. May be repeated for credit upon approval of major professor.

535. Research Methods. Cr. 3.
Project outlines, research administration, research organization, fellowships, research budgets, thesis organization and writing, research foundations.

631-632. Thesis. Cr. 6.

Department of Animal Husbandry

PROFESSORS FINE, HARBAUGH, MOWERY, STANGEL.
ASSOCIATE PROFESSORS S. ANDERSON, BAUMGARDNER, CROOKSHANK, NEELEY, TURNER.
ASSISTANT PROFESSORS BURKHART*, O'BRIEN

The Department of Animal Husbandry, in which students may major as candidates for the Degree of Bachelor of Science in Agriculture, provides instruction in the selection, breeding, feeding, management and marketing of livestock and poultry. Primarily for class instruction, representative breeds of livestock and poultry, along with the necessary buildings, equipment and pastures, are maintained.

Graduates of the animal husbandry curriculum and its various options, which allow liberal elective credits, find many employment opportunities, in addition to livestock farming and ranching, for which the curriculum is primarily designed.

ANIMAL HUSBANDRY

For Undergraduates

131. General Animal Husbandry. Cr. 3. (2-2).
An introductory course designed to acquaint the student with the importance of livestock and their products in Texas and the United States. Types, market classes, and grades of cattle, sheep, and hogs. Horses. Goats. Livestock markets. Slaughtering and slaughter by-products.

231. Breeds of Livestock. Cr. 3. (2-2).
Prerequisite: A.H. 131. Development of the breeds of beef, dairy, and dual-purpose cattle, hogs, horses, sheep, and goats. Special emphasis upon the work of recent prominent breeders and the merits of individual animals.

313. Livestock Judging. Cr. 1. (0-3).
Prerequisite: A.H. 321 and approval of Head of Department. A continuation of A.H. 321. For those students seeking to gain proficiency in livestock judging.

321. Livestock Judging. Cr. 2. (0-6).
Prerequisite: A.H. 231, or junior standing with parallel enrollment in A.H. 231. Selection of breeding and market animals. Carcass yield studies. Comparative showyard judging of cattle, horses, sheep, and swine. Inspection trips to farm herds, plants, and livestock shows.

322. Farm Meats. Cr. 2. (1-3).
Prerequisite: A.H. 131, and sophomore standing. Effects of conformation, quality, and finish on dressing percentage, grade of carcass, and yield. Slaughtering, cutting, curing, and processing. Special health certificate required.

323. Dairy Cattle Judging. Cr. 2. (1-3).
Prerequisite: A.H. 231 or junior standing with parallel enrollment in A.H. 231. Major dairy cattle characteristics. Showyard classification. Comparative judging. Field trips to farm herds and dairy cattle shows.

325. Meat Grading and Judging. Cr. 2. (1-3).
Prerequisite: A.H. 231, or sophomore standing and current enrollment in A.H. 231. Identifying, grading and judging of beef, pork and lamb carcasses and cuts. Live animal evaluation and carcass studies. Field trips to packing houses and stockyards.

331. Animal Nutrition and Principles of Feeding. Cr. 3.
Prerequisite: Chem. 341. Chemical composition of plants and animals. Digestibility, energy, and manurial value of feeds. Feeding standards and calculation of rations for maintenance, growth, fattening, milk, wool, and egg production.

334. Wool and Mohair. Cr. 3. (2-2).
Wool and mohair production and preparation for market. A study of physical and chemical characteristics; sampling, grading, sorting, and scouring.

* On Leave

335. Artificial Insemination, Pedigrees and Records. Cr. 3. (2-3).
Prerequisite: Vet. 331 and junior standing. The collection, evaluation, and storage of semen. Insemination techniques. Artifical breeding organizations, pedigree compilation, and study.

421. Advanced Judging of Livestock, Wool, or Meats. Cr. 2. (0-6).
Prerequisite: A.H. 313, 322, or 323 and approval of Head of Department. Special work in judging livestock, wool, or meats. Inspection trips to herds, plants, shows, and contests.

For Undergraduates and Graduates

411. Animal Husbandry Seminar. Cr.1.
Prerequisite: Senior standing in agriculture. Assigned subjects. Review of recent investigations. Reports and discussion. May be repeated once for credit.

425. Horse Production. Cr. 2.
Prerequisite: Approval of instructor. Breeding, feeding, breaking, training, stabling, and shoeing. Gaits. Care of stallion, brood mare, and foal. Parasites and diseases.

427. Swine Production. Cr. 2.
Prerequisite: A.H. 331. The swine industry. Breeding, feeding, housing, marketing, fitting for show and sale. Herd records. Diseases, parasites, and sanitation. Laboratory practice with farm animals and equipment is done as assigned problems.

431. Beef Cattle Production. Cr. 3.
Prerequisite: A.H. 331. The beef cattle industry. Breeding, feeding, and marketing. Purebred herd and range management. Cattle ranching. Fitting for show and showing. Disease and parasite control. Laboratory practice with farm animals and equipment is done as assigned problems.

432. Animal Breeding. Cr. 3.
Prerequisite: Agron. 341. Genetics applied to the improvement of farm animals. Systems of breeding.

433. Sheep Production. Cr. 3.
Prerequisite: A.H. 331. The sheep industry. Breeding, feeding, shearing, marketing and fitting for show and sale. Farm flock and range management. Disease and parasite control. Laboratory practice with farm animals and equipment is done as assigned problems.

435. Dairy Cattle Production. Cr. 3.
Prerequisite: A.H. 331. The dairy industry. Feeding for growth, maintenance, and milk production. Handling and marketing milk and animals. Dairy barn construction and sanitation. Advanced registry and herd records. Laboratory practice with farm animals and equipment is done as assigned problems.

436. Advanced Animal Nutrition. Cr. 3.
Prerequisite: A.H. 331. The role of nutrients in the metabolism of farm animals. Nutrient utilization and energy efficiency in production.

438. Range Livestock Production. Cr. 3.
Prerequisite: Agron. 437. Breeds of range livestock and their relationship to management of soil and plant growth. Range economics and ranch management.

439. Hormones in Animal Production. Cr. 3.
Prerequisite: Any one of the following: Vet. 331, Chem. 342, A.H. 435, or approval of instructor. Hormones of the endocrine glands, with special reference to their influence upon milk secretion, egg production, growth and fattening.

For Graduates

533. Current Investigations in Animal Husbandry. Cr. 3.
Prerequisite: Graduate standing and consent of Head of Department. Investigation of specific problems in line with the major interest of the student. May be repeated once for credit.

631-632. Thesis. Cr. 6.

POULTRY HUSBANDRY

For Undergraduates

231. Introductory Poultry Husbandry. Cr. 3. (2-2).
A general introduction to the poultry industry. Application of those factors concerned with economic production as observed under average farm conditions. Laboratory demonstration in selecting, culling, grading, and caponizing.

331. Pullet Brooding and Production. Cr. 3. (2-3).
Prerequisite: P.H. 231. Factors influencing fertility and hatchability of eggs. Practical chick embryology. Brooding requirements of baby chicks. Cost of production and methods of marketing. The laboratory includes the successful brooding of baby chicks.

332. Broiler Production. Cr. 3. (2-3).
Prerequisite: P.H. 231. Detailed study of broiler production. Influence of strains, environment, feed conversion, and mortality upon production costs. The course includes the raising and marketing of finished broilers.

For Undergraduates and Graduates

431. Poultry Production. Cr. 3.
Prerequisite: P.H. 231. Breeding, feeding, management, and marketing of poultry and poultry products. Housing types as influenced by biological and engineering requirements. Disease control and sanitation. Field trips to nearby poultry enterprises.

432. Turkey Production. Cr. 3.
Prerequisite: P.H. 231. The turkey industry. Breeds, breeding, incubation, rearing, housing, feeding, management, and marketing. Disease control and sanitation. Field trips to nearby turkey farms whenever possible.

433. Caged Egg Production. Cr. 3.
Prerequisite: P.H. 231, or approval of instructor. A detailed introduction to the caged egg industry. The influence of varieties and strains, environment, feeds, culling, and management upon production. Summary and analysis of records. Field trips will be made to nearby cage production areas.

For Graduates

(See A. H. 533.)

VETERINARY SCIENCE

For Undergraduates

331. Anatomy of Farm Animals. Cr. 3.
An introduction to comparative anatomy of domestic animals.

332. Physiology of Farm Animals. Cr. 3.
Prerequisite: Vet 331. An introduction to physiology of domestic animals.

334. Animal Sanitation and Disease Control. Cr. 3.
Prerequisite: Vet. 332. A consideration of some of the diseases of farm animals, both infectious and non-infectious, also parasites, parasitic diseases, and the establishment of immunity through the use of biological products.

Department of Dairy Industry

PROFESSOR J. J. WILLINGHAM.
ASSISTANT PROFESSOR PEEPLES.*
INSTRUCTOR JARMAN, MORGAN.**

The Department of Dairy Industry offers courses in the fundamentals of the science of dairying. Special technical courses are offered which prepare the student to become a general dairy plant operator, dairy food and sanitary inspector, dairy products salesman, and technical dairy laboratory control operator. The curriculum is so arranged that electives may be pursued in other fields closely allied with the dairy industry. The department maintains a dairy plant with modern equipment for laboratory instruction in market milk, cheese, butter, ice cream, condensed milk, and laboratory control of dairy products. Complete laboratory facilities are maintained for making analysis of dairy products.

For Undergraduates

131. Principles of Dairying. Cr. 3. (2-2).
A general survey of the field of dairying; composition of milk; milk analysis; milk production and processing.

231. Testing Dairy Products. Cr. 3. (1-6).
Prerequisite: D.I. 131, Chem. 142. Chemical and physical tests used in the processing of dairy products; laboratory control methods for the dairy plant.

241. Market Milk. Cr. 4. (3-3).
Prerequisite: D.I. 131. The fluid milk industry; milk and public health; city, state and federal regulations and ordinances; production, transportation, handling, retailing, wholesaling of milk; cost studies; processing; field trips.

313. Dairy Products Judging. Cr. 1. (0-3).
Prerequisite: Consent of instructor. Commercial grades and classification of dairy products; practice in judging milk, butter, cheese and ice cream; student contests.

314. Advanced Dairy Products Judging. Cr. 1. (0-3).
Prerequisite: Consent of instructor. Commercial grades and classification of dairy products; practices in judging milk, butter, cheese and ice cream; student contests.

* On leave, Spring 1958.
** Spring 1958

321. Dairy Plant Equipment. Cr. 2. (2-0).
Prerequisite: D.I. 337. Principles involved in the selection, installation and care of dairy equipment.

334. Fundamentals of Dairy Science. Cr. 3. (2-3).
Prerequisites: D.I. 131, Chem. 142. Chemical and physical principles of basic importance in the processing of dairy products.

335. Dairy Bacteriology. Cr. 3. (2-3).
Prerequisites: D.I. 131, Bact. 231. Study of organisms in milk and dairy products; methods of control.

337. Dairy Plant Equipment. Cr. 3. (2-3).
Prerequisite: D.I. 131. Application of the physical principles of heat and power to operation of dairy plant equipment; dairy refrigeration; water problems; steam and water fittings; plumbing; sewage disposal; steam boilers.

339. Marketing Dairy Products. Cr. 3.
Prerequisite: D.I. 131, or approval of instructor. Federal marketing orders; by-products markets; pricing formula; brokerage policies.

For Undergraduates and Graduates

411. Dairy Seminar. Cr. 1.
Prerequisite: Senior standing in the department. A review of scientific literature; papers and reports; class discussion. Graduate students may repeat for credit.

412. Starters and Cultured Milk. Cr. 1. (0-3).
Prerequisite: D.I. 335. Bacteriology of starters and fermented milks; technique of preparing cultures for use in dairy processing operations.

422. Condensed and Powdered Milk. Cr. 2.
Prerequisite: D.I. 321. The manufacture of condensed milk and milk powder; malted milk; milk casein; commercial buttermilk and whey; field trips.

432. Dairy Industry Problems. Cr. 3.
Prerequisite: 21 hours in the department and consent of instructor. Investigation of special problems in the field of dairy industry in which the student has a special interest.

433. Ice Cream Making. Cr. 3. (2-3).
Prerequisite: D.I. 131. Problems of the ice cream industry; ingredients, standardization and calculation of mixes; processing; cost studies; field trips.

435. Dairy and Food Inspection. Cr. 3. (2-3).
Prerequisite: D.I. 131. Municipal, state and federal dairy and food regulations; inspection methods used in the field; laboratory analysis of dairy and food products; required field trip.

437. Creamery Management and Merchandising. Cr. 3.
Prerequisite: D.I. 321. Organization and control of dairy plants; duties of plant manager; plant plans and construction; ethics and methods of merchandising; required field trip.

451. Butter and Cheese Making. Cr. 3. (3-4).
Prerequisites: D.I. 131, Bact. 231. Problems in the manufacture of butter and cheese.

For Graduates

531. Dairy Industry Research. Cr. 3. (0-9).
Prerequisite: Consent of major professor. Scientific research in the field of dairy industry. May be repeated for credit.

535. Dairy Bacteriology Research. Cr. 3. (0-9).
Prerequisite: Consent of major professor. Scientific research in the field of dairy bacteriology. May be repeated for credit.

631.-632. Thesis. Cr. 6.

Department of Horticulture and Park Management

PROFESSORS URBANOVSKY, ASHDOWN, ELLE, YOCUM.
ASSOCIATE PROFESSOR RUCKER.
ASSISTANT PROFESSOR ZUKAUKAS.
INSTRUCTORS ANDRESS, GOSDIN,* REED.

The Department of Horticulture and Park Management offers training in basic horticultural subjects including plant propagation and selection of plant materials, olericulture, pomology, floriculture, landscape gardening, park design, recreation area layouts, park management, and entomology. A large greenhouse area, plant propagation house, nursery, orchard, vegetable garden, and hot beds and cold frames are maintained for instructional use in addition to the laboratories and classrooms. Training of students in commercial vegetable crop pro-

* Spring Semester 1958

duction, floriculture, insect control, and park management are special objectives, along with the general training in horticulture. The large campus area provides a wide variety of ornamental plant species for study and at the same time serves as a laboratory for landscape design and management problems which are common in recreational and park areas.

The entomology program of the College is a joint effort involving the Departments of Biology and Horticulture and Park Management. Courses offered in the Department of Biology stress the zoological phases of the field and those offered in the Department of Horticulture and Park Management stress the applied phases. For other listings, refer to the Department of Biology, School of Arts and Sciences.

HORTICULTURE

For Undergraduates

131. Principles of Horticulture. Cr. 3. (2-2).
Fundamental principles and practices of ornamental horticulture, orcharding, vegetable gardening, propagation, and landscaping of small homes.

231. Vegetable Gardening. Cr. 3. (2-3).
Prerequisite: Hort. 131. The basic principles of market gardening and truck farming. Planning, planting and caring for the home garden.

232. Trees and Shrubs. Cr. 3. (2-2).
Prerequisite: Sophomore standing. Identification, characteristics and use of deciduous and evergreen trees and shrubs of economic and ornamental importance.

233. Annuals and Perennials. Cr. 3. (2-2).
Prerequisite: Sophomore standing. Identification, characteristics, culture, and use of annuals, biennials, perennials, bulb crops, and outdoor roses.

234. Commercial Propagation. Cr. 3. (2-3).
Prerequisite: Hort. 131, Chemistry 142. A study of propagation techniques of commercial nurseries and greenhouse ranges, and the study of the physiological reaction of cutting material. Offered 1959-60 and alternate years.

333. Fruit Culture. Cr. 3. (2-3).
Prerequisite: Hort. 131, junior standing in agriculture. Principles of fruit production; particularly the home orchard. Tree fruits, grapes, and small fruits. Climate, soil and water requirements. Varieties and cultural practices. Offered in 1959-60 and alternate years.

334. Principles of Floriculture. Cr. 3. (2-3).
Prerequisite: Hort. 233, 234, Chem. 341, Agron. 241, junior standing. Greenhouse construction, heating, fundamental soil treatment, and the basic principles of flower production and floriculture marketing. Offered 1958-59 and alternate years.

338. Turfgrass Management. Cr. 3.
Principles and practices of turfgrass management for specialized areas such as athletic fields, playground areas, golf courses, home lawns, etc.

3311. Landscape Planning and Maintenance. Cr. 3. (1-6).
Prerequisite: Hort. 232, 233. An introductory course to landscape design with problems in the design of private, semi-private, and public areas, and maintenance of same.

410. Seminar. Cr. 1.
Prerequisite: Senior standing in horticulture and park management. Assigned readings, current advances, informal discussions, and oral reports and papers.

For Undergraduates and Graduates

422. Design and Operation of Parks and Recreation Systems. Cr. 2.
Prerequisite: Junior standing and consent of instructor. The study of the operation, management, administration, and history of city, state, and national parks.

423. Design and Operation of Parks and Recreation Systems. Cr. 2.
Prerequisite: Junior standing and consent of instructor. The study of design and construction of park structures together with the operation, planning, financing, legislation, and recreation use.

425. Horticulture Problems. Cr. 2.
Prerequisite: Open to all advanced students having satisfactory scholastic records. An investigation of a problem in the field of special interest to the individual student concerned.

430. Horticulture Problems. Cr. 3.
Prerequisite: Open to all advanced students having satisfactory scholastic records. An investigation of a problem in the field of special interest to the individual student concerned. Repeated for credit with approval of Head of Department.

431. Pomology. Cr. 3.

Prerequisite: Hort. 333, advanced standing in agriculture. The principles underlying fruit production. Temperature, moisture, irrigation, nutrition, fruit setting of pomological fruit.

435. Vegetable Production. Cr. 3.

Prerequisite: Hort. 231, advanced standing in agriculture. A study of the practices and problems involved in the commercial production and handling of the important vegetable crops for fresh market and processing. Required field trips.

436. Advanced Floricultural Science. Cr. 3. (2-3).

Prerequisite: Hort. 334, junior standing. Advanced culture and techniques of fertilization, soil maintenance; specific detailed study of greenhouse crops such as chrysanthemums, carnations, stock, and snapdragons.

441. Landscape Design. Cr. 4. (1-8).

Prerequisite: Eng. Arch. 141, 142, Hort. 3311, junior standing. Principles of landscape design, the city home, country estate, gardens, small city parks, and playgrounds. Field trips are included for practical applications.

442. Landscape Design. Cr. 4. (1-8).

Prerequisite: Hort. 441, junior standing. A continuation of Hort. 441 and the fundamental principles of the national, state, and city park department methods of planning.

For Graduates

511. Horticulture Seminar. Cr. 1.

Review and discussion of current literature in the field. May be repeated for credit.

531. Horticultural Research. Cr. 3.

Prerequisite: Consent of major professor. An outline of a specific problem of specialized study not included in regular course work. May be repeated for credit with approval of major professor.

631-532. Thesis. Cr. 6.

ENTOMOLOGY

For Undergraduates

231. Introductory Entomology. Cr. 3. (2-2).

Prerequisite: Sophomore standing in agriculture, and Biol. 134. An introduction to insects and their role in human affairs, particularly agriculture: emphasis on morphology and biology as applied to control of pest species; control materials and methods.

321. Field Crop Insects. Cr. 2. (1-3).

Prerequisite: Ento. 231, An intensive study of field crop pests; cotton, range crop, and small grains insect pests; storage pests. Principally for agronomy majors.

322. Livestock Pests. Cr. 2. (1-3).

Prerequisite: Ento. 231. Livestock pests and associated insect problems. Life history and economic control.

323. Horticultural Pests. Cr. 2.(1-3).

Prerequisite: Ento. 231. The arthropod pests of ornamental, vegetable, and fruit crops. Recognition, biology, and control.

324. Applied Entomology. Cr. 2. (1-3).

Prerequisite: Ento. 231. Recognition and control of economic pests of agricultural crops.

For Undergraduates and Graduates

431. Agricultural Compounds. Cr. 3.

Prerequisites: Ento. 231, Chem. 341. Nature, mode of action, and uses of insecticides, fungicides, herbicides, and fertilizers.

SCHOOL OF ARTS AND SCIENCES

R. C. GOODWIN, *Dean*

The principal objective of the School of Arts and Sciences is to promote the requisites of a general and liberal education directed toward the attainment and enrichment of social and personal culture. Though this is a goal within itself, for purposes of administration the work of this School is divided into that of the various departments wherein varying degrees of specialization are permitted depending upon the department and the degree sought. Curricula for these specialized programs are to be found on succeeding pages.

Regardless of the finally adopted program of the student, it is believed that the entering year should be of a more general nature. At the time of the preregistration counseling program, each entering freshman will be assigned to a faculty member who will serve as academic counselor and adviser to the student during his freshman year. The student will report to his counselor for such individual conferences or group meetings as may be prescribed for the purpose of orienting himself with academic regulations and procedures, curricula, and degree requirements in the various areas of interest of the student. Unless specifically indicated to the contrary in a particular printed curriculum, each entering student in this School will set up, upon the advice of his counselor, an academic program within the framework of the established freshman year, as set forth immediately below.

Prescribed Freshman Curriculum:

1. English composition	6
2. Mathematics, foreign language, science or history	18
3. Electives, if not included under 2 above	6
4. Physical education, band, or basic ROTC	2-4
Total for both semesters of freshman year	32-34 hours

Required freshman courses should be taken during the freshman year and not postponed. During the sophomore year the student should take English, the second year of physical education, band or basic air or military science, and remove all unabsolved freshman requirements. No student will be classified as a senior unless he has completed four separate semesters of physical education, basic air or military science, or band. Furthermore, students who postpone taking required freshman subjects until the senior year must take such subjects though the credit therefrom will not apply toward the hours required for a degree. For the purpose of this regulation a senior is considered as a student with a minimum of 90 semester hours to his credit.

From 6 to 12 semester-credit hours of advanced ROTC may be counted toward degree requirements, subject to the approval of the head of the department concerned.

The normal amount of work to be carried by a student in the School of Arts and Sciences should not exceed 17 hours per semester. Unless specifically prescribed by a particular curriculum, loads exceeding 17 hours or loads of less than 12 hours must have the expressed approval of the Dean. In calculating the load, the Dean will consider all active correspondence courses, grade-point averages, and the student's extra-curricular work.

THE DEGREE OF BACHELOR OF ARTS

The curriculum established for the Degree of Bachelor of Arts is designed specifically to fulfill the aims of liberal education through a well-rounded study of the humanities, the physical, biological, and social sciences. It provides also the basis of facts and insights requisite for specialized study and professional work in these fields.

The minimum requirements for the Degree of Bachelor of Arts also apply to all other degrees offered by the School of Arts and Sciences unless specifically shown to the contrary. These minimum requirements are:

		Sem. Hrs.
1.	English	12
2.	Foreign Language	6-18†
3.	Mathematics	0-6*
4.	Government 233-234	6
5.	American History	6
6.	Six hours of a social science above the freshman level other than major or minor	6
7.	Laboratory Science	6-14**
8.	Major, minor, and electives sufficient with the above mentioned courses to total a minimum of 123 semester hours not including physical education, band, or basic ROTC.	
9.	Physical Education, Band, or Basic ROTC	4-6

The selection of the major and minor fields should be made by the time the student reaches his junior year. For the major subject he will be required to complete 24 semester hours in addition to the minimum degree requirements in that subject. In the case of a subject offered as a major in which no specific courses are included in the prescribed requirements for the Bachelor of Arts Degree, a minimum of 30 semester hours must be completed in the major subject. Eighteen hours of the major subject must be in courses of junior and senior rank. For the minor he will complete a minimum of 18 semester hours, at least 6 of which must be of junior and senior rank. All courses in the major and minor subjects must be approved by the head of the department concerned.

Not more than 42 semester hours in one subject may be counted in the requirement for the Bachelor of Arts Degree. Not more than 12 hours in Biblical history and literature may be counted; not more than 8 hours in applied music and/or music ensemble, except for students offering music as a major or minor. Courses in shorthand and typewriting may not be offered for this degree.

---

† Students who had no foreign language in high school, or who repeat a language begun in high school, 18 hours. Students who had two units in the same language in high school, 12 hours in one language. Students who had 3 or 4 units in high school, 6 hours in the same language in a 300 course.

* If three and one-half units of mathematics including two of algebra, one of plane geometry, and plane trigonometry are accepted for admission, no further courses in mathematics are required. If three units are accepted including two units in algebra and one in plane geometry, Math. 130, 131, 133, or 138 is required.

** If two or more units of laboratory science, biological or physical or both, are accepted for admission, one year of a laboratory course in college will satisfy the natural science requirement. Should either or both the units accepted be in general science and applied science, two years of college science will be required to satisfy degree requirements. If two are required in college, they cannot be offered in the same subject; and one year must be in physical science and one in biological science.

In the majority of cases students completing the requirements for the Degree of Bachelor of Arts will carry their major and minor work in the following departments of this School:

Biology
Chemistry
Education and Philosophy
English
Foreign Languages (Spanish, French, German, Latin)
Geology
Government
Health, Physical Education and Recreation
History, Anthropology, and Sociology
Journalism
Mathematics
Music
Physics
Psychology
Speech

Majors in Other Schools.

Provision is made, however, whereby students may complete either majors or minors in departments of other schools. The Department of Economics provides excellent training for those students who desire to enter business. The combination of the more professionalized courses of economics with the liberal arts program would be of great advantage to certain students.

Texas Technonogical College has two strong departments related to art. Allied Arts is associated with Architecture in the School of Engineering and the Department of Applied Arts is in the School of Home Economics. The completion of a major in these departments and the fulfilling of other degree requirements for the Bachelor of Arts Degree will provide the student with an excellent background for the enjoyment of art and its non-professionalized application. For further information, students should consult with the department heads concerned.

In all cases the same regulations covering majors within this School apply to majors taken in other schools. But unless such work does constitute the major, no more than 24 semester hours in the technical or professional subjects of agriculture, business administration, engineering, and home economics may be offered, as electives, for the Degree of Bachelor of Arts.

Students who expect to teach and who elect majors in subjects other than professional education may qualify for a teacher's certificate by satisfactorily completing the 24 semester hours in the Professional Education Curriculum required for the various certificates.

Studies Preparatory to Medicine and Dentistry. Colleges of medicine and dentistry require an applicant to present 15 units of approved work and a certificate of graduation from an accredited high school. A minimum of two years of college work is required. Many medical schools require three years of college work and some require a bachelor's degree.

The following course of study meets the usual premedical requirements. For predentistry students, certain modifications may be advisable.

Freshman Year: The established freshman curriculum should include Chemistry 141-142 and Biology 133-134. The University of Texas Schools of Medicine require 6 semester hours of American history be-

fore a degree will be granted. History 231-232 fulfills this requirement and may be taken during the freshman year.

Some schools require 6 semester hours of mathematics. Math 133 and 131 will fulfill this requirement.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Chem. 231—Qual. Anal.	3	Chem. 232—Inorg. Chem.	3
Zool. 231—Comp. Vert. Anat.	3	Zool. 232—Comp. Vert. Anat.	3
Phys. 141—Gen. Phys.	4	Phys. 142—Gen. Phys.	4
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Foreign Languages	3	Foreign Languages	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	17		17

Junior Year

First Semester	Credit	Second Semester	Credit
Zool. 331—Anim. Histol or Bact. 331—Prin. of Bact.	3	Zool. 332—Comp. Vert. Embry. or Bact. 332—Prin. of Bact.	3
Chem. 353—Org. Chem.	5	Chem. 354—Org. Chem.	5
Chem. 331—Quan. Anal.	3	Chem. 332—Quan. Anal.	3
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Electives	3	Electives	3
	17		17

The Degree of Bachelor of Arts for Premedical or Predental Students: The Degree of Bachelor of Arts for premedical or predental students may be obtained in one of two ways:

A. While in residence at Texas Technological College by completing the requirements outlined in this catalog. The major selected depends on the interest of the student.

B. By completing three years of work in the School of Arts and Sciences, totaling a minimum of 100 semester hours, and graduation from a Class A medical or dental college. The following regulations apply:
   1. Of the three years of preprofessional work, at least the junior year must be completed in residence at this College. This minimum will apply to transfers from other colleges, provided they have satisfactorily completed the work outlined in the freshman and sophomore years, or its equivalent.
   2. The three years of work must satisfy all graduation requirements for the Bachelor of Arts Degree at this College with the exception of the major requirements.
   3. Submission of properly approved credentials from a Class A college of medicine or college of dentistry to the effect that the applicant has completed satisfactorily the work leading to a Degree of Doctor of Medicine or Doctor of Dental Surgery.

The program outlined above is not designed to meet the minimum requirements of any medical school but it is planned to fit the student for the successful study of medicine. Each student is charged with the responsibility for knowing any special requirements of the medical school which he plans to attend and should consult with the Premedical Adviser at each registration period. Application for admission to the professional school should be made through his office. Professional Aptitude and Admission Tests may be taken at Texas Technological College.

Studies Preparatory to Law. The usual minimum requirements for admission to standard law schools include 15 entrance units and graduation from high school plus at least three academic years (96 semester hours) of college work. Exceptions are sometimes made in

the case of veterans for whom special requirements may be fixed. Many law schools now require a degree from a reputable college or university for admission, and in most cases it is recommended that a degree be completed.

The following curriculum is suggested for students who contemplate the study of law. *Freshman Year*: The prescribed freshman curriculum should be followed, but should include History 133-134 and Government 233-234. The courses in the freshman year will vary somewhat depending upon whether or not the student intends to complete a degree before going to law school. *Sophomore Year*: English 231-232, History 231-232, advanced government courses, and Economics 231-232 should be taken. If a foreign language was begun in the freshman year, it should be continued. The student should consult his adviser concerning other courses. *Junior and Senior Years.* A major and minor should be designated by the beginning of the junior year, and if a Bachelor of Arts Degree is anticipated, a degree plan should be worked out during the junior year. Electives should be chosen chiefly from the social sciences.

The Degree of Bachelor of Arts for Prelaw Students: The Bachelor of Arts Degree for prelaw students may be obtained in one of two ways:

A. While in residence at Texas Technological College completing the degree requirements prescribed in this catalog.

B. By completing three years of work in the School of Arts and Sciences, totaling a minimum of 96 semester hours, and graduation from a three-year standard law school, and subject to the following regulations:
   1. Of the three years of preprofessional work, at least the junior year must be completed in residence at this College.
   2. The three years' work must satisfy all graduation requirements for the Bachelor of Arts Degree in Texas Technological College with the exception of the major requirements.
   3. A minimum of 18 hours credit should be obtained in one social science and a minimum of 18 hours in one or more of the other social sciences.
   4. The applicant for a Bachelor of Arts Degree must present credentials showing graduation from an approved law school along with a request for the granting of the Bachelor of Arts Degree from Texas Technological College.

The Head of the Department of Government is the adviser for prelaw students. All prelaw students should consult him at each registration period.

THE DEGREE OF BACHELOR OF SCIENCE

For students primarily interested in the natural sciences and mathematics, the School of Arts and Sciences provides curricula leading to the Degree of Bachelor of Science. The fundamentals of liberal education as well as the foundation courses necessary for advanced study in the fields of science and mathematics are emphasized in the requirements for this degree. The minimum requirements for this degree, in terms of semester hours, are as follows:

	Sem. Hrs.
1. English	12
2. Foreign Language	12
3. Mathematics	6

4. American History 6
5. Government 6
6. Additional courses to make a minimum total of 124 semester hours, exclusive of required physical education, band, or air or military science.
7. Physical Education, Band, or Basic ROTC 4-6

Both a major and a minor are required for the Bachelor of Science Degree and each is to be completed within one of the separate subject matter fields of botany, chemistry, geology, mathematics, physics, and zoology. The minimum requirements for the major and minor are 36 and 18 semester hours, respectively, including the required amount of advanced work.

Unless indicated to the contrary in a specific curriculum, courses are to be taken in at least three of the four fields of science: biology, chemistry, geology, and physics. Even though not shown in all of the following curricula, 6 semester hours of American history are requisite to a degree.

BACHELOR OF SCIENCE

BACTERIOLOGY MAJOR

Freshman and Sophomore Years

First Semester	Credit	Second Semester	Credit
Biol 133—Botany	3	Biol. 134—Zoology	3
Chem. 141—Gen. Chem.	4	Chem. 142—Gen. Chem.	4
Math. 133—Col. Alg.	3	Math. 131—Trigonometry	3
Eng. 131—Eng. Comp.	3	Eng. 132—Eng. Comp.	3
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Foreign Language	6	Foreign Language	6
Zool. 235—Anat. Phys. Hyg. or Zool 231—Comp. Vert. Anat.	3	Zool. 236—Anat. Phys. Hyg. or Zool. 232—Comp. Vert. Anat.	3
Chem. 231—Qual. Anal.	3	Chem. 232—Inorg. Chem.	3
P.E., Band or Basic ROTC	2-3	P.E., Band or Basic ROTC	2-3
Science Elective	3	Science Elective	3
	33-34		33-34

Junior and Senior Years

First Semester	Credit	Second Semester	Credit
Bact. 331—Prin. of Bact.	3	Bact. 332—Prin. of Bact.	3
Bact. 432—Immunology, Serology	3	Bact. 433—Phys. of Bact.	3
Bact. (junior or senior)	3	Bact. (junior or senior)	3
Bact. Biol. or Bot. (junior or senior)	3	Bact. Biol. or Bot. (junior or senior)	3
Chemistry (junior or senior)	3-4	Chemistry (junior or senior)	3-4
Science Electives	9	Science Electives	6
Hist. 3321—Her. of Amer.	3	Hist. 3322—Her. of Amer.	3
Electives	2	Electives	6
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Biol. 411—Seminar	1		
	33-34		33-34

BACHELOR OF SCIENCE

BOTANY MAJOR

Freshman and Sophomore Years

First Semester	Credit	Second Semester	Credit
Biol. 133—Botany	3	Biol. 134—Zoology	3
Chem., Geol., or Phys. (beginning course)	8	Chem. Geol., or Phys. (beginning course)	8
Math. 133—Col. Alg.	3	Math. 131—Trigonometry	3
Eng. 131—Eng. Comp.	3	Eng. 132—Eng. Comp.	3
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Foreign Language	6	Foreign Language	6
Bot. 231—Plant Groups	3	Bot. 232—Taxonomy	3
Zool. 231—Comp. Vert. Anat.	3	Zool. 232—Comp. Vert. Anat.	3
P. E., Band, or Basic ROTC	2-3	P.E., Band, or Basic ROTC	2-3
	34-35		34-35

Junior and Senior Years

First Semester	Credit	Second Semester	Credit
Bot. 331—Plant Physiol	3	Bot. 339—Plant Anat.	3
Botany (junior or senior)	3	Botany (junior or senior)	3
Bact., Biol., or Bot. (junior or senior)	6	Bact., Biol., or Bot. (junior or senior)	6
Chem., Geol., or Phys. (begin. course)	4	Chem., Geol., or Phys. (begin course)	4
Approved science electives	9	Approved science electives	6
Hist. 3321—Her. of Amer.	3	Hist. 3322—Her. of Amer.	3
Approved electives	2	Govt. 234—Amer. Govt., Func.	3
Govt. 233—Amer. Govt., Org.	3	Approved electives	6
Bot. 411—Seminar	1		
	34		34

BACHELOR OF SCIENCE
ZOOLOGY MAJOR

Freshman and Sophomore Years

First Semester	Credit	Second Semester	Credit
Biol. 134—Zoology	3	Biol. 133—Botany	3
Chem., Geol., or Phys. (begin course)	8	Chem., Geol., or Phys. (begin course)	8
Math. 133—Col. Alg.	3	Math. 131—Trignometry	3
Eng. 131—Eng. Comp.	3	Eng. 132—Eng. Comp.	3
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Foreign Language	6	Foreign Language	6
Zool. 231—Comp. Vert. Anat.	3	Zool. 232—Comp. Vert. Anat.	3
Bot. 231—Plant Groups	3	Bot. 232—Taxonomy	3
P.E., Band, or Basic ROTC	2-3	P.E., Band, or Basic ROTC	2-3
	34-35		34-35

Junior and Senior Years

First Semester	Credit	Second Semester	Credit
Zool. 331—Anim. Histol., or Zool. 336—Comp. Invert. Zool.	3	Zool. 332—Embryology, or Zool. 333—Parasitology	3
Zoology (junior or senior)	3	Zoology (junior or senior)	3
Bact., Biol., or Zool. (junior or senior)	6	Bact., Biol., or Zool. (junior or senior)	6
Chem., Geol., or Phys. (begin course)	4	Chem., Geol., or Phys. (begin course)	4
Approved science electives	9	Approved science electives	6
Hist. 3321—Her. of Amer.	3	Hist. 3322—Her. of Amer.	3
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Approved electives	2	Approved electives	6
Zool. 411—Seminar	1		
	34		34

BACHELOR OF SCIENCE
CHEMISTRY MAJOR

Freshman Year

First Semester	Credit	Second Semester	Credit
Chem. 141—Gen. Chem.	4	Chem. 142—Gen. Chem.	4
Math. 133—Col. Alg.	3	Math. 231—Calculus	3
Math. 131—Trignometry	3	Math. 132—Anal. Geom.	3
Eng. 131—Eng. Comp.	3	Eng. 132—Eng. Comp.	3
Phys. 141—General Phys., or Science elective	4-3	Phys. 142—General Phys., or Science elective	4-3
P.E., Band, or Basic ROTC	1-2	P.E., Band, or Basic ROTC	1-2
	17-19		17-19

Sophomore Year

First Semester	Credit	Second Semester	Credit
Chem. 231—Qual. Anal.	3	Chem. 232—Inorg. Chem.	3
Chem. 331—Quan. Anal.	3	Chem. 332—Quan. Anal.	3
Math. 232—Integ. Calc.	3	Eng. 233—Tech. Writing	3
Ger. 131—Begin. German	3	Ger. 132—Begin. German	3
Science elective, or Phys. 141—Gen. Phys.	3-4	Science elective or Phys. 142—Gen. Phys.	3-4
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16-17		16-17

Junior Year

First Semester	Credit	Second Semester	Credit
Chem. 353—Org. Chem.	5	Chem. 354—Organ. Chem.	5
Chem. 441—Phys. Chem.	4	Chem. 442—Phys. Chem.	4
Ger. 233—Scien. German	3	Ger. 234—Scien. German	3
Science elective	3	Free elective	3
Hist. 3321—Her. of Amer.	3	Hist. 3322—Her. of Amer.	3
	18		18

Senior Year

First Semester	Credit	Second Semester	Credit
Chem. 411—Seminar	1	Chem. 412—Seminar	1
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Economics	3	Economics	3
Senior Chemistry	3	Senior Chemistry	3
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Science or Math elective	3	Science or Math. elective	3
	16		16

BACHELOR OF SCIENCE

GEOLOGY MAJOR

Freshman Year

First Semester	Credit	Second Semester	Credit
Geol. 141—Phys. Geol.	4	Geol. 142—Hist. Geol.	4
Chem. 141—Gen. Chem.	4	Chem. 142—Gen. Chem.	4
Math. 133—Col. Alg.	3	Math. 131—Trigonometry	3
Eng. 131—Eng. Comp.	3	Eng. 132—Eng. Comp.	3
P.E., Band, or Basic ROTC	1-2	P.E., Band, or Basic ROTC	1-2
	15-16		15-16

Sophomore Year

First Semester	Credit	Second Semester	Credit
Geol. 221—Crystallography or Geol. 241—Mineralogy	2 4	Geol. 241—Mineralogy or Geol. 221—Crystallography	4 2
Phys. 141—Gen. Phys.	4	Phys. 142—Gen. Phys.	4
Math. 132—Anal. Geom.	3	Math. 231—Diff. Calc.	3
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
For. Lang. 131	3	For. Lang. 132	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16-18		16-18

Junior Year

First Semester	Credit	Second Semester	Credit
Geol. 331—Geomorphology or Geol. 332—Struct. Geol.	3	Geol. 332—Struct. Geol. or Geol. 331—Geomorphology	3
Geol. 335—Paleontology	3	Geol. 336—Gen. Paleontology	3
Math. 232—Integ. Calc.	3	For. Lang. 232	3
For. Lang. 231	3	Govt. 234—Amer. Govt. or Hist. 3322—Her. of Amer.	3
Govt. 233—Amer. Govt. or Hist. 3321—Her. of Amer.	3	Electives	6
Electives	3		18
	18		

SUMMER SESSION—Geol. 363, Field Geology 6

Senior Year

First Semester	Credit	Second Semester	Credit
Geol. 431—Optical Min. & Petrog.	3	Geol. 432—Optical Min. & Petrography	3
Geol. 4314—Prin. of Stratig.	3	Geol. 4315—Paleo., Meso., & Cenozoic Stratigraphy	3
Geol. 433—Petr. Geol. or Geol. 4311—Eco. Geol. or Geol. 437—Sedimentation	3	Geol. 434—Petr. Geol. or Geol. 4312—Eco. Geol. or Geol. 438—Sedimentation	3
Govt. 233—Amer. Govt. or Hist. 3321—Her. of Amer.	3	Govt. 234—Amer. Govt. or Hist. 3322—Her. of Amer.	3
Electives	6	Electives	3
	18		15

BACHELOR OF SCIENCE

MATHEMATICS MAJOR

Freshman Year

First Semester	Credit	Second Semester	Credit
*Math 133—Algebra	3	Math. 131—Trigonometry	3
Eng. 131—Eng. Comp.	3	Eng. 132—Eng. Comp	3
For. Lang.	3	For. Lang.	3
Science	7-8	Science	7-8
P.E., Band, or Basic ROTC	1-2	P.E., Band, or Basic ROTC	1-2
	17-19		17-19

* If the student makes a sufficiently good grade in the placement test, Math. 131 may be taken simultaneously with Math. 133.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Math. 132—Anal. Geom.	3	Math. 232—Integ. Calc.	3
*Math. 231—Diff. Calc.	3	Eng. 232—Mast. of Lit.	3
Eng. 231—Mast. of Lit.	3	For. Lang.	3
For. Lang.	3	Science	4
Science elective	4	Approved elective	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	17		17

Junior and Senior Years

First Semester	Credit	Second Semester	Credit
**Math (Junior & Senior)	12	**Math (Junior & Senior)	9
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Science (for minor)	6	Science (for minor)	6
Hist. 3321—Her. of Amer.	3	Hist. 3322—Her. of Amer.	3
Approved electives	6	Approved electives	9
	30		30

BACHELOR OF SCIENCE

PHYSICS MAJOR

Freshman Year

First Semester	Credit	Second Semester	Credit
Eng. 131—Eng. Comp.	3	Eng. 132—Eng. Comp.	3
Math. 133—Col. Alg.	3	Math. 231—Calculus	3
Math. 131—Trigonometry	3	Math. 132—Analytics	3
Phys. 141—Elem. Phys.	4	Phys. 142—Elem. Phys.	4
Chem. 141—Gen. Chem.	4	Chem. 142—Gen. Chem.	4
P.E., Band, or Basic ROTC	1-2	P.E., Band, or Basic ROTC	1-2
	18-19		18-19

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Math. 232—Calculus	3	Math. 331—Applic. of Calc.	3
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 215—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
Geol. 141—Gen. Geol.	4	P.E., Band, or Basic ROTC	1
P.E., Band, or Basic ROTC	1	Geol. 142—Gen. Geol.	4
Hist. 231—Eco. & Pol. Hist. U.S.	3	Hist. 232—Eco. & Pol. Hist. U.S.	3
	18		18

Junior Year

First Semester	Credit	Second Semester	Credit
Ger. 131—Begin. German, or French 131—Begin. French	3	Ger. 132—Begin. German, or French 132—Begin. French	3
Phys. 331—Light	3	Phys. 332-Heat	3
Phys. 336—Elec. and Mag.	3	Phys. 341—Elect. Tubes & App.	4
Phys. 337—Atomic Phys.	3	Phys. 338—Nuclear Phys.	3
Math. 332—Diff. Equations	3	Elective	3
	15		16

Senior Year

First Semester	Credit	Second Semester	Credit
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Phys. 436—Indiv. Study	3	Eco. 232—Prin. of Eco.	3
Eco. 231—Prin. of Eco.	3	Phys. 435—Mechanics	3
Math. 434—Adv. Calc.	3	Math. 435—Adv. Calc.	3
Phys. 423—Elec. Meas.	2	Phys. 424—Elec. Meas.	2
Ger. 233—Scien. German, or French 231—Grammar Readings	3	Ger. 234—Scien. German, or French 232—Grammar Readings	3
	17		17

* Math. 231 may be taken simultaneously with Math. 132 only if the student has made an average of C or better in Math. 133 and Math. 131.

** Astr. 231 may be counted in this group.

Department of Biology

PROFESSORS CROSS, LANDWER, SEALEY, R. W. STRANDTMANN, STUDHALTER.
ASSOCIATE PROFESSOR E. CAMP.
ASSISTANT PROFESSORS PRIOR, PROCTOR, ROWELL, TINKLE.
INSTRUCTORS BARR, M. F. DURAN, HENDERSON, LONGPRE*, V. RIGGS, TILTON.
PART-TIME INSTRUCTORS FRY, PHILPOTT, RALSTIN, R. WILSON.

Students majoring in bacteriology, botany, or zoology may minor in any of these fields, provided the major and minor are not in the same field. Students majoring in botany for the Bachelor's Degree are expected to complete the following courses in the Department of Biology as a minimum: Biology 133-134, 411; Botany 231, 232, 331, 339; Zoology 231-232; and 12 additional hours in courses of junior and senior rank in bacteriology, biology, or botany. Students majoring in zoology for the Bachelor's Degree are expected to complete the following courses in the Department of Biology as a minimum: Biology 133-134, Zoology 411; Zoology 231-232; and two of the following four—Zoology 331, 332, 333, 336; Botany 231, 232; and 12 additional hours in courses of junior and senior rank in bacteriology, biology, entomology, or zoology.

Students majoring in bacteriology will be expected to complete the following courses; Biology 133-134, 411; Zoology 235-236, or 231-232; Bacteriology 331-332, 432, 433, plus 6 semester hours of bacteriology of junior and senior rank, or three semester hours of junior or senior rank and Zoology 333. Dairy Industry 335 may be counted as a course in bacteriology of junior rank. The program in entomology has course listings in both this department and the Department of Horticulture and Park Management. Courses in The Biology Department stress the zoological phases of entomology and courses in horticulture and park management stress of the applied phases. Students desiring a broad entomology background should take courses in both departments.

Students completing the Bachelor of Arts or the Bachelor of Science Degree, together with the special requirements for teacher certification, will be qualified to teach in their major and minor fields in the public schools of Texas.

Those students using biology as a teaching major for the Degree of Bachelor of Science in Education should take the following courses: Biology 133-134, 332; Botany 231, 232; Bacteriology 331-332; Zoology 235-236, 437. Those using biology for a minor for the Bachelor of Science in Education should take Biology 133-134; Zoology 235-236; Botany 232, and one of the following courses: Biology 331, 332, 333; Bacteriology 333; Entomology 334; Zoology 332, 336.

For the students taking the Degree of Bachelor of Science in Education, science option, the following courses in biology are offered:

1. 9 semester hours: Biology 133-134, Biology 332.
2. 12 semester hours: Biology 133-134; Zoology 235-236.
3. 18 semester hours: Biology 133-134, 332; Botany 232; Zoology 235-236.
4. 24 semester hours: Biology 133-134, 332; Botany 232; Zoology 235-236; Bacteriology 331-332.

No grade below C will be accepted on the major for the bachelor's degree in the Department of Biology. No grade below C will be accepted on the minor for the bachelor's degree, if the major and minor are both in the Department of Biology. No grade below B will be accepted for any graduate course, major or minor, if the student's major is in the Department of Biology.

* On leave, 1957-58.

Students looking forward to a master's degree should add enough courses as electives in their proposed major and minor subjects to meet the entrance requirements of the Graduate School.

At least one course in the field is very strongly recommended for all graduate students majoring in botany or zoology. This work may be taken from this institution or at one of the mountain, seashore, or other biological field stations.

Courses numbered 300 or above in bacteriology or biology may be counted as courses of the same level either in botany or zoology.

For detailed information for requirements for the B.S. Degree see Page 137.

BACTERIOLOGY

For Undergraduates

131. Bacteriology for Nurses. Cr. 3. (2-3).

Open only to nurses in training. Bacteria and fungi, and their relation to human diseases, immunity, sanitation, and foods.

231. Bacteriology. Cr. 3. (2-3).

Open only to students of the Schools of Agriculture and Home Economics during their sophomore or junior year. Prerequisite: 3 semester hours in the Biology Department. The morphology, physiology and activities of bacteria and molds, with emphasis on those of soils and of food and dairy products.

For Undergraduates and Graduates

331-332. Principles of Bacteriology. Cr. 3. (2-3).

Prerequisite: 12 semester hours in the Department of Biology, Chemistry, Geology, or Physics; prerequisite or parallel: 6 semester hours in chemistry. The morphology, physiology, and classification of bacteria and molds. Bacteria in relation to soils, food and water sanitation, disease, and the problems of immunity.

333. Communicable Diseases. Cr. 3.

Prerequisite: 3 semester hours in bacteriology; junior standing. History, prevalence, etiology, sources and modes of infection, laboratory diagnosis, and methods of control of the principal human diseases.

334. Bacteriology of Foods and Food Sanitation. Cr. 3. (2-3).

Prerequisite: 3 semester hours in bacteriology; junior standing. Bacteria and molds in their relations to food spoilage and food sanitation. Offered at intervals.

431. Problems in Bacteriology. Cr. 3. (0-9).

Prerequisite: 6 semester hours of bacteriology. Selected problems in the various fields of bacteriology, according to the needs or interests of the student. May be repeated or taken parallel for full credit in another field or with new materials in the same field.

432. Immunology and Serology. Cr. 3. (2-3).

Prerequisite: 6 semester hours of bacteriology; 10 semester hours of chemistry. The theories of infection and resistance, the production and demonstration of antibodies as well as the action of antigens and the various diagnostic tests.

433. Physiology of Bacteria. Cr. 3. (2-3).

Prerequisite: 6 semester hours of bacteriology; 12 semester hours of chemistry. Chemistry and physiology of bacteria and related microorganisms; the influence of environment on bacterial metabolism, growth and reproduction.

BIOLOGY

For Undergraduates

133-134. Botany and Zoology. Cr. 3. (2-3).

Both botany and zoology are offered each semester; either may be taken first, but both, or their equivalents, must be completed before credit is received toward a degree. Biology 133, botany, emphasizes the important groups of plants. In Biology 134 a survey of general zoology is given, with emphasis on the vertebrates, protozoa, insects, and certain parasitic forms. In both, general principles and concepts are stressed.

For Undergraduates and Graduates

331. Heredity. Cr. 3.

Prerequisite: 12 semester hours in the Biology Department. Principles of heredity with special reference to practical application in human affairs, heredity mechanisms, and problems.

332. Teaching of Biology. Cr. 3.

Prerequisite: 12 semester hours in the Biology Department; or 6 semester hours in the Biology Department and 6 semester hours in chemistry, geology, geography, or physics; and 6 semester hours in education. Lectures, assigned readings, reports, and laboratory and field problems. May be counted as biology or education. Offered at intervals. For graduates if the degree is Master of Arts in Teaching.

333. Bio-ecology. Cr. 3.

Prerequisite: 12 semester hours in the Biology Department, or junior standing in the School of Agriculture, or Biol. 133, 134, and junior standing in the Department of Geology. Introduction to the relationship of organisms to their environment. Field trips to nearby points are included at a minimum cost to the student.

411. Biology Seminar. Cr. 1.

Prerequisite: Senior or graduate standing in bacteriology, botany or zoology. Critical reviews of classical and recent literature and reports of original investigations. May be repeated for full credit.

BOTANY

For Undergraduates

231. Morphology of the Plant Groups. Cr. 3. (2-3).

Prerequisite: Biol. 133-134. The morphology of those plant groups not emphasized in Biol. 133.

232. Taxonomy. Cr. 3. (2-3).

Prerequisite: Biol. 133-134. Principles and practice in the classification of the flowering plants.

For Undergraduates and Graduates

331. Plant Physiology. Cr. 3. (2-3).

Prerequisite: Bot. 231-232; or Biol. 133-134 and 6 semester hours in horticulture or agronomy; prerequisite or parallel, Chem. 141. The physiological processes as applied to the seed plants.

332. Plant Pathology. Cr. 3. (2-3).

Prerequisite: Biol. 133-134 and 6 additional hours in agronomy, botany, or horticulture; prerequisite or parallel, Bact. 231 or equivalent. Principles underlying the cause, identificaton, and control of plant diseases.

339. Plant Anatomy. Cr. 3. (2-3).

Prerequisite: Bot. 231-232; or Biol. 133-134 and 6 semester hours in horticulture or agronomy. Studies of anatomy of the vascular plants.

431. Botanical Microtechnique. Cr. 3. (0-9).

Prerequisite: Bot. 339; or 3 semester hours of botany of sophomore rank and 9 semester hours in horticulture or agronomy. Freehand and microtome sections, staining, and the preparation of permanent slides.

435. Advanced Taxonomy. Cr. 3. (0-9).

Prerequisite: Bot. 232, 331, 339; or Bot. 232 and 9 semester hours in horticulture or agronomy. A critical study of classification and nomenclature as applied to vascular plants. Offered at intervals.

436. Plant Geography. Cr. 3.

Prerequisite: 6 semester hours in botany of junior rank; or Biol. 133-134 and 12 semester hours in zoology, geology, geography, horticulture, or agronomy. Principles of the geography of plants; vegetation types, especially of North America. Field trips to nearby sections of the country are included as feasible at a minimum of cost to the student.

437. Problems in Plant Geography. Cr. 3.

Prerequisite: 6 semester hours in botany of junior rank; or Biol. 133-134 and 12 semester hours in zoology, geology, geography, horticulture, or agronomy. Geographic distribution of plants and its underlying principles; origin and composition of floras, especially of North America. Field trips to nearby sections of the country are included as feasible at a minimum of cost to the student.

438. Morphology of Fungi. Cr. 3. (2-3).

Prerequisite. Bot. 331, 339; or Bot. 232 and 9 semester hours in horticulture or agronomy. Morphology and taxonomy of the fungi as a basis for plant pathology. Offered at intervals.

For Graduates

531. Problems in Botany. Cr. 3. (0-9).

Prerequisite: Graduate standing in botany. Selected problems in morphology, anatomy, ecology, taxonomy, or possibly others. May be repeated for full credit in another field or with new materials in the same field. Offered at intervals.

534. Advanced Plant Anatomy. Cr. 3. (0-9).

Prerequisite: Bot. 339 and graduate standing in botany. Advanced anatomy of vascular plants. Offered at intervals.

535. Field Botany. Cr. 3.

Prerequisite: Graduate standing in botany. Readings, reports, and field work on assigned problems. The cost of field trips is held to a minimum. May be repeated for full credit with new materials. Offered at intervals.

631-632. Thesis.

ENTOMOLOGY

For Undergraduates and Graduates

334. Insect Morphology. Cr. 3. (2-3).

Prerequisites: Zool. 231-232 or Zool. 336, or 5 semester hours of entomology in the School of Agriculture. Structure and classification of insects.

335. Insect Taxonomy. Cr. 3. (1-6).
Prerequisite: Ento. 334 or its equivalent. A critical study of insect classification. Assigned problems and readings.

4311. Medical Entomology. Cr. 3. (2-3).
Prerequisites: Senior standing in zoology, or Ento. 231 and senior standing in agriculture. A study of insects and other arthropods directly affecting man.

4312. Acarology. Cr. 3. (2-3).
Prerequisites: Senior standing in zoology or in one of the following three fields of agriculture: agronomy, horticulture, animal husbandry. The systematics, life histories, and control of mites affecting man, animals, and plants. Assigned problems and readings.

ZOOLOGY

For Undergraduates

135-136. Human Anatomy and Physiology. Cr. 3. (2-3).
The elements and fundamental principles of human anatomy and physiology. For nurses only. May not be used as part of the requirements for a major in zoology.

137. Anatomy and Physiology. Cr. 3. ((2-3).
Prerequisite: Chem. 133-134 or 141-142. The gross anatomy and physiology of the human body. The digestive and reproduction systems are emphasized. Open only to students of home economics and not applicable to degrees in other schools.

231-232. Comparative Vertebrate Anatomy. Cr. 3. (2-3).
Prerequisite: Biol. 133-134. Structure, function and history of the vertebrates with emphasis on the dogfish shark and the cat.

235-236. Anatomy, Physiology, and Hygiene. Cr. 3. (2-3).
Prerequisite: Chem. 133-134 or 141-142 and sophomore standing. Gross anatomy of the mammalian body; the various physiological processes; the fundamental principles of hygiene and sanitation; the fundamentals of heredity. May not be used as a part of the requirements for a major in zoology, but may be used as part of a major in bacteriology.

For Undergraduates and Graduates

331. Animal Histology. Cr. 3. (2-4).
Prerequisite: Zool. 231-232. The study of normal animal tissues. Laboratory assignments are to be completed in the laboratory.

332. Comparative Vertebrate Embryology. Cr. 3. (2-4).
Prerequisite: Zool. 231-232. The embryological development of different vertebrates with emphasis on the chick and the pig. Laboratory assignments are to be completed in the laboratory.

333. Parasitology. Cr. 3. (2-3).
Prerequisite: Zool. 231-232 or Zool. 336. Internal and external parasites, with emphasis on the helminths. Life histories and host relationships.

336. Comparative Invertebrate Zoology. Cr. 3. (2-3).
Prerequisite: Zool. 231-232 or Geol. 335-336. Open also to pre-veterinary medicine students. Structure, life history, and evolution of the invertebrates. Field trips and assigned readings.

435. Cytology. Cr. 3. (2-3).
Prerequisite: Biol. 331 or Zool. 331 or Zool. 332, or junior standing in botany. A study of the cell in evolution and heredity.

436. Zoological Technique. Cr. 3. (0-9).
Prerequisite: 12 semester hours of zoology above the freshman year. Preparation and interpretation of permanent microscope slides.

4312. Advanced Parasitology. Cr. 3. (2-3).
Prerequisite: Zool. 333 and Zool. 436. Biology, taxonomy, and evolution of parasites, with emphasis on the arthropods.

For Graduates

531. Problems in Zoology. Cr. 3. (0-9).
Prerequisite: Graduate standing in zoology. Selected problems in morphology, anatomy, ecology, taxonomy, or possibly others. May be repeated for full credit in another field or with new materials in the same field. An acceptable written report of the semester's work must be presented before credit will be allowed.

535. Field Zoology. Cr. 3. (0-9).
Prerequisite: Graduate standing in zoology. Readings, reports and field work on assigned problems. May be repeated for full credit with new materials. An acceptable written report of the semester's work must be presented before credit will be allowed.

631-632. Thesis.

Botany

(See Biology)

Department of Chemistry and Chemical Engineering

PROFESSORS JOE DENNIS, BRADFORD, W. CRAIG, GOODWIN, OBERG, SLAGLE.
ASSOCIATE PROFESSORS ESTOK, S. LEE, RENARD, WENDLANDT.
ASSISTANT PROFESSORS ADAMCIK, HENDRY, REKERS, SHINE, SOUTHALL*, STUART.
INSTRUCTORS CLINTON McPHERSON, C. E. WILSON.
PART-TIME INSTRUCTORS BALLARD, BEAR, BRASCH, RHETT, C. SEWELL, J. SEWELL, D. STEWART, B. WHEELER.

The Department of Chemistry and Chemical Engineering offers curricula leading to three bachelor's degrees. For those who desire a maximum of flexibility in their choice of courses the Bachelor of Arts Degree is recommended. Those who are preparing for professional work in medicine or in the teaching of science may find this curriculum preferable. The curriculum leading to the Bachelor of Science Degree is designed to give the student fundamental work in the various fields of chemistry with supporting work in mathematics and other sciences. This curriculum may be preferred by those who wish to enter industry as chemists. The curriculum for the Degree of Bachelor of Science in Chemical Engineering is based upon the belief that the student should secure a thorough fundamental training in both chemistry and engineering. This program may be preferred by those students who wish to enter industry as chemical engineers.

All three curricula are designed to fit the student for graduate work as well as the professional pursuits mentioned above.

It is highly desirable that the student's accomplishment be of the best quality. Grades of D will not be accepted in more than 20 per cent of the hours counted in a major in this department. Not more than one D will be accepted in any course.

All majors in this department are required to take Chemistry 411-412 and to complete a minimum of 6 additional hours of senior chemistry.

This Department offers the Degrees of Master of Science in Chemical Engineering, Master of Science in Chemistry, and Doctor of Philosophy in Chemistry. The requirements for these degrees are outlined in the Graduate Bulletin.

For those planning to teach chemistry and other sciences, the following plans are offered: (see also Page 106.)

Plan I. B.S. in Education with Chemistry Teaching Option

(1) Chemistry courses

		Hours
(a)	General chemistry — Chem. 141-142	8
(b)	Qualitative Analysis — Chem. 231	3
(c)	Inorganic chemistry — Chem. 232	3
(d)	Quantitative analysis — Chem. 331-332	6
(e)	Organic chemistry — Chem. 353-354	10
	Total chemistry	30

(2) Recommended Minor—Physics, biology, or mathematics

Plan II B.A. in Chemistry

(1) Chemistry courses

		Hours
(a)	Chemistry listed under Plan I	30
(b)	Physical Chemistry — Chem. 441-442	8
(b)	Seminar — Chem. 411-412	2
	Total chemistry	40

(2) Minor Courses

Minor may be in any field desired. This plan requires mathematics through calculus and Physics 141-142 as prerequisite for Chemistry 441-442.

(3) If desired, this plan may be adapted to a B.S. in Education,

* Spring semester, 1958.

Chemistry Teaching Option. It is permitted, in such case, to omit Chemistry 411-412.

Plan III Science Teaching Option

The following grouping of courses in chemistry is offered. The student is referred to Page 107 for the complete requirements of this option.

	Hours
1. Chemistry 141-142	8
2. Chemistry 141-142, 341	12
3. Chemistry 141, 142, 231, 332, 341	18
4. (a) Chemistry 141-142, 231, 232, 331-332, 341, or (b) Chemistry 141-142, 231, 332, 353-354	24

CHEMISTRY

For Undergraduates

133-134. Elementary Chemistry. Cr. 3. (2-3).

Some of the principles and applications of inorganic, organic, and biochemistry. Only for nursing students, women physical education majors, and some home economics students. This course does not serve as prerequisite for any other course in chemistry. Applicable only to degrees with above majors.

141-142. General Chemistry. Cr. 4. (3-3).

Prerequisite for all other courses in chemistry except 133-134. A general course in chemistry for all students of the College except those mentioned under 133-134.

231. Qualitative Analysis. Cr. 3. (2-3).

Prerequisite: Chem. 141-142 (142 may be parallel). The qualitative separation and the detection of common cations and anions with a thorough consideration of underlying principles.

232. Inorganic Chemistry. Cr. 3.

Prerequisite: Chem. 231. A more extended consideration of those principles of chemistry which normally are not covered sufficiently in a first course.

235. Hydrocarbon Chemistry. Cr. 3.

Prerequisite: Chem. 141-142. A service course for petroleum engineers. The study of the chemistry of hydrocarbons with particular reference to petroleum, natural gas, and synthetic fuels.

236. Analytical Chemistry. Cr. 3. (1-6).

Prerequisite: Chem. 141-142. A service course for petroleum engineering students. Principles of gravimetric and volumetric quantitative analysis.

330. The Teaching of High School Chemistry. Cr. 3.

Prerequisite: 12 hours of chemistry, or consent of instructor. Offered only in summer sessions.

331-332. Quantitative Analysis. Cr. 3. (3-6).

Prerequisite: Chem. 141-142. Prerequisite or parallel: Chem. 231 and 232. Gravimetric and volumetric methods of quantitative analysis. Recommended for the development of laboratory technique. Majors in other departments may take Chem. 332 with special permission without all the usual prerequisites.

341. Introductory Organic Chemistry. Cr. 4. (3-3).

Prerequisite: Chem. 141-142. A study of the compounds of carbon. Primarily for students in agriculture and home economics. Not open to majors in chemistry for credit.

342. Physiological Chemistry. Cr. 4. (3-3).

Prerequisite: Chem. 341 or equivalent. An elementary course in physiological chemistry.

353-354. Organic Chemistry. Cr. 5. (3-6).

Prerequisite: Junior standing in chemistry. A thorough foundation course in organic chemistry for chemical engineering majors, chemistry majors, premedical and other students. Prerequisite for all higher numbered courses in organic chemistry. Divided into sections according to student interest.

For Undergraduates and Graduates

411-412. Chemical Literature and Seminar. Cr. 1.

Prerequisite: Senior standing in chemistry. First semester primarily devoted to training in methods of using chemical literature and chemical libraries. Second semester primarily devoted to study of and reports upon specific topics. Required of all majors.

431. Qualitative Organic Analysis. Cr. 3. (1-6).

Prerequisite: Senior standing in chemistry. The identification of unknowns and the separation and identification of the components of mixtures of organic substances.

433. Inorganic Preparations. Cr. 3. (0-9).

Prerequisite: Senior standing in chemistry. Preparation and purification of inorganic compounds, with emphasis on principles and techniques.

434. Organic Preparations. Cr. 3. (0-9).

Prerequisite: Senior standing in chemistry. The synthesis of organic compounds with special attention to techniques and yields.

436. Biological Chemistry 1. Cr. 3. (2-3).
Prerequisite: Senior standing in chemistry. The chemistry of carbohydrates, proteins, lipids, enzymes and other constituents of living systems.

437. Biological Chemistry II. Cr. 3. (2-3).
Prerequisite: Senior standing in chemistry. A study of biochemical processes and their regulation.

438. Physical Chemistry III. Cr. 3.
Prerequisite: Chem. 441-442. Theoretical treatment of thermodynamics, kinetic theory of gases, quantum mechanics, and reaction kinetics.

439. Instrumental Methods of Analysis. Cr. 3. (1-6).
Prerequisite: Senior standing in chemistry. Theory and application of the important instruments used for analysis in industry and research.

441-442. Physical Chemistry I-II. Cr. 4. (3-3).
Prerequisite: Chem. 331-332, 5-6 semester hours in calculus. 6 semester hours in physics. Prerequisites or parallel: Chem. 353-354. The modern theories of chemistry and the methods of physicochemical measurements.

For Graduates

511-512. Graduate Seminar. Cr. 1.
Prerequisite: Graduate standing in chemistry. A seminar for graduate students and staff members. Required of all graduate students majoring in this department. May be taken more than once for credit.

5301. Advanced Inorganic Chemistry I. Cr. 3.
Prerequisite: Chem. 441-442. Atomic structure, nature of the chemical bond, periodic classification of the elements, and the chemistry of representative elements.

5302. Advanced Inorganic Chemistry II. Cr. 3.
Structure of coordination compounds, heteropoly acids, the chemistry of nonaqueous solvents, and other selected topics.

5303. Nuclear Chemistry. Cr. 3.
Prerequisite: Chem. 5301. Theory of nuclear structure, natural and artificial radioactivity, radioactive tracers, and other selected topics.

5304. Selected Topics in Inorganic Chemistry. Cr. 3.
Prerequisite: Consent of instructor. Consideration of special areas of inorganic chemistry not commonly included in other courses.

5314. Advanced Analytical Chemistry. Cr. 3.
Prerequisite: Chem. 331-332. An advanced survey of the general principles and special methods of analytical chemistry.

5315. Spectrographic Analysis I, Emission Spectra. Cr. 3. (2-3).
Prerequisite: Consent of instructor. Phys. 331 is recommended. Qualitative and quantitative analysis using emission spectra.

5316. Spectrographic Analysis II, Absorption Spectra. Cr. 3. (2-3).
Prerequisite: Chem. 5315. Identification of compounds and analysis of mixtures by means of their absorption spectra.

5318. Chemical Microscopy. Cr. 3. (1-6).
Fundamental principles and applications of chemical microscopy.

5321. Advanced Organic Chemistry I. Cr. 3.
Prerequisite: Chem. 353-354. An advanced survey of the principles and reactions of organic chemistry.

5322. Advanced Organic Chemistry II. Cr. 3.
Prerequisite: Chem. 5321. Continuation of Chem. 5321.

5324. Quantitative Organic Analysis. Cr. 3. (0-9).
Prerequisite: Chem. 353-354. The quantitative determination of elements and functional groups in organic compounds.

5325. Selected Topics in Organic Chemistry. Cr. 3.
Prerequisite: Chem. 5321. Since the topics may vary from year to year, may be repeated for credit.

5327. Physical Organic Chemistry. Cr. 3.
Prerequisite: Chem. 5321, 438. A consideration of the reactions and properties of organic compounds in the light of physicochemical principles.

5328. Mechanisms of Organic Chemistry. Cr. 3.
Prerequisite: Chem. 5327. Modern interpretations of organic reaction mechanisms and rearrangements.

5334. Selected Topics in Biological Chemistry. Cr. 3.
Since the topics may vary from year to year, this course may be repeated for credit.

5335. Physical Biochemistry. Cr. 3.
Prerequisite: Chem. 436, 437. Prerequisite or parallel: Chem. 5342. The application of the principles of physical chemistry to membrane permeabilities, membrane potentials, energy metabolism, properties of large molecules and other such problems.

5342. Advanced Physical Chemistry. Cr. 3.
Prerequisite: Chem. 438. Quantum mechanics atomic and molecular spectra, valence theories, statistical mechanics, solids, solutions, electrochemistry.

5343. Colloidal Chemistry. Cr. 3. (2-3).
Prerequisite: Chem. 438.

5344. Kinetics of Chemical Reactions. Cr. 3.
Prerequisite or parallel: Chem. 5342. Solutions of rate equations for closed and open systems, modern theories of reaction rates in gases and in liquid solutions.

5346. Electrochemistry. Cr. 3.
Prerequisite: Chem. 438.

5347. Advanced Thermodynamics. Cr. 3.
Prerequisite or parallel: Chem. 5342, Math. 434. Thorough study of basic principles of thermodynamics. Thermodynamics of complex chemical systems, modern developments in thermodynamics, irreversible processes, energetics.

5348. Selected Topics in Physical Chemistry. Cr. 3.
Prerequisite: Consent of instructor. Since the topics may vary from year to year, this course may be repeated for credit.

537, 538. Advanced Work in Specific Fields. Cr. 3 to 6.
Prerequisite: Graduate standing and approval of the Head of Department. Nature of course and amount of credit depend on interest of students. May be taken for chemistry credit by chemistry students, or for chemical engineering credit by chemical engineering students. See same course under Chemical Engineering, Graduate Courses.

631-632. Master's Thesis. Cr. 3.

731, 732. Research. Cr. 3.
Required of students on the doctor's dissertation.

831-832. Doctor's Dissertation. Cr. 3.
Required as the final registration for the dissertation.

CHEMICAL ENGINEERING

See listing of courses under "Courses in Chemical Engineering" in School of Engineering.

Department of Education

PROFESSORS M. WALLACE, BARNETT, COOPER, GARLIN, D.D. JACKSON, LIVINGSTON, MECHAM.
ASSOCIATE PROFESSORS BROWNING, DAVIDSON, EVANS, FALLON, LITTLE.
ASSISTANT PROFESSORS GAMMILL, SOUTHALL, O. WHEELER, W. WILLIAMS.
INSTRUCTOR CORHN.
PART-TIME INSTRUCTOR SCHULZE.

THE BACHELOR OF ARTS IN TEACHER EDUCATION

The standard requirements of the Bachelor of Arts Degree are of sufficient flexibility to enable those seeking certification to teach in the secondary school to incorporate within this curriculum the 24 hours of work in professional education required under the 1955 Teacher Certification Law and specified on the following page. The specific types of teaching certificates issued by the State of Texas, together with the various fields in which Texas Tech has approved programs, are described in detail in the General Information section of this catalog on Page 106.

THE DEGREE OF BACHELOR OF SCIENCE IN EDUCATION

All students entering Texas Technological College after Sept. 1, 1955, and who expect to secure a certificate to teach in any subject at any level, must meet the requirements of the new law. The specific teaching fields in which Texas Tech has approved programs are listed on Pages 106-108 of this catalog. Students preparing to teach in secondary schools who choose the broad (composite) teaching field — described in the preceding reference — in either social science or science will not be required to have a minor if they are working toward the Degree of Bachelor of Science in Education. These students will fol-

low one or the other of the following patterns of courses in lieu of the conventional major-minor pattern:

Students choosing the broad teaching field of social science will take 18 semester hours in government, 18 hours in history, 6 hours in economics, and 6 additional hours in social science for a total of 48 semester hours.

Students choosing the broad teaching field of science will take a minimum of 42 semester hours in science. This course work must be distributed in at least three of the science departments, but work taken in the Department of Geology should not exceed 8 semester hours. For the possible distribution of work including specific courses, see the programs of teacher education as outlined by the Departments of Biology, Chemistry, and Physics.

The Professional Education Curriculum at Texas Technological College is based upon the policies adopted by the State Board in 1955 and contains 24 semester hours of work required under the new 1955 Certification Law for every person who expects to be certified to teach.* These specific courses and titles, together with the year in which each should be taken in order to avoid conflicts and semester-hour limitations in education, are as follows:

FOR ELEMENTARY TEACHERS

Freshman Year
Educ. 130-Intro to Educ.
Sophomore Year
Educ. 232-Educ. Psy.
Junior Year
Educ. 333-Curric. Devel. in Elem. Educ.
Educ. 335-Elem. Educ. Meth.
Psy. 331-Child Psy.
Senior Year
Educ. 4326-Reading Devel. in the Elem. Sch.
Educ. 431-Stud. Obs. and Tch. in Elem. Sch.
Educ. 433-Adv. Stud. Tch. in the Elem Sch.

FOR SECONDARY TEACHERS

Freshman Year
Educ. 130-Intro. to Educ.
Sophomore Year
Educ. 232-Educ. Psy.
Junior Year
Educ. 330-Prin. of Secon. Educ.
Educ. 334-Curric. Devel. in the Sec. Sch.
Educ. 336-Sec. Educ. Meth.
Psy. 335-Adol. Psy.
Senior Year
Educ. 432-Stud. Obs. and Tch. in the Secon. Sch.
Educ. 434-Adv. Stud. Tch. in the Secon. Sch.

Under the New Teacher Certification Law, the preparation program for all teachers must include a minimum of 45 hours of general education. This must be distributed between the social sciences, the natural sciences including mathematics, and the humanities, with a minimum of 6 and a maximum of 18 hours in each. Each student who expects to teach should plan the freshman and sophomore years to include most of the required 45 hours of general education. In the junior and senior years the study plan should include the balance of the Professional Education Curriculum and the specialized professional or content courses for the elementary and the secondary teacher. The overlapping of general education, the work in the teaching fields, and the Professional Education Curriculum is believed to be essential to an adequate preparation program for teachers.

The teacher education program at this College has five major purposes or goals: (1) to provide each prospective teacher with a comprehensive and balanced general education experience as a basic foundation to teach in the classroom and to serve as a citizen in the community; (2) to develop the teacher as a person through a well-rounded

* This requirement applies to all students who expect to be certified except those seeking certificates in vocational agriculture and home economics, where the existing state plan for certification is operative.

program as well as through the provision of free electives; (3) to provide the teacher with a thorough subject matter preparation through extensive work in the content and teaching fields; (4) to develop an understanding of the learner and the learning process; and (5) to develop the understandings, attitudes, and skills that are essential for effective teaching.

The courses designed to provide the broad basis upon which the professional curriculum for teachers at the elementary and secondary levels is projected, and which lead to the Degree of Bachelor of Science in Education, expressed in terms of semester hours, are as follows:

For Elementary Teachers

Course	Semester Credit Hours
1. English	12
2. Government	6
3. American History (3 of which may be in Texas History)	6
4. Laboratory Science	14
5. Physical Education	6
6. Mathematics	3
7. Music	6
8. Speech	3
9. Sociology	3
10. Philosophy	3
11. Anthropology	3
12. Child Development	3
13. Economic Geography	3
14. Applied Arts	6
15. Degree major, sufficient electives, freshman and sophomore physical education, band, or basic military or air science to total 126 or 128 semester hours and 138 grade points.	

For Secondary Teachers

Course	Semester Credit Hours
1. English	12
2. Government	6
3. American History (3 of which may be in Texas History)	6
4. Laboratory Science Secondary majors may substitute 6 hours of mathematics for 6 hours of science.	12-14
5. Physical Education	6
6. Sociology	3
7. Mathematics (see above reference)	
8. Teaching Major	24-30
9. Teaching Minor	18-24
10. Degree major, sufficient electives, freshman and sophomore physical education, band, or basic military or air science, to total 126 or 128 semester hours and 138 grade points.	

Students preparing to teach in the elementary school are advised to follow the four-year schedule outlined below:

BACHELOR OF SCIENCE IN EDUCATION

ELEMENTARY PROGRAM

Freshman Year

First Semester	Credit	Second Semester	Credit
Educ. 130—Foun. of Educ.	3	Eng. 132—Eng. Comp.	3
Eng. 131—Eng. Comp.	3	Biol. 134—Zoology	3
Biol. 133—Botany	3	Hist. 232—Eco. & Pol. Hist. of U. S. or Hist. 235—Texas Hist.	3
Hist. 231—Eco. & Pol. Hist of U.S.	3	Soc. 230—Intro. to Sociol.	3
Free Elective	3	Math. 135—Math. in Gen. Educ.	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16		16

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Educ. 232—Educ. Psy.	3
Govt. 233—Amer. Govt., Org.	3	Eng. 232—Mast. of Lit.	3
Chem. 141—Gen. Chem., or Geol. 141—Gen. Geol., or Phys. 141 Gen Phys.	4	Chem. 142—Gen. Chem., or Geol. 142—Gen., Geol., or Phys. 142—Gen Phys.	4
Music 231—Fund. of Music for Elem. Classroom Tchrs.	3	Music 232—Music for Elem. Tchrs.	3
Ch. D. 233—Child Growth and Devel.	3	Govt. 234—Amer. Govt., Func.	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	17		17

Junior Year

First Semester	Credit	Second Semester	Credit
Educ. 333—Curric. Devel. in Elem. Sch.	3	Educ. 335—Elem. Educ. Meth.	3
Psy. 331—Child Psy.	3	Ap. A. 338—Art in Elem. Educ.	3
Ap. A. 337—Art in Elem. Educ.	3	Eco. 237—Eco. Geog.	3
P.E. 230—Health Educ. in Elem. and Sec. Sch.	3	P.E. 233—P.E. for Elem. Sch. Tchrs.	3
Spch. 239—Spch. Dev. for Tchr. Comp.	3	Free Elective	3
	15		15

Senior Year

First Semester	Credit	Second Semester	Credit
Educ. 4326—Reading Devel. in Elem. Sch.	3	Educ. 433—Adv. Stud. Obs. and Tch. in Elem. Sch.	3
Educ. 431—Stud. Obs. and Tch. in Elem. Sch.	3	Educ. 4325—Children's Lit.	3
Phil. 230—Intro. to Phil.	3	Ch. Dev. 433—Fam. Rel., or Soc. 332—Marriage	3
Anthro. 232—Cult. Anthro.	3	Free Elective	3
Free Elective	3	Free Elective	3
	15		15

Students preparing to teach in the secondary school are advised to follow the four-year schedule outlined in the following. Special attention should be given to the selection of a teaching major and a teaching minor, since completion of most of the work in these fields is required as prerequisite to student teaching.

All transfer students who have completed work in standard colleges may be considered on an individual basis and in accord with institutional requirements.

BACHELOR OF SCIENCE IN EDUCATION
SECONDARY PROGRAM

Freshman Year

First Semester	Credit	Second Semester	Credit
Educ. 130—Foun. of Educ.	3	Eng. 132—Eng. Comp.	3
Eng. 131—Eng. Comp.	3	P.E. 131—Intro. to P.E.	3
*Math	3	*Math	3
Hist. 231—Eco. Pol. Hist. of U.S.	3	Hist. 232—Eco. Pol. Hist. of U.S. or Hist. 235—Texas Hist.	3
*Science	3-4	*Science	3-4
P.E., Band or Basic ROTC	1-2	P.E., Band or Basic ROTC	1-2
	16-18		16-18

Sophomore Year

First Semester	Credit	Second Semester	Credit
Educ. 232—Educ. Psy.	3	Eng. 232—Mast. of Lit.	3
Eng. 231—Mast. of Lit.	3	Govt. 234—Amer. Govt., Func.	3
Govt. 233—Amer. Govt., Org.	3	Soc. 230—Intro. to Soc.	3
P.E. 230—Health Educ. in the Elem. and Secon. Sch.	3	Teaching Major	3
Teaching Major	3	Teaching Minor	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16		16

Junior Year

First Semester	Credit	Second Semester	Credit
Educ. 330—Prin. of Secon. Educ.	3	Educ. 334—Curric. Dev. in Secon. Sch.	3
Psy. 335—Adol. Psy.	3	Educ. 336—Secon. Educ. Meth.	3
Teaching Major	6	Teaching Major	3
Teaching Minor	3	Teaching Minor	3
Free Elective	3	**Education Elective	3
	18		15

Senior Year

First Semester	Credit	Second Semester	Credit
Educ. 432—Stud. Obs. and Tch. in Secon. Sch.	3	Educ. 434—Adv. Stud. Obs. and Tch. in Secon. Sch.	3
Teaching Major	6	Teaching Major	3
Teaching Minor	3	Teaching Minor	6
Free Electives	3	Education Elective	3
	15		15

* Secondary majors may take 14 semester hours of laboratory science, or 6 semester hours of mathematics and 6-8 semester hours of science. In certain fields exceptions to this may be made by the student with the approval of the appropriate department head. Students who have had a biological science in high school should take a physical science to balance their program in basic science arts.

**Recommended electives: Educ. 4315—Audio Visual Education; Educ. 430—History and Philosophy of Education; Educ. 4318—Developing the Guidance Program; Educ. 4331—Foundations of Educational Sociology; Educ. 435—Evaluation.

Note that in the above curriculum for secondary education, choice must be made in the sophomore year of the major and minor fields in which the student desires to prepare himself for teaching. It is imperative that the work in the major and minor teaching fields be started in the sophomore year in order to meet the prerequisites for student teaching. With the approval of the deans concerned, teaching majors and minors may also be taken in other schools of the College. Ordinarily, the teaching major calls for completion of a minimum of 24 semester hours and the teaching minor a minimum of 18 semester hours. Certain more general teaching majors are available, such as social science, general science, and foreign language. Such majors ordinarily call for completion of a minimum of 36 semester hours. The teaching major and minor must be planned in consultation with the appropriate department head. Special requirements are made for music education (vocal and instrumental majors) and for physical education as outlined elsewhere in this catalog. Certificate requirements are outlined elsewhere in this catalog.

The courses indicated in the above, for both elementary and secondary education, may be used to satisfy requirements for teachers' certificates valid in Texas and other states. Students seeking placement in teaching positions in other states may consult the Head of the Department of Education for assistance in obtaining information about certification requirements in these other states.

Admission to Student Teaching. As stated earlier, every person who expects to teach is required to have 6 semester hours of work in student observation and teaching. The student teaching experience, which is scheduled for the first and second semester of the senior year, is regarded as one of the most important phases of the entire preparation program. For this reason no student will be permitted to enroll in more than 15-16 hours of work while taking student teaching without the approval of the committee on student teaching.

Beginning with fall semester of 1958-59, each person expecting to receive a teaching certificate in any subject must meet the following admission standards to student teaching. These standards, developed through the cooperation of the Department of Education and the departments in which teaching majors and minors may be selected, will be administered by the Committee on Student Teaching. These standards are not applicable to students graduating prior to August, 1958. The standards are as follows:

1. The student must have completed approximately 90 hours of college work, including the requisite courses in professional education and a majority of the work required in the teaching major and minor.

2. The student must file an application with the Department of Education to enroll in student teaching at the time of registration for the first semester of the junior year. This is done in order to permit proper planning and placement of students in their teaching field.

3. The student must pass the same health examination required by the school system in which student teaching is done. The examination center will be specified at the filing of the application to student teaching.

4. The student must present evidence of freedom from extreme handicaps that would be detrimental to classroom teaching. The de-

cision in such cases will be made by the Committee on Student Teaching.

5. The student must have a grade average of 1.00 in all general work and a 1.25 average in the teaching major and minor and professional education courses. Students unable to meet this standard will be allowed an additional semester in which to qualify.

6. The student must demonstrate a proficiency in the use of the English language as measured by appropriate standardized tests administered by the Committee on Student Teaching. These tests include such areas as English usuage, sentence structure and spelling.

In meeting the standards described above, all transfer students will be considered as special cases by the Committee on Student Teaching.

In addition to the courses listed below, certain others, particularly in methods, may be scheduled. These courses may be found in the various departments of the College; for example, Eng. 338, The Teaching of English in the Secondary School, is described under the Department of English. Such courses do not replace any required professional education course.

For Undergraduates

130. Foundations of Education. Cr. 3.
Introduction to education and teaching as a profession. Emphasis on purposes and function of education and the nature and importance of teaching in our democracy.

232. Educational Psychology. Cr. 3.
Prerequisite: Sophomore classification. A study of educational and psychological principles as basic knowledge in professional education and in teaching.

431. Student Observation and Teaching in the Elementary School. Cr. 3.
Prerequisite: Completion of approximately 90 hours work, Educ. 333, 335, and Psy. 331, or equivalents.

432. Student Observation and Teaching in the Secondary School. Cr. 3.
Prerequisite: Completion of approximately 90 hours' work, 18 hours of education, including Educ. 330, 334, and Psy. 335, plus a major portion of the course work in the teaching major and minor.

433. Advanced Student Observation and Teaching in the Elementary School. Cr. 3.
Prerequisite: Same as Education 431.

434. Advanced Student Observation and Teaching in the Secondary School. Cr. 3.
Prerequisite: Same as Educ. 432.

For Undergraduates and Graduates

330. Principles of Secondary Education. Cr. 3.
Prerequisite: Second semester sophomore classification, Educ. 130 and 232, or equivalents. Introduction to secondary education. Basic principles underlying the secondary school program.

333. Elementary Curriculum Development. Cr. 3.
Prerequisite: Junior classification, Educ. 130 and 232 or equivalents. Basic principles underlying the organization and development of the curriculum and methods in the elementary school.

334. Curriculum Development in Secondary Education. Cr. 3.
Prerequisite: Junior classification, Educ. 130 and 232, or equivalents. Foundations of curriculum development, patterns of organization, principles and procedures, curriculum areas, resource units, and issues in curriculum development.

335. Elementary Education Methods. Cr. 3.
Prerequisite: Junior classification, Educ. 130 and 232 or equivalents. Continuation of Educ. 333 with increased emphasis on teaching and evaluation.

336. Secondary Education Methods. Cr. 3.
Prerequisite: Junior classification, Educ. 130, 232, and 330, or equivalents. Foundations of teaching, methods and techniques, observation of teaching, evaluation and management problems related to teaching.

338. Elementary Educational Statistics. Cr. 3.
Prerequisite: Junior classification and 9 hours of education. A foundation course in the application of statistical analysis to educational data.

430. History and Philosophy of Education. Cr. 3.
Prerequisite: Junior classification and 9 hours of education. Influences of historical developments and philosophical concepts upon education as the foundation of our American democracy.

435. Educational Evaluation. Cr. 3.
Prerequisite: Junior classification and 12 hours in education and educational psychology. Major techniques and trends in evaluation of pupil progress and of total school programs.

436. Public School Administration. Cr. 3.
Prerequisite: Senior classification and 18 hours in education and educational psychology. Detailed analysis of the principles and problems involved in the organization and administration of schools.

438. Supervision. Cr. 3.
Prerequisite: Senior classification and 18 hours in education and educational psychology. Principles, procedures, modern trends, and programs of supervision in both elementary and secondary education.

4315. Audio-Visual Education. Cr. 3.
Prerequisite: Junior classification. A general course with emphasis on operation and care of equipment; methods and techniques in using communicative materials in teaching-learning; and adaptation of equipment and materials to elementary and secondary teaching levels. $3 lab fee.

4318. Developing the School Guidance Program. Cr. 3.
Prerequisite: Senior classification and 12 hours in education and educational psychology. Designed to acquaint the teacher, the principal, and counselor with the organization of a school for serving the needs of students as individuals on both the elementary and secondary levels.

4325. Children's Literature. Cr. 3.
Prerequisite: Junior classification. Prose and poetry for children under 12, including standards for judging and criteria for selecting children's books.

4326. Reading Development in the Elementary School. Cr. 3.
Prerequisite: Educ. 333, 335, and Psy. 331 or equivalents. Methods and materials in teaching reading in the elementary school.

4331. Foundations of Educational Sociology. Cr. 3.
Prerequisite: Senior classification and 9 hours in education and educational psychology. A study of the principles of educational sociology believed to be essential to an understanding of the social, economic, civic and cultural functions of education in our democratic society.

4338. Foundations of Special Education. Cr. 3.
Prerequisite: Senior classification, 12 hours in education, educational psychology, and psychology. A survey of education for exceptional children including major developments in special education.

For Graduates

5139. Advanced Education Workshops in Teaching and Administration. Cr. 1-6.
Prerequisite: Graduate classification, 18 hours in education and educational psychology, and experience as a teacher or administrator. A series of workshops on such emphases as guidance, budgeting, school business services, audio-visual education, curriculum, special education, etc.

530. Advanced Educational Psychology. Cr. 3.
Prerequisite: Graduate classification with 18 hours of education and educational psychology. Designed for graduate students with emphasis on the application of educational psychological principles to teaching at all levels.

532. Philosophy of Education. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Comparative analysis of major social philosophies and their application to the field of education in our American democracy.

534. Advanced Educational Sociology. Cr. 3.
Prerequisite: Graduate classification, 18 hours in education including 3 hours in educational sociology. Advanced study and application of sociological principles as basic knowledge in professional education.

535. Federal, State, County and Local Administration. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Emphasis on the responsibility for education in America, including the relationship between the various levels of educational administrations.

536. Elementary School Administration. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and psychology. Emphasis on elementary school organization, personnel, curriculum development, details of modern administration and supervision.

537. Secondary School Administration. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and psychology. Emphasis on curriculum function of administration, developing the master schedule, personnel, finance and related aspects of organization.

538. Administration of Audio-Visual Services. Cr. 3.
Prerequisite: Graduate classification, 18 hours in education, including Educ. 4315. Emphasis on state, regional and local audio-visual programs; analysis of procedures in budgeting, selection, procurement, accounting, distribution, and care of audio-visual materials and equipment; preparation of personnel, and facilities for audio-visual centers.

539. Administration of School Business Services. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and psychology, including Educ. 436, or equivalent. Emphasis on internal business management of schools with emphasis on activity funds, teacher welfare, special services, lunchroom transportation, and purchasing and accounting of supplies and materials.

5312. Supervision in the Elementary School. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Supervision in the elementary school with emphasis on problems and procedures.

5313. Supervision in the Secondary School. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Supervision in the secondary school with emphasis on problems and procedures.

5315. Introduction to Continuing Education. Cr. 3.
Prerequisite: Graduate classification, 18 hours in education and educational psychology. Analysis of social and economic changes and individual needs as a basis for programs in continuing education. Emphasis on the research and literature including psychological principles underlying adult learning.

5316. The Junior College. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Emphasis on the emergent junior college in terms of terminal education and senior college preparation. Review of best practice in developing junior college programs.

5318. Selection and Evaluation of Audio-Visual Materials. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education, including Educ. 4315. Emphasis on commercially prepared audio-visual materials for use in teaching the various subject areas. Special emphasis given to selection, classification of educational motion picture film and filmstrip, and to preparation of study guides.

5319. Audio-Visual Production. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education, including Educ. 4315. Emphasis on production, application, and integration of photographic, graphic, three-dimensional, and recorded materials in school programs.

5321. Individual Study in Education. Cr. 3.
Prerequisite: Advanced graduate classification, educational psychology, and approval of advisory committee. Individual study on special aspects of professional education. May be repeated one time for credit.

5322. Foundations of Educational Research. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Study and application of methods of educational research. Methods of obtaining, processing, interpreting, and utilizing significant educational data.

5323. Advanced Educational Statistics. Cr. 3.
Prerequisite: Graduate classification and 3 hours in educational statistics. Application of statistical analysis to educational data; the use of certain statistical procedures to interpret the values of research, and the numerical and pictographic presentation of attributes and variables.

5325. Legal Bases of Education. Cr. 3.
Prerequisite: Graduate classification, 18 hours in education and psychology, and Educ. 436. Legal structure of education in America with emphasis on school laws in Texas.

5329. Organization and Program Planning in Continuing Education. Cr. 3.
Prerequisite: Graduate classification, or approval of the Department of Education. Organizational principles and procedures in planning and developing programs in continuing education in school-community situations.

5331. Human Development in Education. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Emphasis on research from the major human study fields in developing an understanding of human behavior including growth and development and socialization.

5332. Group Processes in Education. Cr. 3.
Prerequisite: Graduate classification, or approval of the Department of Education. Examination of current theories of leadership with emphasis on group processes and techniques of organization and communication in both formal and informal educational situations.

5341. Developing Arithmetic Programs in Elementary Education. Cr. 3.
Prerequisite: Eligibility for Provisional Certificate with elementary endorsement (or Educ. 333 and 335 or equivalents). A study of the development of arithmetic and its educative function in the elementary school curriculum.

5342. Developing Reading Programs in Elementary Education. Cr. 3.
Prerequisite: Eligibility for Provisional Certificate with elementary endorsement (or Educ. 333 and 335 or equivalents). Critical examination of the psychological and research bases for developing reading programs in the elementary school.

5343. Developing Natural and Physical Environment Concepts in Elementary Education. Cr. 3.
Prerequisite: Graduate classification. Eligibility for Provisional Certificate with elementary endorsement (or Educ. 333 and 335, or equivalents), and 6 hours of science. Emphasis on the methods and materials for helping children develop an understanding of their natural and physical environment.

5344. Developing Language Arts Programs in Elementary Education. Cr. 3.
Prerequisite: Graduate classification, 12 hours of English and/or speech including 6 hours of English composition. Eligibility for Provisional Certificate with elementary endorsement (or Educ. 333 and 335, or equivalents). Emphasis on the practical applications of research findings and modern theory as related teaching and organizing the language arts in the elementary school.

5345. Developing Social Studies Programs in Elementary Education. Cr. 3.
Prerequisite: Eligibility for Provisional Certificate with elementary endorsement (or Educ. 333 and 335 or equivalents). Analysis of various objectives, patterns, and principles of organization of social studies in the elementary schools including teaching materials and procedures.

5346. Fundamentals of Curriculum Development. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. A study of the fundamental bases for curriculum development growing out of the knowledge of human growth and development, nature of the learning process, school-community relationships, and current social, and economic problems.

5347. Developing Curriculum and Instructional Materials in the Elementary School. Cr. 3.
Prerequisite: Educ. 5346. Practical problems in developing projects, materials, and curricula for the elementary school according to accepted psychological principles, sound educational theory, and objectives of education.

5348. Developing Curriculum and Instructional Materials in the Secondary School. Cr. 3.
Prerequisite: Educ. 5346. Practical problems in developing projects, materials, and curricula for the secondary school according to accepted psychological principles, sound educational theory, and objectives of education.

5349. Organizing and Administering the Instructional Improvement Program. Cr. 3.
Prerequisite: Graduate classification, 18 hours in education and educational psychology, and Educ. 5346, or equivalent. Principles and procedures in organizing programs of system-wide curriculum and instructional improvement.

5351. General Education Seminar. Cr. 3.
Prerequisite: Advanced graduate classification and approval of admissions committee of Department of Education. Survey of the whole field of professional education. Basic course for second stage of graduate work in education; to be taken at the beginning of the advanced graduate program.

5352. Seminar in History and Philosophy of Education. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Discussion and research in history and philosophy of education in a comprehensive sense with application of derived principles to the specific needs and interests of the individual student.

5353. Comparative Education. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. A comprehensive and comparative study of the educational systems of the major countries in recent and current times. Individual attention to problems of special concern.

5354. Seminar in Educational Sociology. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Comprehensive review of the literature in the specific field of educational sociology. Analysis of the sociological significance of current problems in our democracy and the world as related to the field of professional education.

5355. Seminar in Elementary Education. Cr. 3.
Prerequisite: Advanced graduate classification, 18 hours in education and educational psychology and consent of advisory committee. Intensive study of trends in modern elementary education.

5356. Seminar in Secondary Education. Cr. 3.
Prerequisite: Graduate classification and 18 hours in education and educational psychology. Intensive study of trends in modern secondary education.

5357. The Administration of the Junior College. Cr. 3.

Prerequisite: Graduate classification, 18 hours in education and psychology, including 3 hours in educational administration or supervision. Emphasis on major principles, organization, problems, techniques, and trends in the administration of the junior college.

5359. Seminar in Supervision. Cr. 3.

Prerequisite: Advanced graduate classification and 24 hours in education including supervision. Intensive research in current practices as they have developed in the field of supervision.

5362. Seminar in Continuing Education. Cr. 3.

Prerequisite: Graduate classification, or approval of the Department of Education. An intensive study of special problems in continuing education.

5363. Problems in Audio-Visual Education. Cr. 3.

Prerequisite: Graduate classification and 24 hours in education, including Educ. 4315 and two advanced courses in audio-visual education. Emphasis on practical problems in planning audio-visual education programs for a variety of school systems and intermediate service agencies; research in the field of audio-visual education.

5364. Seminar in Educational Psychology. Cr. 3.

Prerequisite: Graduate classification, 18 hours of education and educational psychology, including Educ. 530. An intensive study on individual problems in the field of educational psychology.

5366. The Administration of School Staff Personnel. Cr. 3.

Prerequisite: Graduate classification, 18 hours in education and psychology, including Educ. 436. Emphasis on principles and procedures involved in selection, organization, and administration of the school personnel; evaluation of teaching efficiency, merit rating, and in-service education.

5367. School Finance. Cr. 3.

Prerequisite: Graduate classification, 18 hours in education and psychology including Educ. 436, 539, or equivalents. Basic theories, principles, and problems involved in school finance as applied to taxation, budgeting, school construction, operation, and maintenance.

631-632. Thesis Seminar. Cr. 6.

Required of students following the master's thesis degree plan. Selection of and work upon an action research problem or a course research problem.

731, 732. Dissertation Seminar. Cr. 3 each.

Required of students working on the doctor's dissertation.

831-832. Doctor's Dissertation. Cr. 6.

Required as the final registration for the dissertation.

PHILOSOPHY

Students may major or minor in philosophy. By special permission, the following courses in other fields may be applied on the major in philosophy: Govt. 433 and 434., Educ. 430, 532, and 5332.

For Undergraduates

230. Introduction to Philosophy. Cr. 3.

Prerequisite: Sophomore classification. Problems involved in the interpretation of the nature of knowledge, reality, and value.

238. Ethics. Cr. 3.

Prerequisite: Sophomore classification. Problems of individual and social conduct.

For Undergraduates and Graduates

332. History of Philosophy. Cr. 3.

Prerequisite: Junior classification. Philosophical systems developed by the great philosophers of the world.

333. Development of American Philosophy. Cr. 3.

Prerequisite: Junior classification. A study of peculiarly American philosophy beginning with colonial times, ending with recent trends.

335. Oriental Philosophies. Cr. 3.

Prerequisite: Junior classification. Survey of the views of important philosophic thinkers of the Orient, with particular emphasis upon those of China and India.

337. Logic. Cr. 3.

Prerequisite: Junior classification. Introduction to deductive and inductive methods, including a supplementation of Aristotelian principles with Boolean techniques and the rudiments of the propositional and functional calculi.

431. Aesthetics. Cr. 3.

Prerequisite: Senior classification or consent of instructor. Interpretations of the nature of beauty and analysis of the aesthetic experience.

432. Philosophy of Value. Cr. 3.

Prerequisite: Senior classification or consent of instructor. Analysis of the nature and validity of values; exploration of the possibility of an integrated value system.

436. Philosophy of Religion. Cr. 3.
Prerequisite: Senior classification or consent of instructor. Survey of historical and contemporary religious movement.

438. Seminar in Philosophical Problems. Cr. 3.
Prerequisite: Senior classification and major or minor in philosophy. Readings on selected topics, reports, and conferences.

For Graduates

5335. Structure and Dynamics of Philosophical Thought. Cr. 3.
Prerequisite: Graduate or senior classification. An analytical and historical inquiry into the major areas of philosophical speculation; purpose includes the development of a clearer interpretation of the historical movement of philosophical ideas.

Department of English

PROFESSORS T. CAMP, J. ALLEN, W. B. GATES, GILLIS, GUNN, McCULLEN, A. STROUT.
ASSOCIATE PROFESSORS BOWLING, GUILDS, MURPHY, NALL, G. TEAGUE.**
ASSISTANT PROFESSORS BUMPASS, O. CARTER, L. GREEN, LAMBERT, LITZINGER*, MILES.
INSTRUCTORS BRUCE, CARLOCK, DANIEL, K. DAVIS, GAHRING, KELLEY, KINNAMON, LACY, Q. LEWIS, MOREY,*** E. REEVES, J. RUSHING,* SCHAEFER, M. STROUT, TERRELL, RUTH TRACY. TUNNELL, WELLBORN.
PART-TIME INSTRUCTORS N. BENNETT, M. BRUNSON, COOK, M. FOREMAN, SANDERS.

Students who major or minor in English for the Bachelor of Arts Degree, or choose English for a teaching major or minor for the Bachelor of Science in Education, should consult with the Department Head before selecting advanced courses. For both the English major and the English teaching major, 30 hours are required in the following courses:

English 131-132 or 133-134, English 231-232, and at least 18 hours in the following groups of advanced courses:

At least one course in English Literature before 1660 (430, 432, 434, 4314, 4331, 4332);

At least one course in English Literature after 1660 (4311, 4312, 435, 436, 4319, 4327, 4328);

At least one course in American Literature (4322, 4323, 4324, 4325, 4326, 4329);

At least one course in World Literature, Philosophical Ideas, Literary Criticism, or Language (4351, 4333, 4334, 438, 439).

The other two courses can be selected from any of the four above fields.

Those courses in English designated with 300 can be elected by those who wish more than 30 hours in English.

Those who are choosing a teaching minor in English will take 21 hours:

English 131-132 or 133-134, 231-232, and three 400 courses from three different groups above.

Those who are minoring in English will take 18 hours:

English 131-132 or 133-134, 231-232, and any two advanced courses (300 or 400) in English, with the approval of the Department Head.

Substitutions may be made only with the prior approval of the Department Head.

A student must receive at least a C on an advanced course in English if he wishes to have it count toward a major, minor, or teaching major or minor in English. In all English courses, regardless of

* On leave, 1957-58.
** Deceased (Dec. 26, 1957).
*** Spring semester, 1958.

rank, a student must demonstrate an adequate command of correct and effective English or receive an F in the course.

All entering freshmen will take a standardized achievement test in English. Students who receive extremely low scores in achievement tests and who make very poor grades on diagnostic themes at the beginning of the semester will be assigned to English 031, Fundamentals of Writing. These students must pass English 031 before they will be permitted to register for the regular freshman composition course, English 131. English 131 must be passed before English 132 can be taken.

Students who receive a superior score in the achievement test may enroll in English 133, Advanced Composition and Literature for Freshmen. Those students who receive a C or better in English 133 will be allowed to enroll in English 134; those receiving D must complete their 6 hours of English by taking English 132. Those students who receive A in English 131 will be eligible to complete their 6 hours of freshman English by taking English 134 in the second semester.

For those students from foreign countries whose knowledge of English is inadequate, there are special sections of freshman and sophomore English set up to assist them in oral and written English and in reading comprehension.

Six hours of freshman English is a prerequisite for all courses of the sophomore level.

Sophomore students in the School of Agriculture will take English 234, and many of the students in the School of Engineering and chemistry majors will take English 233. English 233 and 234 cannot be substituted for required English courses (English 231 or 232) by students in other schools and departments. All other students, including those in the Department of Architecture (Design and Commercial Art Option), will take English 231-232. Students who have completed English 133-134 with a grade of B or better will be permitted the option of completing required courses in English by taking two of the following junior courses; English 335, Introduction to Shakespeare; 337, Major Victorian Poets; 332, American Drama; 333, Modern European Drama.

To enroll in advanced courses in English, students must have completed 12 semester hours of English in 131-132 or 133-134 and 231-232 or their equivalents.

Candidates for the Degree of Doctor of Philosophy in English will be accepted subject to the general requirements of the Graduate School. These students must complete at least one graduate course in each of nine specific fields of English and American literature, and must concentrate with additional courses in one of these fields (or two or more closely related fields) and write their dissertation in that field. For a minor subject (at least 18 graduate hours) the department recommends work in history, foreign languages, or speech. See the latest Bulletin of the Graduate School for more details.

For Undergraduates

031. Fundamentals of Writing. Cr. 3.

Emphasis on spelling, punctuation, grammar, and remedial reading. Required of all students whose scores in the English placement test and/or whose writing shows inadequate preparation for regular college work in English. This course cannot be substituted for English 131. Credit for this course is 3 hours, but this credit will not be used to satisfy normal degree requirements.

131-132. English Composition. Cr. 3 each.

The essentials of good, correct and effective general writing. Reading and the discussion of examples of good literature. Class discussions, regular themes, outside reading, individual conferences.

133. Advanced Composition and Literature for Freshmen. Cr. 3.
Designed for those who demonstrate competence in English composition as measured by English placement tests. Emphasis on expository writing and reading of various types of literature.

134. Advanced Composition and Literature for Freshmen. Cr. 3.
Continuation of English 133. Narrative writing, descriptive writing. Reading of various types of literature.

231-232. Masterpieces of Literature. Cr. 3 each.
A careful study of outstanding literary masterpieces. In 231, Greek plays, Chaucer, Shakespeare, and Milton are read. In 232, instructors will select outstanding novels, poems, plays, or biographies written during the eighteenth, nineteenth, and twentieth centuries. Required course for most sophomore students.

233. Technical Writing for Engineers. Cr. 3.
Prerequisite: 6 hours of Freshman English. Techniques of verbal efficiency in the various media of engineering and scientific communication, with stress on report and research-report preparation and letter-writing. Required by most branches of engineering and by chemistry and open to students of all sciences.

234. Technical Writing for Students of Agriculture. Cr. 3.
Prerequisites: 6 hours of freshman English. Themes, reports, and much practical experience in writing. Required of sophomores in School of Agriculture.

331. The Short Story. Cr. 3.
A careful study of some of the outstanding writers of the short story.

332. American Drama. Cr. 3.
A survey of the great American plays, particularly those of the contemporary period. May be taken as a second-year course by those who receive B in 133-134.

333. Modern European Drama. Cr. 3.
Representative plays from Ibsen to some of the more recent European dramatists. May be taken as a second-year course by those who receive B in 133-134.

334. Creative and Professional Writing. Cr. 3.
Study of the various techniques of creative writing. Limited to those who have received a B or better in freshman English.

335. Introduction to Shakespeare. Cr. 3.
Study of Shakespeare's life and of some of his outstanding comedies, tragedies, and histories. May be taken as a second-year course by those who receive B in 133-134.

336. Masterpieces of World Literature. Cr. 3.
A study in English of some of the great books of the ancient and medieval world.

337. Major Victorian Poets. Cr. 3.
Careful study of the poetry of Tennyson, Browning, and Arnold. May be taken as a second-year course by those who receive B in 133-134.

338. Teaching of English in the Secondary Schools. Cr. 3.
Problems of teaching English in the secondary school. Study of effective methods and materials. It may be counted as English or education by English majors.

3311-3312. Literary Tour of Europe: A Travel Course. Cr. 6.
Prerequisite: Eng. 131-132 or equivalent. A travel course visiting important literary shrines in Europe. Lectures on and readings in European drama and English poetry and prose, with opportunities to see specimens of the drama (including Shakespeare) in stage production. Eng. 3311 can be substituted for Eng. 232 and Eng. 3312 can be taken for elective credit, or those who already have credit for 231-232 can count 3311-3312 for 6 hours of elective credit. Three hours of advanced credit may be applied toward an English major or English teaching major. This course is scheduled for the summer of 1959.

For Undergraduates and Graduates

430. Myth and Romance. Cr. 3.
Major works of English literature from Beowulf through Chaucer and Malory, with special reference to classical, Christian, Celtic, and Teutonic origins.

432. Shakespeare. Cr. 3.
Careful study of some of the outstanding plays of Shakespeare. (This course will not duplicate any material in Eng. 335.)

434. Milton and His Age. Cr. 3.
A careful study of most of Milton's poetry and prose.

435. English Romanticism. Cr. 3.
Selections from the works of the Pre-Romanticists. Poetry and poetic principles of Wordsworth and Coleridge.

436. The Later Romantic Poets. Cr. 3.
Selections from the poetry of Scott, Byron, Shelley and Keats; biography and background.

438. History of the English Language. Cr. 3.
A study of the principal changes which the English language has undergone from the beginning to the present and the relationship of these changes to the cultural development of the English-speaking peoples.

439. American English. Cr. 3.
History, characteristics, dialects, and present study of the English language in America with some reference to British and Dominions English. Special emphasis on dialect and idiom of the Southwestern United States.

4311. The Neo-Classical Age. Cr. 3.
Dryden, Rise of Journalism, Defoe, Addison, Steele, Swift, Pope.

4312. Age of Johnson. Cr. 3.
Detailed study of Samuel Johnson and his contemporaries. Boswell, Goldsmith, Walpole, Burke, and others.

4314. Literature of the English Renaissance. Cr. 3.
Poetry and prose of the sixteenth and early seventeenth century.

4319. Victorian Literature. Cr. 3.
Outstanding poetry and prose of the nineteenth century. (Not to be taken by those who have credit in Eng. 337.)

4322. Literature of the Southwest. Cr. 3.
Study of the contributions of the Southwest to American life and literature.

4323. American Literature and Its Backgrounds. Cr. 3.
The Puritan influence, the Age of Reason, the Romantic Movement to Whitman.

4324. American Literature and Its Backgrounds. Cr. 3.
From Whitman to the present time. A continuation of 4323, but either part may be taken separately.

4325. The American Novel to 1900. Cr. 3.
Representative works of the outstanding American novelists of the nineteenth century.

4326. The American Novel after 1900. Cr. 3.
Representative works by outstanding American novelists of the twentieth century.

4327. English Novel from Lyly to Scott. Cr. 3.
Development of the English novel. Reading examples from Elizabethan fiction, novels of Richardson, Defoe, Fielding, Austen, Scott.

4328. English and Foreign Fiction from 1825 to 1910. Cr. 3.
Novels of Dickens, Thackeray, Hardy, Balzac, Tolstoy, and others.

4329. Modern British and American Poetry. Cr. 3.
The major poets and poetic movements from Hardy and Robinson to the present.

4331. Pre-Shakespearean Drama. Cr. 3.
From the beginnings through Marlowe.

4332. Elizabethan Drama through 1642. Cr. 3.
From Marlowe to the closing of the theaters.

4333. Philosophical Ideas in Literature. Cr. 3.
Tracing the evolving philosophical ideas in English and American literature. (May be repeated for credit with the permission of the instructor.)

4334. Literary Interpretation and Criticism. Cr. 3.
A study of the selected literary works in relation to the best literary critical theory.

4351. Appreciation of Literature of Western Civilization. Cr. 3.
A careful study in English of certain of the literary masterpieces of the Western World from the fourteenth century through the twentieth. May be taken by graduate students in secondary education to complete a part of a composite minor.

For Graduates

511. Research Seminar. Cr. 1.
A one-hour graduate seminar for staff and graduate degree candidates. Graduate students enrolled for the first year of their program will meet for a second hour of study in Eng. 521.

521. Bibliography and Methods of Literary Research. Cr. 2.
A consideration of the nature of research. Enumerative and critical bibliography, use of primary and secondary sources; methods of literary research and preparation of the research paper. Work in the course is coordinated and pursued simultaneously with non-credit enrollment in Eng. 511. This is a required course for long-term graduate students in English.

530. The Age of Chaucer. Cr. 3.
A graduate seminar in Chaucer and his contemporaries. This course may be repeated for credit.

533. Studies in Renaissance Literature. Cr. 3.
A seminar course in English literature from 1500 to 1660, with the exception of Shakespeare's works. This course may be repeated for credit.

534. Old English. Cr. 3.
A study of the Old English language and of its literature, with special emphasis upon **Beowulf.**

535. Studies in Nineteenth Century English Literature. Cr. 3.
This course may be repeated for credit.

536. Studies in American Literature. Cr. 3.
This course may be repeated for credit.

538. Studies in the English Romantic Poets. Cr. 3.
This course may be repeated for credit.
539. Studies in Eighteenth Century Literature. Cr. 3.
This course may be repeated for credit.
5319. Studies in Shakespeare. Cr. 3.
This course may be repeated for credit.
5335. Principles of Language. Cr. 3.
A survey of the structure of English, with some reference to related languages. Consideration of current linguistic concepts and investigations in the fields of grammar, syntax, phonetics, spelling and dialect study. Special attention to the problems of standards and levels of usage. Designed for graduate students in elementary education.
631-632 Master's Thesis. Cr. 6.
731, 732. Research. Cr. 3 each.
831-832. Doctor's Dissertation. Cr. 6.

Department of Foreign Languages

PROFESSORS DOWLING*, E. GATES, HAMILTON, QUALIA.
ASSOCIATE PROFESSORS FRANK, STREHLI, S. TUCKER.
ASSISTANT PROFESSORS T. ALEXANDER, BUMPASS**, HULL.
INSTRUCTORS B. ALEXANDER, BONEY, HORVATH.
PART-TIME INSTRUCTOR JAMES.

The Department of Foreign Languages offers instruction in French, German, Greek, Latin, and Spanish. Portuguese may be offered when there is demand.

Courses numbered 131 suppose no previous study of the language. For students who have had previous study in a language, placement tests are offered at the beginning of each semester to aid students and counselors in determining the level at which study should be continued. Normally, students who have had two years (i.e. two units) of one language in high school, and who wish to continue the same language, should enroll for the 231 course. Students who have had three or four years of one language in high school and who wish to continue the same language should enroll for the 331 or 333 course.

Sufficient work is offered for a major in French, German, or Spanish. A minor may be obtained in French, German, Latin, and Spanish. Courses leading to the Degree of Master of Arts are offered in Spanish.

Students majoring in a foreign language must offer 36 hours in the major language or 24 hours in the major and 12 hours in another language approved by the Department. The Department offers a program leading to teacher certification for those who wish to teach languages, and co-operates with other departments in two special fields of study: Latin American Area Studies and the Bilingual Secretarial Program (See Page 109).

For a teaching major for the B. S. in Education, Meth. 4311 and a total of at least 24 hours in one language, including 12 hours in courses at the 400 level, are required. At present, in Texas, employment opportunities for teaching Spanish are more numerous than in the other languages.

A total of 18 hours in one language is required for a minor. For a teaching minor, 6 of the hours must be in courses at the 400 level.

Majors and minors are required to have at least a C average in their language courses. To count toward a major, a grade of at least C is required in courses numbered 400 or above.

Students who wish to major or minor in a foreign language should consult the Head of the Department.

* On leave Fall Semester, 1957.
** Part-time Fall Semester, 1957.

*** For Undergraduates**

FRENCH

131-132. A Beginning Course in French. Cr. 3 each.
Oral practice, elementary reading and grammar.

231-232. A Second Course in French. Cr. 3 each.
Prerequisite: French 131-132, or two units of high school French. Reading, cultural background, conversation and composition.

331-332. Introduction to French Life and Literature. Cr. 3 each.
Prerequisite: Fren. 231-232, or the equivalent. Reading of little masterpieces of the nineteenth century. Study of cultural background. Conversation, composition, and grammar review. Conducted chiefly in French.

GERMAN

131-132. A Beginning Course in German. Cr. 3 each.
Oral practice, elementary reading, and grammar.

231-232. A Second Course in German. Cr. 3 each.
Prerequisite: Ger. 131-132, or two units of high school German. Reading, cultural background, conversation, and composition.

233-234. Scientific German. Cr. 3 each.
Prerequisite: Ger. 131-132, or two units of high school German. The reading of specially prepared scientific texts in German with grammar review to assist in the interpretations. For pre-medical and science students.

331-332. Introduction to German Life, Literature, and Science. Cr. 3 each.
Prerequisite: Ger. 231-232 or 233-234, or the equivalent. Reading of representative short stories, novels, dramas, and lyrics. Composition based on readings. Conducted chiefly in German.

GREEK

131-132. A Beginning Course in Greek. Cr. 3 each.
Essentials of grammar, reading of easy Greek prose (including selections from the New Testament), Greek mythology and civilization, and building of English vocabulary derived from Greek.

LATIN

131-132. A Beginning Course in Latin. Cr. 3 each.
Forms, word formation, the fundamentals of syntax, common quotations, phrases, and terms, and easy reading. Especially recommended for students preparing for law or medicine as well as those electing Latin for degree requirements.

133. Latin Terminology. Cr. 3.
Practical Latin and Greek, especially for students majoring in scientific or professional courses. Minimum essentials of Latin and Greek grammar. Analysis of English words by study of Latin and Greek roots, prefixes and suffixes. Word lists, charts, and myths relating to special subjects. May not be counted in meeting foreign language requirements.

231-232. A Second Course in Latin. Cr. 3 each.
Prerequisite: Latin 131-132 or two units of high school Latin. Prose selections and Vergil. This course begins with a review of Latin grammar.

331-332. Latin Readings. Cr. 3 each.
Prerequisite: Latin 231-232, or three or four units of high school Latin. The nature and content of this course will vary to meet the needs of the individual student.

SPANISH

131-132. A Beginning Course in Spanish. Cr. 3 each.
Oral practice, elementary reading, and grammar.

231-232. A Second Course in Spanish. Cr. 3 each.
Prerequisite: Span. 131-132, or two units of high school Spanish. Reading, cultural background, conversation and composition.

---

* All courses numbered 100 through 300, except Latin 133, require the completion of the second semester in order to receive credit for the first.

331-332. Introduction to Spanish Life and Literature. Cr. 3 each.
Prerequisite: Span. 231-232, or three or four units of high school Spanish. The history, geography, literature, and customs of Spain. Reading of representative novels, dramas, and lyrics of the nineteenth century. A review of grammar. Composition and conversation based on readings. Conducted chiefly in Spanish. Spanish 331-332 and 333-334 may not both be counted toward a degree.

333-334. Introduction to Spanish American Life and Literature. Cr. 3 each.
Prerequisite: Span. 231-232, or three or four units of high school Spanish. The history, geography, literature, and customs of Spanish American countries. A review of grammar. Composition and conversation based on readings. Conducted chiefly in Spanish. Spanish 331-332 and 333-334 may not both be counted toward a degree.

***For Undergraduates and Graduates**

FRENCH

431. The Modern Drama. Cr. 3.
Prerequisite: Fren. 331-332, or the equivalent. The drama of France from 1636 to 1900. Conducted chiefly in French.

432. The Modern Drama. Cr. 3.
Prerequisite: Fren. 331-332, or the equivalent. A continuation of French 431.

433. The Literature of the Nineteenth Century. Cr. 3.
Prerequisite: Fren. 331-332, or the equivalent. A study of French literature of the nineteenth century, exclusive of the drama. Conducted chiefly in French.

434. The Literature of the Nineteenth Century. Cr. 3.
Prerequisite: Fren. 331-332, or the equivalent. A continuation of French 433.

435. Studies in French Language and Literature. Cr. 3.
Prerequisite: Fren. 331-332, or the equivalent. Directed study with individual conferences and written reports to enable students majoring in French to investigate those periods of French literature not treated in other courses. Conducted chiefly in French.

436. Studies in French Language and Literature. Cr. 3.
Prerequisite: Fren. 331-332, or the equivalent. A continuation of Fren. 435.

GERMAN

435. Studies in German Language and Literature. Cr. 3.
Prerequisite: Ger. 331-332, or the equivalent. Directed study in a field of German language or literature: survey, classical period, romanticism, realism, contemporary. May be repeated for credit with consent of instructor. Conducted chiefly in German.

436. Studies in German Language and Literature. Cr. 3.
Prerequisite: Ger. 331-332, or the equivalent. A continuation of Ger. 435.

SPANISH

431. Nineteenth-Century Prose. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. Certain nineteenth-century novels, essays, and short stories representing the various tendencies and regions. Lectures, written reports. Conducted chiefly in Spanish.

432. Nineteenth Century Prose. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. A continuation of Span. 431.

433. Modern Drama and Poetry. Cr. 3.
Prerequisite: Spanish 331-332, or the equivalent. Drama and poetry from the Romantic movement to the generation of 1898. Lectures, written reports. Conducted chiefly in Spanish.

434. Modern Drama and Poetry. Cr. 3.
Prerequisite: Span. 331-332 or the equivalent. A continuation of Span. 433.

436. Advanced Composition and Conversation. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. A practice course emphasizing idiomatic, everyday Spanish and practical phonetics. Review of important grammatical constructions. Recommended for prospective teachers and travelers. Conducted in Spanish.

437. Advanced Composition and Conversation. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. A continuation of Span. 436.

4312. The Prose of the Golden Age. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. The important prose writers from 1499 to 1650. Reading of representative works, lectures, collateral reading, and reports. Conducted chiefly in Spanish.

---

* Credit may be received for either semester of all courses listed in this category without the completion of the other. Students may enter the second semester without having had the first.

4313. The Prose of the Golden Age. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. A continuation of Span. 4312.

4314. The Drama of the Golden Age. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. The drama of the seventeenth century. Reading of representative plays, lectures, and discussions. Conducted chiefly in Spanish.

4315. The Drama of the Golden Age. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. A continuation of Span. 4314.

4316. A Survey of Spanish Literature. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. The history of Spanish literature to the nineteenth century. Recommended for majors in Spanish. Required for graduate majors. Conducted chiefly in Spanish.

4317. A Survey of Spanish Literature. Cr. 3.
Prerequisite: Spanish 331-332, or the equivalent. A continuation of Span. 4316.

4318. Readings in Contemporary Spanish Literature. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. A survey of the literary scene in Spain from 1898 to the present. Reading of representative novels, dramas, and poetry. Collateral reading and written reports. Conducted chiefly in Spanish.

4319. Readings in Contemporary Spanish Literature. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. A continuation of Span. 4318.

4324. Readings in Spanish American Literature and Civilization. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. The nature and content of this course will vary to meet the needs of the students. Lectures and readings. Conducted chiefly in Spanish.

4325. Readings in Spanish American Literature and Civilization. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. A continuation of Span. 4324.

4326. Survey of Spanish American Literature. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. The history of Spanish American literature from colonial days to the present. Readings, lectures, reports. Conducted chiefly in Spanish.

4327. Survey of Spanish American Literature. Cr. 3.
Prerequisite: Span. 331-332, or the equivalent. A continuation of Span. 4326.

4328-4329. Spanish Civilization. Cr. 3 each.
Prerequisite: Span. 331-332, or the equivalent. A study of the various phases of Spanish civilization in Mexico: history, arts, language, literature, and customs. Offered in alternate summers in Mexico City.

METHODS

4311. Teachers' Course in Methods of Teaching Foreign Languages. Cr. 3.
Prerequisite: French, German, Latin, or Span. 331-332 or 333-334 and 6 semester hours of education. Instruction in scientific methods of teaching foreign languages with as much practice work as possible. May be counted as education or as foreign language. Required of those preparing to teach a foreign language.

For Graduates

SPANISH

5312. Studies in Spanish and Spanish American Literature. Cr. 3.
Prerequisite: Consent of the Head of the Department. The nature and content of this course will vary to meet the needs of individual students. Credit given for either semester of this course as often as course is repeated.

5313. Studies in Spanish and Spanish American Literature. Cr. 3.
Prerequisite: Consent of the Head of the Department. A continuation of Span. 5312.

5335. Spanish in the Elementary School. Cr. 3.
Prerequisite: As a part of the composite minor or for credit in education, no formal prerequisites are necessary; a student who wishes to apply this course toward a major or minor in Spanish must have completed Span. 331-332 or equivalent. Spanish language and culture for elementary school children. Songs, games, dances, and children's literature.

631-632. Thesis. Cr. 6.

Department of Geology

PROFESSORS WADE, BRAND, MATTOX.
ASSOCIATE PROFESSOR ARPER.
ASSISTANT PROFESSORS J. G. DENNIS, R. HARRIS, REXROAD, D. SHURBET.
INSTRUCTORS CLARKE, McLAMORE, C. REEVES, J. WOOD.
PART-TIME INSTRUCTORS BROOKS, BURTON, B. JONES, J. POWELL,*
PROBANDT, WATKINS.

The functions of the Department of Geology are twofold: first, through the Bachelor of Arts Degree, to give the student a thorough background in the fundamental principles of geology, the application of which would permit him to continue in any of the specialized branches of the science; second, through the Bachelor of Science Degree, to direct the student through a curriculum which will prepare him for specialization in any of the following branches: structural geology, mineralogy, petrology, paleontology, economic geology, sedimentology, ground water geology, petroleum geology, and field geology.

Students desiring to follow the Bachelor of Arts curriculum must include the following courses: Geology 141-142, 221, 241, 331, 332, 335-336, 363.

No grade below C will be accepted on the major for the bachelor's degree in the Department of Geology. No grade below C will be accepted on the major for the master's degree in the Department of Geology, and candidates must maintain a B average.

Geology majors should consult with the Head of the Department concerning graduate courses.

For Undergraduates

141-142. General Geology. Cr. 4. (3-3).
The first semester involves a study of geologic features and processes of the earth; the second, an introductory study of the earth's geologic history. A foundation course for all additional work in geology and a general course for cultural development. Open only to students majoring in geology.

143. Physical Geology. Cr. 4. (3-2).
Geologic features and processes of the earth.

144. Historical Geology. Cr. 4. (3-2).
Prerequisite: Geol. 143 or 141. An introductory study of geologic history.

221. Crystallography. Cr. 2. (1-3).
Prerequisite: Geol. 141-142. Geometric crystallography, crystal chemistry.

241. Mineralogy. Cr. 4. (2-6).
Prerequisites: Geol. 141-142; Chem. 141-142. Methods of identification of minerals; blowpipe analysis; formation, occurrence, properties of minerals.

233. General Geology for Engineers. Cr. 3. (2-3).
Similar to Geol. 141-142, but a shorter course adapted to the special needs of engineering students other than petroleum students; especially for students in civil engineering.

234. Mineralogy and Petrography for Petroleum Engineers. Cr. 3. (2-3).
Prerequisite: Geol. 141-142. Methods of field identification of minerals and rocks commonly found in oil well samples.

331. Geomorphology. Cr. 3. (2-3).
Prerequisites: Geol. 141-142, and approval of instructor. The origin and characteristics of land forms based on a consideration of geologic processes, stages of development, and geologic structures.

332. Structural Geology. Cr. 3. (2-3).
Prerequisites: Geol. 141-142, and approval of instructor. Systematic analysis of the deforming processes and resultant structures in the earth's crust. Graduate credit for minors only.

335-336. General Paleontology. Cr. 3. (2-3).
Prerequisites: Geol. 141-142, junior standing, and approval of instructor. The detailed structure, basis of classification and geologic history of the various groups of invertebrates. Graduate credit for minors only.

337. Ground Water. Cr. 3.
Prerequisites: Geol. 241, 331, and approval of instructor. Principles of the occurrence, recharge, movements and discharge of ground water. (Graduate credit with permission of Department Head and Graduate Dean.)

* Resigned, Jan. 31, 1958.

363. Field Geology. Cr. 6.
Prerequisites: Geol. 141-142, 221, 241, 331, 332, 335-336, and approval of instructor. Field application of principles of stratigraphy, structural geology and methods of geological surveys. Required of all majors in the Department of Geology. (Graduate credit for minors only). Offered only during summer sessions.

For Undergraduates and Graduates

431-432. Optical Mineralogy and Petrography. Cr. 3. (1-6).
Prerequisites: Geol. 221, 241, and approval of instructor. Optical properties of minerals; identification of minerals in fragments and thin sections with the petrographic microscope; description and classifications of igneous, sedimentary, and metamorphic rocks.

433. Petroleum Geology. Cr. 3.
Prerequisites: Geol. 241 or 234, 332; Physics 141-142 or 235-236, and approval of instructor. The origin, migration, and accumulation of oil and gas; petroliferous provinces.

434. Petroleum Geology Cr. 3. (2-3).
Prerequisites: Geol. 433, and approval of instructor. Subsurface methods; advanced principles.

436. Micropaleontology. Cr. 3. (1-5).
Prerequisites: Geol. 335-336, and approval of instructor. Morphology, classification, and distribution of foraminifera, ostracods, conodonts, and other microscopic fossils; methods of collection and preparation.

437. Sedimentation. Cr. 3.
Prerequisites: Geol. 241 or 234, 331, 332, and approval of instructor. Sedimentary processes and environments.

438. Sedimentation. Cr. 3. (2-3).
Prerequisites: Geol. 437, and approval of instructor. Continued study of processes, classification, sedimentary petrology, and laboratory techniques for the study of sedimentary rocks.

4311. Economic Geology. Non-metallics. Cr. 3. (2-3).
Prerequisites: Senior or graduate standing, and approval of instructor. Detailed study of the origin, occurrence and economic aspects of the non-metallic mineral deposits exclusive of oil and gas.

4312. Economic Geology. Metallics. Cr. 3. (2-3).
Prerequisites: Geol. 431-432 or parallel enrollment, and approval of instructor. Detailed study of the origin, occurrence, and economic aspects of the metallic mineral deposits.

4314. Principles of Stratigraphy. Cr. 3.
Prerequisites: Geol. 221, 241, 335-336, and approval of instructor. Stratigraphic methods, geochronology, stratigraphic nomenclature, stratigraphic maps, paleoecology, correlation methods, sedimentary facies, sedimentary tectonics.

4315. Paleozoic, Mesozoic, Cenozoic Statigraphy. Cr. 3.
Prerequisites: Geol. 4314, and approval of instructor. Advanced historical geology of North America with emphasis on the application of stratigraphic principles, paleogeography, source areas, sedimentary facies.

4316. Aerial Photo Interpretation. Cr. 3. (2-3).
Prerequisites: Geol. 331, 332, and approval of instructor. Geomorphic and geologic interpretation. Use of stereoscopes and vertical control instruments. Aerial photographs converted to maps.

4317. Geophysical Methods. Gravity and Magnetic. Cr. 3.
Prerequisites: 24 hours of geology, Phys. 141-142, Math. 231-232, and approval of instructor. The application of geophysical principles to the solution of geological problems.

4318. Geophysical Methods. Seismic and Electrical. Cr. 3.
Prerequisites: 24 hours of geology, Phys. 141-142, Math. 231-232, and approval of instructor. Continuation of Geol. 4317.

For Graduates

511. Graduate Seminar. Cr. 1.
Required of all graduate students majoring in this Department.

531-532. Advanced Physical and Historical Geology. Cr. 3.
Prerequisite: Graduate standing in geology. A field trip of several days' duration will be taken each semester as part of the course.

533. Petrology of Igneous Rocks. Cr. 3.
Prerequisite: Geol. 431-432, at least two years of chemistry.

534. Petrology of Metamorphic Rocks. Cr. 3.
Prerequisite: Geol. 431-432, at least two years of chemistry.

535. Advanced Work in Specific Fields. Cr. 3.
Prerequisite: Consent of Head of Department. Course and credit depend upon preparation and need of the student.

536. Advanced Work in Specific Fields. Cr. 3.
Prerequisite: Consent of Head of Department. Continuation of Geol. 535.

537. Problems in Mineralogy. Cr. 3.
538. Geology of Southwest. Cr. 3.
Reading and discussion on geology and physiographic evolution of the Southwest.
539. Problems in Petrology. Cr. 3.
5311. Stratigraphic Micropaleontology. Cr. 3.
Prerequisite: Geol. 436. Foraminifera, bryozoa, conodonts, and ostracods; emphasis on morphology and stratigraphic range.
5312. Problems in Economic Geology. Cr. 3.
5313. Problems in Geomorphology. Cr. 3.
5322. Advanced Field Geology. Cr. 3. (1-6).
Prerequisite: Elementary field geology. Solution of advanced field problems requiring application of geologic principles, mapping, and aerial photo interpretation. Written report required.
5324. Problems in Sedimentation. Cr. 3.
5326. Problems in Stratigraphy. Cr. 3.
5327. Problems in Paleontology. Cr. 3.
5328. Problems in Structural Geology. Cr. 3.
631-632. Thesis. Cr. 6.
731, 732. Research. Cr. 3 each.
Required of students working on the doctor's dissertation.
831-832. Doctor's Dissertation. Cr. 6.
Required as the final registration for the dissertation.

GEOGRAPHY

For Undergraduates

231, 232. Principles of Geography. Cr. 3 each.
Geographic factors including relief, climate, industries, communication and economic resources.

For Undergraduates and Graduates

331. General Meteorology. Cr. 3. (2-3).
Prerequisites: Geol. 141-142 or Phys. 141-142, or geography. Descriptive and theoretical meteorology and analysis of terrestrial, hydrospheric and atmospheric factors of weather and climate.
332. Practical Meteorology. Cr. 3. (2-3).
Prerequisite: Geog. 331. Care and use of meteorological instruments and interpretation of charts and maps. Methods of observing and recording weather.

Department of Government

PROFESSORS W. DAVIS, S. FULLER, J. W. JACKSON, KENNEDY.
ASSOCIATE PROFESSOR ODEN.
ASSISTANT PROFESSORS C. JOHNSON, MACK.
INSTRUCTORS BOHLMANN, COWART, B. HAZLEWOOD, MYERS.
PART-TIME INSTRUCTORS AVERYT, BOWMAN, ELLIS, GRIFFITH, W. A. JACKSON, SOWDER.

All students who graduate from state-supported colleges in Texas must have completed 6 semester hours of government covering the United States and Texas Constitutions. (See Page 103). In these courses, the Department of Government endeavors to prepare students for a basic understanding of governmental processes that are involved in responsible citizenship, intelligent voting, and successful leadership in public affairs.

For those who desire a more intensive study, a major or minor containing a well-rounded program is offered in government.

The major is based on the principles of a liberal education, with attention to the social sciences, and emphasis on the theory and practice of governments. Students majoring in government should take certain basic courses in all fields of government. Generally, at the

beginning of the junior year several alternative fields of emphasis are offered from which the student may choose. They are:

American Government and Politics (National, State, and Local)
Comparative Government (British, Russian, and Latin American)
International Relations (Organization, Politics, and Law)
Public Administration (Organization, Procedure, and Administrative Law)
Political Theory (European, American, and Modern)
Public Law (Constitutional, Administrative, and International)

A government major or minor can be shaped to serve as vocational preparation in any of at least seven different fields:

1. Careers in public administration on the national, state, or local levels.
2. Preparation for entry into law school.
3. Training for the foreign service.
4. The teaching of government or social science, on the secondary or college levels.
5. Journalistic, radio, or television careers in collecting, evaluating, reporting, or commenting upon news of a political nature.
6. Research in public affairs for private industrial or commercial firms, labor unions, or endowed research institutes.
7. Preparation for a political career.

The Department of Government serves in an advisory capacity for prelaw students. Each student having such interest is guided carefully toward fulfilling the entrance requirements for law school and is given the best possible preparatory background for his future work. (See Page 107).

Students interested in preparing for government service may take advanced courses in all levels of American government with emphasis upon the field of their special interest.

The Department of Government also cooperates in the Latin American Area Studies program. (See Page 109).

As a participant in the teacher education program of the College, the Department of Government provides a program whereby a student may qualify for certification to teach in the secondary schools. By following the program described below, a student may receive a Bachelor of Arts Degree with certification in the fields of government (civics), history, and social sciences. The requirements for this program are:

1. Basic Bachelor of Arts Degree requirements see Page 133.
2. Major in government (30 hours).
3. Minor in history (18 hours).
4. Other social sciences (12 hours) including economics, geography, sociology, or psychology.
5. Professional education courses required for certification (see Page 106).
6. Electives sufficient for graduation.

A teaching major (minimum of 30 hours) or minor (minimum of 18 hours) may also be similarly arranged under the Bachelor of Science in Education requirements (See Pages 149-150).

In the Bachelor of Science in Education Degree, a social science teaching option is available which will provide certification for teaching three fields in the secondary schools: government (civics), history, and social sciences. To qualify in this broad area the student will

take: 18 hours in government, 18 hours in history, 6 hours in economics, and 6 other hours in the social subjects.

The Department of Government offers a special major on the graduate level for students interested in city manager training or work in municipal government. The course work is of an inter-departmental nature and includes courses with special emphasis on problems of municipal government. After graduation, a student may be placed as an intern in some Texas city.

Other graduate offerings of the Department of Government are covered in the Graduate Bulletin of Texas Technological College.

Students interested in investigating a major or minor in government are invited to call by the Department of Government to examine sample curricula. Such curricula are intended as guides and a great deal of flexibility is permitted, so that each student may take courses in line with his own particular interests.

For Undergraduates

233. American Government, Organization. Cr. 3.
A study of the constitutions and organizations of the governments of the United States, the states in general, and Texas in particular.

234. American Government, Functions. Cr. 3.
A study of the functions and services of the government of the United States, the states in general, and Texas in particular. This course will follow Govt. 233.

For Undergraduates and Graduates

331. Local Government. Cr. 3.
A study of the organization of city and county government in the United States, the various forms of local government, interdepartmental relations, city-state relations, city-nation relations, and an introduction to the administrative problems of local units of government.

332. European Political Ideas. Cr. 3.
A study of the political ideas expressed by the great thinkers from ancient times to the present with emphasis upon reading from the classics.

333. American Political Ideas. Cr. 3.
The lives and ideas of leading political thinkers of the United States from the colonial period to the present.

334. Political Parties. Cr. 3.
An analysis of political parties showing party history, functions, organization, finance, nominations, campaign methods, and elections.

335. International Politics. Cr. 3.
Problems and issues which arise in the family of nations; organizations and techniques to cope with these problems; the principles of international conduct.

336. United States Foreign Policy. Cr. 3.
Emphasis is placed upon the process of making foreign policy, the constitutional framework for the conduct and control of American foreign policy, and study of the problems and issues of the contemporary period with sufficient historical perspective to give meaning to its development.

337. Public Administration, Organization. Cr. 3.
Principles of administrative organization; distribution of administrative functions together with the structure of all units of government charged with the carrying out of public policy.

338. Public Administration, Procedure. Cr. 3.
The chief problems of national, state, and local units of government, including budgeting, accounting, reporting, purchase and supply, personnel, promotion, demotion, removal, and retirement.

339. Legislation. Cr. 3.
An analysis of the structure, organization, and procedure of American legislative bodies, showing the problems and principles of lawmaking.

3312. British Government. Cr. 3.
Study of the principles, policies, and practices of the government of Great Britain with emphasis on comparisons with France and the United States, and the impact of Britain on the development of democracy.

3313. Russian Government. Cr. 3.
Study of the development, structure, and operation of the government of the USSR with emphasis on the impact of the Soviet Union upon the rest of continental Europe, and the techniques of dictatorship.

3314. Latin-American Governments. Cr. 3.
The constitutional development, governmental organization, political forces and trends and contemporary political problems of leading nations of Latin America.

3315. Government and Business. Cr. 3.
The role of government in the field of business and in the American economy. A study of public policy on aids to business, on regulation of business and public utilities, on government participation in business, and on government responsibility for maintaining full employment and a healthy economy. Also a study of the voice of business in government and the political activities of business.

3316. Government and Labor. Cr. 3.
The role of government in labor problems. Legislative, administrative and judicial policies relating to organization of workers, industrial disputes, wages and hours, child labor, workmen's compensation, labor as monopoly, social security, etc. Also a study of labor's voice in government and the political activities of labor.

431. American Constitutional Law, Powers. Cr. 3.
Interpretation of the constitution of the United States based primarily upon Supreme Court decisions. Emphasis on the powers of government.

432. American Constitutional Law, Limitations. Cr. 3.
Interpretation of the constitution of the United States based primarily upon Supreme Court decisions. Emphasis on limitations on both the state and national governments.

433. Modern Political Ideas. Cr. 3.
An analytical study of the ideas of modern political writers, emphasizing a comparison and contrast of twentieth century philosophies of democracy, fascism, and communism.

435. International Organization. Cr. 3.
The perspective of this course is a view of the United Nations with consideration given to the historical aspects and processes of international organization, and the practice of governments in the United Nations.

436. International Law. Cr. 3.
The historical background and the nature and scope of international law; the organization of the community of nations; the general rights and duties of states; and the problems of applying law to international relations. The writings of outstanding publicists, as well as legal cases, are critically evaluated.

437. Political Geography. Cr. 3.
Study of the principal political areas of the world from the point of view of politico-geographic factors of power including size, location, population, political and social organization, natural and industrial resources and national morale.

438. Local Administration. Cr. 3.
A study of governmental functions performed by local units of government such as planning, zoning, water supply, recreation, police and fire protection, public works, and municipal finance.

439. Administrative Law. Cr. 3.
Organization and procedure of federal and state administrative agencies; distinction between legislative, executive and judical powers; delegation of powers; the nature of power vested in administrative agencies; requirements of due process; judicial control over administrative action.

For Graduates

531. Reading and Research. Cr. 3.
A directed course of intensive readings and research in particular fields. May be used either as an individual study course or as a seminar. May be repeated in different fields of emphasis.

5335. Political Ideologies and Institutions. Cr. 3.
This course is designed to afford mature students an acquaintanceship with the broad fields, the literature, and ideological concepts of political science, and is particularly designed to be of value to those in public education or government service.

631-632. Thesis. Cr. 6.

Department of Health and Physical Education, and Recreation For Men

PROFESSORS KIREILIS, JENNINGS.
ASSOCIATE PROFESSORS PHILBRICK, ROBISON.
INSTRUCTORS BROWN, BUCHANAN (INTRAMURAL DIRECTOR), FEATHERS, McNALLY.

The Department offers the following degrees: Bachelor of Science in Education with a major in physical education, Bachelor of Arts with a major in physical education, and a Bachelor of Arts with a major in recreation. Students desiring to become coaches or physical educators should seek the physical education degree and those desiring to work in city recreation programs, camps, and allied areas should

seek a recreation major degree. Further information in regard to these degrees should be secured from the Department Head.

Each student who plans to major or minor in physical education must bring each year, from his family physician, a complete physical examination report. The form for this examination should be secured from this Department.

Required Service Courses

It is the purpose of the Physical Education Department to give each student the opportunity to develop physically, socially, and mentally, by providing a wide variety of physical education activities in which students may participate. All male students who are required to complete four semesters of work in physical education activities for graduation will complete work in Physical Education 010—Introduction to Physical Education Activities—during the first semester of their freshman year. Transfer students taking work in physical education will also be required to complete work in Physical Education 010 during their first semester. After a student has satisfactorily completed work in Physical Education 010, a three-semester program of physical education activities will be recommended to the student.

010. Introduction to Physical Education Activities. Cr. 1. (1-1). To ascertain the student's physical efficiency and health status through standardized physical efficiency tests and medical reports which will enable the staff to prescribe a sports program that will meet each student's physical needs; to introduce the student to a variety of sports offered in the department through such media as movies, class observation, expert demonstrations, and lectures by the regular staff.

The remaining three semesters of physical education activities will be recommended to the student as to his needs from the following list of courses:

011. Adapted Sports	0112. Weight Lifting	0127. Tennis
*012. Beginning Swimming	0113. Advanced Bowling	0128. Advanced Tennis
*013. Advanced Swimming	0114. Fly & Bait Casting	0141. Touch Football
*014. Life Saving	0121. Handball	0142. Basketball
016. Elementary Tumbling	0122. Badminton	0143. Soccer
017. Golf	0123. Wrestling	0144. Speedball
018. Archery	0124. Fencing (Foil)	0145. Softball
019. Track and Field	0125. Social Dancing	0146. Folk Dance
0111. Bowling	0126. Fencing (Saber-Epee)	0147. Volleyball

Students who pass any one course may not repeat the same course for additional credit. These are all laboratory courses involving individual instruction.

INTRAMURAL SPORTS FOR MEN

It is the purpose of the Intramural Sports Program to provide every student in the College with the opportunity to participate in the sport of his choice as often as time and inclination permit.

Competition is conducted in individual, dual, and team sports to enable the student to choose the type of game best suited to his interests and abilities. Participation is entirely voluntary.

The intramural sports now offered are badminton, basketball, bowling, fencing, golf, handball, ping pong, softball, swimming, tennis, touch football, track, volleyball, and weight lifting.

* Special fee, $5.

BACHELOR OF SCIENCE IN EDUCATION

HEALTH AND PHYSICAL EDUCATION MAJOR

FOR MEN

Students who desire to coach and/or to teach physical education on the secondary level should follow the 24 semester-hour major program. Usually a beginner coach and/or physical education teacher must have a teaching minor, therefore students should select a minor as soon as possible and complete work in the minor as indicated in the curriculum outlined below.

HEALTH AND PHYSICAL EDUCATION MAJOR

SECONDARY LEVEL CERTIFICATION PROGRAM

Freshman Year

First Semester	Credit	Second Semester	Credit
Chem. 141—Gen. Chem.	4	Chem. 142—Gen. Chem.	4
Eng. 131—Eng. Comp.	3	Eng. 132—Eng. Comp.	3
Speech 131—Fund. of Spch.	3	Speech 233—Voice & Dict. or Speech 235—Disc. & Debate	3
Educ. 130—Foun. of Educ.	3	P.E. 230—H. Educ. in Elem. & Secon. Sch.	3
P.E. 133—Pers. & Com. Hyg.	3	Soc. 230—Intro. of Soc.	3
	16		16

Sophomore Year

First Semester	Credit	Second Semester	Credit
Zool. 235—Human. Anat. & Phys.	3	Zool. 236—Human Anat. & Phys.	3
Govt. 233—Amer. Govt., Org.	3	Govt. 234—Amer. Govt., Func.	3
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Hist. 231—Eco. & Pol. Hist. U.S.	3	Hist. 232—Eco. & Pol. Hist. U.S.	3
*P.E. 221—Theory & Prac. Indiv. Spts.	2	*P.E. 222—Theory & Prac. Team Spts.	2
Minor	3	Educ. 232—Educ. Psy.	3
	17		17

Junior Year

First Semester	Credit	Second Semester	Credit
Educ. 330—Prin. of Secon. Educ.	3	Educ. 334—Cur. Dev. in Sec. Ed.	3
Psy. 335—Adol. Psy.	3	Educ. 336—Sec. Ed. Meth.	3
*P.E. 321—Theory & Fund. of Gymnastics & Wrestling	2	*P.E. 322—Elem. Aquatics	2
P.E. 332—Care & Prev. of Ath. Inj.	3	P.E. 3311—Secon. Meth.	3
P.E. 323—Sports Officiating	2	Electives	3
Minor	3	Minor	3
	16		17

Senior Year

First Semester	Credit	Second Semester	Credit
Educ. 432—Stud. Obs. & Tch.	3	Educ. 434—Advan. Stud. Obs. & Tch.	3
P.E. 422—Theory & Fund. of Base. & Bask.	2	P.E. 423—Theory & Fund. of Foot. & Track	2
P.E. 437—Measurement	3	P.E. 436—Phys. Exam. & Cor. P.E.	3
Minor	6	P.E. 431—Kinesiology	3
Electives	3	Minor	3
	17	Electives	4
			18

It should be noted that if a student desires a 36-hour major program without a minor he should consult with the Head of the Physical Education Department for Men. This program is offered to students

* Satisfies one semester of physical education requirement.

who desire to coach most sports, teach physical education, supervise safety, health, and recreation programs in a small school.

Also it should be noted that an all-level certification program is offered. Students desiring to teach and/or coach in the elementary and secondary schools should follow this program. Those students who desire this certificate must consult with the Head of the Department so as to secure information on additional courses that must be taken to qualify for the all level certificate.

No grade less than C will be accepted in meeting the physical education major requirements.

Students seeking a minor in health and safety education for certification purposes will be required to complete work in the following courses: P.E. 133, 230, 436, 4326, 4321, and 437. Students minoring in health and safety education will be required to complete work in Chemistry 141 and 142, and Zoology 235 and 236. A physical education minor program is not offered by the Department.

A recreation minor program is offered by the Department for those students who are interested in recreation. Students who follow this program will not receive a teaching certificate, but will be capable of working in various types of recreation programs offered by numerous institutions. Students desiring to minor in recreation should complete work in the courses listed in the following program: P.E. 221, 222, 321, 322, 332, 4324, 331 and 439, or 4323 and field experiences.

BACHELOR OF ARTS

MAJOR IN RECREATION

In addition to a major in physical education, the Department also offers a B. A. Degree with a major in recreation. The general requirements for the Bachelor of Arts Degree will be met. The core program in this field consists of the following courses: Physical Education 133, 4326, 439, 331; Speech 233 or 235; Education 330; Psychology 130 and 332. The areas of emphasis available at the present time are sports, arts and crafts, music, dramatics, and park management.

A recreation major must complete work in the sports area; in addition he must select one other area from the following: arts and crafts, music, dramatics, or park management.

The courses to be taken in the sports area are: Physical Education 131, 221, 222, 321, 322, 323, 422, and 4324 or 4223 with field experience.

Courses in the arts and crafts area are:

Applied Arts 131, 133, 232, 437. 9 semester hours of the following: Applied Arts 233, 331, 332, 335, 337, 338, 3311, 425, 427, 434, 435, or 439. Allied Arts, 126, 127, 238, 239.

Music courses are: Music 131-132, Applied Music 1113-1114, 1123-1124, Music Education 327. 6 hours electives.

Dramatic courses are: Speech 319 (may be taken three times), 231, 232, 333, 334, 431, 4311.

Park management courses are: Horticulture 131, 232, 233, 3311, 338, 422, 423.

Professional Courses for Undergraduates

131. Introduction to Physical Education. Cr. 3.
Brief introduction to the field of physical education, its philosophy, aims, objectives, principles, and potential values.

133. Personal and Community Health. Cr. 3.
Fundamentals of health, dealing with personal hygiene; community health problems; causes and prevention of disease in the family as related to individual and community health.

221. Theory and Practice of Individual Sports. Cr. 2. (0-4).
Course is designed to prepare students as physical educators in junior and senior high schools, colleges, and as community recreation leaders. It covers the rules and fundamentals of tennis, handball, and badminton.

222. Theory and Practice of Team Sports. Cr. 2. (0-4).
Continuation of P.E. 221. Covers the rules and fundamentals of volleyball, softball, speedball, and soccer.

230. Health Education in the Elementary and Secondary Schools. Cr. 3.
Basic principles and procedures of health education and their application to the total school health program.

233. Physical Education for the Elementary School. Cr. 3.
A method and content course dealing with the theory and practice of physical education.

310. Health Education Workshop. Cr. 1. (10-25). Lasts one week.
Study of problems in health education and methods of implementation and coordination of local and state resources.

321. Theory and Fundamentals of Gymnastics and Wrestling. Cr. 2 (0-4).
Prerequisite: Junior standing. Practice in fundamental gymnastic and wrestling skills and a study of theory, rules, and history of gymnastics and wrestling.

322. Elementary Aquatics. Cr. 2. (0-6).
Practice of swimming fundamentals from beginner's swimming through lifesaving; also includes principles, methods of teaching, leading to water safety instructor's certificate; principles of pool management, theory of coaching swimming, and introduction to synchronized swimming.

323. Sports Officiating. Cr. 2. (2-2).
Prerequisite: Consent of instructor. Designed to prepare qualified teachers as officials of interscholastic sports. Covers the ethics, rules, and mechanics involved.

331. Recreational Methods. Cr. 3.
Material appropriate for small and large groups, different age levels, and various situations. Consideration of philosophy and method; practice in planning and leading recreation.

3311. Methods of Teaching Physical Education in High School. Cr. 3.
Prerequisite: 6 semester hours of physical education and 6 hours of education. Aims and methods of teaching physical education in junior and senior high school.

332. First Aid; Care and Prevention of Athletic Injuries. Cr. 3. (3-2).
American Red Cross First Aid Course leading to a standard first aid certificate, including athletic training and an analysis of common athletic injuries, their care, and prevention.

422. Theory and Fundamentals of Baseball and Basketball. Cr. 2. (2-2).
Practice in offensive and defensive fundamentals of baseball and basketball and a study of offensive and defensive systems, strategies, scouting methods, public relations, and professional ethics. Approximately two-fifths of the semester will be devoted to baseball and three-fifths of the semester to basketball.

423. Theory and Fundamentals of Football and Track. Cr. 2. (2-2).
Practice in individual offensive and defensive fundamentals in football and individual skills in track and field events. A study of offensive and defensive systems and strategies, scouting methods, public relations, and professional ethics in football. Approximately three-fifths of the semester will be devoted to football and two-fifths of the semester to track

Professional Courses for Undergraduates and Graduates

431. Kinesiology. Cr. 3. (1-2).
Prerequisite: Chem. 141-142 and Zool. 235-236. A study of the principles of human motion. Anatomical and mechanical analysis of everyday and physical education activities emphasized for the purpose of promoting normal physical development and improvement of performance.

432. Physiology of Exercise. Cr. 3.
Prerequisite: Chem. 141-142, and Zool. 235-236. The effect of muscular activity on the processes of the body.

4321. Methods and Techniques of Driver Instruction. Cr. 3. (3-2).
Prerequisite: 6 hours of physical education and 6 hours of education and junior standing. Preparation of high school teachers in driver education, which includes classroom and behind-the-wheel techniques. All prospective teachers will have the opportunity to teach beginners. Special fee, $10.

4322. Organization and Administration of Interscholastic and Intercollegiate Athletic Programs. Cr. 3.
A study of methods in organizing and administering the interscholastic and intercollegiate athletic program. Study is given to the following items: staff, program, budget, health and safety, facilities, publicity, history, duties of an athletic director, and national, state, and local controls.

4323. Organization and Administration of Camps. Cr. 3.
Prerequisite: 6 hours of physical education and 6 hours of education. A study of organization and administration of different types of camps including objectives, organization, routine administration, and evaluation.

4324. Organization and Administration of Intramural Sports. Cr. 3.
Administrative procedures connected with organization, records, equipment, program, and staff duties. Includes sports officiating, which covers the ethics, rules, mechanics, and practice.

4326. Safety Education. Cr. 3. (3-2).
A study of prevention of accidents in home, industry, and recreation. This includes Red Cross standards, advanced, instructors, and safety courses.

436. Physical Examinations and Corrective Physical Education. Cr. 3.
Prerequisite: Zool. 235-236. Practice in administering screening tests with interpretation of findings; organization of programs in physical education for the physically handicapped.

437. Measurements in Physical Education. Cr. 3.
Techniques in physical education. Survey of tests used in physical education and methods of administering tests and using data.

438. Curriculum Development in Physical Education. Cr. 3.
Principles of curriculum planning in physical education.

439. Organization and Administration of Recreational Programs. Cr. 3.
Study of community recreation, its significance, leadership, facilities, and organization of programs with special consideration of the contribution of physical education.

Professional Courses for Graduates

531. Administration of Physical Education. Cr. 3.
Prerequisite: Major in health and physical education or B.S. in Education with physical education minor including PE 437 and 438 or equivalent. A study of principles, problems and procedures for administering physical education programs. The course is especially designed for school administrators, athletic directors, physical education directors, and city directors.

532. Supervision of Physical Education. Cr. 3.
Prerequisite: Same as P.E. 531. A study of principles, problems, relationships, and procedures in the supervision of elementary and high school physical education programs.

533. Facilities for Physical Education. Cr. 3.
Prerequisite: Same as P.E. 531. A study of principles, terminology, and standards for planning, construction, use, and maintenance of facilities.

534. Administration of the School Health Program. Cr. 3.
Prerequisite: 6 hours of health education and 12 hours of science. A course for teachers, coaches, and school administrators who desire an understanding of a well-balanced health program.

Department of Health and Physical Education, and Recreation For Women

PROFESSOR DABNEY.*
ASSOCIATE PROFESSOR RAINEY.**
ASSISTANT PROFESSOR HOYLE.
INSTRUCTORS PERRY, ROLLO, SLIFER.***

The Department of Physical Education for Women offers the following degrees: Bachelor of Science in Education with a major in physical education, Bachelor of Arts with a major in physical education, and a Bachelor of Arts with a major in recreation. Students desiring to become physical educators should seek the physical education degree; whereas those desiring to work in city recreation programs, camps, and allied areas should seek a recreation major degree. Further informa-

* On Leave Spring, 1958.
** Acting head Spring, 1958.
*** Spring semester, 1958.

tion in regard to these degrees should be secured from the Department Head.

Each student who plans to major or minor in physical education must bring each year from her family physician, a complete physical examination report. The form for this examination should be secured from the Physical Education Department.

REQUIRED SERVICE COURSES FOR WOMEN

Four semesters of physical education are required of all women students during the freshman and sophomore years. One hour credit is given each semester. These are all laboratory courses involving individual instruction.

111. Body Conditioning. Required of all freshmen women other than majors. The remaining three semesters may be elected from the courses listed below.
210. Tap Dance
211. Riding
212. Tennis
215. Basketball
216. Soccer and Speedball
217. Folk Dance
218. Volleyball
219. Stunts and Tumbling
2111. Golf
2112. Swimming (Special fee, $5)
2113. Body Mechanics for the individual. May be substituted for required courses on the advice of a physician and the Head of the Department.
2114. Field Hockey
2115. Badminton
2116. Social Dance
2117. Archery
2118. Modern Dance
2119. Softball

HEALTH AND PHYSICAL EDUCATION, AND RECREATION

Physical education majors and minors must complete the requirements for the Bachelor of Science in Education or for the Bachelor of Arts Degree. Candidates for the Bachelor of Arts Degree will complete the usual requirements for that degree. The curriculum leading to the Bachelor of Science in Education will be found below.

Students seeking a minor in health education, physical education, or recreation will be required to complete the following courses:

Health Education: 133, 230, 436, 4326, 437, and 4321.

Physical Education: 123, 124, 125, 126, 230, 131, 4311, or 233, 2118, and 217, and three hours of advanced electives.

Recreation: 123, 124, 125, 126, 133, 322, 331, and 439 or 4323 and field experiences.

Students minoring in the above fields will be required to complete 12 hours of science.

The student desiring to major in health and physical education for the degree, B. S. in Education, will follow the curriculum below:

BACHELOR OF SCIENCE IN EDUCATION

HEALTH AND PHYSICAL EDUCATION MAJOR

Secondary Program*

Freshman Year

First Semester	Credit	Second Semester	Credit
Ed. 130—Foun. of Educ.	3	Eng. 132—Eng. Comp.	3
Eng. 131-Eng. Comp.	3	Spch. 233—Voice & Diction	3
Spch. 131—Func. of Spch.	3	Chem. 134—Inor., Org., & Biol.	3
Chem. 133—Inor., Org., & Biol.	3	P.E. 133—Pers. & Com. Hyg.	3
P.E. 2118—Modern Dance	1	P.E. 131—Intro. to P.E.	3
**P.E. 123—Indiv. Sports	2	**P.E. 124—Indiv. Sports	2
	15		17

* Students wishing to qualify to teach in both the elementary and secondary schools must, in addition to the above courses, take P.E. 233 and Psychology 331; and substitute Educ. 431 for Educ. 434.

** Satisfies one semester of physical requirement.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Ed. 232—Educ. Psy.	3	Eng. 232—Mast. of Lit.	3
Eng. 231—Mast. of Lit.	3	Zool. 236—Human Anat. & Physiol	3
Zool. 235—Human Anat. & Physiol	3	Govt. 234—Amer. Govt., Func.	3
Govt. 233—Amer. Govt., Org.	3	Hist. 232—Ec. & Pol. Hist. U.S.	3
Hist. 231—Ec. & Pol. Hist. U.S.	3	P.E. 230—Health Educ.	3
*P.E. 125—Team Sports	2	*P.E. 126—Team Sports	2
	17		17

Junior Year

First Semester	Credit	Second Semester	Credit
Ed. 330—Prin. of Secon. Educ.	3	Ed. 334—Curric. Dev. Secon. Educ.	3
Psy. 335—Adol. Psy.	3	Ed. 336—Secon. Educ. Meth.	3
Soc. 230—Intro. to Sociol.	3	P.E. 329—Tech. of Sports	2
P.E. 328—Tech. of Sports	2	P.E. 3313—Theory & Prac. of Dance	3
Elective	3	P.E. 322—Elem. Aquatics	2
Minor	3	Minor	3
	17		16

Senior Year

First Semester	Credit	Second Semester	Credit
Ed. 432—Stud. Obs. & Tch.	3	Ed. 434—Adv. Stud. Obs. & Tch.	3
P.E. 4311—Meth. Secon. Schools	3	P.E. 431—Kinesiology	3
P.E. 436—Physical Exam. & Correc.	3	P.E. 437—Measurement	3
Minor	3	Minor	3
Electives	3	Electives	6
	15		18

BACHELOR OF ARTS

MAJOR IN RECREATION

In addition to a major in physical education, the Department also offers a B. A. Degree with a major in recreation. The general requirements for the Bachelor of Arts Degree will be met. The core program in this field consists of the following courses: Physical Education 133, 4326, 439, 331; Speech 233 or 235; Education 330; Psychology 130, 332. The areas of emphasis available at the present time are sports and dance, arts and crafts, music, dramatics, and park management.

A recreation major must complete work in the sports and dance area; in addition she must select one other area from the following: arts and crafts, music, dramatics, or park management.

The courses to be taken in the sports and dance area are: Physical Education 131, 123, 124, 125, 126, 328, and 329 or 4323 with field experience.

Courses in the arts and crafts area are:

Applied Arts 131, 133, 232, 437. 9 semester hours of the following: Applied Arts 233, 331, 332, 335, 337, 338, 3311, 425, 427, 434, 435, or 439. Allied Arts 126, 127, 238, 239.

Music courses are: Music 131-132, Applied Music 1113-1114, 1123-1124, Music Education 327. 6 hours electives.

Dramatic courses are: Speech 319 (may be taken three times), 231, 232, 333, 334, 431, 4311.

Park management courses are: Horticulture 131, 232, 233, 3311, 338, 422, 423.

* Satisfies one semester of physical education requirement.

Professional Courses for Undergraduates

123. Individual Sports. Cr. 2. (0-4).
Skills, tactics, and rules in the individual sports of tennis and badminton.

124. Individual Sports. Cr. 2. (0-4).
Skills, tactics, and rules in the individual sports of archery and golf.

125. Team Sports. Cr. 2. (0-4).
Skills, tactics, and rules in the team sports of hockey, speedball, and soccer.

126. Team Sports. Cr. 2. (0-4).
Skills, tactics, and rules in the team sports of volleyball, basketball, and softball.

131. Introduction to Physical Education. Cr. 3.
Brief introduction to the field of physical education, its philosophy, aims, objectives, principles, and potential values.

133. Personal and Community Health. Cr. 3.
Fundamentals of health, dealing with personal hygiene; community health problems; causes and prevention of disease in the family as related to individual and community health.

230. Health Education in the Elementary and Secondary Schools. Cr. 3.
Basic principles and procedures of health education and their application to the total school health program.

233. Physical Education for the Elementary School. Cr. 3.
A method and content course dealing with the theory and practice of physical education.

322. Elementary Aquatics. Cr. 2. (0-6).
Practice of swimming fundamentals from beginner's swimming through life saving; also includes principles, methods of teaching, leading to water safety instructor's certificate, principles of pool management, theory of coaching swimming, and introduction to synchronized swimming.

326. First Aid. Cr. 2.
Red Cross standard, advanced, and instructor's courses.

328. Technique of Sports. Cr. 2.
Prerequisite: P.E. 123, 124, 125, 126. Emphasis on skills, skill analysis and officiating.

329. Technique of Sports. Cr. 2.
Prerequisite: P.E. 328. A continuation of P.E. 328.

331. Recreational Methods. Cr. 3.
Material appropriate for small and large groups, different age levels, and various situations. Consideration of philosophy and method; practice in planning and leading recreation.

3313. Theory and Practice of the Dance. Cr. 3.
Prerequisite: P.E. 210, 217, 2118. Rhythm analysis, practice, and procedure in dance.

Professional Courses for Undergraduates and Graduates

431. Kinesiology. Cr. 3. (1-2).
Prerequisite: 12 hours of science. A study of the principles of human motion. Anatomical and mechanical analysis of everyday and physical education activities emphasized for the purpose of promoting normal physical development and improvement of performance.

4311. Physical Education for the Junior and Senior High School. Cr. 3.
Prerequisite: Junior standing in physical education. Methods and materials of physical education in the secondary school.

432. Physiology of Exercise. Cr. 3.
Prerequisite: 12 hours of science. The effect of muscular activity on the processes of the body.

4321. Methods and Techniques of Driver Instruction. Cr. 3. (3-2).
Prerequisite: 6 hours of physical education and 6 hours of education and junior standing. Preparation of high school teachers in driver education, which includes classroom and behind-the-wheel techniques. All prospective teachers will have the opportunity to teach beginners.

4323. Organization and Administration of Camps. Cr. 3.
Prerequisite: 6 hours of physical education and 6 hours of education. A study of organization and administration of different types of camps including objectives, organization, routine administration, and evaluation.

4326. Safety Education. Cr. 3. (3-2).
A study of prevention of accidents in home, industry, and recreation. This includes Red Cross standards, advanced, instructors, and safety courses.

436. Physical Examinations and Corrective Physical Education. Cr. 3.
Prerequisite: 6 hours of science. Practice in administering screening tests with interpretation of findings; organization of programs in physical education for the physically handicapped.

437. Measurements in Physical Education. Cr. 3.
Techniques in physical education. Survey of tests used in physical education and methods of administering tests and using data.

438. Curriculum Development in Physical Education. Cr. 3.
Principles of curriculum planning in physical education.

439. Organization and Administration of Recreational Programs. Cr. 3.
Study of community recreation, its significance, leadership, facilities, and organization of programs with special consideration of the contribution of physical education.

Professional Courses for Graduates

531. Administration of Physical Education. Cr. 3.
Prerequisite: Major in health and physical education or B.S. in Education with physical education minor, including P.E. 437 and 438 or equivalent. A study of principles, problems and procedures for administering physical education programs. The course is especially designed for school administrators, athletic directors, physical education directors, and city directors.

532. Supervision of Physical Education. Cr. 3.
Prerequisite: Same as P.E. 531. A study of principles, problems, relationships, and procedures in the supervision of elementary and high school physical education programs.

533. Facilities for Physical Education. Cr. 3.
Prerequisite: Same as P.E. 531. A study of principles, terminology, and standards for planning, construction, use, and maintenance of facilities.

534. Administration of the School Health Program. Cr. 3.
Prerequisite: 6 hours of health education and 12 hours of science. A course for teachers, coaches, and school administrators who desire an understanding of a well-balanced health program.

Department of History, Anthropology, and Sociology

PROFESSORS PEARCE, CONNOR, C. EAVES, W. C. HOLDEN*,
O. A. KINCHEN, McKAY, E. WALLACE.
ASSOCIATE PROFESSORS GRAVES, MANNING, STEGLICH, D. M. VIGNESS, WENDORF.
ASSISTANT PROFESSORS BLAISDELL, DeLaRUE, DILLON, M. SMITH.
PART-TIME ASSISTANT PROFESSORS DUNN, J. HOLDEN, W. VIGNESS.
INSTRUCTORS BOWERS, B. BRUNSON, CLARDY, HUGHES, McGRAW.
PART-TIME INSTRUCTOR GORDON.

HISTORY

Students may major or minor in history in the Bachelor of Arts Degree program, and may choose history as a teaching major or minor for certification purposes in either the Bachelor of Arts or Bachelor of Science in Education Degree work. History may also be used to fulfill part of the requirement for the social science teaching major in the teacher training program of the college. (See Pages 149-150 in this catalog).

The courses below are recommended and approved for the programs indicated. Substitutions may be made with the prior approval of the Department Head.

Bachelor of Arts Degree, history major: History 131-132 (or 133-134), 231, 232 (or 3321, 3322 for juniors and seniors); Anthropology 131; History 331, 333, 436, 437, 4339. Total—30 semester hours.

Bachelor of Arts Degree, history minor: History 131-132 (or 133-134), 231, 232 (or 3321, 3322 for juniors and seniors), 436, 437. Total—18 semester hours.

Bachelor of Science in Education Degree or Bachelor of Arts Degree, history teaching major: History 131-132, 231, 232 (or 3321, 3322

* On leave, 1957-58.

for juniors and seniors); Anthropology 232; History 235, 331, 436, 437; 4339 or 4371. Total—30 semester hours.

Bachelor of Science in Education Degree or Bachelor of Arts Degree, history teaching minor: History 131-132, 231, 232 (or 3321, 3322 for juniors and seniors), 235, 3324, 3325. Total—21 semester hours.

In the Bachelor of Science in Education Degree, secondary program, a social science teaching option is available; this will provide certification in three fields,—government (civics), history, and social science. To qualify in this broad area the student will take 18 hours in government, 18 hours in history, 6 hours in economics, and 6 other hours in social science subjects. Approved history courses (18 hours) are: History 131-132, 231, 232, (3321, 3322 for juniors and seniors), 436, 437. Substitutions may be made with the prior approval of the Department Head.

All courses numbered above 300 are advanced courses; junior classification or higher is prerequisite to enrollment in advanced courses. A student must receive at least a C in an advanced course in history if he wishes to have it count toward his major, minor or teaching major or minor.

Candidates for the Degree of Doctor of Philosophy in history and for the Master of Arts Degree with a major in history will be accepted subject to the general requirements of the Graduate School. Doctoral candidates may major in American history with European history as the first minor.

This department cooperates in the Latin American Area Studies courses (see Page 109 in this catalog.)

Students who receive a bachelor's degree from Texas Technological College are required by action of the Texas Legislature to pass 6 semester hours in American history. A student who absolves this requirement in the junior or senior year will take History 3321 and 3322; a student below junior rank will take History 231 and 232. Credit cannot be earned for both History 231 and 3321, nor for both History 232 and 3322. For 3 of the 6 hours in American history a student may elect to offer 3 hours in Texas history; students who exercise this option will take History 235 regardless of classification.

Requests for further information should be addressed to the Head of the Department.

For Undergraduates

131.-132. Basic Social Science: Development of Civilizations. Cr. 3 each.
Man in the social world; a study of economic, political, religious, and intellectual aspects of culture and their relation to modern society; special emphasis on the rise of Western civilization.

133-134. Economic and Political History of England. Cr. 3 each.
Economic, legal, and cultural development of the English people.

231. Economic and Political History of the United States to 1865. Cr. 3.

232. Economic and Political History of the United States Since 1865. Cr. 3.

235. History of Texas. Cr. 3.
Survey of Texas history from colonial times to the present.

331. Classical Civilizations: Greece and Rome. Cr. 3.
Greek and Roman civilizations and their contributions to Western civilization.

333. Europe, 1500-1789. Cr. 3.
The Renaissance and the Reformation; the Old Regime; the "Enlightenment."

335. Modern Europe, 1815-1918. Cr. 3.

337. Tudor and Stuart England. Cr. 3.

338. Eighteenth and Nineteenth Century England. Cr. 3.

3314-3315. Contemporary Europe; a travel course. Cr. 6.
A field course conducted biennially in the summer. Lectures on and visits to culture centers and historic sites in western Europe. Scheduled for summer of 1960.
3316. The Near East in Modern Times. Cr. 3.
3317. History of Military Affairs. Cr. 3.
Relationship of civil to military aspects of modern war; the eighteenth century military system; nationalism and the beginning of mass war; civil control of the military in America; the impact of war on society.
3321. The Heritage of America to 1865. Cr. 3.
The development of the American heritage in its social, economic, political and cultural aspects.
3322. The Heritage of America Since 1865. Cr. 3.
The development of the American heritage in its social, economic, political and cultural aspects.
3324. The United States, 1900-1932. Cr. 3.
3325. The United States Since 1932. Cr. 3.
3331. Colonial Spanish South America. Cr. 3.
3332. South America Since Independence. Cr. 3.

For Undergraduates and Graduates

430 English Colonial America. Cr. 3.
431. History of Science and Technology. Cr. 3.
Prerequisite: senior classification and 6 hours in history.
432. Constitutional History of the United States to 1865. Cr. 3.
English background; Confederation; formation and adoption of the Constitution; governmental organization; early amendments; the United States Bank; nullification; the Texas question; slavery in the territories; secession.
433. Constitutional History of the United States Since 1865. Cr. 3.
The Civil War amendments; reconstruction; new state constitutions; income tax, prohibition and suffrage amendments; interstate commerce; recent developments.
434. Diplomatic History of the United States to 1865. Cr. 3.
Diplomatic affairs during the Revolution; negotiations leading to the purchase of Louisiana; acquisition of Florida; the Oregon and Texas questions; the Mexican Cession and the Gadsden Treaty; Civil War diplomacy.
435. Diplomatic History of the United States Since 1865. Cr. 3.
Foreign relations during the Reconstruction and Big Business eras; Caribbean affairs; policies in Latin America; The First and Second World Wars; the U.N.
436. Social and Cultural History of the United States to 1865. Cr. 3.
437. Social and Cultural History of the United States Since 1865. Cr. 3.
4311. The Old South. Cr. 3.
4312. The Civil War and Reconstruction. Cr. 3.
4323. Spanish Colonial North America. Cr. 3.
4324. Mexico Since Independence. Cr. 3.
4326. Social and Cultural History of Texas. Cr. 3.
4327. The American Frontier, 1763-1803. Cr. 3.
4328. The Trans-Mississippi West, 1803 to the Present. Cr. 3.
4331. History of Russia. Cr. 3.
Prerequisite: 12 hours in history.
4334. The French Revolution and Napoleon. Cr. 3.
Prerequisite: 12 hours in history.
4336. Europe Since 1918. Cr. 3.
Prerequisite: 12 hours in history.
4337. Twentieth Century Britain. Cr. 3.
Prerequisite: 6 advanced hours in history.
4339. Constitutional History of England. Cr. 3.
Prerequisite: 6 hours in history.
4341. Early Texas History. Cr. 3.
Prerequisite: 12 hours in history.
4342. Texas History, the Republic and Early Statehood. Cr. 3.
Prerequisite: 12 hours in history.
4343. Recent Texas History. Cr. 3.
Prerequisite: 12 hours in history.
4352. The Canadian Dominion. Cr. 3.
Prerequisite: 12 hours in history.

4353. The British Empire. Cr. 3.
Prerequisite: 6 advanced hours in history.
4354. The Far East. Cr. 3.
Prerequisite: 12 hours in history. Japan and China during the nineteenth and twentieth centuries.
4362. Medieval Civilization. Cr. 3.
Prerequisite: 6 advanced hours in history. Europe during the Middle Ages.
4371. Teaching History in the High School. Cr. 3.
Primarily for senior education majors and candidates for the Master of Arts in Teaching Degree.

For Graduates

530. Seminar in Southwestern History. Cr. 3.
531. Seminar in Texas History. Cr. 3.
532. Seminar in American History. Cr. 3.
May be repeated once for credit.
533. Seminar in European History. Cr. 3.
May be repeated once for credit.
534. Historical Methods and Historiography. Cr. 3.
535. The American Heritage. Cr. 3.
A study of democratic concepts and institutions which have shaped the American way of life.
536. Seminar in Latin American History. Cr. 3.
5335. History Appreciation for Elementary Teachers. Cr. 3.
Enrollment limited to graduate students majoring in elementary education.
631-632. Master's Thesis. Cr. 6.
731-732. Doctoral Research. Cr. 6.
831-832. Doctoral Dissertation. Cr. 6.

ANTHROPOLOGY

Anthropology 131 and 232 are required courses for all majors and minors in anthropology. Junior classification is prerequisite to enrollment in advanced courses. Courses which may be credited toward a major in anthropology are: Sociology 332, 336; Philosophy 436. A student must receive at least a C in an advanced course if he wishes to have it count toward a major or minor in anthropology.

In the master's degree program, anthropology may be used as a minor only.

For Undergraduates

131. The Nature of Man. Cr. 3.
232. Cultural Anthropology. Cr. 3.

For Undergraduates and Graduates

330. Cultures and Peoples of the Southwest. Cr. 3.
332. Physical Anthropology. Cr. 3.
333. The Plains Indians. Cr. 3.
334. Races, Peoples and Languages of North America. Cr. 3.
336-337. Archaeology of Mexico. Cr. 6.
A field course, summer only.
338. Culture and Personality. Cr. 3.
431. Field Archaeology. Cr. 3.
Mapping excavating and preparing reports on archaeological sites.
433-434. Southwestern Archaeology. Cr. 6.
A field course, summer only. Lecturers, research, excavation.

For Graduates

531. Seminar in Anthropology. Cr. 3.
Anthropological literature, bibliography.
5335. Origins of Social Customs and Institutions. Cr. 3.
Enrollment limited to graduate students majoring in elementary education.

SOCIOLOGY

Sociology 230 and 233 are required courses for all majors and minors, and Anthropology 232 for all majors in sociology. Sociology 230 and 233 may be used in the social science teaching major in the Bachelor of Science in Education Degree program. Courses numbered over 300 are advanced courses; junior classification or higher is prerequisite to enrollment in advanced courses. Courses which may be applied on a major in sociology include Anthropology 338, Philosophy 436, and Psychology 434. Minimum requirement for majors in sociology; 30 semester hours; for minors, 18 semester hours. A student must receive at least a C in an advanced course in sociology if he wishes to have it count toward a major or minor in sociology.

For Undergraduates

230. Introduction to Sociology. Cr. 3.
233. Current Social Problems. Cr. 3.
235. Marriage. Cr. 3.
History, present status, and current problems of the marriage institution.

For Undergraduates and Graduates

333. American Minority Problems. Cr. 3.
Sociocultural backgrounds of American minority groups.
336. Society and Culture of Mexico. Cr. 3.
338. The Sociology of the Person. Cr. 3.
An examination of the effects of group membership on individual behavior.
3312. Community Organization. Cr. 3.
The community in its ecological, cultural and social aspects.
431. Regional Patterns in American Life. Cr. 3.
432. Studies in Social Work. Cr. 3.
Prerequisite: senior classification or consent of instructor. Basic principles of and practices in social case work; supervised training with local agencies.
433. Criminology. Cr. 3.
Prerequisite: senior classification or consent of instructor. Delinquency and crime examined as individual, social and cultural phenomena; the development and application of penal policies.
434. The Sociology of Knowledge. Cr. 3.
435. Collective Behavior and Social Movement. Cr. 3.
436. The Development of Sociological Thought and Theory. Cr. 3.
437. Social Change. Cr. 3.
Stability and continuity in social change; theories of progress; social trends.
438. Population Studies. Cr. 3.
Population theories; implications in growth, composition, and size of populations; control policies.

For Graduates

531. Seminar in Social Problems. Cr. 3.
Primarily for majors and minors in sociology.
532. Research Methods in Sociology. Cr. 3.
Analysis of methods of sociological research; interpretation of data.
631-632. Master's Thesis. Cr. 6.

Department of Journalism

PROFESSOR GARETS.
ASSOCIATE PROFESSOR L. ALLEN.
INSTRUCTOR WHITTED.

Students majoring in journalism are required to complete 36 semester hours. Two options are offered: news editorial and newspaper advertising. By the time the student reaches his junior year he should consider one of the several fields of emphasis which the department

offers. A journalism major or minor can be shaped to serve as vocational preparation in any of at least five different fields:

1. Service on the newspaper, large or small.
2. Work on the magazine, house organ, trade journal or professional publication.
3. Careers in newspaper advertising and public relations.
4. Employment in radio and television news and continuity.
5. Teaching in the elementary or secondary school.

Those interested in a major or minor in journalism may call at the Department of Journalism to investigate sample curricula. Such curricula are guides built around a core of courses. Each student has considerable flexibility in taking courses in line with his own particular career interest.

A major in journalism must include Journalism 130, 231, 232, 335, 336, 338, 339, 3313 and 430 in the 36 required hours. The minor must include Journalism 130, 231 and 338 in the minimum of 18 required hours. Students must be able to type to enter Journalism 231.

Majors and minors must have an overall C average in required courses; however, one D will be accepted in a required course provided the cumulative average equals C or better. More than one D will result in the student repeating the course.

Economics 231-232 and Psychology 130 or Philosophy 230 or Sociology 230 are also required for a major in journalism.

For Undergraduates

130. Introduction to Journalism. Cr. 3.
A survey of journalism and its related fields intended to give the student an understanding of communication agencies in modern life and a broad picture of the vocational opportunities.

231, 232. Newspaper Reporting. Cr. 3. (2-3).
Practice in gathering and writing news. Journ. 231 is prerequisite to all higher journalism courses for both majors and minors. Majors and minors enrolled in this course are required to work on the Toreador.

233. Newspaper Feature Writing. Cr. 3.
Special feature stories; sources for subjects; collection of facts; practice in writing the news feature, side feature, color story.

330. Advertising Typography and Layout. Cr. 3.
Brief history and evolution of typography; survey of type faces; principles of type selection; basic art, engraving, printing and projection techniques; effective advertising layout; techniques of advertising production.

335. History of American Journalism. Cr. 3.
Study of the development of journalism in America from its European roots to the present and of its interrelation with society.

336. Advanced Reporting. Cr. 3. (2-3).
A course in the interrelation and writing of news on social, political and economic topics. Instruction in techniques of specialized reporting will be given through off-campus laboratory assignments. Prerequisites: Journalism 231, 232.

338, 339. Editing. Cr. 3. (2-4).
Intensive study and practice of editing principles plus basic problems involved in the design and makeup of the newspaper. Includes practice in makeup, layout, copyfitting and selection of types. Members of the class are required to work on the Toreador copy desk.

3311. Agricultural and Home Economics Journalism. Cr. 3.
Prerequisite: Junior standing. Designed for students of agriculture and home economics. Preparation in the principles of gathering and writing news, feature stories, and magazine articles in their respective fields. Lectures on editing and marketing copy, and on preparing the radio and television newscast.

3313. Photojournalism. Cr. 3. (1-6).
Varied assignments of news and feature picture coverage, stressing use of the press camera. Lecture and laboratory course covering picture processing, and practice and study in picture editing. $2 chemicals fee.

3315. Advanced Photojournalism. Cr. 3. (1-6).
Prerequisite: Journalism 3813. Reportorial duties with various cameras for newspaper and magazine publication. Study of picture markets and study and practice in picture editing. Practical work on advanced photojournalism problems. $2 chemicals fee.

3318. Radio-Television News Writing. Cr. 3.
Prerequisite: Junior standing and (for majors and minors) completion of 231. Training in news writing for radio and television presentation; preparation of copy for both wire and local news reports; interviews and other multiple voice news shows. Speech 335 recommended. May be taken for speech credit.

3319. Radio-Television Advertising Continuity Writing. Cr. 3.
A study of network and station organization and application of techniques of advertising continuity writing to radio and television presentation. Preparation and presentation of commercial copy for radio and television. Speech 335 recommended. May be taken for speech credit.

431. Reviewing and Reporting the Fine Arts. Cr. 3.
Lecture and class discussions on critical standards as they relate to writing about books, music, painting, motion pictures and other art forms. For students seeking general culture as well as for those preparing for newspaper departmental work.

For Undergraduates and Graduates

332. Magazine Writing and Editing. Cr. 3.
Techniques in writing for current magazines; a survey of editorial problems of the magazine; market study and marketing; layout and production problems.

333. Problems of the Community Newspaper. Cr. 3.
Weekly and small daily newspaper property values, organization, sources of income, operating expense, news-editorial policies, production, records, promotion and commercial printing. Field trips, individual study and research.

411. Special Problems in Journalism. Cr. 1.
Prerequisite: Senior or graduate classification, juniors only with consent of department head. Individual research on approved problems in one of the following journalistic fields: news-editorial, radio-television, photography, magazine, public relations, and advertising. May be repeated for credit.

430. Law of the Press. Cr. 3.
A study of the laws which guarantee and protect the privileges and define the duties and responsibilities of the press. The course deals with legal aspects of the newspaper, radio, television, and advertising.

432. Journalism for the High School Teacher. Cr. 3.
Study and practice with the problems met by a publications supervisor in organizing and directing high school newspapers and yearbooks, functions of high school publications, organization and training of the staff; editorial and business problems; problems with printers.

433. Public Opinion and Propaganda. Cr. 3.
The nature of public opinion; the role of the newspaper in its formation and how the press in turn is influenced by public opinion. Propaganda analysis; the purpose, devices, and effects of propaganda and censorship. May be taken for psychology credit.

434. Editorial Writing. Cr. 3.
Theory and practice of writing editorials; a study of contemporary editorial pages and editorials, with analysis of style, content, and purpose.

435. Newspaper Advertising Problems and Methods. Cr. 3. (2-3).
Selling and servicing newspaper advertising; newspaper advertising makeup; rate structures; procedure in newspaper advertising departments.

Department of Mathematics

PROFESSORS E. HAZLEWOOD, G. FULLER, HEINEMAN, SPARKS, UNDERWOOD.
ASSOCIATE PROFESSORS, BUNTON*, PARKER, C. RIGGS, WOODWARD.
ASSISTANT PROFESSORS LINDSAY**, MAY, PEREL, V. ROBERTS, ROWLAND, WENJEN, C. WILLINGHAM.
INSTRUCTORS BAILEY, CARPENTER, McGLOTHLIN, MORELAND, MORTON, R. POWER, G. L. SHURBET, B. SMITH, SORENSON, M. R. STRANDTMANN.
PART-TIME INSTRUCTORS CARAWAY, COFFEE, DONALDSON, EKELUND, S. D. HARRIS, A. LEE, T. LEWIS, MADDEN, McCLURE, NIX, L. PHILLIPS. N. POWELL, RILEY, SETLIF, SULLENBERGER, WALDRON, WANG, WHELAN. WOODRUFF, V. YOUNG.

Until recently mathematics has been considered as primarily a "service" course for scientists and engineers; and teaching has been the chief occupation open to professional mathematicians. Now, however, mathematicians are in demand by various types of industrial and research organizations. For example, "programming" for mathematical computers has become a profession in itself, and this is only one facet of the rapidly expanding demand.

* Resigned effective Oct. 31, 1957.
** On leave, 1957-58.

Students preparing to teach may major or minor in the Bachelor of Arts Degree or the Bachelor of Science Degree programs. They, also, may choose mathematics as a teaching major or minor in the Bachelor of Science in Education Degree work.

Courses recommended for the teaching major are: Math 133 (or 130), 131, 132, 231, 232, 238, 337, 431 and 433 (or 333). Substitutions may be made only with prior approval of the Department Head.

A minimum of 36 hours of mathematics is required for a Bachelor of Science Degree in mathematics while 33 hours normally are required for the Bachelor of Arts Degree.

The 6 hours of advanced work (courses numbered 300 and above) required of all minors must be approved by the Department Head.

A freshman course especially designed for engineers and science majors is Mathematics 133, preceded if necessary by Mathematics 031, accompanied by Mathematics 131, and followed by Mathematics 132. For arts and sciences students, excluding science majors, the corresponding courses are Mathematics 130 or 051 for three required hours, plus Mathematics 131, 138, or 238 for three more hours.

For Undergraduates

031. Elementary Algebra. Cr. 3.
Required of engineering students whose placement test scores indicate a serious deficiency in high school algebra. Credit for this course may not be used to satisfy normal degree requirements.

032. Introductory Geometry. Cr. 3.
A course in elementary geometry open to students who cannot satisfy the plane geometry prerequisite for Math. 131. Credit for this course may not be used to satisfy normal degree requirements, and will not be allowed to students who use high school geometry for college entrance.

051. Introductory Algebra. Cr. 5.
A comprehensive review of high school algebra plus the topics covered in Math. 130. Only 3 of the 5 credit hours may be applied to normal degree requirements.

052. College Algebra. Cr. 5.
Required of engineering students who have a minor deficiency in high school algebra. A comprehensive review of high school algebra plus the topics covered in Math. 133. Only 3 of the 5 credit-hours may be applied to normal degree requirements. A grade of C or better in the course will entitle the student to credit equivalent to that of Math 133. A grade of D will be equivalent to passing Math. 031. May not be taken simultaneously with Math. 131.

130. Algebra. Cr. 3.
Prerequisite: One unit of high school algebra. Review of high school algebra; quadratic equations; graphs; binomial theorem; logarithms and exponential equations; variation; progressions. Credit will not be allowed for both Math. 130 and 133.

131. Trigonometry. Cr. 3.
Prerequisite: One unit of high school algebra, one unit of plane geometry, and Math. 133 or 130, or concurrent registration in Math. 133 or 130. Trigonometric functions; radians; logarithms; solutions of triangles; functions of composite angles; identities; trigonometric equations.

132. Analytic Geometry. Cr. 3.
Prerequisite: Math. 133 or 130, and 131. The straight line and conic sections; transformation of coordinates, polar coordinates; parametric equations; introduction to solid analytic geometry.

133. College Algebra. Cr. 3.
A standard course in college algebra required of all engineering students. Recommended for all mathematics majors and minors. Prerequisite: Placement test scores which indicate proficiency in high school algebra or credit in a more elementary algebra course offered in college.

135. Mathematics in General Education. Cr. 3.
Basic concepts in elementary mathematics, including numbers and operations with numbers. Designed especially as a survey course for such students as pre-service teachers in elementary education. It is not to be taken in lieu of Math. 130.

138. Mathematics of Finance. Cr. 3.
Prerequisite: Math 130 or 133. Compound interest; discount; annuities; amortization; depreciation; sinking funds; evaluation of bonds; introduction to statistical methods.

230. Agricultural Mathematics. Cr. 3.
For students of agriculture. Elementary algebra; percentage; linear equations; elementary trigonometry; mensuration and applications; graphical representation of statistics.

231-232. Differential and Integral Calculus. Cr. 3. each.
Prerequisite: Math. 132 or concurrent registration. Differentiation; rates; maxima and minima; curvature; fomal integration; definite integrals; areas; lengths; volumes.

238. Statistics. Cr. 3.
Prerequisite: Math. 130. Collection and tabulation of data; bar charts; graphs; sampling; averages; dispersion; correlation; index numbers; normal curve; probability; applications to various fields.

For Undergraduates and Graduates

331. Applications of Calculus. Cr. 3.
Prerequisite: Math 232. Lengths; surfaces; volumes; centroids; moment of inertia; pressure; work; partial differentiation; series; multiple integrals; indeterminate forms; hyperbolic functions.

332. Differential Equations. Cr. 3.
Prerequisite: Math 232. Solutions of differential equations, with geometric and physical applications.

333. Advanced Algebra. Cr. 3.
Prerequisite: Math. 130 or 133. Mathematical induction; the number system; matrices and determinants; systems of linear equations; linear transformations.

334. History of Mathematics. Cr. 3.
Prerequisite: 15 hours of mathematics, including Math. 231. A survey of the historical development of arithmetic, algebra, geometry, trigonometry, and the beginnings of analytic geometry and calculus. Celebrated problems. Methods and concepts of modern mathematics.

337. College Geometry. Cr. 3.
Prerequisite: Math. 132. Directed segments and angles; similitude; inversion; geometry of the triangle, quadrilateral, and circle. Recommended for teachers of geometry in high school.

339. Statistical Methods. Cr 3.
Prerequisite: Math. 238. Multiple and partial correlation; probability and the normal curve of error; derivation of statistical formulas; nonlinear trends; curve fitting by the method of least squares; use of moments; sampling theory.

430. Synthetic Projective Geometry. Cr. 3.
Prerequisite: Math. 337 or consent of the instructor. Fundamental theorems of projective geometry treated synthetically.

431. Teaching of Secondary Mathematics. Cr. 3.
Prerequisite: 12 semester hours of college mathematics.

432. Advanced Differential Equations. Cr. 3.
Prerequisite: Math. 332. Total differential equations; systems of differential equations; partial differential equations.

433. Theory of Equations. Cr. 3.
Prerequisite: Math. 232. Complex numbers; rational integral equations; symmetric functions; determinants and matrices; systems of equations.

434, 435. Advanced Calculus. Cr. 3 each.
Prerequisite: Math. 232. Continuity; indeterminate forms; partial differentiation; multiple integration; line, surface, and space integrals; series; Fourier series; partial differential equations; elliptic integrals and functions.

436. Introduction to Finite Groups. Cr. 3.
Prerequisite: Math 232 and consent of the instructor. Lagrange theorem; Cayley theorem; gamma groups; conjugate classes; normalizer; Sylow theory.

437. Theory of Numbers. Cr. 3.
Prerequisite: Math. 232. Prime numbers; congruences; theorems of Fermat, Euler, and Wilson; residues; reciprocity law; Diophantine equations.

438. Solid Analytic Geometry. Cr. 3.
Prerequisite: Math. 132. Direction angles and cosines; equations of space curves, lines, and surfaces; canonical forms.

439. Vector Analysis. Cr. 3.
Prerequisite: Math 232 or 251. Scalar and vector products; gradient; divergence; curl; applications.

4311. Extended Analytic Geometry. Cr. 3.
Prerequisite: Math. 232 or 251. Essential features of a coordinate system for n variables on a plane and in space of three dimensions. Applications to algebra, number theory, and calculus.

4312. Numerical Mathematical Analysis. Cr. 3.
Prerequisite: Math. 332, or concurrent registration in Math. 332. Finite differences; interpolation; numerical solutions of algebraic, transcendental, and differential equations; empirical equations.

4313. Probability. Cr. 3.
Prerequisite: Math. 232. Permutations and combinations; additive and multiplicative laws of probability; expectation; Bayes' theorem; continuous and discontinuous distribution functions; applications.

For Graduates

531. Advanced Problems. Cr. 3.
Prerequisite: Math. 435 and graduate standing. May be used in an individual study or as a seminar. May be repeated in different areas such as algebra, geometry, statistics, and analysis.

533. Advanced Topics in Analysis. Cr. 3.
Prerequisite: Math. 332. Partial differential equations; boundary value problems; related topics.

535. Analytic Projective Geometry. Cr. 3.
Prerequisite: Math. 438. Analytic treatment of the projective properties of systems of lines and the conic sections.

536, 537, Modern Algebra. Cr. 3 each.
Prerequisite: Math. 433. Numbers, sets; groups; rings; fields; polynomials; Galois theory.

5312, 5313. Functions of a Complex Variable. Cr. 3 each.
Prerequisite: Math. 435. The algebra of complex numbers and their geometric representations: conformal mapping; power series; properties of analytic functions; differentiation and integration; special definite integrals.

5314, 5315. Functions of a Real Variable. Cr. 3 each.
Prerequisite: Math. 435. The real number system; set theory; Borel-Lebesgue measure; Riemann, Lebesgue, and Stieltjes integrals.

5321. Methods of Applied Mathematics. Cr. 3.
Prerequisite: Math. 432. Methods and procedures required for applying mathematics to graduate and postgraduate level physical problems. Linear transformations; orthogonal sets; linear integral equations; complex variables; residue theory and conformal mapping; transform calculus.

631. 632. Thesis. Cr. 6.

ASTRONOMY

For Undergraduates

111. Survey of Astronomy. Cr. 1.
Prerequisite: College standing. The main features of the known universe and the principles involved in their discovery. A non-mathematical survey recommended for all students except those planning to take Astron. 231-232.

231, 232, General Astronomy. Cr. 3 each.
Prerequisite: Math. 130 or 133 and 131, with a grade of C or better. The solar, stellar, and galactic systems, studied with attention to technical details.

Department of Music

PROFESSORS HEMMLE, WILEY.
ASSOCIATE PROFESSOR R. ELLIOTT.
ASSISTANT PROFESSOR VAN APPLEDORN
INSTRUCTORS ELLSWORTH, KENNEY, La MAR, LAWRIE, K. McCARTY, POST, R. TAYLOR.
PART-TIME INSTRUCTORS SHORT, H. M. TAYLOR.

The Department of Music is equipped to serve the student desiring a major in music education (vocal or instrumental), piano or voice; the student with a strong avocational interest in music; and the general student.

Non-music majors may elect class or private instruction in voice or in any instrument. Each student enrolled in applied music is carried at his maximum level of achievement, and the non-music major is not examined in competition with the music major. Courses designed to serve all students enrolled in the College are: Applied Music (vocal or instrumental, class or private instruction. Applied Music 025 and 026 may be repeated for credit); Music Literature 131, 132, 431, 432; Music Ensemble 010-1 (Tech Choir), 010-2 (Festival Chorus), 010-3 (Tech Men's Glee Club), 010-4 (Tech Opera Theater), 011-1 (Orchestra), 013-A (Tech Concert Band), 013-B (Tech "B" Band).

THE DEGREE OF BACHELOR OF MUSIC

The Department of Music offers the Bachelor of Music Degree with a major in music education (instrumental or vocal), piano, or voice.

This degree is for the student who expects to teach or direct vocal or instrumental music in the public schools, or for the student who desires concentration in performances and studio teaching.

All entering freshmen will follow the freshman program designed for music education (instrumental or vocal) majors. Entering freshman music majors should have studied previously and should have attained technical proficiency in applied music sufficient to qualify for a course numbered 125 or above. Classification as to course will be made during orientation week. Students who qualify for courses below 125 must register for Music 025 until deficiency is removed. Students following a plan for a major in music education will study the principal instrument for six semesters. Satisfying all requirements for the professional degree in music education may require more than eight semesters. Students following a plan for a major in voice or piano will study the principal instrument for eight semesters. The applied music major is required to attain a higher performance proficiency than is required of the music education major concentrating in the same field. The Department of Music will supply specific requirements for entrance into Applied Music 125 upon request. Additional credit for applied music may apply toward the Bachelor of Music Degree only when carried as secondary instruments.

In accordance with recommendations of the sub-committee appointed by the Council of Deans, it is possible for students to receive credit for college level work accomplished prior to entrance into this College. This may be done through advanced standing examinations administered by the faculty of the Department of Music after obtaining permission of the Dean of Arts and Sciences. Advanced standing examinations will be administered only in the fields of applied music (secondary instruments) and music theory. In order to receive credit by an advanced standing examination, the student must achieve a grade of not less than B on such examinations. The credit received through advanced standing may be recorded, but not for credit toward the total number of semester hours required for graduation.

At the completion of the freshman year, the faculty will review qualifications of all freshmen and advise these students concerning specific major fields. Students desiring to major in piano or voice, yet failing to meet standards established for such a major, may continue to work toward the Bachelor of Music Degree with a major in music education (vocal or instrumental).

At the end of the sophomore year, the faculty will review the work of all applied music students who wish to enter advanced classes. Each music major will be required to present a joint recital during the junior year. Applied music majors will be required to present a full recital during the senior year. Permission to present each recital must be obtained from an examining jury during the semester preceding the recital presentation.

Attendance at 75 per cent of the student recitals, faculty recitals, civic music series is required of all music majors. Practical experience in accompanying not to exceed one clock hour per week is required of students enrolled with piano as a principal instrument.

Students are encouraged to minor in any area outside the major field. It may require additional time to obtain a teaching minor.

Minimum requirements for the Degree of Bachelor of Music with a major in applied music, in terms of semester hours, are as follows:

	Sem. Hrs.
1. English	12
2. Government	6
3. Electives	12
4. American History	6
5. Applied music, music literature, music education, music theory, and music ensemble (band, chorus, orchestra), but not including freshman and sophomore physical education, band, or military science, to total 126 semester hours.	
6. Band, basic air or military science, or physical education	4-6

Minimum requirements in terms of semester hours for the Bachelor of Music Degree with a major in music education and leading to a Provisional Teaching Certificate qualifying the graduate to teach the special subject of music at all grade levels, are as follows:

General Education	Sem. Hrs.
1. English	12
2. Music Literature	6
3. History	6
4. Government	6
5. Science or Mathematics	6
6. Other general courses	9
Professional Education	24
Free Electives	16

Applied music, music literature, music education, music theory, and music ensemble (band, chorus, orchestra, opera theater), but not including freshman and sophomore physical education, band, or military science, to total 133-135 semester hours.

BACHELOR OF MUSIC
MUSIC EDUCATION MAJOR (VOCAL) *

Freshman Year **

Sophomore Year

First Semester	Credit	Second Semester	Credit
Ap. Mus. 225—Prin. Instrum.	2	Ap. Mus. 226—Prin. Instrum	2
Ap. Mus. 2123 or 2113—Class Piano or Class Voice	1	Ap. Mus. 2123 or 2113—Class Piano or Class Voice	1
Mus. Th. 247—Intermed. Theory	4	Mus. Th. 248—Intermed. Theory	4
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Educ. 130—Foun. of Educ.	3	Educ. 232—Educ. Psy.	3
Math. or Science	3-4	Math or Science	3-4
Ensemble	1	Ensemble	1
Band, PE, Basic ROTC	1	Band, PE, Basic ROTC	1
	18-19		18-19

Junior Year

First Semester	Credit	Second Semester	Credit
Ap. Mus. 325—Prin. Instrum	2	Ap. Mus. 326—Prin. Instrum	2
Music Ed. 327—Choral Meths. & Tech	2	Mus. Ed. 328—Instrum Conduct	2
Mus. Ed. 338—Sec. Sch. Tch. of Mus.	3	Mus. Ed. 337—Elem. Sch. Tch. of Mus.	3
Mus. Th. 322—Form and Comp.	2	Mus. Th. 428—Instrumentation	2
Govt. 233—Amer. Govt. Org.	3	Govt. 234—Amer. Govt. Func.	3
Psych. 331—Child Psy.	3	Psych. 335—Adol. Psy.	3
Ensemble	1	Ensemble	1
	16		16

* Students desiring to teach exclusively in the elementary or secondary schools should consult with the Department of Music regarding certification requirements.

** The curriculum is being revised. The revised plan will be sent by the Department of Music upon request.

Senior Year

First Semester	Credit
Mus. Lit. 431—Hist. of Music	3
Educ. 431—Stud. Tch. (Elem.)	3
Hist. 3321—Amer. Her.	3
Electives	3
Ensemble	1
	13

Second Semester	Credit
Mus. Lit. 432—Hist. of Music	3
Educ. 432—Stud. Tch. (Secon.)	3
Hist. 3322—Amer. Her.	3
Electives	3
Ensemble	1
	13

BACHELOR OF MUSIC

MUSIC EDUCATION MAJOR (INSTRUMENTAL*)

Freshman Year **

Sophomore Year

First Semester	Credit
Ap. Mus. 225—Prin. Instrum.	2
Ap. Mus. 115—Trumpet	1
Ap. Mus. 213—Strings	1
Ap. Mus. 2113—Class Voice	1
Ap. Mus. 2123—Class Piano	1
Mus. Th. 247—Intermed. Theory	4
Eng. 231—Mast. of Lit.	3
Educ. 130	3
Ensemble	1
Band, P.E., or Basic ROTC	1
	18

Second Semester	Credit
Ap. Mus. 226—Prin. Instrum	2
Ap. Mus. 116—Trumpet	1
Ap. Mus. 214—Strings	1
Ap. Mus. 2114—Class Voice	1
Ap. Mus. 2124—Class Piano	1
Mus. Th. 248—Intermed. Theory	4
Eng. 232—Mast. of Lit.	3
Educ. 232—Educ. Psy.	3
Ensemble	1
Band, P.E., or Basic ROTC	1
	18

Junior Year

First Semester	Credit
Ap. Mus. 325—Prin. Instrum.	2
Ap. Mus. 115—Clarinet	1
Ap. Mus. 313—Brass	1
Mus. Ed. 327—Choral Conduct.	2
Mus. Ed. 338—Sec. Meth.	3
Mus. Th. 322—Form and Comp.	2
Math. or Science	3-4
Psy. 335—Adol. Psy.	3
Ensemble	1
	18-19

Second Semester	Credit
Ap. Mus. 326—Prin. Instrum.	2
Ap. Mus. 116—Clarinet	1
Ap. Mus. 314—Brass	1
Mus. Ed. 328—Instrum. Conduct.	2
Mus. Ed. 336—Secon. Instrum. & Mat.	3
Mus. Th. 428—Instrumentation	2
Math. or Science	3-4
Ed. 334—Curric. Devel. in Secon. Educ.	3
Ensemble	1
	18-19

Senior Year

First Semester	Credit
Mus. Lit. 431—Hist. of Mus.	3
Ap. Mus. 413—Woodwinds	1
Govt. 233—Amer. Govt., Org.	3
Hist. 3321—Amer. Her.	3
Educ. 432—Stud. Tch. (Second.)	3
Elective	3
Ensemble	1
	17

Second Semester	Credit
Mus. Lit. 432—Hist. of Mus.	3
Ap. Mus. 414—Woodwinds	1
Govt. 234—Amer. Govt., Func.	3
Hist. 3322—Amer. Her.	3
Educ. 434—Adv. Stud. Obs. & Tch. in Secon. Sch.	3
Elective	3
Ensemble	1
	17

BACHELOR OF MUSIC

PIANO OR VOICE MAJORS***

For Prescribed Freshman Year, See "Bachelor of Music, Music Education Major (Vocal)."

---

* Students desiring all level certification should consult with the Department of Music regarding requirements.

** This curriculum is being revised. A copy of the revision will be sent by the Department of Music upon request.

*** Students majoring in piano will not be required to include Music Lit. 330, Mus. Educ. 437. Students majoring in voice will not be required to include Mus. Lit. 332, Mus. Educ. 433.

Sophomore Year*

First Semester	Credit
Ap. Mus. 235—Piano or Voice	3
Ap. Mus. 2113—Class Voice or Ap. Mus. 2123—Class Piano	1
Mus. Th. 247——Intermed. Theory	4
Eng. 237—Mast. of Lit.	3
Govt. 233—Amer. Govt., Org.	3
Ensemble	1
Band, P.E., or Basic ROTC	1-2
	16-17

Second Semester	Credit
Ap. Mus. 236—Piano or Voice	3
Ap. Mus. 2114—Class Voice or Ap. Mus. 2124—Class Piano	1
Mus. Th. 248—Intermed. Theory	4
Eng. 238—Mast. of Lit.	3
Govt. 234—Amer. Govt., Func.	3
Ensemble	1
Band, P.E., or Basic ROTC	1-2
	16-17

Junior Year

First Semester	Credit
Ap. Mus. 345—Piano or Voice	4
Mus. Lit. 330—Vocal Repertoire or Mus. Lit. 332—Piano Repertoire	3
Mus. Educ. 327—Choral Conduc.	2
Mus. Th. 322—Form. and Comp.	2
Ensemble	1
Academic Electives	3
	15

Second Semester	Credit
Ap. Mus. 346—Piano or Voice	4
Elective	3
Mus. Ed. 328—Instrum. Conduct.	2
Mus. Th. 323—Form and Comp.	2
Ensemble	1
Academic Electives	3
	15

Senior Year

First Semester	Credit
Ap. Mus. 445—Piano or Voice	4
Mus. Lit. 431—Hist. of Music	3
Mus. Ed. 437—Piano Pedagogy or Mus. Ed. 433—Voice Pedagogy	3
Mus. Th. 427—Instrumentation	2
Ensemble	1
Amer. Hist.	3
	16

Second Semester	Credit
Ap. Mus. 446—Piano or Voice	4
Mus. Lit. 432—Hist. of Music	3
Elective	3
Mus. Th. 428—Instrumentation	2
Ensemble	1
Amer. Hist.	3
	16

APPLIED MUSIC

Additional fees for Applied Music are shown under **Expenses.** (See Index.)

For Undergraduates

113, 114. Percussion. Cr. 1.
Fundamental knowledge of snare drum. Ability to tune and play timpani. Performance on all instruments of the battery. Laboratory ensemble experience. Formerly Band 115, 116.

1113, 1114. Voice. Cr. 1. (0-2).
Class instruction. Correct posture and studies for breath control; development of resonance; study of vowel formation; vocalization. Simple songs.

1123, 1124. Piano. Cr. 1. (0-2).
Class instruction. Sight reading and repertoire of simple piano materials. Harmonization and transposition of easy compositions.

213, 214. Strings. Cr. 1. (0-2).
Ability to play scales on violin, viola, cello and bass. Laboratory ensemble experience. Formerly Band 215, 216.

2113, 2114. Voice. Cr. 1. (0-2).
Class instruction. A continuation of Ap. Mus. 1113, 1114.

2123, 2124. Piano. Cr. 1. (0-2).
Class instruction. A continuation of Ap. Mus. 1123, 1124.

313, 314. Brass Instruments. Cr. 1. (0-2).
Prerequisite: Ap. Mus. 115. Ability to play scales on trumpet, French horn trombone, and tuba. Laboratory ensemble experience. Formerly Band 315, 316.

413, 414. Woodwinds. Cr. 1. (0-2).
Prerequisite: Ap. Mus. 115. Ability to play scales on flute, oboe, clarinet, and bassoon. Laboratory ensemble experience.

PIANO

025, 026, 115, 116, 215, 216, 315, 316. Piano. Cr. 2 or 1.
The technical work and repertoire recommended by the State Department of Education in Bulletin 449, Pages 64 to 72.

125, 126. Piano. Cr. 2.
Major and minor scales, arpeggios, broken chords, Bach, two-part inventions; sonatas; Haydn, Mozart, and Beethoven; romantic and modern compositions.

* The above curriculum is in the process of revision.

225, 226, 235, 236. Piano. Cr. 2 or 3.

Major and minor scales, arpeggios, broken chords, 16th notes at MM 100 to 120. Bach, two and three-part inventions, well-tempered clavichord; sonatas; Mozart, Beethoven, Op. 10; romantic and modern compositions.

325, 326, 345, 346. Piano. Cr. 2 or 4.

Prerequisite: Faculty approval of performance proficiency. Bach, well-tempered clavichord, Czerny, Op. 740, or studies of similar difficulty; sonatas; Scarlatti, Haydn, Mozart, Beethoven, Concerto No. 1 or 2; romantic and modern compositions.

For Undergraduates and Graduates

425, 426, 435, 436, 445, 446. Piano. Cr. 2, 3 or 4.

Bach, well-tempered clavichord; Beethoven, sonatas equivalent in difficulty to Op. 31; Chopin; ballads. etudes, scherzi; romantic and modern compositions.

VOICE

025, 026, 115, 116, 215, 216, 315, 316. Voice. Cr. 2 or 1.

For course description, see Ap. Mus. 1113, 1114.

125, 126. Voice. Cr. 2.

Studies in diatonic and chromatic scales; staccato and legato tones; emphasis on the latter. Simpler early Italian and English classics and repertoire for general use.

225, 226, 235, 236. Voice. Cr. 2 or 3.

More advanced technique; songs by Handel, Mozart, Schubert, Schumann, and other composers of the Classic and Romantic Periods. Repertoire for general use.

325, 326, 345, 346. Voice. Cr. 2 or 4.

Advanced vocal technique; studies in style appropriate to various periods. Selections from operas and oratorios of Bach, Handel, Mozart, Gluck, and Haydn. Romantic and modern songs.

For Undergraduates and Graduates

425, 426, 435, 436, 445, 446. Voice. Cr. 2, 3 or 4.

Summary of previous technical exercises; more difficult songs of classic, romantic and modern composers. Performance in German, French, and Italian languages.

ORGAN

For Undergraduates

025, 026, 115, 116, 215, 216, 315, 316. Organ. Cr. 2 or 1.

For non-music majors or music majors failing to qualify for Organ 125 or 126.

125, 126. Organ. Cr. 2.

Prerequisite: Piano 125, 126, or equivalent. Gleason: Method of Organ Playing; Bach-Riemenschneider. The Liturgical Year: movements from easy sonatas; hymn and anthem accompaniments.

225, 226. Organ. Cr. 2.

Bach, Prelude and Fugue in E minor (The Cathedral), Fugue in G minor, Choral Preludes; Guilmant. Third Sonata; Mendelssohn, Second Sonata; chuch service playing.

325, 326. Organ. Cr. 2.

Bach; Toccata and Fugue in D minor, Dorian Toccata; Mendelssohn; Sonatas V and VI; Franck: Piece Heroique, Cantabile; works by American contemporary composers; registration and transcribing.

VIOLIN

025, 026, 115, 116. Violin. Cr. 2 or 1.

The technical work and literature outlined in Bulletin 449 of the State Department of Education, or work of equal difficulty.

125, 126. Violin. Cr. 2.

Scales and arpeggios. Studies of Wolfahrt, Op. 74 or Op. 45. Sevcik, Preparatory Double Stops; Kayser, Book 1, Op. 20. Representative solos.

225, 226. Violin. Cr. 2.

Kayser. Book II; continued Sevcik, Op. 9; Dancla, School of the Five Positions; scales (16th slurred). Studies; Sevcik, Op. 36. Representative solos.

325, 326. Violin. Cr. 2.

Scales and arpeggios, studies as needed. Concertos and sonatas selected for technical and musical advancement. Compositions of varying type and difficulty.

For Undergraduates and Graduates

425, 426. Violin. Cr. 2.

Scales and arpeggios, studies as needed. Concertos and sonatas by Bach, Mendelssohn, Bruch, Franck, Beethoven, Lalo, and others. Solo repertoire.

VIOLONCELLO

025, 026, 115, 116. Violoncello. Cr. 2 or 1.
The technical work and literature outlined in Bulletin 449 of the State Department of Education or work of equal difficulty.

125, 126. Violoncello. Cr. 2.
Scales and arpeggios. Studies of Grutzmacher, Lee, and Klengel. Representative solos.

225, 226. Violoncello. Cr. 2.
Scales and arpeggios. Studies as needed. Studies of Vol. 1, Schlemuller, Dotzauer, Sevcik, and Romberg Concerto. Representative solos.

325, 326. Violoncello. Cr. 2.
Scales and arpeggios. Studies as needed. Studies of Schroeder, Lee Op. 31, Kreutzer studies. Representative solos.

425, 426. Violoncello. Cr. 2.
Scales and arpeggios, concertos and sonatas by Baccherini, Lalo, Brahms, and others. Solo repertoire.

VIOLA

025, 026, 115, 116. Viola. Cr. 2 or 1.
The technical work and literature outlined in Bulletin 449 of the State Department of Education, or work of equal difficulty.

125, 126. Viola. Cr. 2 .
Scales and arpeggios. Studies and exercises by Lifschey, Sitt, Wolfahrt, Representative solos.

225, 226. Viola. Cr. 2.
Scales and arpeggios as needed. Studies by Campagnoli, Lifschey, Kreutzer, Representative solos.

325, 326. Viola. Cr. 2.
Scales and arpeggios as needed. Studies by Kreutzer, Mazas. Bach suites, representative solos. Sonatas and concertos by Telemann, Haydn.

425, 426. Viola. Cr. 2.
Studies as needed. Advanced repertoire sonatas by Brahms, Bach, Hindemith. Concertos by Handel, Mozart, orchestral studies.

FLUTE

For Undergraduates

115, 116. Flute. Cr. 1.
Development of embouchure, breath control, tone and articulation. Major, minor, chromatic scales in simple articulations; simple melodies; broken arpeggios. Representative solos.

125, 126. Flute. Cr. 2.
Continuation of scales, arpeggios, simple melodies; Popp-Soussmann, Complete Method for Flute, Book I; Studies by Kohler, Book II; Soussmann, Part II. Representative solos, including at least one pre-classical sonata.

225, 226. Flute. Cr. 2.
Popp-Soussmann. Duets, Part II; Studies by DeLorenzo; Endresen, Supplementary Studies for flute; Boehm, Studies. Representative solos including at least one Bach sonata and one Handel sonata.

325, 326. Flute. Cr. 2.
Studies by Boehm continued; Popp-Soussmann, Part III; Roodenburg, Scale, Interval, and Arpeggio Studies for Flute; Studies by Briccialdi. Representative solos, including at least one Mozart concerto and one contemporary sonata.

For Undergraduates and Graduates

425, 426. Flute. Cr. 2.
Studies by Soussmann and Briccialdi continued. Representative solos including Bach, B Minor Suite and at least one contemporary sonata or concerto.

OBOE

For Undergraduates

115, 116. Oboe. Cr. 1.
Development of embouchure, tone, breath control, articulation. Gekeler Method for Oboe. Barrett's Standard Oboe Tutor. Studies for development of control in scale, arpeggio, and interval progressions. Representative solos.

125, 126. Oboe. Cr. 2.
All major and minor scales and arpeggios in fluent legato and staccato. Pares, Daily Technical Studies for Oboe; Barrett, Exercises in Articulation and Progressive Methods. Representative solos including Handel, B flat Concerto.

225, 226. Oboe. Cr. 2.
Barrett Studies continued; Sellner, Etudes of Oboe, Part II. Studies for intervals, broken chords, and alternate fingerings. Representative solos including at least two pre-classical sonatas. Beginning reed making.

325, 326. Oboe. Cr. 2.
Studies by Barrett and Sellner continued. Representative solos including the Hindemith. Sonata.

For Undergraduates and Graduates

425, 426. Oboe. Cr. 2.
Studies by Barrett, Sellner and Andraud. Bassi. Twenty-seven Virtuoso Studies for Oboe. Representative solos including the Goossens Concerto.

CLARINET

For Undergraduates

115, 116. Clarinet. Cr. 1.
Development of embouchure, breath control, tone production and fingering. Klose, Method, Part I; Lazarus, Method, Part III. Representative solos.

125, 126. Clarinet. Cr. 2.
Lazarus, Method. Part II; Baermann, Book II; Klose, Characteristic Studies. Representative solos.

225, 226. Clarinet. Cr. 2.
Baermann. Book III; Rose, Forty Studies; Langenus, Scale Studies. Representative solos.

325, 326. Clarinet. Cr.2.
Labanchi Method. Book II; Saint-Saens, Sonata Op. 167; representative solos, including one sonata or concerto.

For Undergraduates and Graduates

425, 426. Clarinet. Cr. 2.
Langenus, Virtuoso Studies and Duets; Jeanjean, Twenty-five Technical and Melodic Studies. Representative solos, including concertos, sonatas, and shorter solos.

BASSOON

For Undergraduates

115, 116. Bassoon. Cr. 1.
Development of embouchure, breath control, attack and production of tone. Representative solos.

125, 126. Bassoon. Cr. 2.
Weissenborn Studies, Book I, Op. 8. Begin Milde, Studies. Alternate fingerings; reed making, exercises in tenor clef. Jancourt, Progressive Sonatas, Book II; representative solos.

225, 226. Bassoon. Cr. 2.
F. Oubradous, Daily Scales and Exercises, Books I, II; Weissenborn Studies, Book II. Representative solos.

325, 326. Bassoon. Cr. 2.
Weissenborn Studies. Book II continued; Milde, Concert Studies; A Giampieri, Sixteen Daily Studies. Representative solos.

For Undergraduates and Graduates

425, 426. Bassoon. Cr. 2.
Weissenborn, Milde, and A. Giampieri Studies continued. Almenrader, Book II. Clef studies. Representative solos.

SAXOPHONE

For Undergraduates

115, 116. Saxophone. Cr. 1.
Development of embouchure, breath control, tone, and articulation. Caillet, Method, Books I and II. Representative solos.

125, 126. Saxophone. Cr. 2.
All major and minor scales and arpeggios in fluent legato and staccato articulations. Vivian Scale Exercises; Brooke Method. Representative solos.

225, 226. Saxophone. Cr. 2.
Brooke Method continued: Eby Method; Bassi-Iasilli, Twenty-seven Virtuoso Studies. Representative solos.

325, 326. Saxophone. Cr. 2.
Brooke and Eby Methods continued. Special studies for intervals, broken chords, alternate fingerings, and high note register; studies by Sigurd Rascher, Virtuoso Studies by Traxler. Representative solos.

For Undergraduates and Graduates

425, 426. Saxophone. Cr. 2.
Six Virtuoso Caprices by Pantaleo-Iasilli and Technical Exercises by Calicchio. Representative solos.

CORNET OR TRUMPET

For Undergraduates

115, 116. Cornet or Trumpet. Cr. 1.
Development embouchure; breathing; attack; scale studies; representative solos.

125, 126. Cornet or Trumpet. Cr. 2.
Arban, Method; Williams, Book II; Pares, Daily Technical Studies; Rubank (Advanced); Kopprasch, Etudes; Clarke; Bellstedt; Gatti, World's Method of Cornet, Part II. Emphasis on breath control, attack, and articulation. Solos selected from Class II, Interscholastic League Solo List.

225, 226. Cornet or Trumpet. Cr. 2.
Williams (Book II), Arban, Gatti Studies, Clarke, Technical Studies for Cornet; Scholossbert Drills. Studies in double and triple tonguing. Clef reading (Sachse, Vol. 1). Representative solos.

325, 326. Cornet or Trumpet. Cr. 2.
Williams, Book III, Guilbaut, Conservatory Studies, Clarke, Characteristic Studies; Etudes by Laurent and St. Jacome. Clef reading. Representative solos, including one sonata or concerto, arias, lieder, and other solos.

For Undergraduates and Graduates

425, 426. Cornet or Trumpet. Cr. 2.
Smith, Top Tones for Trumpet; Williams and St. Jacome Studies; Paudert, Twenty-four Modern Virtuoso Studies; Etudes by Petit and Balay. Representative solos, including concertos, sonatas, and shorter solos.

FRENCH HORN

For Undergraduates

115, 116. French Horn. Cr. 1.
Development of embouchure, breath control, articulation, and tone. Pottag-Hovy, Book II, or studies of similar difficulty. Solos from Interscholastic Solo List, Class 1.

125, 126. French Horn. Cr. 2.
Continuation of Kopprasch, Book I. Begin Book II, studies for transposition, clef reading extension of range of all major and minor scales and arpeggios. Representative solos, including arias, sonatas, and selections from Interscholastic League Solo List, Class II.

225, 226. French Horn. Cr. 2.
Continuation of Kopprasch, Book II, Franz Studies; Pottag French Horn Passages. Representative solos.

325, 326. French Horn. Cr. 2.
Continuation of Kopprasch; Franz Studies. Alphonse Etudes, Book III; Gallay, Thirty Etudes, Op. 13. Representative solos, including one sonata or concerto, arias, lieder, other solos.

For Undergraduates and Graduates

425, 426. French Horn. Cr. 2.
Continuation of Kopprasch; Franz studies. Alphonse Etudes, Book IV; Michiels Twenty-four Etudes. Continued study of transposition, clef reading; representative solos including concertos and shorter solos.

TROMBONE

For Undergraduates

115, 116. Trombone. Cr. 1.
Development of embouchure, breath control, articulation. Buchtel, Book II; Muller, Method for Trombone; Cimera, One Hundred Seventy Studies. Solos from Interscholastic League Solo List. Class I.

125, 126. Trombone. Cr. 2.
Buchtel, Cimera, Muller Studies; Arban, Celebrated Method for Trombone. Part I; representative solos, including two arias, one sonata, and solos from Interscholastic League Solo List. Class II.

225, 226. Trombone. Cr. 2.
Studies for legato articulation, added range, clef reading, flexibility, breath control, surety of attack. Continuation of Cimera, Muller studies; completion of Arban Book I; Book II; Kopprasch, Book I. Representative solos.

325, 326. Trombone. Cr. 2.
Studies in clef reading transposition. Continuation of Kopprasch, Arban, Muller studies; Rochut, Book I; Blazevich, Method, representative solos, including one concerto or sonata, arias, and lieder.

For Undergraduates and Graduates

425, 426. Trombone. Cr. 2.
Studies by Tyrrell; Mantia, Trombone Virtuoso; Lea Studies for Cello. Study of F trombone. Advanced clef studies. Representative solos, including concertos, sonatas, and shorter solos.

BARITONE

For Undergraduates

115, 116. Baritone. Cr. 1.
Development of the embouchure, breathing, attack. All major scales, articulation, arpeggio exercises. Solos from Interscholastic League Solo List Class I.

125, 126. Baritone. Cr. 2.
Continuation of studies for development of embouchure, breath control, attack. All major and minor scales, double and triple tonguing, arpeggio exercises. Studies in treble and bass clefs. Rubank, Arban, Tyrrell. Solos from Interscholastic League Solo List, Class II.

225, 226. Baritone. Cr. 2.
Studies in arpeggios continued, original scale forms, transposition. Representative solos.

325, 326. Baritone. Cr. 2.
Continuation of technical studies, Clarke, Characteristic Studies; double and triple tonguing, clef reading, Arban, Tyrell, St. Jacome, and Smith. Top Tones. Representative solos, including one sonata or concerto, arias, and lieder.

For Undergraduates and Graduates

425, 426. Baritone. Cr. 2.
Continuation of all technical studies, clef reading, representative solos, including concertos, sonatas, and shorter solos.

MUSIC LITERATURE

For Undergraduates

131, 132. Introduction to Music Literature. Cr. 3.
Through directed listening, music of various forms and styles is considered. Introduction to music history presented showing relationship of music studied to that preceding and following it.

For Undergraduates and Graduates

330. Voice Repertoire. Cr. 3.
Prerequisite: Ap. Mus. 226 or 236 (Voice). Survey of song repertoire for all voices. Class performance and listening.

332. Piano Repertoire. Cr. 3.
Prerequisite: Ap. Mus. 226 or 236 (Piano). A survey of literature for piano. Class performance and listening.

431. 432. History of Music. Cr. 3.
Prerequisite: Junior standing. Through directed listening, study of development of style, form, technique, and performance practice is exemplified through **L'Anthologie Sonore** recordings and other standard recorded works. Formerly Mus. 335, 336.

4351. Music in the General Culture. Cr. 3.
Through directed listening and other channels, the course aims to increase understanding and enjoyment of great musical works in all styles. Major broadcasts and local concerts paralleled when feasible.

MUSIC EDUCATION

For Undergraduates

231. Music for Classroom Teachers. Cr. 3.
Prerequisite: Sophomore standing. For primary or elementary education majors. Not open to music majors. Rudiments of music, elementary music reading, ear training based upon elementary school music material.

232. Elementary Music Principles, Practices, and Materials. Cr. 3.
Prerequisite: Mus. Ed. 231 or equivalent. For elementary education majors. Not open to music majors. Music for elementary school children. Emphasis upon various music activities at this level.

327. Choral Methods and Techniques. Cr. 2.
Prerequisite: 4 semester hours of voice or equivalent. Conducting technique; procedures in development of choral organizations. Rehearsal techniques for preparation of choral works for public performance. Formerly Mus. 327.

328. Instrumental Conducting. Cr. 3.
Prerequisite: Th. 247 or equivalent. A detailed study of baton technique, score reading, tone production, interpretation. Conducting laboratory ensemble required. Formerly Mus. 328.

336. Secondary Instruments and Methods. Cr. 3.

Prerequisite: Junior standing and Ap. Mus. 226. Study of instruments other than student's principal instrument. Study of repertoire for and the organization and administration of public school instrumental groups.

337. Elementary School Teaching and Supervision of Music. Cr. 3.

Prerequisite: Junior standing. For music majors and minors. Study of procedures in teaching music in first six grades; selection and presentation of materials; the child voice in singing, its care and development; introduction and development of music reading; rhythmic development; creative music; the listening lesson. Not open to students having completed Mus. Ed. 232.

338. Secondary School Teaching and Supervision of Music. Cr. 3.

Prerequisite: Junior standing or permission of the instructor. For music majors. Study of procedures in teaching music in upper level grades and in high school. General treatment of choral and instrumental music; instruction in theory and general music. Formerly Mus. 438.

For Undergraduates and Graduates

433. Piano Pedagogy. Cr. 3.

Prerequisite: Ap. Mus. 326 or 346 (Piano). For prospective piano teachers. Teaching methods for beginners and succeeding levels. Correct presentation of rudiments of music, principles of technique, and teaching materials.

437. Voice Pedagogy. Cr. 3.

Prerequisite: Ap. Mus. 326 or 346 (Voice). Comparison of known systems of voice teaching; evaluation of the individual voice, various vocal exercises, singing styles; student teaching.

4317. Choral Conducting. Cr. 3.

Prerequisite: Senior classification in music education. Study and performance of representative choral works of all periods. Participation in a major choral organization required. Formerly Mus. Ed. 522.

4318. Instrumental Conducting. Cr. 3.

Prerequisite: Senior classification in music education. Study and performance of instrumental works of all periods. Participation in a major instrumental group required. Formerly Mus. Ed. 521.

For Graduates

530, 531. Seminar in Music Education. Cr. 3.

Prerequisite: Open to any interested graduate student upon approval of the Music Department. Review of current educational philosophy in America. Special reference to the place of music in the curriculum. Review and criticism of music curricula. Evaluation of music education principles, practices, and materials. General aspect of course is adaptable to interests of all music teachers and educators interested in music. Special studies allow concentration in the field of the student's major activity.

532. Choral Music Workshop. Cr. 3.

Prerequisite: 18 semester hours of music, 6 of which are advanced hours including Mus. Ed. 327 or equivalent. Emphasis in the organization and development of choral organization in the public schools including tone production, rhythmic precision, balance, blend, enunciation. Individual and group project required.

533. Instrumental Music Workshop. Cr. 3.

Prerequisite: 18 semester hours of music, 6 of which are advanced hours including Mus. Educ. 328 or equivalent. Emphasis in the organization and development of instrumental groups in the public schools including tone production.

5335. Music for Children. Cr. 3.

Prerequisite: 6 semester hours in music education or two years experience in elementary teaching. Emphasis upon development of musical expressions of children through rhythmic activities, song repertoire, dramatic interpretation, creative expression, and appreciative listening to music. A study of material adapted to normal social and musical interests of children. Enrollment limited to graduate students majoring in elementary education.

THEORY

For Undergraduates

147-148. Elementary Theory. Cr. 4 each. (5-0).

Properties of sound; introduction to the keyboard; elementary time and rhythm reading; triad study and introduction of four-voice chords; key feeling and tonality; sight singing; simple modulation; harmonic and melodic dictation in major and minor keys; original Chorale harmonizations in eighteenth century style; alto and tener clef reading.

247-248. Intermediate Theory. Cr. 4 each. (5-0).

Prerequisite: Th. 147-148 or equivalent. Continuation of melodic and harmonic dictation including non-harmonic tones; original harmonization; introduction to contrapuntal forms of canon and fugue; analysis of cantatas and instrument works of eighteenth century; melodic and harmonic dictation in the modes; seventh chords; altered chords; augmented sixth chords; and realization of figured bass.

For Undergraduates and Graduates

322, 323. Form and Composition. Cr. 2 each.
Prerequisite: Th. 247-248 or equivalent. Study of homophonic forms of musical composition with respect to Viennese Classical style. Analysis of basic principles of phrase construction, two and three-part song forms. Study of the basic form and style of Romantic period music, study of the composition techniques of the impressionistic and contemporary periods with analysis—performance projects, and application of these styles in original compositions.

427. Instrumentation. Cr. 2.
Prerequisite: Th. 323 or equivalent. Study of properties of wind instruments. Emphasis on devices, techniques, mechanics of band scoring.

428. Instrumentation. Cr. 2.
Prerequisite: Th. 323 or equivalent. Study of properties of orchestral instruments. Emphasis on devices, techniques, mechanics of orchestral scoring.

4312. Pedagogy of Theory. Cr. 3.
Prerequisite: Th. 248 or equivalent. Methods in presentation of music theory. Emphasis on problems to be met by public school and private music teachers. Theories of scales, intervals, all types of chords and the inversions, keys, cadences, modulation techniques, harmonization of melodies at sight at keyboard, comprehension of rhythmic, melodic, and harmonic construction of Classical Period examples. Formerly Mus. Th. 424.

ENSEMBLE

Each ensemble except 313, may be taken for four successive years, since the literature studied will cover a cycle of that period of time. Ensemble 313 may be taken for two successive years.

For Undergraduates

010. Sec. 1. Tech Choir. Cr. 1. (0-5).
Prerequisite: Audition.

010. Sec. 2. Festival Chorus. Cr. 1. (0-2).
Open to any interested student enrolled in the College.

010. Sec. 3. Men's Glee Club. Cr. 1. (0-3).
Prerequisite: Audition.

010. Sec. 4. Opera Theater. Cr. 1. (0-4).
Prerequisite: Audition.

011. Symphony Orchestra. Cr. 1. (0-5).
Prerequisite: Audition.

013. Sec. A. Tech Band. Cr. 1. (0-5).
Prerequisite: Audition. 4 semester hours may be substituted for required physical education.

013. Sec. B. Band. Cr. 1. (0-5).
4 semester hours may be substituted for required physical education.

313. Sec. A. Band. Cr. 1. (0-5).
Open to junior and senior students.

MILITARY BAND

Part of Basic ROTC. For particulars inquire of the officer in command.

MUSIC FEES FOR APPLIED MUSIC (PRIVATE)

(See Expenses)

Department of Physics

PROFESSORS SCHMIDT, MERRYMON.
ASSOCIATE PROFESSORS J. DAY, P. GOTT.
ASSISTANT PROFESSORS BASFORD, SEVERANCE, SANDLIN.*
INSTRUCTORS GEORGE, HENSON, MIRES.
PART-TIME INSTRUCTORS COLE, S. D. WILLIAMS.

The course offering of the Physics Department is designed to provide a rigorous course of study leading to the bachelor's and master's degrees with a major in physics, as well as to meet the needs of those majoring in other fields. There is at the present time

* On leave, 1957-58.

a nationwide shortage of persons well-trained in the natural sciences. Although the demand in many areas is greatest for those with advanced training, many opportunities exist for inquisitive young people with a good grounding in basic or applied science. Serious-minded students sincerely interested in science are invited to consult with this department about their proposed program of study.

Students majoring in physics for the Bachelor of Arts Degree should take Physics 141-142, 235-236, 215-216, and at least 18 hours of courses in physics of junior and senior rank. Majors for the Bachelor of Science Degree should see that section of this catalog.

For those planning to teach physics and other sciences, the following plans are offered (see also Page 149.)

I. B. S. in Education with physics teaching major:
Physics 141-142, 235-236, 215-216, plus 12 hours from the following: 331, 336, 341, 423-424, 436.

II. B. S. in Education with a physics teaching minor:
Physics 141-142, 235-236, 215-216, plus 6 hours from the following: 331, 336, 341.

III. B. S. in Education — science option:
The following are suggested as the requirements in physics for the certification of teachers in the field of general science. (See Pages 149, 150).
For a minimum of 8 hrs. ..... 141-142.
For a minimum of 12 hrs. ..... 141-142, 235-236, 215-216.
For a minimum of 18 hrs. ..... 141-142, 235-236, 215-216, 331.

For Undergraduates

031. Introductory Physics. Cr. 3.
Prerequisite: Math. 031 or equivalent. Required of engineering students whose placement test scores indicate a deficiency in high school physics. Credit for this course may not be used to replace any physics required in the curriculum concerned nor as a normal degree requirement.

141-142. General Physics. Cr. 4 each. (3-3).
A general course in beginning physics covering mechanics, heat, sound, electricity and magnetism, light, and modern physics.

215-216. Physical Measurements. Cr. 1 each. (0-3).
Must be taken parallel with Phys. 235-236.

235-236. Engineering Physics. Cr. 3 each.
Prerequisite: One year of high school or college physics; parallel enrollment in calculus. See Phys. 215-216.

237. Techniques of Photography. Cr. 3. (2-3).
Prerequisite: Sophomore standing and approval of instructor. A course in fundamental processes and techniques of photography for those who will later need photography as a scientific working tool. Additional time needed for darkroom processing to be arranged. A $20 fee for materials is required.

For Undergraduates and Graduates

312-313. Atomic and Nuclear Physics Laboratory. Cr. 1 each. (0-3).
Prerequisite: Parallel enrollment in Phys. 337-338. Approval of instructor. Credit will be given for either or both semesters.

331. Light. Cr. 3. (2-3).
Prerequisite: One year of physics and junior standing.

332. Heat and Thermodynamics. Cr. 3.
Prerequisite: One year of physics and calculus.

336. Electricity and Magnetism. Cr. 3.
Prerequisite: One year of physics and calculus.

337. Introduction to Atomic Physics. Cr. 3.
Prerequisite: One year of physics and junior standing.

338. Introduction to Nuclear Physics. Cr. 3.
Prerequisite: One year of physics and junior standing.

341. Electron Tubes and Applications to Physical Science. Cr. 4 (3-3).
Prerequisite: Phys. 336. A general course in electronics stressing the fundamentals of electron tubes and the application of these tubes in instruments and apparatus that are of primary importance in the physical sciences.

411-412. Physical Seminar. Cr. 1 each.
Prerequisite: 12 hours of physics and calculus.
415-416. Special Projects. Cr. 1 each. (0-3).
Prerequisite: Approval of Head of Department. Individual student study of theoretical or experimental projects in physics under the guidance of a member of the staff. An outline of the proposed project must have been accepted by the Head of the Department before registering in this course.
423-424. Electrical Measurements. Cr. 2 each. (0-6).
Prerequisite: 12 hours of physics and calculus.
431. High School Physics Teaching. Cr. 3.
435. Mechanics. Cr. 3.
Prerequisite: 12 hours of physics and calculus.
436-437. Individual Study in Specified Fields. Cr. 3 each. (3-0 or 0-9).
Prerequisite: Calculus and 18 hours of physics and approval of Department. Individual student study of theoretical or experimental projects under the guidance of a member of the staff. Similar to 415-416 with more credit. For students with pronounced ability.

For Graduates

531-532. Theoretical Physics. Cr. 3 each.
533-534. Quantum Mechanics. Cr. 3 each.
Prerequisite: Differential equations.
535. Nuclear Physics. Cr. 3.
Prerequisite: Phys. 337, 338, or equivalent.
536. Advanced Dynamics. Cr. 3.
Prerequisite: Phys. 531 or consent of instructor.
537. Electromagnetic Theory. Cr. 3.
538-539. Geometrical and Physical Optics. Cr. 3 each.
Prerequisite: Calculus and Phys. 331.
631-632. Thesis. Cr. 6 each.

Department of Psychology

PROFESSORS KAPLAN, BARNETT, O'LOUGHLIN.
ASSOCIATE PROFESSORS KUNTZ, McCUTCHAN, MELCHING, R. SMITH.
ASSISTANT PROFESSORS R. ANDERSON, PEREBOOM, ATTNEAVE, DAUTERMAN.
PART-TIME INSTRUCTORS BIRKMAN, CRAWFORD, C. S. HARRIS.

The Department of Psychology is designed to meet the interests of three classes of students: (1) those who desire a basic orientation of human behavior as a supplement to their major course, (2) those who want thorough undergraduate training in the area of psychology as a major, or in preparation for further professional study, and (3) those who wish specialized training in psychology at the graduate level. The graduate student may emphasize one of the following areas: General theoretical psychology, physiological and comparative psychology, industrial psychology, child and adolescent psychology, clinical psychology or counseling.

Undergraduate majors are expected to offer 30 semester hours in psychology; these must include Psychology 130, 333, 336, 436, 437, 438, and 4317. (For detailed information for B. A. curriculum in psychology, see School of Arts and Sciences section of this catalog.) Students planning to pursue graduate study should consult with a departmental adviser at the earliest possible date. It is highly desirable that the student's accomplishment be of the best quality. Grades of "D" in psychology courses will not be acceptable for fulfillment of the degree plan.

The general requirements for the Master of Arts and Doctor of Philosophy Degrees will be found in this catalog under the Graduate School. Candidates for a graduate degree will be expected to have taken at least 12 advanced semester hours at the undergraduate level in psychology. Required courses for the master's degree will include

the following (or acceptable equivalents from another institution): Psychology 437 or 438, 4315, 4316, 4317, and 538. Students desiring to obtain the M.A. Degree in preparation for high school counseling, however, will follow a curriculum prepared specifically for their needs. Required courses for the doctor's degree will include the following (or acceptable equivalents from another institution). Psychology 4315, 4316, 4317, 536, 537, and 538.

SPECIAL PROGRAM IN REHABILITATION COUNSELING

Texas Technological College is co-operating with the United States Department of Health, Education, and Welfare, Office of Vocational Rehabilitation, in the preparation of counselors in the general area of rehabilitation as well as in that for the blind. The curriculum is a two-year sequence of graduate training including an internship leading to the Master of Arts Degree in psychology and a certificate of competence.

The rehabilitation counseling curriculum represents the co-operative effort of several different departments and schools of the College. In addition, the University of Texas Post-Graduate School of Medicine in Lubbock is one cooperating agency. Its faculty will provide the instructional staff for the areas concerned with medical aspects of rehabilitation.*

For Undergraduates

130. Introduction to Psychology. Cr. 3.
Introduction to the scientific study of the fundamental problems of human behavior.

230. General Psychology. Cr. 3.
A general course in psychology stressing the fundamental scientific aspects of behavior and experiences; lectures and demonstrations.

330. Psychology in Business and Industry. Cr. 3.
Prerequisite: Psy. 130. Psychological principles and methods applied to representative problems in business and industry.

331. Child Psychology. Cr. 3.
Prerequisite: Psy. 130 or Educ. 232. Social behavior and development in living and learning as related to physical, mental and emotional maturation and readiness levels from early childhood to adolescence.

332. Mental Health. Cr. 3.
Prerequisite: Psy. 130 or equivalent. The genesis of adequate personality; understanding the origin of common behavioral difficulties and techniques for re-education.

333. Statistical Methods. Cr. 3.
Prerequisite: Psy. 130 or Educ. 232. Application of statistical methods to educational and psychological problems. Description of data in terms of averages, measures of variability, and measures of relationships.

335. Adolescent Psychology. Cr. 3.
Prerequisite: Psy. 130 or Educ. 232 and upper division classification. Social behavior and development in living and learning as related to physical, mental, and emotional growth and adjustment from early adolescence to maturity. Guidance emphasis.

336. Physiological Psychology. Cr. 3.
Prerequisite: 6 semester hours in psychology or Psy. 130 and 6 semester hours in the biological sciences. The relation between psychological processes and physiological activity. The neurophysiological mechanisms involved in behavior. Designed to acquaint the pre-medical student with medical-psychological problems in therapeusis. Discussion of electro-insulin-metrozol shock, frontal lobotomy.

For Undergraduates and Graduates

431. Tests and Measurements. Cr. 3. (2-3).
Prerequisite: Psy. 333 or equivalent. Instruction and supervised practice in the administration and scoring of individual and group intelligence tests and various tests of achievement, aptitudes and personality. Fee: $2.

432. Personnel Testing. Cr. 3. (2-3).
Prerequisite: Psy. 130 or equivalent and Psy. 333 or equivalent. The principles and methods of test construction and test administration. Survey of the practical fields of personnel measurement including specific aptitudes and achievement, interest, and personality dimensions. Fee. $2.

* Dean Sam C. Arnett, M.D., F.A.C.P., and his teaching staff.

434. Introduction to Social Psychology. Cr. 3.
Prerequisite: Psy. 130 or equivalent and upper division classification. Principles of psychology applied to group behavior. Survey of experimental work and reports on current problems.

435. Abnormal Psychology. Cr. 3.
Prerequisite: 6 semester hours in psychology. Personality deviations and maladjustments, with emphasis upon clinical descriptions of abnormal behavior, etiological factors manifestations, interpretations, and treatment.

436. Personality Development. Cr. 3.
Prerequisite: 6 semester hours in psychology. Principles of normal personality development. Designed to meet the practical needs of teachers, personnel workers, counselors, clinical psychologists, and others who are interested in the proper guidance of growing personalities.

437. Experimental Psychology. Cr. 3. (2-3).
Prerequisite: 6 semester hours in psychology and Psy. 333 or equivalent. A laboratory course dealing with emotion, thinking, motivation, and learning. Fee: $2.

438. Experimental Psychology. Cr. 3. (2-3).
Prerequisite: Psy. 437. A laboratory course dealing with experimental procedures and results. Emphasis on perception, sensation, and simple motor phenomena. Fee: $2

439. Industrial Psychology. Cr. 3.
Prerequisite: Psy. 330; Mgt. 334 or I. E. 321; Psy. 333 or equivalent. The principles of psychology applied to industrial problems.

4311. Psychology of Social Change. Cr. 3.
Prerequisite: 6 semester hours in psychology. The psychological aspects of social movements. The role of movements in social change. The role of education in social movements. Social change and cultural patterns.

4312. Methods in Clinical Psychology. Cr. 3.
Prerequisite: Psy. 431 or equivalent. A study of the use and interpretations of psychological tests; case studies and related methods as applied in a clinical setting.

4313. Counseling Psychology. Cr. 3.
Prerequisite: 6 semester hours of psychology. A survey of the basic principles, techniques, and procedures as applied to educational, vocational, and personal counseling.

4314. The Human Element in Engineering. Cr. 3.
Prerequisite: Psy. 330 and Psy. 333 or its equivalent. Application of psychological principles and experimental methodology to the design and operation of machines, including visual displays, signaling systems, problems of visibility, and selection and distinguishability of control.

4315. Advanced Statistical Methods. Cr. 3.
Prerequisite: Psy. 333 or equivalent. The study of statistical inference including probability, small sample theory, chi square, and analysis of variance.

4316. History of Psychology. Cr. 3.
Prerequisite: 6 semester hours in psychology. The origin and development of modern-day psychology including the influences of physics, philosophy and physiology upon the field of psychology. The development of psychological systems.

4317. The Psychology of Learning. Cr. 3.
Prerequisite: 6 semester hours of psychology. Principles of learning, including conditioning, problem solving, trial and error learning. Theories of behavior.

4318. Industrial Training. Cr. 3.
Prerequisite: Psy. 330. Principles of teaching and selection of persons who will be teaching in business and industry; effective techniques for training supervisors inspectors, and others; setting up training programs.

4321. Interviewing: Principles and Practice. Cr. 3.
Prerequisite: Consent of the instructor. A review of principles. Emphasis upon skill which will apply directly to all interview situations such as industrial, clinical, and vocational counseling. Demonstration, recordings, and discussion. Student participation stressed.

4324. Pathology of the Eye. Cr. 3.
Prerequisite: Consent of instructor. A study of the anatomy of the eye, diseases and eye conditions resulting in blindness, methods of physical restoration and prognosis and optical aids for blind persons with residual vision.

4325. Survey of Services and Facilities for the Blind. Cr. 3.
Prerequisite: Consent of instructor. The structure and scope of local, state, national, and international organizations and/or agencies (public and private) serving blind persons. A study of federal and state legislation directly affecting blind individuals.

4326. Psychology of the Blind. Cr. 3.
Prerequisite: Consent of instructor. Attitudes towards blindness and the social and psychological implications of blindness.

4329. Psychology of Exceptional Children. Cr. 3.
Prerequisite: 6 semester hours of psychology, including child psychology. The social and psychological influences of various disabilities upon the individual. The means for providing emotional and educational support for the exceptional child. Special consideration of individual problems with laboratory opportunity for study of play technique and test construction. Companion course to Ap. A. 4129; concurrent registration required for credit.

For Graduates

531. Introduction to Projective Techniques. Cr. 3.
Prerequisite: Psy. 431. Review of the development of projective techniques. Study and administration of specific projective tests.

532. Problems in Psychology. Cr. 3.
Prerequisite: 12 advanced semester hours in psychology. Readings and papers in selected fields of psychology. Independent work under the individual guidance of a staff member.

533. Advanced Developmental Psychology. Cr. 3.
Prerequisite: Consent of the instructor. Advanced work in the psychology of the child with emphasis upon research techniques. Opportunities will be provided to observe children in the nursery schools, cerebral palsy clinics, schools for exceptional children.

534. Practicum in Intelligence Testing. Cr. 3.
Prerequisite: Psy. 431. Instruction and practice in giving the Stanford-Binet Test and the Wechsler-Bellevue Test.

536. Advanced Experimental Psychology. Cr. 3. (1-6).
Prerequisite: Psy. 437 or 438 and 4315. Duplication of crucial experiments in various areas of psychology with special consideration of research designs and theoretical implications. Fee: $3.

537. Advanced General Psychology. Cr. 3.
Prerequisite: Graduate standing. Intensive study of problems in learning, motivation, sensation, perception, interpersonal relationships, and personality. Review of experimentation bearing on these topics.

538. Experimental Design and Advanced Statistical Analysis. Cr. 3.
Prerequisite: Psy. 437 or 438 and Psy. 4315. A study of the logical principles governing sound experimentation; detailed description of some designs that have been developed; relation between experimental design and statistical analysis.

539. Occupational Information. Cr. 3.
Prerequisite: Psy. 4313. The sources, techniques of collecting, classifying and using educational and occupational information necessary in counseling.

5312. Practicum in Occupational Information. Cr. 3.
Prerequisite: Psy. 539. Collecting and using occupational information necessary in counseling; special emphasis upon use of The Dictionary of Occupational Titles.

5316. Introduction to Adjustment Counseling. Cr. 3.
Prerequisite: 6 semester hours of psychology and Psy. 4313 or 4317. Consideration of theories of adjustment counseling. Principal emphasis on client-centered approach to counseling. Attitudes and orientation of the counselor and the counseling relationship, oral discussion, recordings, and role playing.

5317. Techniques of Counseling. Cr. 3.
Prerequisite: Psy. 4313 and 431. Methods of vocational, educational, and personal counseling approached through case histories, observation, and interviews. Methods of counseling, including directive and non-directive.

5318. Practicum in Techniques of Counseling. Cr. 3.
Prerequisite: Psy. 5317. Supervised experience in interviewing, counseling, and preparing case reports.

5319. Advanced Industrial Psychology. Cr. 3.
Prerequisite: Psy. 439. Effective management of human resources. Emphasis upon ingenuity of approach to solution of psychological problems in industry. Survey of the literature. Development of methods and techniques.

5321. Learning Theory. Cr. 3.
Prerequisite: Psy. 4317 or equivalent. Specific consideration of current learning theories including those of Hull, Tolman, Lashley, Spence, Lewin, Hebb, and others.

5322. Advanced Physiological Psychology. Cr. 3.
Prerequisites: Psy. 336 or equivalent. (Open to graduate students in the biological sciences who have had Psy. 130 or equivalent). Relation between psychological processes and physiological activity. Designed to acquaint the student with medical-psychological problems in therapeusis. Discussion of electro-insulin-metrozol shock, frontal lobotomy.

5324. Personality Theory. Cr. 3.
Prerequisite: Psy. 436 or 4317. Critical review of current theories of personality including those representing field, psychoanalytic, and specific-trait viewpoints.

5325. Case Studies in Vocational Rehabilitation. Cr. 3.
Prerequisite: Consent of instructor. Critical analysis of actual cases derived from the files of the State Office of Rehabilitation. Study and review of cases of blind persons derived from case records of the State Commission for the Blind.

5326. Medical Aspects of Rehabilitation. Cr. 3.
Prerequisite: Consent of instructor. Seminar considering the effects of cardiac disturbances, tuberculosis, and other disabling diseases on the individual. Introduction to medical terminology. Review of each of the various medical areas by a medical specialist, e.g., orthopedics, internal medicine, ophthalmology.

5331. 5332. Internship in Counseling and Guidance. Cr. 3 each.
Prerequisite: Psy. 5317 and 5318. Supervised work in one or more school systems or other approved agencies engaged in professional psychological services.
631-632. Master's Thesis. Cr. 6.
731-732. Doctoral Research. Cr. 6.
831-832. Doctoral Dissertation. Cr. 6.

Department of Speech

PROFESSORS LARSON* PENDLETON.
ASSISTANT PROFESSORS LANDES, LINDELL, MARINER, SCHULZ.
INSTRUCTORS BRENNAN, THOMPSON.

A major function of this department is to service the student body generally in aiding the individual student to attain the highest possible level of oral communicative effectiveness. While many courses contribute to this end, those especially geared to this objective for the non-speech major are Fundamentals of Speech, Voice and Diction, and Business and Professional Speaking. Other courses are available in public speaking, discussion, theater, oral interpretation, radio, television, and speech correction.

Requirements for a major in speech include the following:

1. The general college requirements for the Bachelor of Arts Degree.
2. Fundamentals of Speech (or equivalent), 3 hours.
3. Speech 231 or 232, 233, 235, 237 or 435, 331, 335 or 336, 4318 or 4319, and 4351.
4. Additional speech courses to total 36 hours, of which total 18 hours shall be in upper division courses.
5. A minor in one of the following suggested fields:
   Applied art, architecture, clothing and textiles, economics, English, a foreign language, government, history, journalism, management, marketing, physical education, psychology, sociology, or other approved fields.

Speech majors should take Fundamentals of Speech during their first year in college. Transfer students and others electing to major in speech after their freshman year should consult the Head of the Department before enrolling in any speech course. Courses subsequent to Fundamentals of Speech will be selected from several areas of speech: (1) Public address, discussion and debate, (2) Theater, (3) Oral Interpretation, (4) Speech Correction, and (5) Radio and Television.

Speech minors are urged to consult with the Head of the Speech Department as soon as possible.

Teaching majors and teaching minors in speech are required to complete 24 and 18 hours in speech, respectively. Courses to be applied toward a teaching major or minor in speech should be selected in consultation with the Head of the Speech Department.

Students who wish to be qualified for certification for the teaching of children with speech disorders are required to complete the following courses: Speech 233, 331, 433, 434, 4318, 4319, 4321-4322. The certificate in speech correction is an all-level certificate. As such it has unique requirements in both professional education courses and in student teaching. The Department of Education should be consulted in regard to the education courses needed to meet the all-level requirement.

* On leave 1957-58.

A student must receive at least a C grade in every speech course he wishes to count toward a major or minor, or teaching major or minor in speech.

For Undergraduates

131. Fundamentals of Speech. Cr. 3.
Training in the basic principles of speech, with emphasis on discussion and original speaking. May not be taken for credit by students having had Spch. 338 previously.

211. Stage Makeup. Cr. 1. (0-3).
A laboratory course in the practice of makeup for the stage. Assigned readings in textbook.

231. Introduction to the Theater and Cinema. Cr. 3.
A study of the modern theater and cinema as art forms, with attention to the historical background and traditions of each. Emphasis is placed on a better understanding of the social, cultural, and aesthetic significance of theater and cinema. Attendance, when it can be arranged, at representative plays and motion pictures.

232. Principles of Acting. Cr. 3. (2-3).
Study and application of the theories and techniques of the art of acting. Character analysis and the use of the body and voice in creating a role. Materials for illustrative exercises chosen from classical and contemporary plays.

233. Voice and Diction. Cr. 3.
Analysis of the characteristics of good voice and speech usage. Structure and functioning of the speech mechanism. The use of phonetics and phonetic symbols for ear training and transcription of speech. Practical exercises in developing adequate voice control and diction for effective speaking.

235. Discussion and Debate. Cr. 3.
Study and practice in the essential tools of a democratic society: group problem-solving and methods of inquiry and advocacy.

237. Oral Interpretation. Cr. 3.
Major emphasis is placed on the appreciation of good literature and its effective oral interpretation from the printed page.

238. Introduction to Radio and Television Broadcasting. Cr. 3.
The origin and development of radio and television; basic structure of the broadcasting industry and its social, political, economic, and cultural significance.

239. Speech Development for Teacher Competence. Cr. 3.
The development of speech skills necessary for teaching effectiveness are emphasized during the first half of the course. During the second half, methods of using speech materials and methods in the teaching of other subject matter areas are studied. (For education majors only).

311. Parliamentary Procedure. Cr. 1.
Principles and procedure governing deliberative groups, with practice in their usage.

312. Radio Speech for Agriculture and Home Economics. Cr. 1.
Prerequisite: Spch. 131 or 338 or by permission of Head of Department. Includes radio speaking technique, organization of the radio speech directed toward a specific audience; program planning directed toward farm, garden, 4-H, women's clubs, etc. Planning and conducting interviews and discussions.

318. Forensic Activities. Cr. 1.
Opportunity is offered the student who wishes to participate extensively in forensic activities to secure credit for this laboratory work. Limit: 4 semester hours for speech majors and minors, 2 semester hours for others.

319. Theater Activities. Cr. 1.
Opportunity is offered the student who wishes to participate extensively in theater activities to secure credit for this laboratory work. Limit: 4 semester hours for speech majors and minors, 2 semester hours for others.

331. The Speech Mechanism and Phonetics. Cr. 3.
Study of the functioning of the speech mechanism and the principles of phonetics basic to major study in speech. Primarily for speech majors but equally valuable for prospective elementary school teachers.

332. Advanced Acting. Cr. 3. (2-3).
Prerequisite: Speech 232. Continuation of the study and application of the theories and techniques of the art of acting, with emphasis upon characterization, analysis of roles, and techniques and types of performance. Materials for illustrative exercises chosen from classical and contemporary plays.

333. Stagecraft. Cr. 3. (2-3).
Prerequisite: Spch. 231 or equivalent. The study of technical problems of play production. Design, construction, and painting of scenery and properties; and special effects.

334. Stagecraft. Cr. 3. (2-3).
Prerequisite: Spch. 231 or equivalent. Continuation of study of technical problems of play production. Stage lighting, costume design and construction, and stage makeup.

335. Fundamentals of Radio and Television Broadcasting. Cr. 3. (2-3).
The basic principles and techniques for performance on radio and television. Practical experience under broadcast conditions.

336. Radio Program Production. Cr. 3. (2-3).

Prerequisite: Approval of Head of Department. A concentrated and practical course covering the multiple problems faced by the radio director and producer. Opportunity to acquire professional facility and technique in direction and production of radio programs on the campus station, KTTC. Development of creative ingenuity and critical standards is emphasized.

337. Television Program Production. Cr. 3. (2-3).

Prerequisite: Approval of the Head of Department. A concentrated and practical course on the theory and application of the principles of television production; development of creative ingenuity and critical standards is emphasized.

338. Business and Professional Speech. Cr. 3.

Prerequisite: Sophomore classification. Basic principles of speech applied to the speech needs of the professional man and woman. Practice in the construction and delivery of the various types of speeches and participation in group conferences, discussion and interviews. For majors in other fields than speech.

4324. American Theater Tour. Cr. 3.

A tour of representative American theaters and productions to include such examples as; professional resident companies, arena theaters, professional and non-professional summer stock, showboat, indigenous theater revival productions, community-little theater and Broadway or Hollywood productions.

For Undergraduates and Graduates

430. Advanced Public Speaking. Cr. 3.

Prerequisite: 9 hours of speech, including 3 hours primarily in public speaking. Intensive study and practice in different kinds of public speaking. Audience analysis and adaptation are given special emphasis.

431. Creative Dramatics. Cr. 3.

Studies in the principles and methods of developing original dramatizations with children. (May also be taken for education credit).

433. Introduction to Hearing Problems. Cr. 3.

Anatomy of the ear. Definition and description of types of hearing loss and deafness. Principles and methods of clinical and classroom retraining of the hard-of-hearing through lip reading and speech correction.

434. Principles of Audiometry. Cr. 3.

Principles of testing hearing loss through use of the audiometer and psychometer. Use and interpretation of audiograms. The physics of sound as related to hearing. Psychological problems of hearing. Clinical observation and practice.

435. Interpretative Reading. Cr. 3.

Prerequisite: Junior classification and 12 hours of English. Students are advised to complete Speech 233 and/or 237 before taking this course. Consideration of the problems of transferring meaning from the printed page to the listener. Study of types of literature for oral interpretation. Practice in interpretation of prose and poetry.

436. Radio and Television Program Planning and Management. Cr. 3. (2-3).

Prerequisite: Approval of Head of Department. Objectives and methods in planning commercial and educational programs for radio and television. Staff organization and administration. Case studies and individual projects.

437. Persuasion. Cr. 3.

Prerequisite: 6 hours of public speaking and a course in psychology or permission of Head of Department. A study of the psychological and rhetorical principles of motivation, suggestion, and other aspects of audience psychology as used in business, radio, and public affairs.

438. Advanced Discussion, Debate and Conference Methods. Cr. 3.

Prerequisite: Spch. 235 or 338. A study of the history and philosophy of discussion and debate and their application to specialized forms, with special emphasis on newer techniques in the business and educational conference including consideration of group dynamics.

439. Methods in Teaching Speech. Cr. 3.

Prerequisite: 18 hours of speech and 9 hours of education. Review of the areas of speech. A survey of texts and their critical analysis. Preparation of syllabi. (May be taken for education credit.)

4311. Stage Directing Methods. Cr. 3. (2-3).

Prerequisite: Junior classification. 18 hours of speech, including Spch. 231, and 232 or equivalent. Analysis of the function of the director as related to the principles of play production. Study and practice of fundamental techniques of directing, with attention to composition, picturization, movement, and stage business. Rehearsal procedure organization. Student direction of representative plays. (May be taken for education credit).

4318. Introduction to Speech Correction. Cr. 3.

Prerequisite: Junior classification and permission of Head of Department. A survey of the speech correction field, with emphasis on classification of speech disorders, etiology, and resulting problems of the field. Observation in speech clinic required. (May be taken for education credit.)

4319. Speech Correction Methods. Cr. 3.

Prerequisite: Junior classification and permission of Head of Department. Treatment of classification of speech disorders, with emphasis on speech, retraining, and the methods in speech therapy. Observation of speech training and audiometric testing in clinic. A limited amount of supervised work in the speech clinic if it is the student's second course in speech correction. (May be taken for education credit.)

4321-4322. Supervised Clinical Practice in Speech Correction. Cr. 3 each.

35 laboratory hours per credit hour. Prerequisite: Spch. 4318, concurrent registration in Spch. 4319, or permission of Head of Department. Required of teachers desiring certificate of approval for speech therapy. (May be taken as Spch. 4221, 4222, and 4223 for 2 credit hours each. May be taken for education credit.)

4325. Directing School Speech Activities, Cr. 3.

Prerequisite: 12 hours of speech or education, and/or teaching experience. Methods and principles involved in extracurricular speech activities, such as discussion, debate, dramatics, public speaking, and radio. Students will have an opportunity to work with individuals and projects in different activities. (May be taken for education credit).

4351. History of Speech and Theater. Cr. 3.

A study of the origin, history and development of speech and theater as social functions and forces.

For Graduates

531. Studies and Problems in Speech. Cr. 3.

May be repeated for credit.

535. Pathology of the Hard-of-Hearing. Cr. 3.

Advanced study in the etiology, therapy, and problems of the hard-of-hearing.

536. Speech Pathology. Cr. 3.

(Formerly 4314). Advanced study in the etiology, therapy, and problems of speech disorders, with emphasis on diagnosis. Investigation of current theories and recent experimental work. (May be taken for education credit).

5335. Basic Speech for Elementary Teachers. Cr. 3.

A study of the basic characteristics of speech skills and abilities necessary for effective speech, and the use of speech in classroom activities.

631-632. Thesis. Cr. 6.

Biblical Literature

LEWIS COBBS, BAPTIST GENERAL CONVENTION OF TEXAS;
CECIL RAYMOND MATTHEWS, THE METHODIST CHURCH;
DAVID M. H. RICHMOND, THE PRESBYTERIAN CHURCH;
ROBERT A. FUDGE, THE DISCIPLES OF CHRIST;
GOEBEL MUSIC, THE CHURCHES OF CHRIST;
HUBERT HALFMAN, ROMAN CATHOLIC CHURCH;
GEORGE SALLAWAY, ROMAN CATHOLIC CHURCH.

The purpose of this area is to introduce students to that world of literature, the Bible, which has so broadly affected Western culture. Guidance is given in the study of its moral and religious teachings and their relevance to life today. Though recognized for credit by the College, all courses are taught off campus in centers provided by the churches at no expense to the College.

131. Survey of The Old Testament. Cr. 3.

A survey of the contents of the Old Testament in relation to the history of the Hebrews and their religious outlook on life.

132. Survey of The New Testament. Cr. 3.

A survey of the content of the New Testament in relation to its historical background and basic Christian teachings.

211. The Bible, Its Origin and Growth. Cr. 1.

The origin and growth of the Bible from earliest known manuscripts to the present time.

212. The Psalms. Cr. 1.

The origin, significance, and message of the Psalms.

213. Book of James. Cr. 1.

The background, authorship, and occasion for writing the Book of James, with emphasis on its message of practical Christian living.

221. The Book of John. Cr. 2.

The background, authorship, and occasion for writing the Book of John, with emphasis on interpretation and major teaching.

222. Book of Revelation. Cr. 2.

The background and interpretations of the Book of Revelation.

223. Book of Romans. Cr. 2.

Contents of the Epistle to the Romans, with emphasis on the spiritual and ethical teaching.

224. Book of Hebrews. Cr. 2.
The background, content, and practical value of the Epistle to the Hebrews.

231. Church History. Cr. 3.
The history and growth of the Christian Church from its earliest beginning to the present time.

232. Christian Leadership. Cr. 3.
Principles of the development and growth in lay and church careers.

234. Great Ideas of the New Testament. Cr. 3.
The major spiritual and ethical themes of the New Testament.

235. The Prophets. Cr. 3.
The Hebrew prophets, their place in history, and their message.

236. The Life and Teachings of Jesus. Cr. 3.
The life, teaching and significance of Jesus as revealed in the gospels.

237. The Spread of Christianity. Cr. 3.
The Book of Acts is studied in its harmonic connection with the Epistles. The missionary program and message are traced through the historical records of the New Testament.

434. Comparative Religion. Cr. 3.
Prerequisite: Junior classification. A study of the origin and fruits of the chief world religions (e.g. Primitivism, Hinduism, Buddhism, Confucianism, Islamism, Judaism, Christianity, etc.).

SCHOOL OF BUSINESS ADMINISTRATION

GEORGE HEATHER, *Dean*

The School of Business Administration was established officially in 1942, although offerings in business and economic subjects had been available to students since 1925 under the administration of the School of Arts and Sciences.

Lubbock, the home of Texas Technological College, which is located in the center of the South Plains area, is large enough to provide the student with opportunities to observe all types of business and to provide him with opportunities for practical experience in his chosen field of preparation through part-time employment in some of its 250 or more different types of business.

The School of Business Administration has four primary objectives:

1. *Liberal Education for all degree students* with the aim that they may live fuller personal lives and better assume the responsibilities of American citizenship. To help achieve this aim, the School requires that a minimum of 40 per cent of each student's total program consist of liberal arts and non-professional courses. The School of Arts and Sciences cooperates by providing the instruction for most of such courses. With the same objective, the School of Business Administration makes its courses available to majors in other schools of the College.

2. *Professional education* to prepare the student for employment in business and industry. All students are required to study certain business and economic subjects which are considered basic to the preparation for entrance into business employment. In addition, each student is expected to complete a program of major and allied subjects which will result in his being especially employable in some particular field.

3. *Adult or continuing educational programs* for employed persons who cannot enroll in the regular day schedule of classes. The School offers a number of its courses in evening residence classes and to the limit of its facilities will provide instruction in its business subjects to any group sufficiently large in West Texas.

4. *Research* to further the development of business and industry in West Texas, the Southwest, and the United States. The School has specific courses which emphasize training for research and all students are trained to approach problems scientifically, with the case method of instruction being used to some extent in most classes. Superior students are given the opportunity for research experience in the Business Research Bureau. The School welcomes from any group requests for study and recommendation on any problem by its faculty.

Admission

The admission regulations stated in the catalog section "General Information" apply to students making application for the freshman year in the School of Business Administration. The student will find it a considerable advantage to have taken in high school those subjects which will prepare him to be especially proficient in English, speech, and basic mathematical computations. It is also desirable for him to have gained some proficiency in the use of the typewriter.

Length of Program

Many of the major programs can be completed within normal load limits in eight semesters. Some of the majors, because of the greater semester-hour requirements, necessitate a ninth semester or the attendance in one summer session. A student in any major program, because of poor schedule-planning or failure of one or more courses, or for other reasons may be required to attend more than the normal eight semesters. Before the close of his junior year each student should plan carefully the scheduling of his remaining degree requirements to determine his proper graduation date and file application for the degree in the Office of the Dean of Business Administration.

Load

The normal study load for regular students in the School is 15 or 16 semester hours each semester. The student who shows promise of compiling only a mediocre grade-record may have further load restrictions imposed. No student is permitted to enroll for a program of more than 17* semester hours without special approval from the Dean; the student desiring approval of an irregular load should address a written request to the Dean incorporating all pertinent information *prior to the registration period.*

Degrees Granted

The School of Business Administration offers two undergraduate and two graduate degrees: Bachelor of Business Administration, Bachelor of Science, Master of Business Administration, and Master of Arts.

Bachelor of Business Administration. This degree will be awarded to all students who elect the degree and who have completed the minimum requirements as follows:

1. The specific course requirements set forth on the following pages for majors in accounting, advertising, business education, economics, finance, international trade, management, marketing, office management, prelaw, public administration, retailing, or secretarial administration.
2. Additional courses approved by the major adviser to complete the degree program.
3. A minimum grade-point average of 1.00 in all business administration subjects.
4. A total number of semester hours as stated for the major** with a minimum grade-point average of 1.00. In addition, a minimum of 4 semester hours of freshman and sophomore physical education, band, or basic ROTC must be completed.
5. Application for the degree made through the office of the Dean of Business Administration at least one year in advance of the proposed graduation date.

Bachelor of Science. This degree will be awarded to all students who elect the degree and who have completed the minimum requirements as follows:

* Exclusive of a required freshman or sophomore physical education class.
** Exclusive of freshman and sophomore physical education, band, or basic ROTC. Advanced ROTC credit may be used, up to 12 semester hours in certain curricula, in meeting the total semester-hour degree requirements.

1. The specific course requirements set forth on the following pages for majors in economics, international trade, or public administration.
2, 3, 4 and 5. Same as for the degree, Bachelor of Business Administration.

Master of Business Administration and Master of Arts. These degrees are awarded upon the completion of the various prescribed programs administered under the regulations of the Graduate School. The student should consult the catalog section for the Graduate School.

Selection of a Major

It is recommended that the student not attempt to make final selection of his major until he has completed some college work and has had an opportunity to investigate the study programs which are available to him. The required freshman course, "Professional Careers in Business," should prove to be of considerable help to the student in making his decision. The student should counsel with the advisers in those fields which he believes to be of possible interest to him. Aptitude tests are available in giving students additional help in deciding upon their majors.

At the beginning of the sophomore year, each student must have selected a major field of study from one of the following curricula with the approval of a major adviser from that particular field. The student should notify the Dean's office of his choice. Of course, a student may decide to change to another major at a later time.

Since some courses are offered only in alternate years, there is no reasonable assurance that a student will be able to schedule all of his required courses before an expected graduation date unless he makes his final major selection and plans his program of courses a full two years in advance.

Freshman Schedules

Even in the freshman year, the student is given some choice in the courses for which he registers. Each freshman student prepares his study program in conference with the business administration freshman adviser, and therefore should not concern himself particularly about his schedule until the time of his conference with the adviser. The following illustrates a typical selection of courses:

First Semester	Second Semester
Eng. 131, English Composition	Eng. 132, English Composition
Math. 130, Algebra	Math. 138, Mathematics of Finance
Science (student's choice)	Science (student's choice)
Eco. 133, The Development of American Business and Economic Institutions, I	Eco. 134, The Development of American Business and Economic Institutions II
Physical Education, Band, or Basic ROTC	Physical Education, Band, or Basic ROTC
Mgt. 110, Professional Careers in Business	Elective, 2 or 3 semester hours
Elective, 2 or 3 semester hours	

CURRICULA IN THE SCHOOL OF BUSINESS ADMINISTRATION

DEGREES:

BACHELOR OF BUSINESS ADMINISTRATION AND BACHELOR OF SCIENCE

Course requirements for the degrees are set forth in the following groups of subjects.

I. Non-professional courses (52 semester hours):
Eco. 133-134—The Development of American Business and Economic Institutions I and II
Eco. 231-232—Principles of Economics
Eng. 131-132—English Composition
Eng. 231 or 232—Masterpieces of Literature
Gov. 233—American Government, Organization
Govt. 234—American Government, Functions
Mgt. 110—Professional Careers in Business
Math. 130—College Algebra
Math. 138—Mathematics of Finance
Physical Education, Band, or Basic ROTC—4 semesters
Science—6 semester hours
Speech 338—Business and Professional Speech
American History—6 semester hours*
Humanities: approved by the major adviser:**
One course from each of two fields—6 semester hours:
Allied Arts
Anthropology
English
Foreign Language***
History
Music Literature
Philosophy
Psychology
Sociology

II. Basic professional courses (30 semester hours):
Acct. 244-245—Elementary Accounting
Bus. Law 338-339—Business Law****
Fin. 331—Corporation Finance
Mgt. 331—Industrial Management
Mkt. 332—Principles of Marketing
Mkt. 346—Introduction to Business Statistics
Sec. Admin. 333—Business Correspondence

III. Major professional courses as listed on the following pages

IV. Electives

BACHELOR OF BUSINESS ADMINISTRATION
ACCOUNTING MAJOR

III. Major professional courses (28 semester hours):
Acct. 334-335—Intermediate Accounting
Acct. 336—Principles of Cost Accounting
Acct. 434-435—Advanced Accounting
Acct. 437—Principles of Auditing
Accounting electives—6 semester hours
Eco. 326—Research in Economics and Business
Sec. Admin. 327—Report Writing

IV. Electives to complete a total of 126 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

BACHELOR OF BUSINESS ADMINISTRATION
ADVERTISING MAJOR

III. Major professional courses (38 semester hours):
Ap. A. 133—Design
Journ. 330—Typography
Mkt. 321—Public Relations
Mkt. 334—Principles of Advertising
Mkt. 335—Principles of Retailing
Mkt. 339—Principles of Salesmanship
Mkt. 433—Marketing Problems
Mkt. 438—Sales Promotion, Retail Advertising, and Display
Mkt. 4314—Advertising Copy
Mkt. 4317—Advertising Layout
Mkt. 4318—Mechanical Production of Advertising
Mkt. 4319—Advertising Internship
Psy. 130—Introduction to Psychology

IV. Electives to complete a total of 126 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

---

* With approval of the major adviser, 3 semester hours may meet requirement of one humanities field.

** A list of the approved courses may be obtained from the student's major adviser or from the office of the Dean of Business Administration.

*** A student electing foreign languages should have free elective hours to cover the second course in any hyphenated series selected.

**** Not to be taken by prelaw majors.

BACHELOR OF BUSINESS ADMINISTRATION

BUSINESS EDUCATION MAJOR

III. Major professional courses (42 semester hours):
Bus. Educ. 422—Improvement of Instruction in Bookkeeping and the Social Business Subjects
Bus. Educ. 423—Improvement of Instruction in Typewriting and Shorthand
Bus. Educ. 424—Improvement of Instruction in Basic Business
Eco. 326—Research in Economics and Business
Educ. 130—Foundations of Education
Educ. 232. Educational Psychology
Educ. 334—Curriculum Development in Secondary Schools.
Educ. 432—Student Observation and Teaching in the Secondary Schools
Educ. 434—Advanced Student Observation and Teaching in the Secondary School
Psy. 335—Adolescent Psychology
Sec. Admin. 122—Typewriting for Business
Sec. Admin. 131—Elementary Shorthand
Sec. Admin. 132—Intermediate Shorthand
Sec. Admin. 321—Calculating Machines
Sec. Admin. 327—Report Writing
Sec. Admin. 328—Filing Systems, Procedures and Practices
Sec. Admin. 421—Voice-writing and Duplicating Machines

IV. Electives: 10 semester hours
Additional electives to complete a total of 132 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC

BACHELOR OF BUSINESS ADMINISTRATION
OR
BACHELOR OF SCIENCE

ECONOMICS MAJOR

IV. Electives to complete a total of 126 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

III. Major professional courses (40 semester hours):
Eco. 326—Research in Economics and Business
Eco. 331—Economics of Business Enterprise
Eco. 334—Taxation
Eco. 338—Foreign Trade
Eco. 436—Development of Economic Doctrines
Sec. Admin. 327—Report Writing
Approved Electives—24 semester hours

IV. Electives to complete a total of 126 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

BACHELOR OF BUSINESS ADMINISTRATION

FINANCE MAJOR

III. Major professional courses (34 to 40 semester hours):
Eco. 326—Research in Economics and Business
Eco. 331—Economics of Business Enterprise
or 3311—National Income Analysis
Fin. 231—Personal Finance
Fin. 333—Principles of Money, Banking, and Credit
Fin. 334—Credits and Collections
Fin. 335—General Insurance
Sec. Admin. 327—Report Writing
Approved Electives—15 to 21 semester hours

BACHELOR OF BUSINESS ADMINISTRATION
OR
BACHELOR OF SCIENCE

INTERNATIONAL TRADE MAJOR

III. Major professional courses (39 semester hours):
Eco. 237—Economic Geography
Eco. 335—Transportation Principles and Practices
Eco. 337—Economic Systems
Eco. 338—Foreign Trade
Eco. 339—Latin America and the U.S.
Eco. 432—Foreign Market Surveys
Eco. 433—International Economic Relations
Eco. 436—Development of Economic Doctrines
Eco. 437—Current Economic Problems
Gov. 336—U.S. Foreign Policy
Gov. 435—International Organization
Gov. 436—International Law
Gov. 437—Political Geography

IV. Electives to complete a total of 126 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

BACHELOR OF BUSINESS ADMINISTRATION
MANAGEMENT MAJOR

Industrial Management Option

III. Major professional courses (47 semester hours):
Acct. 331—Managerial Accounting
Eco. 326—Research in Economics and Business
Mgt. 221—Industrial Operations
Mgt. 333—Labor Problems
Mgt. 334—Personnel Administration
Mgt. 335—Purchasing
Mgt. 422—Administrative Policies and Practices
Mgt. 433—Labor Legislation
Mgt. 435—Employee Supervision
Mgt. 441—Management of Small Business Enterprise
Mgt. 452—Industrial Management Problems
Sec. Admin. 327—Report Writing
Additional minimum concentration in another approved field—12 semester hours

IV. Electives to complete a total of 134 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC

Personnel Management Option

III. Major professional courses (51 semester hours):
Eco. 326—Research in Economics and Business
Mgt. 221—Industrial Operations
Mgt. 333—Labor Problems
Mgt. 334—Personnel Administration
Mgt. 339—Office Management
Mgt. 421—Job Evaluation
Mgt. 422—Administrative Policies and Practices
Mgt. 433—Labor Legislation
Mgt. 435—Employee Supervision
Mgt. 451—Advanced Personnel Management
Psy. 130—Introduction to Psychology
Psy. 330—Psychology in Business and Industry
Psy. 432—Trade and Aptitude Testing
Sec. Admin. 327—Report Writing
Additional minimum concentration in another approved field—12 semester hours

IV. Electives to complete a total of 139 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC

Traffic Management Option

III. Major professional courses (36 semester hours):
Eco. 326—Research in Economics and Business
Eco. 332—Public Utility Economics
Eco. 335—Transportation Principles and Practices
Eco. 435—Transportation Economics
Mgt. 221—Industrial Operations
Mgt. 333—Labor Problems
Mgt. 334—Personnel Administration
Mgt. 335—Purchasing
Mgt. 337—Motor Carrier Management
Mgt. 338—Railroad Transportation
Mgt. 435—Employee Supervision
Mgt. 437—Industrial Traffic Management
Sec. Admin. 327—Report Writing

IV. Electives to complete a total of 127 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

BACHELOR OF BUSINESS ADMINISTRATION
MARKETING MAJOR

III. Major professional courses (40 semester hours):
Eco. 237—Economic Geography
Eco. 326—Research in Economics and Business
Fin. 334—Credits and Collections
Mkt. 334—Principles of Advertising
Mkt. 335—Principles of Retailing
Mkt. 339—Principles of Salesmanship
Mkt. 433—Marketing Problems
Mkt. 434—Wholesaling
Mkt. 435—Business Cycles and Forecasts
Mkt. 439—Sales Management
Psy. 130—Introduction to Psychology
Sec. Admin. 327—Report Writing
Approved electives—6 semester hours
Recommended:
Economics 335—Transportation Principles and Practices
Economics 337—Economic Systems
Economics 338—Foreign Trade

IV. Electives to complete a total of 126 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

BACHELOR OF BUSINESS ADMINISTRATION

OFFICE MANAGEMENT MAJOR

III. Major professional courses (47 semester hours):
- Acct. 322—Payroll Accounting
- Eco. 326—Research in Economics and Business
- Fin. 334—Credits and Collections
- Mgt. 333—Labor Problems
- Mgt. 334—Personnel Administration
- Mgt. 335—Purchasing
- Mgt. 339—Office Management
- Mgt. 435—Employee Supervision
- Mgt. 436—Problems in Office Management
- Sec. Admin. 121—Typewriting for Business
- Sec. Admin. 122—Typewriting for Business
- Sec. Admin. 310—Business Comportment
- Sec. Admin. 321—Calculating Machines
- Sec. Admin. 327—Report Writing
- Sec. Admin. 328—Filing Systems, Procedures, and Practices
- Sec. Admin. 421—Voice-writing and Duplicating Machines
- Sec. Admin. 431—Internship
- Additional minimum in accounting or secretarial administration—6 semester hours

IV. Electives to complete a total of 134 semester hours, exclusive of freshman and sophomore Physical Education, Band, or ROTC.

BACHELOR OF BUSINESS ADMINISTRATION

PRELAW MAJOR

III. Major professional courses* (10 semester hours)
- Eco. 326—Economics and Business Research
- Sec. Admin. 327—Report Writing
- Electives—6 semester hours to be chosen from the following:
  - Anthro. 231—The Nature of Man
    or 232—Cultural Anthropology
  - Hist. 133-134—Economic and Political History of England
  - Psy. 130—Introduction to Psychology
  - Soc. 230 or 233—Introduction to Sociology and Current Social Problems
  - Speech 236—Argumentation and Debate
  - Advanced business administration courses

IV. Electives in business administration** to complete a total of 95 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

BACHELOR OF BUSINESS ADMINISTRATION

OR

BACHELOR OF SCIENCE

PUBLIC ADMINISTRATION MAJOR***

III. Major professional courses (45 semester hours):
- Acct. 432—Governmental Accounting
- Arch. 436—City Planning
- Eco. 326—Business and Economic Research
- Eco. 332—Public Utility Economics
- Eco. 333—Public Expenditures
- Eco. 334—Taxation
- Gov. 331—Local Government
- Govt. 338—Public Administration
- Govt. 439—Administrative Law
- Mgt. 334—Personnel Administration
- Mgt. 335—Purchasing, Stores, and Inventory Control
- Mgt. 435—Employee Supervision
- Mkt. 321—Public Relations
- Psy. 130—Introduction to Psychology
- Sec. Admin. 327—Report Writing
- Sec. Admin. 431—Internship

IV. Electives to complete a total of 130 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

---

* The completion of all of the requirements for the law degree from any school of law recognized by this College will be accepted as completing the requirements for the B.B.A. Degree.

** Students should attempt to elect courses which will provide the most information concerning the areas of business activity in which it is anticipated legal practice will concentrate.

*** Primarily for city managership.

BACHELOR OF BUSINESS ADMINISTRATION

RETAILING MAJOR

III. Major professional courses (39 semester hours):

Appl. Arts 133—Design
Eco. 237—Economic Geography
Fin. 334—Credits and Collections
Mkt. 334—Principles of Advertising
Mkt. 335—Principles of Retailing
Mkt. 339—Principles of Salesmanship
Mkt. 433—Marketing Problems
Mkt. 438—Sales Promotion, Retail Advertising, and Display
Mkt. 4315—Retail Buying
Psy. 130—Introduction to Psychology
Sec. Admin. 431—Internship
Approved electives—6 semester hours
Recommended: Eco. 337—Economic Systems
Mkt. 439—Sales Management

IV. Electives to complete a total of 130 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

BACHELOR OF BUSINESS ADMINISTRATION

SECRETARIAL ADMINISTRATION MAJOR

III. Major professional courses (37 semester hours):

Acct. 246—Machine Accounting
Eco. 326—Research in Economics and Business
Mgt. 339—Office Management
Sec. Admin. 121—Typewriting for Business
Sec. Admin. 122—Typewriting for Business
Sec. Admin. 131—Elementary Shorthand
Sec. Admin. 132—Intermediate Shorthand
Sec. Admin. 235—Advanced Shorthand
Sec. Admin. 310—Business Comportment
Sec. Admin. 321—Calculating Machines
Sec. Admin. 327—Report Writing
Sec. Admin. 328—Filing Systems, Procedures, and Practice
Sec. Admin. 331—Secretarial Practice
Sec. Admin. 421—Voice-writing and Duplicating Machines
Sec. Admin. 431—Internship

IV. Electives to complete a total of 126 semester hours, exclusive of freshman and sophomore Physical Education, Band, or Basic ROTC.

STENOGRAPHY CURRICULUM

TWO-YEAR PROGRAM

(No Degree)

First Year

First Semester	Hours	Second Semester	Hours
Eng. 131—English Comp.	3	Eng. 132—Eng. Comp.	3
Math. 130—Algebra	3	Math 138—Math. of Fin.	3
Eco. 133—Devel. of Amer. Bus. and Eco. Instit. I	3	Eco. 134—Devel. of Amer. Bus. and Eco. Instit. II.	3
Sec. Admin. 121—Typewrit. for Bus.	2	Sec. Admin. 122—Typewrit. for Bus.	2
Sec. Admin. 131—Elem Shorthand	3	Sec. Admin. 132—Intermed. Shorthand	3
P.E.	1	P.E.	1
	15		15

Second Year

First Semester	Hours	Second Semester	Hours
Govt. 233—Amer. Govt. Org.	3	Acct. 245—Elem. Acct.	4
Acct. 244—Elem. Acct.	4	Sec. Admin. 331—Sec. Prac.	3
Sec. Admin. 235—Adv. Shorthand	3	Sec. Admin. 421—Voice-writing & Dupl. Mach.	2
Sec. Admin. 321—Calc. Machines	2	Sec. Admin. 333—Bus. Corres.	3
Sec. Admin. 328—Filing	2	Speech 338—Bus. & Prof. Speech	3
Sec. Admin. 310—Comportment	1	P. E.	1
P.E.	1		
	16		16

Students who are exempted from Sec. Admin. 121, 131, or 132 may elect other courses taken by four-year majors during their first two years of college.

Department of Accounting and Finance

PROFESSORS R. RUSHING, HEATHER, F. NORWOOD, P. McWHORTER, ROUSE, H. G. TAYLOR.
ASSOCIATE PROFESSORS ABEL, CHISHOLM, A. ROBERTS.
ASSISTANT PROFESSORS COX*, DALE, L. EAVES.
INSTRUCTORS, R. GREEN, REESE.
PART-TIME INSTRUCTORS DIXON, EDWARDS, J. HILL, P. HILL, HOWARD, IRVIN, McLANE, RODGERS, SEGARS, L. STEWART, J. TEAGUE.

ACCOUNTING

The primary purpose of the Department of Accounting and Finance is to offer training to students who wish to specialize in the field of accounting with the expectations of practicing as public, private, or governmental accountants. The secondary purpose of the department is to offer course work that will benefit students: (1) who expect to enter business for themselves or to work for others in managerial positions which will require an understanding of accounting for most efficient performance of their functions; (2) who expect to enter other professions, such as law, engineering, pharmacy, and medicine; (3) who are interested primarily in the personal usefulness of the subject or its cultural aspects.

For Undergraduates

231. Industrial Accounting for Engineers. Cr. 3.
Intended for engineers interested in the process and executive uses of industrial accounting. Offers a foundation in basic accounting principles, a treatment of the essentials of cost accounting theory and practice, and training in managerial aspects of accounting.

244. Elementary Accounting I. Cr. 4. (3-3).
Introduction to principles of accounting. Accounting for merchandise operations, proprietorships, partnerships, negotiable instruments, specialized books of original entry, and the voucher system.

245. Elementary Accounting II. Cr. 4. (3-3).
Second course in elementary accounting. Partnerships, corporations, cost accounting, assets, theory and principles of accounting, and interpretation of financial statements.

246. Machine Accounting. Cr. 4. (3-3).
Prerequisite: Acct. 245. Principles of machine methods; tabulation machine cards, punches, verifiers, sorters, and tabulators; organization of tabulating machine departments. Practice in the operation of the punch, verifier, sorter, plugboard, and tabulator. Machine service fee, $4.

247. Machine Accounting. Cr. 4. (3-3).
Prerequisite: Acct. 246. Principles of printing punch, interpreter, collator, reproducer; procedure development; punched card accounting systems for accounts payable and accounts receivable, payroll, inventory, billing, sales, management and supervisor responsibility. Practice in the operation of the interpreter, collator and reproducer. Machine service fee, $4.

322. Payroll Accounting. Cr. 2.
Accounting for payrolls. A study of social security legislation and wage and hour laws, withholding taxes, state unemployment compensation and taxes, federal unemployment insurance and taxes, old-age and survivors' benefits and taxes.

331. Managerial Accounting. Cr. 3.
Prerequisite: Acct. 245. Relation of financial reports to operations of enterprises, budget planning and control, internal checks and controls, accounting for unit product cost, cost interpretation.

332. Analysis of Financial Statements. Cr. 3.
Prerequisite: Acct. 245 and non-accounting major. Financial statement preparation and analysis. A study of the items that appear on financial statements including their derivation and financial significance. Methods used in interpreting financial statements.

334. Intermediate Accounting I. Cr. 3.
Prerequisite: Acct. 245. A review of elementary accounting, financial statements, analytical and comparative per cents, analysis of working capital, profit and loss analysis, corporations.

335. Intermediate Accounting II. Cr. 3.
Second course in intermediate accounting. Current assets, fixed assets, investments, liabilities, reserves, net income determination, application of funds.

* On leave, 1957-58.

336. Principles of Cost Accounting. Cr. 3.
Prerequisite: Acct. 245. The techniques of cost accounting, embracing the methods of accounting for materials, labor, and factory burden in job order and process cost systems.

337. Advanced Cost Accounting. Cr. 3.
Prerequisite: Acct. 336. The techniques of process cost are more fully developed and the scope of applicability broadened. Estimate and standard cost accounting comprehensively treated with emphasis on cost control.

For Undergraduates and Graduates

430. Income Tex Accounting. Cr. 3.
Prerequisite: Acct. 244. The Federal Revenue Acts with reference to taxation of the incomes of individuals. The preparation of tax returns for individuals and partnerships.

431. Advanced Income Tax Accounting. Cr. 3.
Prerequisite: Acct. 430. Advanced phases of income taxation. Tax court and federal court cases and decisions. Procedure in practicing before the tax court. Study and preparation of returns for corporations and returns involving gift taxes, estate taxes, and inheritance taxes.

432. Governmental Accounting. Cr. 3.
Prerequisite: Acct. 245. Application of accounting principles and systems to the requirements of governmental units, municipal, county, state, and federal. Emphasis on budgetary and fund accounts.

433. Petroleum Accounting. Cr. 3.
Prerequisite: Acct. 245. Accounting for the production, refining, and distribution of oil with emphasis upon production.

434. Advanced Accounting I. Cr. 3.
Prerequisite: Intermediate Accounting. Partnerships, consignments, ventures, installment sales, insurance, bankruptcies and receiverships, compound interest and annuities, estates and trusts.

435. Advanced Accounting II. Cr. 3.
Second course in advanced accounting. Branch accounting, consolidations, and foreign exchange.

436. Accounting Systems. Cr. 3.
Prerequisite: Acct. 245. Construction of accounting reports, application of principles of systems and design to the policies, organization, and operating methods of individual companies. Automation and accounting systems. Local field trips.

437. Principles of Auditing. Cr. 3.
Prerequisite: Acct. 335. Auditing procedure, classification of audits, and investigations. Methods of verification of financial statements. Problems and principles of auditing.

438. Advanced Auditing. Cr. 3.
Prerequisite: Acct. 437. Review of auditing standards; case studies in auditing procedure. Completion of an audit practice case.

439. Budgeting. Cr. 3.
Prerequisite: Acct. 245. Coordination of various business activities by means of the budget. Procedure in obtaining and enforcing the budget.

443. An Introduction to Computers and Programming Techniques. Cr. 4. (3-3).
Lecture and class problems covering machine components, programming, block diagramming, arithmetic operations, branching, table look-ups, instruction modification, loading routines, optimum programming and programming techniques.

4311. CPA Review I. Cr. 3.
Prerequisite: Approval of instructor. A review of accounting with emphasis on subject matter appearing in the practice part of the C.P.A. examinations.

4312. CPA Review II. Cr. 3.
Prerequisite: Approval of instructor. A review of accounting with emphasis on subject matter appearing in the theory part of the C.P.A. examinations.

For Graduates

531. Controllership. Cr. 3.
Prerequisite: Graduate standing or consent of instructor. The role of the controller in business. Functions of the controllers. Use of accounting and budgeting in business planning.

532. Internship. Cr. 3.
Prerequisite: Graduate standing or consent of instructor. A student is placed in an internship in accounting and upon completion writes a report of his internship.

533. Current Accounting Theory. Cr. 3.
Prerequisite: Graduate standing or consent of instructor. A study of current accounting literature; accounting bulletins of the American Institute of Accountants; S. E. C. accounting releases.

534. Seminar. Cr. 3.
Prerequisite: Graduate standing and Acct. 245. The uses of accounting to business, interpretation of financial statements; accounting reports. Limited to non-accounting majors.

535. Seminar in Accounting. Cr. 3.
Prerequisite: Graduate classification and accounting major or consent of instructor. A comprehensive study of some phase of accounting on an advanced level, such as internal auditing, accounting for the Federal Government, auditing of specific enterprises, accounting for fiduciaries and estates, advanced cost problems, and advanced machine accounting.

631-632. Thesis. Cr. 6.

FINANCE

Fundamental courses in the field of banking and finance have been arranged into a major for those students who wish to prepare themselves for the numerous opportunities existing in banks, financial organizations, and financial departments of business enterprises. Advisers will assist students to plan their course to fit the individual for his particular activity.

For Undergraduates

231. Personal Finance. Cr. 3.
Designed to introduce some of the financial problems of the home and of business. Particular emphasis is placed upon those elements that should be considered by the individual before investing his money in real estate, personal property, insurance or securities.

331. Corporation Finance. Cr. 3.
Prerequisite: 60 semester hours, including Eco. 232 and Acct. 245. The fundamental aspects of modern business organization, with attention given to the financial problems associated with promotion, capitalization, sale of securities, dividend policies, expansion, failure and reorganization, and the provision of working capital.

333. Principles of Money, Banking and Credit. Cr. 3.
Prerequisite: Eco. 232. A basic course in the principles of money and banking including consideration of monetary standards, organization and functioning of commercial banking and the Federal Reserve system, problems of money, prices and credit control. Recent monetary and banking trends are emphasized.

334. Credits and Collections. Cr. 3.
Prerequisite: Eco. 232 and Acct. 245. Types and analysis of financial statements, credit limits, collection procedures, legal remedies of the creditor, sources of credit information.

335. General Insurance. Cr. 3.
Prerequisite: Eco. 231-232. A survey of the entire field of private insurance and a foundation for more specialized courses. The history of insurance, the theory of risk, physical and moral hazards, loss prevention, types of insurance carriers and the basic features of each of the principal kinds of insurance.

336. Life Insurance. Cr. 3.
Prerequisite: General Insurance or approval of instructor. The nature of life insurance and of various ways of utilizing the protection which it offers. The principal features of life insurance and annuity contracts. Group insurance, industrial insurance, disability protection, insurance company investments, and the taxation of policy proceeds.

For Undergraduates and Graduates

431. The Federal Reserve System. Cr. 3.
Prerequisite: Fin. 333. An analysis and interpretation of the functions and services performed by the Federal Reserve System.

432. Real Estate. Cr. 3.
Real estate practice and finance from the standpoint of the broker, business man, and property owner. Real estate office organization, leasing and property management, valuation and taxation. The legal financial, economic, and social aspects of the real estate field.

433. Corporate Financial Problems and Cases. Cr. 3.
Prerequisite: Fin. 331. An intensive analysis of selected financial problems concerned with the organization, operation, and dissolution of business organizations, with special attention given to the corporation.

434. Investments. Cr. 3.
Prerequisite: Fin. 331. A study of the various types of investment media with major emphasis on the basic principles of investment, the construction of an investment portfolio, security analysis, sources of information, and the mechanism for investment.

435. Property Insurance. Cr. 3.
Prerequisite: General Insurance or approval of instructor. Fire insurance, marine insurance and allied lines. Policy forms, underwriting and selection, rate-making, loss adjustments, the operations of agency and brokerage firms and reinsurance.

437. Casualty Insurance. Cr. 3.

Prerequisite: General Insurance and Property Insurance. The various casulty lines of insurance such as public liability, automobile, workmen's compensation, aviation, burglary and robbery, glass, power plant, and accident and health. Contracts and practices in the field of fidelity and surety bonding. Primarily for those desiring to specialize in insurance.

438. Bank Administration. Cr. 3.

Prerequisite: Fin. 333 and 431. A study of the internal operations of a commercial bank with major emphasis on the organization of the bank, the sources of bank funds, the allocation of bank funds, and the supervision and regulation of the commercial bank.

439. Real Estate Appraisal. Cr. 3.

Prerequisite: Fin. 432. Application of principle of property valuation to the various classes of realty. Emphasis is placed on the character of land value, axioms of valuation and application of valuation procedures by use of cost, market, and capitalization of income approach to real estate value. Also individual problems and reports on independent property appraisals are required.

For Graduates

531. Current Financial Problems. Cr. 3.

Solution and presentation of approved problems involving individual research in the field of finance.

534. Seminar. Cr. 3.

Prerequisite: Graduate standing and Fin. 331. A comprehensive study of the problems of business enterprise in financing current operations and long-term capital requirements. Limited to non-finance majors.

631-632. Thesis. Cr. 6.

BUSINESS LAW

For Undergraduates

338. Business Law I. Cr. 3.

Prerequisite: 60 semester hours. Nature and source of law, courts and procedure, contracts, Texas Law of separate and community property, agency.

339. Business Law II. Cr. 3.

Second course in business law. Law of negotiable instruments, business organizations including partnerships and corporations, sales.

3311. Real Estate Law. Cr. 3.

Rights in land; classification of estates; acquisition and creation of property rights, titles; and common conveyances.

3312. Insurance Law. Cr. 3.

General principles of insurance law; the insurance contract; insurance agents and their powers; rights under the fire, life, and accident policies; taxation affecting insurance policies; insurance and community property rights. Study of the rules and regulations administered by the Texas Insurance Commission and how they apply to the companies.

3313. Oil and Gas Law. Cr. 3.

General contracts, oil and gas leases and their interpretation, titles, royalty, proration and conservation of oil and gas, regulations governing drilling operations, government lands, cases on oil and gas.

For Undergraduates and Graduates

4311. C.P.A. Law Review. Cr. 3.

A review of business law with emphasis on subject matter appearing frequently in the C.P.A. law examination.

Department of Business Education and Secretarial Administration

PROFESSOR PASEWARK.
INSTRUCTORS EWING, HOLTMANN.
PART-TIME INSTRUCTORS KEITH, KILCHENSTEIN

BUSINESS EDUCATION

The objective of this four-year program is to prepare students for certification in business teaching. Broad business and general background, technical business skills, and professional techniques and practices are primary aims.

Completion of the prescribed business education program qualifies the graduate for the Texas Permanent Provisional Certificate. See Page 106 for additional information about certification.

Those who seek professional advancement may prepare for the Master of Business Administration Degree or the Master of Education Degree with a major in business education.

For Undergraduates and Graduates

422. Improvement of Instruction in Bookkeeping and the Social-Business Subjects. Cr. 2.
Prerequisite: Acct. 245, Bus. Law 338. A study of modern methodology and materials.

423. Improvement of Instruction in Typewriting and Shorthand. Cr. 2.
Prerequisite: Sec. Admin. 122, 235. Progressive methodology. Emphasis on skill-building psychology.

424. Improvement of Instruction in Basic Business. Cr. 2.
Prerequisite: Bus. Law 338, Mkt. 232. Relationship of business learnings to general education for all. Materials and methodology.

For Graduates

511. Individual Directed Study. Cr. 1.
Assigned problems. May be repeated for credit.

522. Foundations of Business Education. Cr. 2.
A historical approach to interpreting present-day problems.

523. Evaluation of Current Literature in Business Education. Cr. 2.
Relating conclusions reflected in current literature to classroom use.

531. Improvement of Instruction in Business Subjects. Cr. 3.
A critical evaluation of content and methods with suggested improvements. May be repeated for credit.

532. Tests and Measurements in Business Education. Cr. 3.
Evaluating high school business programs. Constructing and administering tests. Diagnostic testing for remedial teaching in business subjects.

533. Guidance in Business Education. Cr. 3.
Organizing and implementing guidance programs in business education departments. Occupational surveys and job analyses. Placement and follow-up.

535. Seminar in Business Education. Cr. 3.
Readings, discussions, reports, and papers. May be repeated for credit.

631-632. Master's Thesis. Cr. 6.

SECRETARIAL ADMINISTRATION

Professional rather than purely vocational training is the purpose of instruction in this area. Those who combine job-entry skills with a broad business and general background enhance their opportunities to succeed in business.

Typewriting and shorthand skills are basic to advanced work in this four-year curriculum and should be acquired early in the college program.

For the Bilingual (Spanish or French and English) Secretarial Program, see Page 109 of this catalog.

A two-year stenographic curriculum is provided for those who are certain that they will not complete the four-year secretarial program. Job-entry skills are stressed.

For Undergraduates

120. Typewriting for Personal Use. Cr. 2. (0-5).
Designed to develop the ability to organize and present personal and student materials effectively through use of the typewriter. No credit granted those with one year of high school typewriting. Typewriter service fee, $4.

121. Typewriting for Business. Cr. 2. (0-5).
A beginning course to develop vocational proficiency for office work or business teaching. No credit granted those with one year of high school typewriting. Typewriter service fee, $4.

122. Typewriting for Business. Cr. 2. (0-5).
Prerequisite: Sec. Admin. 121 or equivalent. A continuation of basic skill building leading to acceptable production standards for office work. Speed and accuracy development. Typewriter service fee, $4.

131. Elementary Shorthand. Cr. 3. (3-2).
Prerequisite: Sec. Admin. 121 or equivalent. For students with no previous instruction in Gregg shorthand or with inadequate preparation for advanced work. No credit granted those with one year of high school shorthand. Typewriter service fee, $2.

132. Intermediate Shorthand. Cr. 3. (3-2).
Prerequisite: Sec. Admin. 131 or equivalent. Development of transcription skills. Minimum goals: Dictation at 100 and accurate transcription at 30 words per minute. Typewriter service fee, $2.

235. Advanced Shorthand. Cr. 3. (3-2).
Prerequisite: Sec. Admin. 122 and 132 or equivalent. Emphasis on proficiency and mailable transcripts. Minimum goals: Dictation at 120 and accurate transcription at 40 words per minute. Typewriter service fee, $2.

310. Business Comportment. Cr. 1.
Direction of personality development for the individual's responsibility in promoting harmonious relationships with the public, employers, and other employees.

321. Calculating Machines. Cr. 2. (2-4).
Prerequisite: Math. 130 or equivalent. Development of basic skills on office computing machines. Machine service fee, $4.

327. Report Writing. Cr. 2.
Prerequisite: Eco. 326 and Sec. Admin. 120 or 121 or typewriting proficiency demonstrated by examinations. Practice in writing business and technical reports.

328. Filing Systems, Procedure, and Practice. Cr. 2.
A study of alphabetic, triple-automatic, geographic, numeric, visible, and Soundex systems.

331. Secretarial Practice. Cr. 3. (3-1).
Prerequisite: Sec. Admin. 235. Integration of skills and knowledges essential to the secretarial worker. Typewriter service fee, $2.

333. Business Correspondence. Cr. 3.
Prerequisite: Sec. Admin. 120 or 121 or typewriting proficiency demonstrated by examinations. Practice in writing psychologically sound business letters in correct and forceful English. Typewriter service fee, $2.

For Undergraduates and Graduates

421. Voice-Writing and Duplicating Machines. Cr. 2. (2-4).
Prerequisite: Sec. Admin. 122 or equivalent. Practice in duplicating machines and producing mailable transcripts from voice recordings. Electric typewriter applications. Machine service fee, $4.

431. Internship. Cr. 3. (1-5).
Prerequisite: Sec. Admin. 235 or consent of instructor. Supervised work experience in an approved office or store. Minimum of 75 clock hours of work.

Department of Economics

PROFESSORS WIESEN, CLOVER, ROUSE.
ASSOCIATE PROFESSOR H. ANDERSON.
ASSISTANT PROFESSORS HARDING, LEVY, SAMPSON, H. WALKER.*
INSTRUCTORS POUNDERS, WILKINS.
PART-TIME INSTRUCTORS ASIMOS, E. GOTT, HARTLEY, WITT.*

The courses in economics have been designed to allow the student to accomplish any one or a combination of three objectives:

1. General preparation for entering the business world in various types of activity excluding the highly specialized fields. Considerable flexibility is provided in the matter of courses that the student may take. A specialized curriculum is available for students interested in international trade.

2. Specialized preparation as a professional economist. Business firms, banks, trust companies, insurance companies and government agencies offer numerous opportunities for qualified economists. In addition opportunities are afforded in public school and college teaching.

* On Leave, 1957-58.

3. Cultural training in the foundations of our economic institutions, ideas, and policies. In this period of world crisis when the very existence of our economic system is being challenged, a thorough grounding in fundamental economic concepts is essential for the person who would either assume positions of responsibility in the business world and in public office, or for one who would wish only to meet his full responsibility as a citizen.

For Undergraduates

133. The Development of American Business and Economic Institutions I. Cr. 3.
The foundations of business and economic institutions. Identification of the economic process; problems encountered; antecedents of American business institutions.

134. The Development of American Business and Economic Institutions II. Cr. 3.
The evaluation of our business institutions, commerce, agriculture, finance, industry, labor.

231. Principles of Economics. Cr. 3.
An introduction to modern economic society and theories of production, exchange, and distribution.

232. Principles of Economics. Cr. 3.
Prerequisite: Eco. 231. A continuation of Eco. 231. The application of economic theory to current economic problems.

235. Principles of Economics. Cr. 3.
An abridged course for students not majoring in economics or business administration.

237. Economic Geography. Cr. 3.
The characteristics and distribution of man's economic pursuits, his relation to natural conditions and resources, and his significance in the economics of the major regions of the world order.

326. Research in Economics and Business. Cr. 2.
Research methods used in the field. A definite problem undertaken for actual experience on the part of the students.

331. Economics of Business Enterprise. Cr. 3.
Prerequisite: Eco. 231-232. A study of the determination of prices of products and productive agents under conditions of competition, imperfect competition, and monopoly.

332. Public Utility Economics. Cr. 3.
Prerequisite: Eco. 231-232, or consent of instructor. Principles of public utility regulation, management, and ownership. Includes regulatory background and problems of valuation, costs, rates of return, financing, organization, prices, marketing, public relations, public ownership, and atomic power developments.

333. Public Expenditures. Cr. 3.
Prerequisite: Eco. 231-232. Analysis of the economic aspects of government finance; principles, policies, and problems of public expenditures, nation, state, and local. Public borrowing, debt, and financial administration. Special attention to present-day problems.

334. Taxation. Cr. 3.
Prerequisite: Eco. 231-232. Federal, state, and local taxation: the history, development, and present status with emphasis on sales, income, property, inheritance, and business taxes. Special studies devoted to Texas tax problems.

335. Transportation Principles and Practices. Cr. 3.
Prerequisite: Eco. 231-232, or consent of instructor. Economic and social functions of transportation. Development and characteristics of carrier agencies; routes; commodity movements; shipper-carrier relationships; rates and tariffs; location theory; competition and coordination.

337. Economic Systems. Cr. 3.
Prerequisite: Eco. 231-232. A survey of the control of economic institutions for the welfare of the general community. The main principles of a planned economy and existing economic systems.

338. Foreign Trade. Cr .3.
Prerequisite: Eco. 231-232. Principles of international trade, balance of payments, trade policies, and agreements.

339. Latin America and the United States. Cr. 3.
Prerequisite: Eco. 231-232. A study of the economics of Latin American countries and their economic relations with the United States.

3311. National Income Analysis. Cr. 3.
Prerequisite: Eco. 231-232. A study of national income concept and an analysis of the requirements for full employment. An examination of uses of income analysis for business decisions and public policy.

3312. Economics of Labor. Cr. 3.
Prerequisite: Eco. 231-232. A survey of labor economics embracing the theory of wages, the problems of unemployment, economic insecurity, industrial disputes, industrial accidents, development and aims of labor unions, and employers' associations.

3315. Economic Geography of Latin America. Cr. 3.
Analysis of countries of Latin America as to economy in relation to the natural environment and facts and problems of the socio-economic environment. Possibilities for future development of manufacturing and raw material production in Argentina, Brazil, and Chile. The role of production development as it influences the economy of the United States.

For Undergraduates and Graduates

432. Foreign Market Surveys. Cr. 3.
Prerequisite: Eco. 231-232. Intensive study of the foreign markets which are of particular significance to the United States.

433. International Economic Relations. Cr. 3.
Prerequisite: 12 hours in economics. Comparison of domestic and international economic relations. Political obstacles to international trade. The tariff and commercial treaties. International monetary problems. Financing foreign trade. Foreign loans.

435. Transportation Economics. Cr. 3.
Prerequisite: Eco. 331 or 332, or consent of instructor. An intensive study of transport regulation and public policy, supply of and demand for transport services, organizational and financial structures, technological developments, regional and interregional rate structures, and theories of costs, rate-making, and location. Includes current problems and special projects in students' fields of interest.

436. Development of Economic Doctrines. Cr. 3.
Prerequisite: Eco. 231-232. The evolution of economic thought. A study of the basis, nature and effects of economic doctrines from ancient times through the modern period.

437. Current Economic Problems. Cr. 3.
Prerequisite: Eco. 231-232. Fundamental problems of economic life today and proposed solutions. A critical examination of the present economic policies of government and industry. Individual research encouraged.

4311. Advanced Economic Theory. Cr. 3.
Prerequisite: 12 hours in economics. An analysis of contemporary economic principles and thought concerning the production and distribution of goods and services. A through examination of the fundamental laws of economics as applied to present-day problems and conditions.

4312. Theories of Depressions. Cr. 3.
Prerequisite: 12 hours in economics. A study of the monetary and non-monetary theories of instability, theories on economic stagnation and methods of control.

4313. Distribution Theory. Cr. 3.
Prerequisite: 12 hours in economics. Consideration of significant elements in the theory of profits, wages, capital and interest, and rent.

4314. Consumer Economics. Cr. 3.
Prerequisite: 6 hours in economics. A study of the problems faced by the consumer when he buys goods, services, a home, insurance, or invests his savings. Methods of strengthening the position of the consumer and of helping him to be more efficient.

For Graduates

5335. Human Geography. Cr. 3.
Enrollment limited to graduate students in elementary education. A study of the geographic environment of mankind and his adjustments to the environment. Attention given to the geographic factor influencing the population: its characteristics, density, distribution, and economic and social activities.

531. Economic Research. Cr. 3.
Prerequisite: Graduate standing and Eco. 232. Directed student research in selected areas with written reports under the supervision of a qualified instructor.

532. Advanced Micro-Economic Analysis. Cr. 3.
Prerequisite: Graduate standing. Eco. 232 and 436. An advanced investigation of the economic factors involved in the theory of the firm and determination of price. Special emphasis placed upon the cases of monopoly, monopolistic competition, and oligopoly.

533. Advanced Micro-Economic Analysis. Cr. 3.
Prerequisite: Graduate standing, Eco. 232 and 436. A concentrated study of the aggregate approach to the economy and the tools of analysis used for the solving of aggregate economic problems.

534. Seminar in Contemporary Economic Problems. Cr. 3.
Prerequisite: Graduate standing and Eco. 232. Identification and analysis of contemporary economic problems. The use of the seminar method to explore the nature and extent of the problem, concentrating on student investigation and proposed solutions using economic principles. Enrollment limited to non-economics majors.

631-632. Master's Thesis. Cr. 6.

Department of Management

PROFESSOR MIZE.
ASSOCIATE PROFESSOR CAIN.
ASSISTANT PROFESSORS HARDING, HUBBARD.
PART-TIME INSTRUCTORS REEDY, SHEATS.

Management has become an important area of specialization in training for modern business and industry. The courses offered in this department provide basic training for those students desiring to enter this field. It is the purpose of the management curriculum to develop professional knowledge of and some practical acquaintance with management fundamentals and their application to production, material, and personnel.

For Undergraduates

110. Professional Careers in Business. Cr. 1. (1-1).
An introduction to formal preparation for business occupations. A survey of employment and promotional opportunities in various business careers; preparation, duties and qualifications of personnel; compensation, employment regulations; and other information pertinent to a student's planning for a life in business. $4 testing fee.

221. Industrial Operations. Cr. 2.
Emphasis on audio-visual presentation of typical processes, methods, and equipment found in modern American industries to give the student some familiarity with mass-production activities.

331. Industrial Management. Cr. 3.
Prerequisite: Eco. 231. The principles and methods used in developing and operating industrial and business enterprises, the principles of scientific management and their application to problems of organization, plant location, selection of physical properties, methods of control, and manpower utilization.

333. Labor Problems. Cr. 3.
Prerequisite: Eco. 231. A study of the major labor problems of this country and the measures designed to meet them. Emphasis on the social security movement and on the place of labor organizations in the solutions of problems of workers.

334. Personnel Administration. Cr. 3.
Prerequisite: Eco. 231-232. Mgt. 331. A study of the principles and problems of personnel administration, employee selection, training, placement, service-rating, promotion and transfer, and employee services. Special attention will be given to problems of wages and incentive plans, working hours, and labor turnover.

335. Purchasing, Stores, and Inventory Control. Cr. 3.
Prerequisite: Mgt. 331. The course deals with the organization and function of the purchasing department and study of problems of purchasing policies and procedures, sources of supply, prices, contract negotiation and adjustments, quality control, receiving, and stores control.

337. Motor Carrier Management. Cr. 3.
Prerequisite: Eco. 335 or consent of instructor. Description of the motor carrier industry with special attention to the motor truck companies operating in the West Texas area, carrier organization, accounts and records, legal requirements, rates procedure, insurance needs, material handling techniques in terminal operations.

338. Railroad Traffic Management. Cr. 3.
Prerequisite: Eco. 335 or consent of instructor. Description of the railroad industry with special attention to railroads operating in the Southwest, carrier organizations, rate procedures, special problems facing the industry, accounts and records, federal and state regulation.

339. Office Management. Cr. 3.
Prerequisite: Eco. 231-232. Acct. 244-245. A study of the standards of office practice, office methods, wage payment plans, selection and training of office workers, office planning, techniques, and duties and responsibilities of the office manager.

For Undergraduates and Graduates

421. Job Evaluation. Cr. 2.
Prerequisite: Mgt. 334. Techniques of job analysis and the various methods of job rating and evaluation for wage determination.

422. Administrative Policies and Procedures. Cr. 2.
Prerequisite: Mgt. 451 or 452, or consent of instructor. Nature of administrative problems and responsibilities and functions of top management.

433. Labor Legislation. Cr. 3.
Prerequisite: Mgt. 333. Problems of labor relations with particular emphasis on labor legislation by the Federal Government—Sherman Act. National Labor Relations Act, Labor Management Relations Act, Fair Labor Standards Act, and other federal laws, state laws and collective bargaining standards and practices.

435. Employee Supervision. Cr. 3.
Prerequisite: Mgt. 334 or consent of instructor. Study of the relation of the supervisor to his subordinates and to higher management, leadership, planning of group work, and the use of the tools of supervision. Particular attention to introducing and training new employees, rating, discipline, problems of absenteeism, and maintenance of morale.

436. Problems in Office Management. Cr. 3.
Prerequisite: Mgt. 339. Intensive study of office organization and administration, the standardization of office practices and procedures, layout, personnel selection and training, special records and reports, budgetary controls, and development of systems and controls to meet special problems in business offices.

437. Industrial Traffic Management. Cr. 3.
Prerequisite: Senior standing in management or consent of instructor. Problems in keeping tariff files, obtaining and quoting rates, routine, expediting and tracing shipments, making claims, and auditing freight bills.

441. Management of Small Business Enterprise. Cr. 4.
Prerequisite: Mgt. 331. A problem course involving the application of fundamental priniciples of management to small-scale enterprise situations, location, organization, financing, property control, production control, management of manpower, and coordination of activities.

451. Advanced Personnel Management. Cr. 5.
Prerequisite: Mgt. 333, 334, and Psy. 330. Problems in personnel management developed through consideration of cases, experiences, and results of research in various fields of employer-employe relationship. Development of programs of representative business organizations used as projects.

452. Industrial Management Problems. Cr. 5.
Prerequisite: Mgt. 331, 335, 441, or consent of instructor. Problems of organization and management of an industrial enterprise. The student is required to make office and plant inspections to observe first-hand industrial organization at work. Industrial films used to supplement the work.

For Graduates

511. Individual Problems. Cr. 1.

524. Seminar in Management. Cr. 2.

531. Current Problems in Management. Cr. 3.

532. Research in Management. Cr. 3.

534. Seminar in Management. Cr. 3.
Enrollment limited to non-management majors.

631-632. Master's Thesis. Cr. 6.

Department of Marketing

PROFESSORS RYAN, P. McWHORTER.
ASSOCIATE PROFESSOR GOLDEN.
ASSISTANT PROFESSOR S. McWHORTER.
INSTRUCTORS L. B. BLACKWELL,* LUCHSINGER.
PART-TIME INSTRUCTOR L. C. WALKER.

The curriculum in marketing is primarily designed to provide professional training for careers in the marketing of goods and/or services and, secondarily, to offer an opportunity for students of other employment and interests to secure training which will aid them in their respective endeavors. To these ends, courses are offered in the general field of marketing and in the more specialized fields such as retailing and advertising.

The courses offered lay a broad foundation with a considerable degree of technical training in specialized fields of marketing. Theoretical and practical aspects are incorporated into the subject matter. The student may be advised to substitute certain courses in marketing or in other departments when it is believed that these courses will better prepare him for his chosen field of activity.

* On leave.

For Undergraduates

321. Public Relations. Cr. 2.

The policies and methods of creating and maintaining public good will in business including studies of employee participation and consumer attitude and opinion. A study of the public relations programs of representative business concerns. Not intended to train the student to do publicity work.

332. Principles of Marketing. Cr. 3.

Prerequisite: Eco. 231-232. Marketing structures and agencies. Types of middle men and marketing institutions. Current marketing practices. Distribution of raw materials and finished products.

334. Principles of Advertising. Cr. 3.

A study of advertising from the point of view of the needs of businessmen. To acquaint students in business with the tools and techniques of advertising and the use of advertising as a selling force. Consideration of the media available, the publicity budget, relation of the publicity department to other departments of the business, and means of testing and measuring benefits of advertising.

335. Principles of Retailing. Cr. 3.

Prerequisite: Mkt. 332. A study of store location; layout, fixtures, and organization; interpreting consumer demand; purchasing, receiving, checking, pricing, and merchandising; sales promotion; inventory and merchandise control; credit; and personnel.

338. Essentials of Television Advertising. Cr. 3.

No prerequisite but Mkt. 334 recommended before this course. The study of the techniques and principles of advertising on television. The phases of creating, producing, and scheduling. Advertisements for a variety of products and businesses will be covered.

339. Principles of Salesmanship. Cr. 3.

Fundamentals of personal salesmanship applied specifically in the marketing of goods and services and as they may aid any business or professional man.

346. Introduction to Business Statistics. Cr. 4. (3-2).

Prerequisite: Math. 130. A study of sources, presentation, and interpretation of statistical data as applied to business. Use of statistics in the control of business enterprise.

For Undergraduates and Graduates

426. Index Numbers. Cr. 2.

Prerequisite: Mkt. 346. An intensive study of business use of index numbers, construction and interpretation of index numbers, problems of weighting and splicing, adjustment of business data for inflation and deflation. Practical problems in measurement of business status through use of index numbers.

431. Industrial Marketing. Cr. 3.

Prerequisite: Mkt. 332. A specialized study of problems involved in marketing industrial goods, including commodities.

433. Marketing Problems. Cr. 3.

Prerequisite: Mkt. 332. Actual marketing cases and problems. Marketing costs, analysis of operating statements, production policy, brand policy, various channels of distribution, sales promotion, sales policies, price determination, price policies and operating control.

434. Wholesaling. Cr. 3.

Prerequisite: Mkt. 332. A detailed study of the processes and institutions of wholesale marketing from manufacturer or processor to retailer through merchant and functional middlemen. Special emphasis upon modern channels of distribution including agents and agency structures, selling agents, manufacturer's agents, brokers, jobbers, commission firms, service and special wholesalers, other intermediary marketing institutions, and consignments.

435. Business Cycles and Forecasts. Cr. 3.

Prerequisite: Mkt. 346. Theories of cycles. The causes and proposed remedies. Examination of forecasting services available and techniques employed by them. Problems in specific commodities and securities.

437. Advanced Business Statistics. Cr. 3.

Prerequisite: Mkt. 346. Further training in statistical methods and their uses in business institutions. A more extended study of some phases of business statistics including sampling, averages, dispersion, time series, index numbers, linear and nonlinear correlation, multiple and partial correlation, estimates, variance, and the use of statistics in business forecasting.

438. Sales Promotion, Retail Advertising, and Display. Cr. 3.

Prerequisite: Mkt. 334 or 335. A study of sales promotion activities in retail stores including advertising, display, publicity, and special sales events. The choice of media, including newspaper, radio, television, and other local media. The techniques used in retail advertising and promotions including copy, layout, display, scheduling, and budgets. The coordination of sales promotion campaigns with merchandising and the measurement of their effectiveness.

439. Sales Management. Cr. 3.
Prerequisite: Mkt. 332 and 339. A thorough study of problems and methods of organization and administration of sales department including sales research; sales operation including departmental organization, selection, training, equipping and remunerating sales personnel; sales control, embodying sales territories, routing, expense accounts, quotas, costs and budgets; sales promotion; and sales policies.

4314. Advertising Copy. Cr. 3.
Prerequisite: Mkt. 332 and 334. A study of the writing and uses of advertising copy. Copy will be written for a variety of products and services. Particularly adapted to the needs of the manager of a small business as well as to advertising specialists.

4315. Retail Buying. Cr. 3.
Prerequisite: Mkt. 335. Functions of the retail buyer, emphasizing principles and procedures in buying for resale. Organization for buying, analysis of consumer demand, model stock plans, sources of supply, resident buying, cooperative and central buying, terms and discounts, price quotations, trade relations, selection, and training techniques.

4317. Advertising Layout. Cr. 3.
Prerequisite or corequisite: Mkt. 4314. The principles and details of visualization and effective layout for selling power, emphasis, and distinction. Student preparation of rough layouts—fitting the different units of an advertisement together to form its most forceful and effective presentation.

4318. Mechanical Production of Advertising. Cr. 3.
Prerequisite or corequisite: Mkt. 4314. Training in methods of illustration; in printing and photo-engraving; to understand paper; to recognize and specify type; to plan rough layouts.

4319. Advertising Internship. Cr. 3.
Prerequisite or corequisite: Mkt. 4318. The student will follow a schedule of observation and work in an advertising capacity in various local firms including a radio station, a letter shop, an advertising agency, department store, and an outdoor advertising plant.

For Graduates

531. Advanced Marketing Problems. Cr. 3.

532. Advanced Marketing Research. Cr. 3.

534. Seminar in Marketing. Cr. 3.
Enrollment limited to non-marketing majors.

631-632. Master's Thesis. Cr. 6.

SCHOOL OF ENGINEERING

JOHN R. BRADFORD, *Dean*

The importance of the School of Engineering is stressed in the first section of the bill by which the Thirty-Eighth Legislature established this College. It is pointed out that the commercial development of the state depends largely upon the opportunities for students to receive thorough training in engineering and manufacturing fields.

The aim of the School of Engineering is to give students a thorough knowledge of the fundamentals of all engineering work, with specialization in one particular line only to the extent that experience appears to demand as a minimum. The course of study is planned with the view of giving the student basic training which he cannot get after graduation, leaving a large part of his specialization to his later professional employment. Experience has shown this type of training to produce the most successful engineers.

Engineering has been defined as the "scientific utilization of the forces and materials of nature in the construction, production and operation of works for the benefit of man." Therefore, the fundamental training of the engineer includes a knowledge of pure science, as well as its application to the various specialized fields. As an aid to the development of a scientific attitude, engineering instruction emphasizes the qualities of honesty, loyalty, thoroughness, and industry and fosters the desire for learning and for a knowledge of the ethics of the profession.

Degrees Granted. The School of Engineering offers the following four-year curricula, each leading to the Degree of Bachelor of Science in its respective field: chemical engineering, civil engineering, electrical engineering, engineering physics, industrial engineering, mechanical engineering, petroleum engineering, textile engineering. In the Department of Architecture five-year curricula in architecture, and advertising art and design are offered, leading to the Degrees of Bachelor of Architecture and Bachelor of Advertising Art and Design, respectively.

Field for Graduates. The engineering student upon graduation usually spends a period of time in subordinate positions, securing experience and preparing himself for the more important work of the executive, the designer, the consulting engineer, the teacher, the researcher, or the supervisor of manufacturing operations.

Engineering training is recognized as desirable preparation for a commercial career. From 60 to 70 per cent of engineering graduates in the past have eventually held executive positions. Surveys of employment records of engineering graduates disclose the fact that men who had an engineering education have found their way into nearly every type of vocation. A few of the vocations which the engineering graduate may reasonably expect to enter upon graduation, or after a period of practical experience, have been indicated in the beginning of the departmental descriptions. Attention is called to the fact that in a civilization such as ours, where one is constantly in contact with the results of our modern industrial development, no type of education is more suitable than that leading to an engineering degree.

Requirements for Graduation. The student who expects to enter the profession of engineering or architecture should not only attain proficiency in his field, but must display as a student those qualities which

will be expected of him upon entering his profession, namely absolute honesty in his work, a sense of fair play toward his associates, and a high degree of integrity.

All four-year students in the School of Engineering, except those in the Department of Architecture, are required to take identical work throughout the freshman year. This is done in order that the student, before choosing his professional field, may have the opportunity to become familiar with the courses of instruction and the possibilities after graduation in the various fields of engineering.

Electives in any curriculum must be approved by the Head of the Department in which the student seeks the degree before the student registers for the course. A course regularly approved as an elective normally becomes a part of the student's requirements for graduation for the particular curriculum in which he seeks a degree.

Physically qualified engineering students desiring to do so may take work in air science or military science. All students are eligible for either Air Force or Army ROTC.

In the four-year and five-year curricula in engineering and the five-year curricula in architecture, 6 hours of American government and 6 hours of American history must be completed prior to graduation as required by action of the Texas Legislature.

The suggested plan of study calls for four years and one summer session. However, superior students who have no entrance deficiencies may find it possible to complete the degree requirements in eight semesters.

CURRICULA IN THE SCHOOL OF ENGINEERING

Pre-Engineering Subjects

Math. 031, Algebra, or Math. 052, Algebra; Math. 032, Plane Geometry; English 031, Fundamentals of Writing; Physics 031, Physics.

Enrollment in the School of Engineering as a pre-engineer is subject to the results of the freshman testing program and/or high school record.

Uniform Freshman Year — Four-Year Program

Used with curricula in chemical, civil, electrical, industrial, mechanical, petroleum, and textile engineering, and engineering physics.

First Semester	Credit
Math. 131—Trig.	3
Math. 133—College Alg.	3
Eng. 131—Eng. Comp.	3
Chem. 141—Gen. Chem.	4
E. Dr. 131—Engr. Drawing	3
P.E. Band or Basic ROTC	1-2
	17-18

Second Semester	Credit
Math. 132—Anal. Geom.	3
Math. 231—Calculus	3
Eng. 132—Eng. Comp.	3
Chem. 142—Gen. Chem.	4
E. Dr. 132—Desc. Geom.	3
P.E. Band or Basic ROTC	1-2
	17-18

Chemical Engineering — 4

CHEMICAL ENGINEERING CURRICULUM

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Suggested Plan of Study

Four-Year Program

For Uniform Freshman Year See Page 233.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Math. 332—Diff. Equations	3
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Physics	3
Phys. 215—Phys Meas.	1	Phys. 216—Phys. Meas.	1
Chem. 231—Qual. Anal.	3	Ch. E. 244—Intro. to Ch. E.	4
Amer. Govt.	3	Amer. Govt.	3
Eng. 233 Tech. Writ.	3	P. E. Band, or Basic ROTC	1
P. E., Band, or Basic ROTC	1	Chem. 332—Quan. Anal.	3
	17		18

Summer Session

First Term	Credit	Second Term	Credit
M.E. 237—Metallurgy	3	C.E. 333—Strength of Materials	3
C.E. 233—Statics	3		
	6		3

Junior Year

First Semester	Credit	Second Semester	Credit
Chem. 353—Org. Chem.	5	Chem. 354—Org. Chem.	5
Chem. 441—Phys. Chem.	4	Chem. 442—Phys. Chem.	4
Ch.E. 331—Prin. of Ch.E. I	3	Ch. E. 332—Prin. of Ch. E. II	3
Chem. 411—Chem. Sem.	1	Chem. 412—Chem. Sem.	1
E.E. 328—Elem. of E.E.	2	E.E. 329—Elem. of E.E.	2
E.E. 318—E.E. Lab.	1	E.E. 319—E.E. Lab	1
	16		16

Senior Year

First Semester	Credit	Second Semester	Credit
Ch.E. 431—Unit Processes	3	Ch. E. 432—Process Devel.	3
Ch.E. 437—Prin. of Ch.E. III	3	Ch.E. 430—Ch.E. Plant Des.	3
Ch.E. 435—Instrumentation	3	Elective	3
Ch.E. 425—Unit Oper. Lab.	2	Ch.E. 426—Unit. Oper. Lab.	2
Ch.E. 433—Ch.E. Thermodyn.	3	Ch.E. 434—Ch.E. Thermodyn	3
Amer. Hist.	3	Amer. Hist.	3
	17		17

Minimum hours required for graduation — 140 and P.E., Basic or Band.

Electives: Choices from the following are suggested: Chem. 434, Chem. 438, Chem. 439, Ch. E. 439, Pet.E. 330, and M.E. 335.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Civil Engineering — 4

CIVIL ENGINEERING CURRICULUM

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Suggested Plan of Study

Four-Year Program

For Uniform Freshman Year See Page 233.

Sophomore Year

First Semester	Credit
C.E. 231—Plane Surv.	3
Math. 232—Calculus	3
Phys. 235—Engr. Phys.	3
Phys. 215—Phys. Meas.	1
Geol. 143—Gen. Geol.	4
Amer. Govt.	3
P.E., Band, or Basic ROTC	1
	18

Second Semester	Credit
C. E. 232—Rt. Surv.	3
Math. 331—Applic. of Calc.	3
Phys. 236—Engr. Phys.	3
Phys. 216—Phys. Meas.	1
C.E. 233—Statics	3
Amer. Govt.	3
P.E., Band, or Basic ROTC	1
	17

Summer Session

First Term	Credit
C.E. 332—Kinematics and Kinetics	3
Soph. English	3
	6

Second Term	Credit
C.E. 333—Strength of Materials	3
C.E. 339—Fluid Mechanics	3
	6

Junior Year

First Semester	Credit
C.E. 320—Structures	2
C.E. 321—Munic. San.	2
C.E. 335—H'way Engr.	3
C.E. 312—Fluid Mech. Lab.	1
C.E. 313—San. Lab.	1
M.E. 330—Engr. Thermo.	3
E.E. 328—Elem. of E.E.	2
E.E. 318—E.E. Lab.	1
Amer. Hist.	3
	18

Second Semester	Credit
C.E. 330—Structures	3
C.E. 322—H'way Engr.	2
C.E. 311—H'way Lab.	1
E.E. 329—Elem. of E.E.	2
E.E. 319—E.E. Lab.	1
Amer. Hist.	3
Elective	3
	15

Senior Year

First Semester	Credit
C.E. 424—Materials	2
C.E. 423—Eco. of H'way Design	2
C.E. 431—Reinf. Concrete	3
C.E. 433—Structures	3
(Option A)	
C.E. 439—Law & Ethics in Engr.	3
*Elective B	3
	16
(Option B)	
C.E. 437—Water Supply and Treatment.	3
C.E. 4313—San. Engr. Design-Water	3
	16

Second Semester	Credit
C.E. 425—Materials	2
C.E. 4312—Soil Mech. and Foun.	3
(Option A)	
C.E. 432—Reinf. Concrete	3
C.E. 434—Structures	3
*Elective B	3
	14
(Option B)	
C.E. 439—Law and Ethics of Engr.	3
C.E. 438—Sewerage and Sew. Treatment	3
C. E. 4314—San. Engr. Design-Sewage	3
	14

Minimum hours required for graduation—140 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

*Elective B. Six hours of continuous material are required subject to approval of Head of Department.

Electrical Engineering — 4

ELECTRICAL ENGINEERING CURRICULUM

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Suggested Plan of Study

Four-Year Program

For Uniform Freshman Year See Page 233.

Summer Session

First Term	Credit	Second Term	Credit
Amer. Hist.	3	Amer. Hist.	3
Amer. Govt.	3	Amer. Govt.	3
	6		6

Sophomore Year

First Semester	Credit	Second Semester	Credit
E.E. 231—Prin. of E.E.	3	E.E. 235—Prin. of DC Mach.	3
E.E. 221—E.E. Lab.	2	E.E. 225—DC Mach. Lab.	2
Math. 232—Calculus	3	Math 332—Diff. Equations	3
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 215—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
Eng. 233—Tech Writ.	3	C.E. 233—Statics	3
P.E., Band, or Basic ROTC	1	Spch. 338—Bus. and Prof. Spch.	3
	16	P.E., Band, or Basic ROTC	1
			19

Junior Year

First Semester	Credit	Second Semester	Credit
E.E. 332—AC Circuits	3	E.E. 333—AC Circuits	3
E.E. 312—AC Circuits Lab.	1	E.E. 313—AC Circuits Lab.	1
E.E. 321—Stat. Elec. & Mag. Fields	2	E.E. 337—Electronics	3
C.E. 332—Kinematics & Kinetics	3	E.E. 317—Electronics Lab.	1
M.E. 330—Engr. Thermo.	3	M.E. 335, 4315, 435, 338, or 333	3
Math. 331—Applic. of Calc.	3	M.E. 318—Heat Engr. Lab.	1
Elective	2	C.E. 333—Strength of Materials	3
	17	Eco. 235—Prin. of Eco.	3
			18

Senior Year

First Semester	Credit	Second Semester	Credit
E.E. 4312—AC Mach.	3	E.E. 4313—AC Mach.	3
E.E. 4112—AC Mach. Lab.	1	E.E. 4113—AC Mach. Lab.	1
E.E. 4315—Vac. Tube Cir. & Sys.	3	E.E. 4316—Vac. Tube Cir. & Sys.	3
E.E. 4115—Vac. Tube Cir. Lab.	1	E.E. 4116—Vac. Tube Circ. Lab.	1
E.E. 4221—Control Sys. Instrum.	2	E.E. 4222—Control Sys. Instrum.	2
E.E. 4121—Instrum. Lab.	1	E.E. 4122—Instrum. Lab.	1
E.E. 4323—Elec. Trans. Lines	3	E.E. 4224—Elec. Trans. Lines	2
	14	E.E. 4124—Transmission Lines Lab.	1
			14

Minimum hours required for graduation — 140 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Engineering Physics — 4

ENGINEERING PHYSICS CURRICULUM

BACHELOR OF SCIENCE IN ENGINEERING PHYSICS

Four-Year Program

For Uniform Freshman Year See Page 233.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Math 232—Calculus	3	Math 332—Differential Equations	3
Phys 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 215—Phys. Meas.	1	Phys 216—Phys. Meas.	1
C.E. 233—Statics	3	C.E. 332—Kinematics and Kinetics	3
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Eco. 235—Prin. of Eco.	3	Govt. 233—Amer. Govt.	3
P.E., ROTC, or Band	1	P.E., ROTC, or Band	1
	17		17

Summer Session

First Term	Credit	Second Term	Credit
M.E. 237—Metals Engr.	3	Govt. 234—Amer. Govt.	3
Hist. 3321—Amer. Her.	3	Hist. 3322—Amer. Her.	3
	6		6

Junior Year

First Semester	Credit	Second Semester	Credit
Phys. 337—Atom. Phys.	3	Phys. 338—Nuclr. Phys.	3
Phys. 331—Light	3	Phys 341—Elec. Tubes and App.	4
Phys. 336—Elec. and Magnet	3	Phys 332—Heat	3
Math. 432—Adv. Diff. Equat.	3	C.E. 333—Strength of Mat.	3
M.E. 330—Engr. Thermo.	3	Elective—(Non-technical)	3
Elective—(Non-technical)	3		16
	18		

Senior Year

First Semester	Credit	Second Semester	Credit
Phys 423—Elec. Meas.	2	Phys. 435—Mechanics	3
M.E. 435—Fluid Dynamics	3	Phys 424—Elec Meas.	2
E.E. 4221—Instrumentation	2	M.E. 4315—Heat and Mass Trans.	3
E.E. 4121—Instrum. Lab.	1	Ch. E. 439—Nucl. Engr.	3
Math. 439—Vector Analysis	3	E.E. 4222—Instrumentation	2
Elective—(Technical)	3	E.E. 4122—Instrum. Lab.	1
	14	Elective—(Technical)	2
			16

Minimum hours required for graduation—140 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Industrial Engineering—4

INDUSTRIAL ENGINEERING CURRICULUM

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

Suggested Plan of Study

Four-Year Program

For Uniform Freshman Year See Page 233.

Summer Session

First Term	Credit	Second Term	Credit
Amer. Hist.	3	Amer. Hist.	3
Amer. Govt.	3	Amer. Govt.	3
	6		6

Sophomore Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Math. 332—Diff. Equat.	3
E.Dr. 221—Mach. Draw.	2	C.E. 233—Statics	3
C.E. 231—Plane Surv.	3	Acct. 231—Indus. Acct. for Engrs.	3
Eco. 235—Prin. of Eco.	3	Eng. 233—Tech. Writ.	3
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 215—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16		17

Junior Year

First Semester	Credit	Second Semester	Credit
I.E. 321—Indus. Rel.	2	I.E. 331—Motion and Time Study	3
I.E. 332—Indus. Org. & Mgt.	3	I.E. 336—Tool Design	3
I.E. 333—Mfg. Processes	3	I.E. 337—Prod. Plan. & Control	3
Psy. 230—Gen. Psy.	3	M.E. 335, 338, 333, 435, or 4315	3
M.E. 330—Engr. Thermo.	3	C.E. 333—Strength of Mat.	3
M.E. 320—Metals Fab.	2	M.E. 321—Metals Fab.	2
	16		17

Senior Year

First Semester	Credit	Second Semester	Credit
E. Seminar 412—Engr. Sem.	1	I.E. 411—Indus. Engr. Probl.	1
I.E. 432—Indus. Plant Des.	3	I.E. 423—Indus. Procurement	2
I.E. 436—Engr. Eco.	3	I.E. 433—Indus. Plant Des.	3
I.E. 437—Qual. Control	3	I.E. 435—Safety Engr.	3
E.E. 338—Elem. of E.E.	3	E.E. 339—Elem. of E.E.	3
E.E. 318—E.E. Lab.	1	E.E. 319—E.E. Lab.	1
Fin. 338—Bus. Law.	3	Speech 338—Bus. and Prof. Sp.	3
	17		16

Minimum hours required for graduation—141 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Mechanical Engineering — 4

MECHANICAL ENGINEERING CURRICULUM

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Suggested Plan of Study

Four-Year Program

For Uniform Freshman Year See Page 233.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Math. 332—Diff. Equat.	3
Phys. 215-Phys. Meas.	1	Phys. 216—Phys. Meas.	1
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Govt. 233—Amer. Govt.	3	Govt. 234—Amer. Govt.	3
Amer. Hist.	3	Amer. Hist.	3
English	3	C.E. 233—Statics	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	17		17

Summer Session

First Term	Credit	Second Term	Credit
M.E. 330—Engr. Thermo.	3	M.E. 333—Comb. Eng.	3
M.E. 320—Metals Fab.	2	M.E. 321—Metals Fab.	2
	5		5

Junior Year

First Semester	Credit	Second Semester	Credit
E.E. 338—Elem. of E.E.	3	E.E. 339—Elem. of E.E.	3
E.E. 318—E.E. Lab.	1	E.E. 319—E.E. Lab.	1
C.E. 332—Kinematics and Kinetics	3	C.E. 333—Str. of Mat.	3
M.E. 237—Metals Engr.	3	Math. 331—Applic. of Calc.	3
M.E. 338—Air. Cond.	3	M.E. 335—Heat Power Des.	3
M.E. 3314—Mech. Design	3	M.E. 3315—Mech. Design	3
	16		16

Senior Year

First Semester	Credit	Second Semester	Credit
Elective	3	Elective	3
M.E. 3312—Mech. of Mach.	3	M.E. 3313—Dynamics	3
M.E. 410—Spec. Probs. Lab.	1	M.E. 412—Phys. Met. Lab.	1
M.E. 420—Spec. Probs.	2	M.E. 422—Phys. Met.	2
M.E. 430—Mech. Equip. Lab.	3	M.E. 431—Mech. Equip. Lab.	3
M.E. 435—Fluid Dyn.	3	M.E. 4315—Heat and Mass Trans.	3
M.E. 4212—Thermodynamics	2	M.E. 4213—Thermodynamics	2
	17		17

Minimum hours required for graduation—140 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Petroleum Engineering — 4

PETROLEUM ENGINEERING CURRICULUM

BACHELOR OF SCIENCE IN PETROLEUM ENGINEERING

Suggested Plan of Study

Four-Year Program

For Uniform Freshman Year See Page 233.

Summer Session

First Term	Credit
C.E. 231—Surveying	3
Amer. Govt.	3
	6

Second Term	Credit
Eco. 235—Prin. of Eco.	3
Amer. Govt.	3
	6

Sophomore Year

First Semester	Credit
Pet. E. 230—Devel. Meth.	3
Geol. 141—Gen. Geol.	4
Math. 232—Calculus	3
C.E. 233—Statics	3
Phys. 235—Engr. Phys.	3
Phys. 215—Phys. Meas.	1
P.E., Band, or Basic ROTC	1
	18

Second Semester	Credit
Geol. 142—Gen. Geol.	4
Eng. 233—Tech. Writ.	3
Phys. 236—Engr. Phys.	3
Phys. 216—Phys. Meas.	1
Math. 332—Diff. Equat.	3
Chem. 235—Hydrocarbons	3
P.E., Band, or Basic ROTC	1
	18

Junior Year

First Semester	Credit
Pet. E. 321—Phase Behavior	2
Chem. 236—Anal. Chem.	3
C.E. 332—Kinematics & Kinetics	3
Geol. 234—Mineral & Petrol	3
M.E. 330—Engr. Thermo.	3
C.E. 339—Fluid Mech.	3
C.E. 312—Fluid Mech. Lab.	1
	18

Second Semester	Credit
Pet. E. 220—Drilling Fluids, or Pet. E. 320—Well Logging	2
Pet. E. 333—Prod. Meth.	3
C.E. 333—Strength of Mat.	3
M.E. 335, 333, or 4315	3
Geol. 332—Struc. Geol.	3
Bus. Law 3313—Oil & Gas Law	3
	17

Senior Year

First Semester	Credit
E. Sem. 412—Seminar	1
Pet. E. 414—Prod. Lab.	1
Pet. E. 433—Reservoir Engr., or Pet. E. 434—Natural Gas Engr.	3
Geol. 433—Petr. Geol.	3
E.E. 338—Elem. of E.E.	3
E.E. 318—E.E. Lab.	1
Hist. 3321—Amer. Hist.	3
M.E. 318—Heat. Engr. Lab.	1
	16

Second Semester	Credit
E. Sem. 412—Seminar	1
Pet. E. 413—Nat. Gas Lab., or Pet. E. 416—Reservoir Engr. Lab.	1
Pet. E. 435—Advan. Nat. Gas Engr., or Pet. E. 436—Reservoir Engr.	3
E.E. 339—Elem. of E.E.	3
E.E. 319—E.E. Lab.	1
Hist. 3322—Amer. Hist.	3
Elective	3
	15

Minimum hours required for graduation—144 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Textile Engineering — 4

TEXTILE ENGINEERING CURRICULUM

BACHELOR OF SCIENCE IN TEXTILE ENGINEERING

Suggested Plan of Study

Four-Year Program

For Uniform Freshman Year See Page 233.

Summer Session

First Term	Credit	Second Term	Credit
Govt. 233—Amer. Govt.	3	Govt. 234—Amer. Govt.	3
Eco. 235—Prin. of Eco.	3	Acct. 231—Acct. for Engrs.	3
	6		6

Sophomore Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Chem. 341—Org. Chem.	4
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 215—Physical Meas.	1	Phys. 216—Phys. Meas.	1
T.E. 235—Text Fibers	3	C.E. 233—Statics	3
Hist. 231—Amer. Hist.	3	Hist. 232—Amer. Hist.	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	14		15

Junior Year

First Semester	Credit	Second Semester	Credit
T.E. 333—Text. Bleaching	3	T.E. 334—Text. Dyeing	3
T.E. 341—Prin. of Fiber Proc. I	4	T.E. 338—Prin. of Fiber Proc. II	3
I.E. 437—Qual. Control	3	C.E. 333—Strength of Mat.	3
M.E. 330—Engr. Thermodyn	3	M.E. 335, 338, or 435	3
I.E. 332—Indus. Org. & Mgt.	3	I.E. 331—Motion and Time Study	3
E.E. 328—Elem. of Elec. Engr.	2	E.E. 329—Elem. of Elec. Engr.	2
E.E. 318—Elec. Engr. Lab.	1	E.E. 319—Elec. Engr. Lab.	1
	19		18

Senior Year

First Semester	Credit	Second Seemster	Credit
T.E. 439—Cotton Mkt. & Eval.	3	T.E. 430—Mfg. Process Cont.	3
T.E. 445—Fab. Design & Const.	4	T.E. 431—Fabric Anal. & Adv. Design	3
T.E. 435—Text. Finishing	3	T.E. 428—Mill Org.	2
I.E. 436—Engr. Eco.	3	T.E. 432—Man-made Fibers	3
Elective	3	T.E. 427—Text. Costing	2
	16	Elective	3
			16

Minimum hours required for graduation—140 and P. E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Architecture and Allied Arts

CURRICULA IN ARCHITECTURE AND ADVERTISING ART AND DESIGN

BACHELOR OF ARCHITECTURE

Design or Construction Option

Suggested Plan of Study

Freshman Year

First Semester	Credit	Second Semester	Credit
Arch. 121—Freehand Draw.	2	Arch. 122—Freehand Draw.	2
Arch. 141—Prin. of Design	4	Arch. 142—Prin. of Design	4
Math. 131—Trig.	3	Math. 231—Calculus	3
Math. 133—Algebra	3	Math. 132—Anal. Geom.	3
Eng. 131—Eng. Comp.	3	Arch. 125—Arch. Graphics	2
P.E., Band, or Basic ROTC	1-2	Eng. 132—Eng. Comp.	3
		P.E., Band, or Basic ROTC	1-2
	16-17		18-19

Students in the design option may substitute a 3-hour elective in lieu of Math. 231.

Construction Option

For Uniform Freshman Year See Above

Sophomore Year

First Semester	Credit	Second Semester	Credit
Arch. 231—Arch. Design I	3	Arch. 232—Arch. Design I	3
Arch. 221—Hist. of Anc. Arch.	2	Arch. 222—Hist. of Med. Arch.	2
Math. 232—Calculus	3	Math. 331—Calculus	3
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 215—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
Eng. 231—Mast. of Lit.	3	Al. A. 210—Intro. to the Arts	1
P.E., Band, or Basic ROTC	1	C. E. 233—Statics	3
		P.E., Band, or Basic ROTC	1
	16		17

Junior Year

First Semester	Credit	Second Semester	Credit
Arch. 351—Arch. Design II	5	Arch. 352—Arch. Design II	5
Arch. 322—Hist. of Renaissance Arch.	2	Arch. 323—Hist. of Mod. Arch.	2
Arch. 226—Mat. & Meth. of Const.	2	Arch. 227—Mat. & Meth. of Const.	2
C.E. 320—Structures	2	C.E. 330—Structures	3
C.E. 332—Kinematics & Kinetics	3	C.E. 333—Strength of Mat.	3
M.E. 330—Engr. Thermo.	3	Spch. 338—Bus. & Prof. Spch.	3
	17		18

Fourth Year

First Semester	Credit	Second Semester	Credit
Arch. 451—Arch. Design III	5	Arch. 452—Arch. Design III	5
Arch. 333—Arch. Working Draw.	3	Arch. 334—Arch. Working Draw.	3
C.E. 431—Reinf. Concrete	3	C.E. 432—Reinf. Concrete	3
E.E. 335—Wiring & Illum.	3	Arch. 325—Mech. Equip. of Bldgs.	2
Arch. 324—Mech. Equip. of Bldgs.	2	Elective	3
C.E. 231—Plane Surveying	3		
	19		16

Fifth Year

First Semester	Credit	Second Semester	Credit
Arch. 420—Profes. Prac.	2	Arch. 436—City Planning	3
Arch. 435—Adv. Arch. Work Draw.	3	C.E. 434—Structures	3
C.E. 433—Structures	3	C.E. 425—Materials	2
C.E. 424—Materials	2	C.E. 4312—Soil. Mech.	3
Amer. Hist.	3	Amer. Hist.	3
Govt. 233—Amer. Govt. Org.	3	Govt. 234—Amer. Govt. Func.	3
	16		17

Minimum hours required for graduation — 166 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Design Option

For Uniform Freshman Year See Page 242.

Sophomore Year

First Semester	Credit
Arch. 231—Arch. Design I	3
Arch. 221—Hist. of Anc. Arch.	2
Arch. 224—Freehand Draw.	2
Arch. 226—Mat. & Meth. of Const.	2
Phys. 141—Elem. of College Phys.	4
Amer. Hist.	3
P.E., Band, or Basic ROTC	1
	17

Second Semester	Credit
Arch. 232—Arch. Design I	3
Arch. 222—Hist. of Med. Arch.	2
Arch. 225—Beginning Watercolor	2
Arch. 227—Materials & Meth. of Const.	2
Phys. 142—Elem. of College Phys.	4
Amer. Hist.	3
Al.A. 210—Intro. to the Arts	1
P.E., Band, or Basic ROTC	1
	18

Junior Year

First Semester	Credit
Arch. 351—Arch. Design II	5
Arch. 326—Anat. & Life Drawing	2
Arch. 322—Hist. of Renaissance Arch.	2
C.E. 337—Struc. Mech.	3
Eng. 231—Mast. of Lit. or For Lang.	3
E.E. 335—Wiring & Illum.	3
	18

Second Semester	Credit
Arch. 352—Arch. Design II	5
Arch. 327—Life Drawing	2
C.E. 338—Struc. Mech.	3
Eng. 232—Mast. of Lit., or For. Lang.	3
Spch. 338—Bus. and Prof. Spch.	3
	16

Fourth Year

First Semester	Credit
Arch. 451—Arch. Design III	5
Arch. 321—Hist. of Early Amer. Arch.	2
Arch. 333—Arch. Working Drawings	3
C.E. 431—Reinforced Concrete	3
Eng. 231—Mast. of Lit., or For Lang.	3
Arch. 324—Mech. Equip. & Bldg.	2
	18

Second Semester	Credit
Arch. 452—Architectural Design III	5
Arch. 323—Hist. of Mod. Arch.	2
Arch. 334—Arch. Working Drawings	3
Eng. 232—Mast. of Lit., or For. Lang.	3
Govt. 233—Amer. Govt.	3
Arch. 325—Mech. Equip. of Bldgs.	2
	18

Fifth Year

First Semester	Credit
Arch. 463—Arch. Design IV	6
Arch. 420—Profes. Prac.	2
Arch. 4316—Arch. Sculpture	3
Arch. 435—Adv. Arch. Work. Draw.	3
C.E. 231—Plane Surveying	3
	17

Second Semester	Credit
Arch. 484—Arch. Design IV	8
Arch. 436—City Planning	3
Arch. 4317—Arch. Sculpture	3
Govt. 234—Amer. Govt.	3
	17

Minimum hours required for graduation—169 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

BACHELOR OF ADVERTISING ART AND DESIGN

Suggested Plan of Study

Freshman Year

First Semester	Credit
Arch. 121—Freehand Draw.	2
Arch. 141—Prin. of Design	4
Al. A. 126—Intro. to Lettering	2
Math. 130—Algebra	3
Eng. 131—Eng. Comp.	3
P.E., Band, or Basic ROTC	1-2
	15-16

Second Semester	Credit
Arch. 122—Freehand Draw.	2
Arch. 142—Prin. of Design	4
Al. A. 127—Intro. to Lettering	2
Arch. 125—Arch. Graphics	2
Math. 131—Trig.	3
Eng. 132—Eng. Comp.	3
P.E., Band, or Basic ROTC	1-2
	17-18

Sophomore Year

First Semester	Credit
Arch. 221—Hist. of Anc. Arch.	2
Arch. 224—Freehand Drawing	2
Al. A. 235—Pictorial Comp.	3
Al. A. 238—Pottery	3
Al. A. 210—Intro. to the Arts	1
Foreign Language	3
Eco. 235—Prin. of Eco.	3
P.E., Band, or Basic ROTC	1
	18

Second Semester	Credit
Arch. 222—Hist. of Med. Arch.	2
Arch. 225—Begin. Watercolor	2
Al. A. 236—Pictorial Comp.	3
Al. A. 239—Pottery	3
Eng. 231—Mast. of Lit.	3
Foreign Language	3
P.E., Band, or Basic ROTC	1
	17

Junior Year

First Semester	Credit
Arch. 322—Hist. of Renaissance Arch.	2
Arch. 326—Anat. & Life Draw.	2
Al. A. 3212—Illustration	2
Al. A. 3311—Draw., Paint & Theory	3
Psy. 130—Intro. to Psy.	3
Eng. 232—Mast. of Lit. or continue Foreign Language	3
Jour. 330—Advtg. Typog. & Layout	3
	18

Second Semester	Credit
Arch. 327—Life Drawing	2
Al. A. 3213—Illustration	2
Al. A. 3312—Draw., Paint. & Theory	3
Psy. 330—Psy. in Bus. & Ind.	3
Elective or continue Foreign Language	3
Physics 237—Photography	3
	16

Fourth Year

First Semester	Credit
Arch. 321—Hist. of Early Amer. Arch.	2
Arch. 423—Life Drawing	2
Al. A. 342—Commercial Design	4
Al. A. 328—Lettering and Layout	2
Al. A. 426—Adv. Painting	2
Al. A. 4318—Hist. of Paint. & Sculp.	3
Govt. 233—Amer. Govt.	3
	18

Second Semester	Credit
Arch. 323—Hist. of Mod. Arch.	2
Arch. 424—Life Drawing	2
Arch. 343—Commercial Design	4
Al. A. 329—Lettering and Layout	2
Al. A. 427—Advanced Painting	2
Al. A. 4319—Hist. of Paint & Sculp.	3
Govt. 234—Amer. Govt.	3
	18

Fifth Year

First Semester	Credit
Arch. 320—Hist. of Furn. & Cost.	2
Al. A. 4214—Fashion Illus.	2
Al. A. 4212—Commercial Illus.	2
Al. A. 433—Commercial Design	3
Al. A. 4311—Ceramics	3
Spch. 338—Bus. & Pro. Spch.	3
Amer. Hist.	3
	18

Second Semester	Credit
Al. A. 4215—Fashion Illus.	2
Al. A. 4213—Commercial Illus.	2
Al. A. 434—Commercial Design	3
Al. A. 4312—Ceramics	3
Amer. Hist.	3
Elective	3
	16

Minimum hours required for graduation—167 and P. E., Basic ROTC, or Band.

Recommended Electives: Marketing 334, 438, 4317, 4318; Journalism 3313.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

FIVE-YEAR PROGRAM LEADING TO BACHELOR OF ARTS DEGREE AND BACHELOR OF SCIENCE DEGREE IN ENGINEERING

In order that the student may have a greater opportunity to broaden his general educational studies in the arts and sciences and thus obtain a more complete and well-rounded engineering education, a combination program is offered whereby a student may obtain a Bachelor of Arts Degree and a Bachelor of Science Degree. The student enrolls in the School of Arts and Sciences for the first three years and in the School of Engineering for the last two years. Upon successful completion of the five-year program the student is awarded both degrees. Under this program the student can take some of the freshman and sophomore engineering subjects during the first three years and then complete the junior and senior engineering courses in two long sessions and one summer session.

The Degree of Bachelor of Arts may be obtained by completing three years of work in the School of Arts and Sciences, totaling a minimum of 100 semester hours. This work must satisfy all graduation requirements for the Bachelor of Arts Degree at Texas Technological College with the exception of major requirements. The student must have a minimum grade average of 1.00 based on the first three years' work before he will be allowed to enroll in the School of Engineering.

Electives scheduled during the time in which the student is enrolled in the School of Engineering are subject to the approval of the Head of the Department. Advanced ROTC may be used in some cases for elective credit.

Students desiring to take advantage of the Latin-American Area Studies Program may do so under the five-year program. The student should plan to attend a minimum of at least one additional summer session in order to complete the program.

Students who plan to enroll under the five-year program should first consult with the Dean of Engineering before enrolling in the School of Arts and Sciences. The admission requirements for the School of Engineering also apply to those students enrolling in the five-year program. Although the five-year curriculum shows only 12 hours of foreign language, students who do not present two units of one foreign language from high school must complete 18 hours of foreign language in accordance with the requirements of the School of Arts and Sciences.

Students taking the five-year program who expect to receive the B.A. Degree from the College must attend a minimum of one year in the School of Arts and Sciences and must meet all of the requirements for students in arts and sciences as outlined in the current catalog with the exception of the major requirements.

The suggested sequence of courses for the five-year program is outlined for each curriculum on the following pages.

FIVE-YEAR COOPERATIVE PROGRAMS WITH OTHER COLLEGES

The School of Engineering now has a cooperative program of study with Abilene Christian College, Baylor University, Hardin-Simmons University, North Texas State College, Trinity University, and

McMurry College. Under this program the student is in attendance for three years at one of the above-mentioned schools and two years and one summer at Texas Technological College. This program of study leads to the issuance of a degree from each institution.

Students electing the five-year program who have deficiencies indicated by their high school record and/or by the results of the freshman testing program must remove said deficiencies as indicated in the outline for the four-year program.

Uniform Freshman Year — Five-Year Program

Used with curricula in Chemical, Civil, Electrical, Industrial, Mechanical, Petroleum, and Textile Engineering, and Engineering Physics in conjunction with the B.A. Degree.

First Semester	Credit
Eng. 131—Eng. Comp.	3
Govt. 233—Amer. Govt.	3
Foreign Language	3
Chem. 141—Gen. Chem.	4
Math. 133—College Alg.	3
P.E., Band or Basic ROTC	1-2
	17-18

Second Semester	Credit
Eng. 132—Eng. Comp.	3
Govt. 234—Amer. Govt.	3
Foreign Language	3
Chem. 142—Gen. Chem.	4
Math. 131—Trigonometry	3
P.E., Band or Basic ROTC	1-2
	17-18

Chemical Engineering — 5

FIVE-YEAR PROGRAM LEADING TO DEGREES OF BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING AND BACHELOR OF ARTS

Suggested Plan of Study

For Uniform Freshman Year See Page 246.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
Social Science	3	E.Dr. 131—Engr. Draw.	3
Foreign Language	3	Foreign Language	3
Math. 132—Anal. Geom.	3	Math. 231—Calculus	3
Chem. 231—Qual. Anal.	3	Chem. 332—Quant. Anal.	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16		16

Junior Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Phys. 236—Engr. Phys.	3
Phys. 235—Engr. Phys.	3	Phys. 216—Phys. Meas.	1
Phys. 215—Phys. Meas.	1	Biological Science	3
E.Dr. 132—Engr. Draw.	3	Social Science	3
Biological Science	3	History	3
History	3	Ch.E.244—Intro. to Ch. E.	4
	16		17

Summer Session

First Term	Credit	Second Term	Credit
M.E. 237—Metallurgy	3	C.E. 233—Statics	3
Math. 332—Diff. Equations	3		
	6		3

Fourth Year

First Semester	Credit	Second Semester	Credit
Chem. 353—Org. Chem.	5	Chem. 354—Org. Chem.	5
Chem. 441—Phys. Chem.	4	Chem. 442—Phys. Chem.	4
Ch.E. 331—Prin. of Ch. E. I	3	Ch.E. 332—Prin. of Ch.E. II	3
Chem. 411—Chem. Sem.	1	Chem. 412—Chem. Sem.	1
I.E. 332—Management or Elective	3	C.E. 333—Strength of Mat.	3
	16		16

Fifth Year

First Semester	Credit	Second Semester	Credit
Ch.E. 431—Unit Processes	3	Ch.E. 432—Process Devel.	3
Ch.E. 433—Ch. E. Thermo.	3	Ch.E. 434—Ch.E. Thermo.	3
Ch.E. 425—Unit. Oper. Lab.	2	Ch.E. 426—Unit. Oper. Lab.	2
Ch.E. 437—Prin. of Ch. E. III	3	Ch.E. 430—Ch.E. Plant Design	3
Ch.E. 435—Instrumentation	3	Elective	3
E.E. 328—Elem. of E.E.	2	E.E. 329—Elem. of E.E.	2
E.E. 318—E.E. Lab.	1	E.E. 319—E.E. Lab.	1
	17		17

Minimum hours required for graduation—170 and P.E., Basic ROTC, or Band. Electives—See four-year program.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Civil Engineering — 5

FIVE-YEAR PROGRAM LEADING TO DEGREES OF BACHELOR OF SCIENCE IN CIVIL ENGINEERING AND BACHELOR OF ARTS

For Uniform Freshman Year See Page 246.

Suggested Plan of Study

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
E. Dr. 131—Engr. Draw.	3	E. Dr. 132—Descr. Geom.	3
Foreign Language	3	Foreign Language	3
Math. 132—Anal. Geom.	3	Math 231—Calculus	3
Geol. 141—Gen. Geol.	4	Geol. 142—Gen. Geol.	4
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	17		17

Junior Year

First Semester	Credit	Second Semester	Credit
Math 232—Calculus	3	Math. 331—Applic. of Calc.	3
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 215—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
Biological Science	3	Biological Science	3
Amer. Hist.	3	Amer. Hist.	3
C.E. 231—Plane Surv.	3	C.E. 232—Route Surv.	3
	16		16

Summer Session

First Term	Credit	Second Term	Credit
Eco. 235—Prin. of Eco.	3	C.E. 439—Law & Ethics in Engr.	3
C.E. 233—Statics	3	C.E. 332—Kinematics & Kinetics	3
	6		6

Fourth Year

First Semester	Credit	Second Semester	Credit
C. E. 320—Structures	2	C.E. 330—Structures	3
C.E. 335—H'way Engr.	3	C.E. 333—Strength of Mat.	3
C.E. 339—Fluid Mechanics	3	C.E. 322—H'way Engr.	2
C.E. 312—Fluid Mech. Lab.	1	Electives	6
C.E. 321—Munic. San.	2		
C.E. 313—San. Lab.	1		
C.E. 311—H'way Lab.	1		
M.E. 330—Engr. Thermo.	3		
	16		14

Fifth Year

First Semester	Credit	Second Semester	Credit
C.E. 424—Materials	2	C.E. 425—Materials	2
C.E. 423—Eco. of H'way Design	2	C.E. 4312—Soil Mech. & Foun.	3
C.E. 431—Reinf. Concrete	3	E.E. 329—Elem. of E.E.	2
C.E. 433—Structures	3	E.E. 319—E.E. Lab.	1
E.E. 328—Elem. of E.E.	2	**(Option A)**	
E.E. 318—E.E. Lab.	1	C.E. 432—Reinf. Concrete	3
(Option A)		C.E. 434—Structures	3
Social Science	3	Elective	3
	16		17
(Option B)		**(Option B)**	
C.E. 437—Water Supply & Treatment	3	Social Science	3
C.E. 4313—San. Engr. Design—Water	3	C.E. 438—Sewerage	3
	19	C.E. 4314—San. Engr. Design—Sewage.	3
			17

Minimum hours required for graduation
Option A—169 and P.E., Basic ROTC, or Band.
Option B—172 and P.E., Basic ROTC, or Band
Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Electrical Engineering — 5

FIVE-YEAR PROGRAM LEADING TO DEGREES OF BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING AND BACHELOR OF ARTS

Suggested Plan of Study

For Uniform Freshman Year See Page 246.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
E.Dr. 131—Engr. Draw.	3	E.Dr. 132—Desc. Geom.	3
Foreign Language	3	Foreign Language	3
Math. 132—Anal. Geom.	3	Math. 231—Calculus	3
Eco. 235—Prin. of Eco.	3	Social Science	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16		16

Junior Year

First Semester	Credit	Second Semester	Credit
Math 232—Calculus	3	Math. 332—Diff. Equations	3
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Physics	3
Phys. 215—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
Biological Science or Elective	3	Biological Science or Elective	3
Elective	2	C.E. 233—Statics	3
Amer. Hist.	3	Amer. Hist.	3
	15		16

Summer Session

First Term	Credit	Second Term	Credit
E.E. 231—Prin. of E.E.	3	E.E. 235—Prin. of DC Mach.	3
E.E. 221—E.E. Lab.	2	E.E. 225—DC Mach. Lab.	2
	5		5

Fourth Year

First Semester	Credit	Second Semester	Credit
E.E. 332—A.C. Cur. Cir.	3	E.E. 333—A.C. Cir.	3
E.E. 312—A.C. Cir. Lab.	1	E.E. 313—A.C. Cir. Lab.	1
E.E. 321—Stat. Elec. & Mag. Fields	2	E.E. 337—Electronics	3
C.E. 332—Kinematics and Kinetics	3	E.E. 317—Electronics Lab.	1
M.E. 330—Engr. Thermo.	3	M.E. 335, 4315, 435, 338, or 333	3
Spch. 338—Bus. and Pro. Spch.	3	M.E. 318—Heat Engr. Lab.	1
Math. 331—Calc. Applic.	3	C.E. 333—Strength of Mat.	3
	18	Elective	3
			18

Fifth Year

First Semester	Credit	Second Semester	Credit
E.E. 4312—A.C. Machines	3	E.E. 4313—A.C. Machines	3
E.E. 4112—A.C. Machines Lab.	1	E.E. 4113—A.C. Machines Lab.	1
E.E. 4315—Vac. Tube Cir. & Sys.	3	E.E. 4316—Vac. Tube Circ. & Sys.	3
E.E. 4115—Vac. Tube Cir. Lab.	1	E.E. 4116—Vac. Tube Circ. Lab.	1
E.E. 4221—Control Sys. Instrum	2	E.E. 4222—Control Sys. Instrum	2
E.E. 4121—Instrum Lab.	1	E.E. 4122—Instrum. Lab.	1
E.E. 4323—Elec. Trans. Lines	3	E.E. 4224—Elec. Trans. Lines	2
Elective	3	E.E. 4124—Trans. Lines Lab.	1
	17	Elective	3
			17

Minimum hours required for graduation—173 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Engineering Physics — 5

FIVE-YEAR PROGRAM LEADING TO DEGREES OF BACHELOR OF SCIENCE IN ENGINEERING PHYSICS AND BACHELOR OF ARTS

Suggested Plan of Study

For Uniform Freshman Year See Page 246.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Eng. 232—Masterpieces of Lit.	3
E. Dr. 131—Engr. Draw.	3	E.Dr. 132—Descr. Geom.	3
Foreign Language	3	Foreign Language	3
Math. 132—Anal. Geom.	3	Math. 231—Calculus	3
Social Science	3	Social Science	3
P.E., Band, or Basic ROTC	1	P.E., Band or Basic ROTC	1
	16		16

Junior Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Math. 332—Diff. Equat.	3
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 215—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
Biological Science	3	Biological Science	3
Elective	3	Elective	3
American History	3	American History	3
	16		16

Summer Session

First Term	Credit	Second Term	Credit
C.E. 233—Statics	3	C.E. 332—Kinematics and Kinetics	3
M.E. 237—Metals Engr.	3	Elective (Non-technical)	3
	6		6

Fourth Year

First Semester	Credit	Second Semester	Credit
Phys. 337—Atom Phys.	3	Phys. 338—Nucl. Phys.	3
Phys. 331—Light	3	Phys. 341—Elec. Tubes and App.	4
Math. 432—Adv. Differential Equations.	3	C.E. 333—Strength of Mat.	3
Phys. 336—Elec. and Magnet.	3	Phys. 332—Heat	3
M.E. 330—Engr. Thermo.	3	Elective—(Non-technical)	3
Speech 338	3		16
	18		

Fifth Year

First Semester	Credit	Second Semester	Credit
Phys. 423—Elec. Meas.	2	Phys. 435—Mechanics	3
M.E. 435—Fluid Dynam.	3	Phys. 424—Elec. Meas.	2
E.E. 4221—Control Sys. Instrum.	2	E.E. 4222—Control Sys. Instrum.	2
E.E. 4121—Instrum. Lab.	1	E.E. 4122—Instrum Lab.	1
Math. 439—Vector Anal.	3	M.E. 4315—Heat and Mass. Trans.	3
Elective —(technical)	3	Ch.E. 439—Nucl. Engr.	3
	14	Elective	2
			16

Minimum hours required for graduation—170 and P.E., Band or Basic ROTC.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Industrial Engineering — 5

FIVE-YEAR PROGRAM LEADING TO DEGREES OF BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING AND BACHELOR OF ARTS

For Uniform Freshman Year See Page 246.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
E.Dr. 131—Engr. Draw.	3	E. Dr. 132—Descr. Geom.	3
Foreign Language	3	Foreign Language	3
Math. 132—Anal. Geom.	3	Math. 231—Calculus	3
Eco. 235—Prin. of Eco.	3	Social Science	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16		16

Junior Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Math. 332—Diff. Equat.	3
History	3	History	3
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 315—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
Biological Science	3	Biological Science	3
Spch. 338—Bus. and Pro. Spch.	3	Bus. Law 338—Bus. Law	3
	16		16

Summer Session

First Term	Credit	Second Term	Credit
Psy. 230—Gen. Psy.	3	C.E. 333—Strength of Mat.	3
C.E. 233—Statics	3	Elective	3
	6		6

Fourth Year

First Semester	Credit	Second Semester	Credit
C.E. 231—Plane Surv.	3	I.E. 331—Motion and Time Study	3
I.E. 332—Indus. Org. and Mgt.	3	I.E. 336—Tool Design	3
I.E. 333—Mfg. Processes	3	I.E. 337—Prod. Plan. & Control	3
M.E. 330—Engr. Thermo.	3	M.E. 335, 338, 333, 435, or 4315	3
E.Dr. 221—Mach. Draw.	2	Acct. 231—Indus. Acct. for Engrs.	3
M.E. 320—Metals Fab.	2	M.E. 321—Metals Fab.	2
	16		17

Fifth Year

First Semester	Credit	Second Semester	Credit
E. Sem. 412—Engr. Sem.	1	I.E. 411—Indus. Engr. Prob.	1
I.E. 321—Indus. Relations	2	I.E. 423—Indus. Procurement	2
I.E. 432—Indus. Plant Design	3	I.E. 433—Indus. Plant Design	3
I.E. 436—Engr. Eco.	3	I.E. 435—Safety Engr.	3
I.E. 437—Qual. Control	3	E.E. 339—Elem. of E.E.	3
E.E. 338—Elem. of E.E.	3	E.E. 319—E.E. Lab.	1
E.E. 318—E.E. Lab.	1	Elective	3
	16		16

Minimum hours required for graduation—172 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Mechanical Engineering — 5

FIVE-YEAR PROGRAM LEADING TO DEGREES OF BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING AND BACHELOR OF ARTS

Suggested Plan of Study

For Uniform Freshman Year See Page 246.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
E. Dr. 131—Engr. Draw.	3	E. Dr. 132—Engr. Draw.	3
Math. 132—Anal. Geom.	3	Math. 231—Calculus	3
Amer. Hist.	3	Amer. Hist.	3
Foreign Language	3	Foreign Language	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16		16

Junior Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Math. 332—Diff. Equat.	3
Phys. 215—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
Phys. 235—Engr. Physics	3	Phys. 236—Engr. Phys.	3
Elective	3	C.E. 233—Statics	3
Biological Science	3	Biological Science	3
Economics	3	Social Science	3
	16		16

Summer Session

First Term	Credit	Second Term	Credit
M.E. 330—Engr. Thermo.	3	C.E. 233—Statics	3
M.E. 320—Metals Fab.	2	M.E. 333—Comb. Eng.	3
	5		6

Fourth Year

First Semester	Credit	Second Semester	Credit
E.E. 318—E.E. Lab.	1	E.E. 319—E.E. Lab.	1
E.E. 338—Elem. of E.E.	3	E.E. 339—Elem. of E.E.	3
C.E. 332—Kinematics and Kinetics	3	C.E. 333—Strength of Mat.	3
M.E. 237—Metals Engr.	3	Math. 331—Applic. of Calc.	3
M.E. 338—Air. Cond.	3	M.E. 321—Metals Fabr.	2
M.E. 3314—Mech. Design	3	M.E. 335—Heat, Power, Design	3
	16	M.E. 3315—Mech. Design.	3
			18

Fifth Year

First Semester	Credit	Second Semester	Credit
Elective	3	M.E. 3313—Dynamics	3
M.E. 3312—Mech. of Mach.	3	M.E. 412—Phys. Met. Lab.	1
M.E. 410—Spec. Probs. Lab.	1	M.E. 422—Phys. Met.	2
M.E. 420—Spec. Probs.	2	M.E. 431—Mech. Equip. Lab.	3
M.E. 430-Mech. Equip. Lab.	3	M.E. 4315—Heat and Mass. Trans.	3
M.E. 435—Fluid Dyn.	3	M.E. 4213—Thermodynamics	2
M.E. 4212—Thermodynamics	2		14
	17		

Minimum hours required for graduation—170 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Petroleum Engineering — 5

FIVE-YEAR PROGRAM LEADING TO DEGREES OF BACHELOR OF SCIENCE IN PETROLEUM ENGINEERING AND BACHELOR OF ARTS

Suggested Plan of Study

For Uniform Freshman Year See Page 246.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
E.Dr. 131—Engr. Draw.	3	E. Dr. 132—Descrip. Geom.	3
Foreign Language	3	Foreign Language	3
Math. 132—Anal. Geom.	3	Math. 231—Calculus	3
Geol. 141—Gen. Geol.	4	Geol. 142—Gen. Geol.	4
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	17		17

Junior Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Hist. 3322—Amer. Hist.	3
Hist. 3321—Amer. Hist.	3	Phys. 236—Engr. Phys.	3
Phys. 235—Engr. Phys.	3	Phys. 216—Phys. Meas.	1
Phys. 215—Phys. Meas.	1	Biological Science	3
Biological Science	3	Chem. 235—Hydrocarbons	3
Pet. E. 230—Devel. Meth.	3	Math. 332—Diff. Equat.	3
	16		16

Summer Session

First Term	Credit	Second Term	Credit
C.E. 233—Statics	3	C.E. 332—Kinematics & Kinetics	3
Eco. 235—Prin. of Eco.	3	C.E. 231—Surveying	3
	6		6

Fourth Year

First Semester	Credit	Second Semester	Credit
Pet. E. 220—Drilling Fluids, or Pet. E. 320—Well Logging	2	Pet. E. 333—Prod. Meth.	3
Pet. E. 321—Phase Behavior	2	C.E. 333—Strength of Mat.	3
Geol. 234—Mineral & Petrol.	3	M.E. 335, 333, or 4315	3
Chem. 236—Anal. Chem.	3	C.E. 339—Fluid Mech.	3
M.E. 330—Engr. Thermo.	3	C.E. 312—Fluid Mech. Lab.	1
Social Science	3	Geol. 332—Struc. Geol.	3
	16		16

Fifth Year

First Semester	Credit	Second Semester	Credit
E. Sem. 412—Seminar	1	E. Sem. 412—Seminar	1
Geol. 433—Petrol. Geol.	3	E.E. 339—Elem. of E.E.	3
E.E. 338—Elem. of E.E.	3	E.E. 319—E.E. Lab.	1
E.E. 318—E.E. Lab.	1	Bus. Law 3313—Oil & Gas Law	3
Pet. E. 414—Prod. Lab.	1	Pet. E. 413—Nat. Gas Lab., or Pet. E. 416—Reservoir Engr. Lab.	1
Pet. E. 433—Reservoir Engr., or Pet. E. 434—Nat. Gas Engr.	3	Pet. E. 435—Advan. Nat. Gas Engr., or Pet. E. 436—Reservoir Engr.	3
Elective	3	Elective	3
M.E. 318—Heat. Engr. Lab.	1		
	16		15

Minimum hours required for graduation—171 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Textile Engineering — 5

FIVE-YEAR PROGRAM LEADING TO DEGREES OF BACHELOR OF SCIENCE IN TEXTILE ENGINEERING AND BACHELOR OF ARTS

Suggested Plan of Study

For Uniform Freshman Year See Page 246.

Sophomore Year

First Semester	Credit	Second Semester	Credit
Eng. 231—Mast. of Lit.	3	Eng. 232—Mast. of Lit.	3
E.Dr. 131—Engr. Draw.	3	E. Dr. 132—Descr. Geom.	3
Foreign Language	3	Foreign Language	3
Math. 132—Anal. Geom.	3	Math. 231—Calculus	3
Eco. 235—Prin. of Eco.	3	Social Science	3
P.E., Band, or Basic ROTC	1	P.E., Band, or Basic ROTC	1
	16		16

Junior Year

First Semester	Credit	Second Semester	Credit
Math. 232—Calculus	3	Chem. 341—Org. Chem.	4
Phys. 235—Engr. Phys.	3	Phys. 236—Engr. Phys.	3
Phys. 215—Phys. Meas.	1	Phys. 216—Phys. Meas.	1
T.E. 235—Text. Fibers	3	Acct. 231—Acct. for Engrs.	3
Amer. Hist.	3	Amer. Hist.	3
	13		14

Summer Session

First Term	Credit	Second Term	Credit
Biological Science	3	Biological Science	3
Technical Elective	3	C.E. 233—Statics	3
	6		6

Fourth Year

First Semester	Credit	Second Semester	Credit
T.E. 333—Text. Bleaching	3	T.E. 334—Text. Dyeing	3
T.E. 341—Prin. of Fiber Proc. I	4	T.E. 338—Prin. of Fiber Proc. II	3
I.E. 437—Qual. Control	3	I.E. 337—Prod. Plan. & Cont.	3
M.E. 329—Mech. of Mach.	2	I.E. 331—Motion and Time Study	3
M.E. 330—Engr. Thermodyn	3	M.E. 335, 338, or 435	3
C.E. 333—Strength of Mat.	3	Elective	3
	18		18

Fifth Year

First Semester	Credit	Second Semester	Credit
T.E. 445—Fab. Design & Const.	4	T.E. 431—Fab. Anal. Adv. Design	3
T.E. 435—Text. Finishing	3	T.E. 430—Mfg. Process Cont.	3
E.E. 328—Elem. of Elec. Engr.	2	T.E. 432—Man-made Fibers	3
E.E. 218—Elec. Engr. Lab.	1	T.E. 427—Text. Costing	2
Technical Electives	6	T.E. 428—Mill Org.	2
E.S. 412—Engr. Seminar	1	E.E. 329—Elem. of Elec. Engr.	2
	17	E.E. 319—Elec. Engr. Lab.	1
		E.S. 412—Engr. Seminar	1
			17

Minimum hours required for graduation—171 and P.E., Basic ROTC, or Band.

Advanced ROTC may be substituted for 6 hours of course work, subject to the approval of the Head of the Department.

Registered Engineers and Architects

The following faculty members and administrative officials of Texas Technological College are registered under either the act to regulate the practice of architecture (House Bill 144, Acts Regular Session, 45th Texas Legislature) or the Texas Engineering Registration Act (Senate Bill No. 74, Acts Regular Session, 45th Texas Legislature):

LICENSED ARCHITECTS:

Nolan E. Barrick
Weldon Leroy Bradshaw
*Clarence A. Bunn
Richard Duran
Robert Ivan Lockard
Florian Arthur Kleinschmidt

REGISTERED PROFESSIONAL ENGINEERS:

O. V. Adams
John Ross Bradford
Charles Victor Bullen
William Moore Craig
Charles Garfield Decker
William Lyon Ducker
Billy Howard Easter
Robert Cabaniss Goodwin
James Monroe Hartsfield
Donald Jacob Helmers
Charles Ernest Houston
William Loyd Jenkins
Philip Johnson
Horace Jurs MacKenzie
Keith Robert Marmion
Robert E. Martin
Robert Louis Mason
James Harold Murdough
Robert Lee Newell
Cecil Thomas Overby
Clifford M. Parrish
L.E. Parsons
Conner Columbus Perryman
Charles W. Pinnell
Louis John Powers
Edward Pugh Price
Oscar Allen St. Clair
Albert J. Sanger
Tom Basil Stenis

Department of Architecture and Allied Arts

VISITING PROFESSOR BUNN.
PROFESSORS BARRICK, BRADSHAW, KLEINSCHMIDT, R. LOCKARD.
ASSOCIATE PROFESSORS R. DURAN, HOUGHTON, SASSER.
ASSISTANT PROFESSORS PARKINSON, RICHARD TRACY.
INSTRUCTORS B. FARRELL, HARTMAN, McMINN.
PART-TIME INSTRUCTORS Z. FARRELL, NOLAN, PIERCE, J. ROBERTS.

The Department of Architecture and Allied Arts is a member of the Association of the Collegiate Schools of Architecture. It is affiliated with the National Institute for Architectural Education, the American Federation of Art, the College Art Association, and it holds valuable teaching aids provided by the Carnegie Foundation.

Curricula open to both men and women lead to:

(1) Bachelor of Architecture, a five-year curriculum for the Design Option or a five-year curriculum for the Construction Option.
(2) Bachelor of Advertising Art and Design, a five-year curriculum.

The five-year program for majors in architecture is a gradual, orderly and integrated development toward apprenticeship and into professional practice. Opportunities in many branches of the building industry are open to graduates having the background of architecture. Standards upheld by the various state registration boards are met, and a degree is the logical step toward apprenticeship and a license to practice architecture.

The primary objective is the creative development of the student as an individual through enlarging his capacities for principled and disciplined thought.

The degree may be obtained through the design option or the construction option. The first-year work is the same in both options so that a student may be given ample opportunity to appraise the two avenues of study. In the design curriculum, emphasis is placed on general requirements which are fundamental to a comprehensive understanding of the many aspects of the profession. The role of an architect as a coordinator is promoted. Basic work in the scientific fields is

*Registered as an Architect under Australian law.

required and at the same time there is more drawing and design, with the aesthetic approach stressed. In the construction curriculum, considerable attention is given to artistic ideals, but mainly the factors of safety and economy in building are made significant. This course includes more advanced mathematics and required specialization in structural engineering.

The five-year program for majors in advertising art and design is carefully arranged to give a suitable balance of theories, backgrounds, sources, and skills to students who plan to enter any of the diversified branches of the profession. An excellent preparation is given to those entering specialized fields. Students seeking creative training in drawing and painting, sculpture and ceramics, and art history will find the courses especially designed to give freedom of expression and to promote creative development.

Students who wish to work toward a Bachelor of Arts degree with a major in art should consult with the Head of the Department and arrange for a four-year course of study.

Insofar as possible the design work in the department is taught by the program-competition method in which the students compete with each other in the solving of a wide variety of theoretical and practical problems. Individual development is encouraged by advice and criticism on a faculty-to-student personal conference level.

The problem-solving process, which is the essence of adequate education in the creative arts, is brought into play at every opportunity. Students are stimulated to recognize needs, to express them in terms of programs upon which analysis and research may be applied to reach creative solutions. A comprehensive collection of books, photographs, prints, projection slides, and art objects is available within the department for research in the allied art fields.

Architectural majors are urged to spend their summer months in an office of a registered architect. A student may receive credit for the laboratory period in Architecture 333 and in Architecture 435 upon presentation to the Department Head of satisfactory evidence of three months of summer work for each course in working drawings and details in a registered architect's office.

The department reserves the right to retain, exhibit, and reproduce the work submitted by students for credit in any course.

ARCHITECTURE

For Undergraduates

121-122. Freehand Drawing I, II. Cr. 2. each. (0-6).
Representational drawing in charcoal emphasizing fundamental skills. Alternating problems stressing creative interpretation. Culminating work introducing color with pastels.

125. Architectural Graphics. Cr. 2. (0-6).
Theory of perspective and architectural shades and shadows. Exercises involving application of principles of descriptive geometry to common geometrical solids and architectural forms.

141-142. Principles of Design. Cr. 4. each. (1-9).
Study of the basic principles of design with emphasis on three-dimensional non-objective problems. Exercises in drafting, lettering and rendering in several media.

221. History of Ancient Architecture. Cr. 2.
A study of the architectural contributions of ancient Egypt. Mesopotamia, Persia, Greece, and Rome to the cultural heritage of western civilization. Illustrated lectures.

222. History of Medieval Architecture. Cr. 2.
Prerequisite: Arch. 221. A study of Early Christian, Byzantine, Romanesque, and Gothic styles, and their relation to the development of Western culture. Illustrated lectures.

224. Freehand Drawing III. Cr. 2. (0-6).
Prerequisite: Arch. 121-122. Pencil, pen and ink rendering and sketching from life and nature.

225. Beginning Watercolor. Cr. 2. (0-6).
Prerequisite: Arch. 224. Beginning course in watercolor painting from life and from nature.

226. Materials and Methods of Construction. Cr. 2.
Prerequisite: Registration in Arch. 231. Introduction to properties, specifications and uses of architectural materials.

227. Materials and Methods of Construction. Cr. 2.
Continuation of Arch. 226 with emphasis on analysis of structural systems related to architecture.

231-232. Architectural Design Grade I. Cr. 3 each. (0-9).
Prerequisite: Arch. 125, 141-142. 9-hour to 45-hour problems under individual criticism dealing with elements of plan and evaluation. Introduction to the project-completing method of study. 9-hour sketch problems emphasizing composition and presentation.

324-325. Mechanical Equipment of Buildings. Cr. 2 each.
Prerequisite: Arch. 227 and 232. Heating and air conditioning requirements and systems for buildings.

326. Anatomy and Life Drawing. Cr. 2. (0-6).
Prerequisite: Arch. 224. Study of anatomical structure. Drawing from life. $5 model fee.

327. Life Drawing I. Cr. 2. (0-6).
Prerequisite: Arch. 326. Drawing from life in a variety of media and approaches with emphasis upon aesthetic factors. Instruction by individual criticism. $5 model fee.

333-334. Architectural Working Drawing. Cr. 3 each. (1-6).
Prerequisite: Arch. 352. Preparation of working drawings and specifications for small residences or commercial buildings; drawing complete details for construction including heating, plumbing, and electrical services. Occasional visits to building under construction.

351-352. Architectural Design, Grade II. Cr. 5 each. (0-15).
Prerequisite: Arch. 231-232. 15-hour to 75-hour problems under individual criticism dealing with small building types. The project-completion method of study is used. 9-hour sketch problems dealing with details of architecture and with larger architectural compositions.

451-452. Architectural Design, Grade III. Cr. 5 each. (0-5).
Prerequisite: Arch. 351-352. 15 to 90-hour problems under individual criticism dealing with more comprehensive building types and groups of buildings. 9-hour sketches are offered to test creative ability and expression in a limited amount of time.

463. Architectural Design, Grade IV. Cr. 6. (0-18).
Prerequisite: Arch. 451-452. 24 to 120-hour problems under individual criticism dealing with large compositions which include groups of buildings, site planning and studies of circulation, etc. 9-hour sketches are also given.

484. Architectural Design, Grade IV. Cr. 8. (0-24).
Prerequisite: Arch. 463. Continuation of Arch. 463 with one final "thesis" problem selected and programmed by the individual student.

For Undergraduates and Graduates

320. History of Furniture and Costume. Cr. 2.
Prerequisite: Arch. 323. A study of furniture and costume from prehistoric times to the present emphasizing trends relative to man's social history and changing needs. Illustrated lectures.

321. History of Early American Architecture. Cr. 2.
Prerequisite: Arch. 322. The American architectural heritage. Pre-Columbian, southwestern colonial, regional styles of the eastern seaboard, Western Reserve, and Greek Revival. Illustrated lectures.

322. History of Renaissance Architecture. Cr. 2.
Prerequisite: Arch. 222. A study of the Renaissance architecture of Europe emphasizing the development of styles essential to an understanding of the background of Early American and modern architectural growth. Illustrated lectures.

323. History of Modern Architecture. Cr. 2.
Prerequisite: Arch. 322. A study of the cultural and social influences as they determine the development of contemporary architecture in Europe and the Americas. Illustrated lectures.

420. Professional Practice. Cr. 2.
Prerequisite: Junior standing. Office organization, ethics, professional relations.

423-424. Life Drawing II, III. Cr. 2 each. (0-6).
Prerequisite: Arch. 327. Continuation of Arch. 327. $5 model fee each.

4316-4317. Architectural Sculpture. Cr. 3 each. (1-6).
Prerequisite: Arch. 224. Clay modeling. Study of the historic development of sculptural techniques. Architectonic studies in clay and other media. Plaster-mold making, glazing, and firing. Fee for ceramics materials, $5 each.

435. Advanced Architectural Working Drawings. Cr. 3. (1-6).
A continuation of Arch. 333-334. Preparation of working drawings and specifications to comply with building and zoning codes for superior fire resistant buildings; analyzing and integrating structural system details with architectural design details.

436. City Planning. Cr. 3. (1-6).

Prerequisite: Arch. 435 and registration in Arch. 452. The theory and problems of city development, community planning, housing, and their drawn and rendered solutions under individual criticism.

Many courses in architecture and allied arts, especially those in city planning, history of architecture, and history of painting and sculpture, are available for electives to students majoring in education, history, music, government, landscape architecture, etc. Consent of the instructor may be secured in lieu of the professional prerequisites listed.

ALLIED ARTS COURSES IN ADVERTISING ART AND DESIGN

Allied arts courses which are combined with courses in architecture form the basis for the advertising art and design curriculum. The training and background of several departmental faculty members makes it possible to offer courses that are available to students pursuing training in public school art fields both on the undergraduate and graduate levels.

For Undergraduates

126-127. Introduction to Lettering. Cr. 2. each. (0-6).

Familiarity with general commercial lettering styles and practices with emphasis upon skill in single stroke lettering in pen and brush. Introduction to layout and lettering for reproduction.

210, 211. Introduction to the Arts. Cr. 1 each.

Prerequisite: Sophomore standing. Guided discussions of the arts through a study of current art exhibitions on the campus and investigations of critical reviews in contemporary publications.

235-236. Pictorial Composition. Cr. 3 each. (1-6).

Prerequisite: Arch. 141-142. Theory of space design with emphasis on line and area composition.

238-239. Pottery. Cr. 3 each. (0-9).

Prerequisite: Arch. 141-142 or consent of instructor. All hand methods of pottery production and simple commercial ones. Decorating, glazing and firing of ware. For ceramic materials fee, $5 each.

328-329. Advanced Lettering and Art Layout. Cr. 2 each. (0-6).

Prerequisite: Al. A. 3212-3213. Advanced commercial lettering and art layout as applied to newspaper, magazines, etc.

3212-3213. Commercial Illustration I. Cr. 2 each. (0-6).

Prerequisite: Al.A. 235-236. Illustration as applied to advertising and commercial fields. Drawing and painting in various media for designated processes of reproduction. Analysis of advertising value of drawings and force of design on subject matter. Problems in design of booklets, posters, illustrations.

335-336. History of Art. Cr. 3 each.

Prerequisite: Junior standing. A survey of architecture, sculpture, painting, and the minor arts from prehistoric times to the present. Emphasis is placed upon the arts as they reveal the visual aspects of man's social, political and cultural growth. Illustrated lectures. Open to all students except those majoring in advertising art and architecture, design option.

3311-3312. Principles of Drawing and Painting, and Theory of Design. Cr. 3 each. (1-6).

Prerequisite: Arch. 225. Al. A. 235-236. Advanced analysis of principles governing good drawing and painting throughout the ages. Lectures illustrated. Laboratory work in line drawing and color.

342-343. Commercial Design I. Cr. 4 each. (1-9).

Prerequisite: Al.A. 235-236. Structural representation of originally designed commercial products emphasizing effective techniques of rendering in a variety of media.

426-427. Advanced Painting. Cr. 2 each. (0-6).

Prerequisite: Arch. 225. Principles of design related to various types of composition in conjunction with direct study from the human model, still life, or landscape. Problems in oil or water color may take the form of book illustration, painting or mural decoration. $5 model fee each.

4212-4213. Commercial Illustration II. Cr. 2 each. (0-6).

Prerequisite: AlA. 3212-3213. A continuation of AlA. 3212-3213 with problems in presentation and studio practice; specialization in illustration with completion of full scale work.

4214-4215. Fashion Illustration. Cr. 2 each. (0-6).

Prerequisite: Arch. 424, Al.A. 3212-3213. The drawing and design of the costumed figure for newspaper and magazine fashion illustrations.

For Undergraduates and Graduates

421. Art Workshop. Cr. 2. (0-6).
For those who wish a refresher course in drawing, painting, pottery, sculpture, ceramics or other graphic media. Instruction on individual project basis. Course may be repeated for credit. $5 material fee if taken in ceramics or pottery.

433-434. Commercial Design II. Cr. 3 each. (0-9).
Continuation of Al.A. 342-343. Problems involving extended research and group product development. Construction of scale models or execution of the finished product where feasible.

4311-4312. Ceramics. Cr. 3 each. (0-9).
Prerequisite: Al.A. 238-239. Advanced pottery design and production. Glaze calculation and clay body construction. Research. Ceramics materials fee $5 each.

4318-4319. History of Painting and Sculpture. Cr. 3 each.
Prerequisite: Junior classification. Illustrated lectures in the development of painting and sculpture from the Egyptian period to the present day. Three hours of library research per week.

4351. Art in the Modern World. Cr. 3.
Prerequisite: Graduate standing. A survey and development of influences upon art forces in the modern world.

5335. Art in Elementary Education. Cr. 3. (1-6).
Prerequisite: 12 semester hours of allied arts or equivalent, or two years art teaching experience plus 6 hours of child psychology. Enrollment limited to graduate students in elementary education. A course in drawing and painting, composition, and color designed primarily for those who have had at least two years of teaching art in public schools.

Courses in Chemical Engineering

For faculty and introductory subject matter, see Department of Chemistry and Chemical Engineering, Page 146.

For Undergraduates

244. Introduction to Chemical Engineering. Cr. 4. (3-3).
Prerequisite: Sophomore standing. An introduction to the equipment and calculations of chemical engineering. The problems involve material and energy balances. The laboratory includes elementary engineering measurements, and testing of fuels, lubricants and water.

331-332. Principles of Chemical Engineering I-II. Cr. 3 each.
Prerequisite: Ch.E. 244, calculus. Prerequisite or parallel: Chem. 441-442. Principles of the basic unit operations of chemical engineering such as flow of fluids, heat transfer, etc.

For Undergraduates and Graduates

425-426. Unit Operations Laboratory. Cr. 2 each. (0-6).
Prerequisite: Ch.E. 331-332. Laboratory experiments on the unit operations of chemical engineering with written reports.

430. Chemical Engineering Plant Design. Cr. 3. (1-6).
Prerequisite: Ch.E. 437 and parallel registration in Ch.E. 432. Development of a plant process from the pilot plant stage to the industrial size unit.

431. Unit Processes. Cr. 3. (3-0).
Prerequisite: Chem. 353-354, Ch.E. 331-332. A study of the more important chemical industries from the point of view of the unit processes and unit operations involved.

432. Process Development. Cr. 3. (3-0).
Prerequisite: Ch.E. 431. This course must be taken before or in parallel with Ch. E. 430. A problem course on the application of fundamental principles in the process calculations and design of pilot plants.

433-434. Chemical Engineering Thermodynamics. Cr. 3 each.
Prerequisite: Ch.E. 331-332. A problem course in chemical process calculations and thermodynamics.

435. Instrumentation. Cr. 3. (2-3).
Prerequisite: Ch.E. 331-332. A study of the characteristics of industrial instruments, and their manner of use in controlling process variables.

437. Principles of Chemical Engineering III. Cr. 3.
Prerequisite or parallel: Ch.E. 331-332. Theory and problems on selected unit operations.

439. Nuclear Engineering. Cr. 3.
Prerequisite: Thermodynamics or its equivalent. A survey of the basic principles applicable to engineering problems of the atomic energy field.

For Graduates

531. Advanced Chemical Engineering Thermodynamics. Cr. 3.
Prerequisite: Ch.E. 433-434 and Ch.E. 437 or equivalent. Advanced topics in applied thermodynamics, including phase equilibria, fluid flow, etc.

532. Chemical Engineering Design. Cr. 3. (1-6).
Prerequisite: Ch.E. 430, Ch.E. 431-432, and Ch.E. 437 or equivalent. The design of the complete plant. Plant location, equipment design or selection, plant layout, building requirements, and estimation of the cost of the plant are included.

533. Organic Unit Processes. Cr. 3.
Prerequisite: Chem. 353-354. A detailed study of the major organic unit processes. Equipment, reaction theory, and the unitary aspects of each organic unit process are considered.

534. Absorption and Extraction. Cr. 3.
Prerequisite: Ch.E. 433-434 and Ch.E. 437 or equivalent. Theory of absorption and extraction with emphasis on design of equipment and operational problems.

535. Heat Transfer. Cr. 3.
Prerequisite: Ch.E. 433-434 and Ch.E. 437 or equivalent. Fundamentals of heat transmission with emphasis on the design of heat transfer equipment.

536. Distillation. Cr. 3.
Prerequisite: Ch.E. 433-434 and Ch.E. 437 or equivalent. Theory of distillation with special emphasis on multicomponent distillation and application of theory to problems of design.

537, 538. Advanced Work in Specific Fields. Cr. 3 each.
Prerequisite: Graduate standing. Course and credit depend on interests of students. All registration must be approved by the Head of the Department. Offered on demand. See Chem. 537, 538.

5391-5392. Nuclear Chemical Engineering. Cr. 3 each.
Prerequisite: graduate standing in engineering, chemistry, physics, or mathematics and preferably Ch.E. 439. A graduate course in nuclear reactions, reactor fuel cycles, production of nuclear feed materials, properties of irradiated fuels, and separations processes.

631-632. Master's Thesis. Cr. 6.

Department of Civil Engineering

PROFESSORS MURDOUGH, O. V. ADAMS, DECKER, OVERBY*, WHETSTONE.
ASSOCIATE PROFESSORS KEHO, SANGER.
ASSISTANT PROFESSORS MARMION, PARRISH, PINNELL.
INSTRUCTORS S. FOREMAN, KIESLING, MITCHAM, ROWAN.

The courses offered by the Department of Civil Engineering fall into two classes: service courses, such as surveying, applied mechanics, and fluid mechanics which are required in many engineering curricula; and courses which serve students majoring in civil engineering, and in closely allied fields.

The curriculum in civil engineering follows the pattern developed through usage by engineering colleges throughout the nation, and is designed to develop the basic fundamentals of engineering as particularly applied to civil engineering. Opportunities are offered for some specialization in highway engineering, in structures, or in sanitary engineering.

For Undergraduates

231. Plane Surveying. Cr. 3. (2-3).
Prerequisite: Math. 131. The uses and adjustment of surveying instruments; differential and profile leveling; cross sections; stadia; open and closed traverses; simple and vertical curves; land area calculations: land subdivision.

232. Route Surveying. Cr. 3. (2-3).
Prerequisite: C.E. 231. Route location; mathematics of compound, spiraled and vertical curves; field astronomy; earthwork calculations; mass diagram.

233. Applied Mechanics. Statics. Cr. 3.
Prerequisite: Math. 232. Resultants of coplanar and non-coplanar force systems; equilibrium of force systems, friction, centroids, moments of inertia.

311. Highway Laboratory. Cr. 1. (0-3).
Prerequisite: Junior engineering standing. Standard tests of road building materials.

*Absent on leave, Spring 1958.

312. Fluid Mechanics Laboratory. Cr. 1. (0-3).
Prerequisite: Registration in C.E. 339.

313. Sanitation Laboratory. Cr. 1. (0-3).
Prerequisite: Registration in C.E. 321. Bacteriology and microscopy of public water supplies and sewage.

320. Structures. Cr. 2. (2-2).
Prerequisite: C.E. 233. Graphic statics; shear, moment, and stresses in framed structures by graphical and analytical methods.

322. Highway Engineering. Cr. 2.
Prerequisite: C.E. 335. Rigid type pavement design. Traffic control; highway administration and finance.

330. Structures. Cr. 3.
Prerequisite: C.E. 320 and registration in C.E. 333. Moment and shear curves; influence lines, stresses in framed structures; moving loads systems; beam design; column design.

332. Applied Mechanics—Kinematics and Kinetics. Cr. 3.
Prerequisite: C.E. 233. Motion of the particle and of rigid bodies; kinetics of translation, rotation, and plane motion; work, energy, impulse, momentum.

333. Applied Mechanics—Strength of Materials. Cr. 3.
Prerequisite: C.E. 233. Stresses and strains in elastic bodies subject to tension, compression, and shear; bending and torsion; deflection in homogeneous beams; column theory, combined stresses.

335. Highway Engineering. Cr. 3.
Prerequisite: C.E. 231. Fundamentals of highway location, design, construction, and maintenance. Traffic control and traffic regulations. History and development of transportation. Highway administration and finance.

337-338. Structural Mechanics. Cr. 3 each.
Prerequisite: Math. 131. Statics, strength of materials and structural design. For students of architecture, design option, and others who desire a brief and general presentation of the material.

339. Fluid Mechanics. Cr. 3.
Prerequisite: C.E. 233. Dynamics of viscous and non-viscous fluids, impulse and momentum, pipe flow, fluid resistance.

For Undergraduates and Graduates

321. Municipal Sanitation. Cr. 2.
Prerequisite: Junior standing or approval of Head of Department. General principles of sanitation as applied to the community, including water supply, sewerage, refuse disposal, rodent and pest control, food and milk sanitation, housing, lighting, ventilation, and swimming pools.

3311. Elements of Hydraulic Engineering. Cr. 3.
Prerequisite: CE 339. Dams; channels and pressure conduits; hydraulic machinery; hydroelectric power.

3312. Hydrology of Ground Water. Cr. 3.
Prerequisite: C.E. 339. Infiltration. Flow of underground water under water table and artesian conditions. Development of ground water supplies. Natural and artificial recharge.

423. Economics of Highway Design. Cr. 2. (0-6).
Prerequisite: C.E. 335.

424. Materials. Cr. 2. (1-3).
Prerequisite: Junior engineering standing. The properties and tests of materials of engineering, with special reference to concrete materials.

425. Materials. Cr. 2. (1-3).
Prerequisite: C.E. 333. The properties and tests of materials of engineering with special reference to wood and steel.

431. Reinforced Concrete. Cr. 3.
Prerequisite: C.E. 333. Study and application of the theory of reinforced concrete design.

432. Reinforced Concrete. Cr. 3.
Prerequisite: C.E. 431.

433. Structures. Cr. 3. (2-6).
Prerequisite: C.E. 330, 333. Design and detail in steel.

434. Structures. Cr. 3.
Prerequisite: C.E. 333. Brief presentation of the theory of statically indeterminate structures.

437. Water Supply and Treatment. Cr. 3. (2-3).
Prerequisite: C.E. 339, or Ch.E. 332. Consumption of water; quality of water; sources of supply-streams, lakes, impounding reservoirs, wells; theory of treatment-coagulation, softening, filtration, recarburation, aeration, chlorination; laboratory work in the chemistry of water.

438. Sewerage and Sewage Treatment. Cr. 3. (2-3).
Prerequisite: C.E. 339, or Ch.E. 332. Quantity of sewage—both sanitary and storm; composition of sewage; construction of sewers and sewerage systems; theory of different methods of treatment; laboratory work in the chemistry of sewage.

439. Law and Ethics in Engineering. Cr. 3.
Prerequisite: Senior standing in engineering or approval of Head of Department. Professional and industrial problems, contracts, specifications, ethics of engineering.

4312. Soil Mechanics and Foundations. Cr. 3.
Prerequisite: C.E. 333. Physical and mechanical properties of soils; theories of stress, settlement, and consolidation; stability of earth masses; bearing capacity and settlement of structures.

4313. Sanitary Engineering Design—Water. Cr. 3. (1-6).
Prerequisite: Registration in C.E. 437. The design of structures used in collection. treatment, and distribution of public water supplies.

4314. Sanitary Engineering Design—Sewage. Cr. 3. (1-6).
Prerequisite: Registration in C.E. 438 and C.E. 431. The design of structures employed in the collection of sanitary and storm sewage, the treatment of sewage, and its disposal.

Department of Electrical Engineering

PROFESSORS BULLEN, HOUSTON.
ASSOCIATE PROFESSOR STENIS.
ASSISTANT PROFESSORS J.P. CRAIG, EASTER, HARTSFIELD, PRICE.
INSTRUCTORS BREELAND, CARDWELL, GOODSON, GRIGSBY, HART.
PART-TIME INSTRUCTOR McFARLAND.

Electrical engineering is one of the newest branches of engineering. The branch has developed so rapidly, and the applications of electricity have become so broad, that many subdivisions in electrical engineering now exist, offering opportunities in a variety of engineering fields. Graduates in electrical engineering find employment in such fields as manufacturing, public utilities, business, contracting, sales, research, teaching, design, construction, transportation, illumination, and communication. Specialization in any one of these fields usually follows graduation.

The undergraduate curriculum is designed to give a comprehensive background in electrical engineering, and is broadened by the inclusion of courses in pure science, the humanities, and related fields of engineering. The graduate may go equally well into advanced studies or directly into the engineering profession. Several areas of specialization are available at the graduate level. For offerings in the graduate curriculum, consult the Graduate Catalog.

Laboratories are equipped with the latest types of radio, electronic equipment, and machines. Theory studied in the classroom is verified experimentally in the laboratory.

For Undergraduates

221. Electrical Engineering Laboratory. Cr. 2. (0-6).
Prerequisite: Registration in E.E. 231. A laboratory course to accompany E.E. 231.

225. Direct Current Machines Laboratory. Cr. 2. (0-6).
Prerequisite: Registration in E.E. 235. A laboratory course to accompany E.E. 235.

231. Principles of Electrical Engineering. Cr. 3.
Prerequisite: Concurrent enrollment in Math. 232. Fundamental principles of electric and magnetic circuits. Magnetic properties of iron and steel. Induced and generated electromotive force. Forces on conductors.

235. Principles of Direct Current Machinery. Cr. 3.
Prerequisite: E.E. 231, Math. 232 or concurrent enrollment. A theoretical study of the operating characteristics and applications of direct current generators and motors.

318-319. Electrical Engineering Laboratory. Cr. 1 each. (0-3).
Prerequisite: Registration in E.E. 328-329 or E.E. 338-339. A laboratory course to provide experience in testing and operating electrical machinery and apparatus. Not for electrical engineering majors.

328-329. Elements of Electrical Engineering. Cr. 2 each.
Prerequisite: Phys. 236, Math. 232. Principles and applications of direct and alternating current circuits, apparatus and machines. For civil, chemical, textile, and agricultural engineering students.

335. Illumination. Cr. 3.
Prerequisite: Math. 132, 6 semester hours of physics. Basic theory and modern methods of illumination. Design considerations. Required for architectural students.

338-339. Elements of Electrical Engineering. Cr. 3 each.
Prerequisite: Phys. 236, Math. 232. Principles and applications of direct and alternating current circuits, apparatus and machines. For industrial, mechanical, and petroleum engineering students.

For Undergraduates and Graduates

312-313. Alternating Current Circuits Laboratory. Cr. 1 each. (0-3).
Prerequisite: Registration in E.E. 332-333. Laboratory course to accompany E.E. 332-333.

317. Electronics Laboratory. Cr. 1. (0-3).
Prerequisite: Registration in E.E. 337. A laboratory course to accompany E.E. 337. An experimental study of high vacuum tubes, gas tubes, photo-tubes and semiconductors.

321. Static Electric and Magnetic Fields. Cr. 2.
Prerequisite: Phys. 236, Math. 332. Basic theory of static electric and magnetic fields. Investigation is made of fields having spherical, cylindrical, and plane boundaries. Includes basic concepts of capacitance and inductance.

332-333. Alternating Current Circuits. Cr. 3 each.
Prerequisite: E.E. 221, 231. Math. 232. Fundamentals of alternating current circuits. Network theorems, coupled circuit phenomena, transients and non-sinusoidal wave forms.

337. Electronics. Cr. 3.
Prerequisite: E.E. 321, 332. Fundamental principles of high vacuum tubes, gas tubes, photo-tubes and semiconductors. Electrical characteristics of these devices.

436-437. Principles of Electromagnetic Fields. Cr. 3 each.
Prerequisite: Math. 332, E.E. 321. Static field equations, elementary boundary value problems, solutions of Maxwell's equations. High-frequency potential, circuit concepts, and skin effect. Propagation of electromagnetic waves. Wave guides and resonant cavities. Radiation. This is not a required course and can be given only on the basis of sufficient registration.

4112-4113. Alternating Current Machinery Laboratory. Cr. 1 each (0-3).
Prerequisite: Registration in E.E. 4312-4313. A laboratory course to accompany E.E. 4312 - 4313. Machines are operated and tested in the laboratory, and results compared with theoretical characteristics.

4115-4116. Vacuum Tube Circuits Laboratory. Cr. 1 each. (0-3).
Prerequisite: Parallel enrollment in E.E. 4315-4316. A laboratory course to accompany 4315-4316.

4121-4122. Control System Instrumentation Laboratory. Cr. 1 each. (0-3).
Prerequisite: Registration in E.E. 4221-4222. A laboratory course to accompany E.E. 4221-4222.

4124. Electrical Transmission Lines Laboratory. Cr. 1. (0-3).
Prerequisite: Registration in E.E. 4224. A laboratory course to accompany E.E. 4224.

4221-4222. Control System Instrumentation. Cr. 2 each.
Prerequisite: Senior standing in electrical engineering. For non-majors, consent of instructor. Dynamics of closed-loop automatic control systems. Basic study of the instrumentation problem. Fundamentals of transducers. Transmission, indication and recording of data. Emphasis on the electrical methods of measurement and control with applications to industrial instrumentation problems.

4312-4313. Alternating Current Machines. Cr. 3 each.
Prerequisite: E.E. 332. Theory and operation of alternating current machines. Transformers, three-phase synchronous motors and generators, three-phase induction motors and small single-phase motors. Theoretical operating characteristics are derived by equivalent circuit solutions and graphical analysis.

4315-4316. Vacuum Tube Circuits and Systems. Cr. 3 each.
Prerequisite: E.E. 337, 333. Electronic sources of power, amplifiers, oscillators, modulators, demodulators, frequency converters, wave-shaping circuits, and antenna systems.

4323-4224. Electrical Transmission Lines. Cr. 3. 2.
Prerequisite: E.E. 333, 321. Theory of electrical transmission lines. Basic long-line equations calculation of line parameters, standing and traveling waves. The fundamental equations are considered in their particular applications to power, telephone, and high-frequency lines.

For Graduates

531-532. Vacuum Tubes and Associated Circuits. Cr. 3 each.
Prerequisite: E.E. 4316 or the equivalent and consent of instructor. A detailed study of vacuum tubes and associated circuits. Steady-state and transient response of linear amplifiers, random noise, power amplifiers, feed-back amplifiers, stability criteria, oscillators, and special topics from current literature.

533. Symmetrical Components. Cr. 3.
Prerequisite: B.S. in E.E. or consent of instructor. The theory of the method of symmetrical components is reviewed and supplemented in detail; related components are described, and the method is applied to the calculation of voltages and currents in complex systems under conditions of fault and unbalanced loading. The symmetrical component impedances of machines are defined and calculated, also the zero sequence impedance of lines and cables.

535. Electric Power Systems. Cr. 3.
Prerequisite: E.E. 4224 or consent of instructor. Line constants, long-line equations, power-circle diagrams, traveling waves, system stability, line construction, corona.

536-537. Advanced Network Theory. Cr. 3 each.
Prerequisite: B.S. in E.E. or consent of instructor. Solution of transients in linear systems by means of the LaPlace transform and matrix methods. Theory of two-terminal and four-terminal networks, impedance transformation, Foster's theorem and extensions, conventional and lattice filters, equalizers, network design and synthesis, application of network theory to vacuum-tube circuits.

538-539. Advanced Electrical Machine Theory. Cr. 3 each.
Prerequisite: B.S. in E.E. or consent of instructor. A rigorous exposition of machine theory. Application of the methods of Doherty, Nickle and Park to many problems. Direct and quadrature-axis concepts of steady-state and transient reactance. Field and armature transient currents by operational calculus methods. Space and time harmonics of magneto-motive force. Emphasis is on operation, but design factors such as flux plotting are considered.

5211-5212. Special Problems in Electrical Engineering. Cr. 2 each.
Experimental work to accompany advanced theory courses in electrical engineering.

5311-5312. Automatic Control Systems. Cr. 3. each.
Prerequisite: E.E. 4221-4222, or equivalent. Quantitative study of closed-loop automatic control system behavior. Relation between transient and steady-state performance. System synthesis for prescribed design criteria.

631-632. Thesis. Cr. 6.

Courses in Engineering Physics

FOR FACULTY AND COURSE DESCRIPTIONS, SEE DEPARTMENT OF PHYSICS, PAGE 201.

Course in Engineering Seminar

412. Engineering Seminar. Cr. 1.
Prerequisite: Senior standing and permission of Head of Department unless course is specifically required in curriculum. The investigation and study of engineering problems of special interest and value to the student. May be repeated for credit.

Department of Industrial Engineering and Engineering Drawing

PROFESSORS BRADFORD, PERRYMAN, ST. CLAIR.
ASSOCIATE PROFESSORS ATKINSON, LINDENMEIER, MACKENZIE.
ASSISTANT PROFESSORS JENKINS, H.G. MARTIN.
INSTRUCTORS BURFORD, GRAHAM.
PART-TIME INSTRUCTORS CECIL, L. ELLIOTT, HENDRICKS, MILLER, WATERS, G. WILSON.

INDUSTRIAL ENGINEERING

The industrial engineering curriculum is concerned with the operation and management of industrial organizations. Courses offered by the department deal primarily with the problems of cost, quality, and quantity of production in manufacturing establishments. The successful solution of such problems involves organizing, planning, and

coordinating the effective utilization and control of materials, facilities, and personnel which requires the consideration of human and economic factors as well as the technical. The curriculum includes the basic courses in mechanical, electrical, and civil engineering. Graduates in industrial engineering enter such fields as production planning and control, motion and time study, plant design, tool design, safety engineering, quality control, industrial relations, supervision, etc.

For Undergraduates

321. Industrial Relations. Cr. 2.

Prerequisite: Junior standing. A study of the policies and practices of industrial organizations relative to employees. Developing and maintaining an effective working force; recruitment, motivation, working conditions, remuneration, evaluation, grievances, etc.

331. Motion and Time Study. Cr. 3. (2-3).

Prerequisite: Junior standing. Methods of analyzing processes and operations for economical operation; principles of motion economy; micromotion study; man-machine and multiple activity analysis; techniques of stopwatch time study to establish work standards; wage incentive applications; standard data.

332. Industrial Organization and Management. Cr. 3.

Prerequisite: Junior standing. The fundamentals of organization, standardization, specialization, departmental functions, coordination, administrative control, cost analysis, etc., as applied to industrial organizations.

333. Manufacturing Processes. Cr. 3.

Prerequisite: Junior standing in engineering. Manufacturing processes as used in various industries such as metal, non-metallic minerals, chemicals, textile, food, etc. A brief history of each industry up to the present. Study of types of machines; characteristics of buildings; working conditions; annual value of products; centers of production.

336. Tool Design. Cr. 3. (1-6).

Prerequisite: E. Dr. 221; C.E. 333 or parallel registration. The study of types and characteristics of tools best suited for use in processing various materials. Jigs, dies, fixtures, gauges, etc. are designed in the laboratory.

337. Production Planning and Control. Cr. 3.

Prerequisite: I.E. 332. The planning and control of quantity production of goods. Methods of controlling materials, machines, personnel, quality and cost of products. Preparation of manufacturing information and authorization, scheduling, routing, etc.

For Undergraduates and Graduate

411. Industrial Engineering Problems. Cr. 1. (0-3).

Prerequisite: Senior standing in industrial engineering. The practical solution of a variety of problems which the industrial engineer may be expected to encounter in his work.

423. Industrial Procurement. Cr. 2.

Prerequisite: Senior standing. Policies affecting procurement of equipment and materials; factors involved in the decision to make or buy; preparation of specifications; the effect of quality and quantity on prices; sources of supply; sub-contracts; etc.

432-433. Industrial Plant Design. Cr. 3 each. (1-6).

Prerequisite: Senior standing in industrial engineering; C.E. 333 or parallel registration. The planning and design of a complete industrial plant covering location, processes, capacity, material handling and routing, buildings, machinery, storage, facilities.

435. Safety Engineering. Cr. 3.

Prerequisite: Senior standing in engineering. History of safety movement as applied to industry; cost of accidents; methods of training and enforcing safety; fundamentals of machine guarding; safety organization; accident rates; accident investigations and reports; protective equipment; fire protection; health hazards; first aid.

436. Engineering Economy. Cr. 3.

Prerequisite: 3 hours economics and senior standing in engineering. Analysis and evaluation of factors involved in making decisions; economic differences in alternatives; cost studies; time value of money; prospective return on increment investments; depreciation; equipment retirement policies.

437. Quality Control. Cr. 3.

Prerequisite: Senior standing in engineering. The application of statistical techniques to the control of quality in industry. Acceptance sampling by attributes and variables, control charts inspection procedures, organization and administration of quality control.

ENGINEERING DRAWING

The courses offered in engineering drawing are fundamental for all courses in engineering. The objective of these courses is to familiar-

ize the student with engineering drawing conventions and to train the student to use skillfully and intelligently engineering drawing techniques as a basis for specialized engineering design work. Approved drawing equipment is required in all courses.

For Undergraduates

131. Engineering Drawing. Cr. 3. (1-5).
Prerequisite: Plane geometry. The essentials of drafting, including freehand, sketching, use of instruments, lettering, engineering, geometry, orthographic projection, sections, isometric drawings, oblique drawings, dimensioning, elementary working drawings.

132. Descriptive Geometry Cr. 3. (1-5).
Prerequisite: E.Dr. 131. Theory of engineering drawing, which provides training in exact thinking. Point, line, and plane problems, tangent planes, intersections and developments, single and double curved surfaces, and warped surfaces.

221. Machine Drawing. Cr. 2. (0-6).
Prerequisite: E.Dr. 132. Application of the graphic language to engineering purposes; engineering sketches; machine fastenings; conventional practice; machine details and assembly drawings.

Department of Mechanical Engineering

PROFESSORS POWERS, NEWELL.
ASSOCIATE PROFESSORS HELMERS, R.E. MARTIN, MASON.
ASSISTANT PROFESSOR A. MONASCH.
INSTRUCTORS COLBERT, DAVENPORT*, EDMONDSON, LAWRENCE, LOWERY, SWINSON.
PART-TIME INSTRUCTOR REIS.

Mechanical engineering is that branch of engineering whose basic functions deal with the transformation of energy into work and the mechanisms by which this is accomplished. The course of study thus deals with the generation, transmission, and utilization of heat and mechanical power, and with the design, construction, operation, and testing of machines. Shop and laboratory courses are employed to familiarize the student with manufacturing processes and testing methods. Emphasis is placed on acquiring a thorough foundation in fundamentals so that the graduate will be prepared to advance and develop in the profession of engineering.

COMBINATION COURSE
MECHANICAL ENGINEERING—PETROLEUM ENGINEERING

The Departments of Mechanical Engineering and Petroleum Engineering are cooperating in offering a five-year curriculum. At the successful completion of four years of this curriculum, the Degree of Bachelor of Science in petroleum engineering will be awarded.

The work of the first four years will include the curriculum of petroleum engineering, except that petroleum students will add M. E. 237 and 333.

The fifth year will include the following mechanical engineering courses: M.E. 320, 321, 3312, 3313, 3314, 3315, 430, 431, 4212, 4213, 4315.

For Undergraduates

M. E. 237. Metals Engineering. Cr. 3.
Prerequisites: Chem. 141, Math. 231. Metallography, heat treatment, and metal fabrication processes for engineering applications.

M. E. 318. Heat Engineering Laboratory. Cr. 1. (0-3).
Prerequisite: ME 330. Standard tests of engines, pump, blower, turbine, and refrigeration machine.

M. E. 320. Metals Fabrication. Cr. 2. (0-6).
Prerequisite: Junior standing. Design and manufacture of weldments and castings.

* On leave, 1957-58.

M. E. 321. Metals Fabrication. Cr. 2. (0-6).
Prerequisite: Junior standing. Design and manufacture of formed and machined parts.

M.E. 330. Engineering Thermodynamics. Cr. 3.
Prerequisites: Math. 232, Chem 142, Phys. 235. First and second laws of thermodynamics, reversible processes, and thermodynamic properties of gases and vapors for engineering applications.

M. E. 333. Combustion Engines. Cr. 3.
Prerequisites: M.E. 330. Types, performance, and applications of spark ignition, compression-ignition, and gas turbine engines.

M. E. 335 Heat Power Design. Cr. 3.
Prerequisite: M.E. 330. Economic and thermodynamic analysis and design of steam and combustion engine power plants.

M. E. 338. Air Conditioning. Cr. 3.
Prerequisite: M.E. 330. Thermodynamics of air-steam mixtures. Heating, cooling and ventilation requirements.

M.E. 3312. Mechanics of Machinery. Cr. 3. (2-2).
Prerequisite: C.E. 233. Kinematics and dynamics of gears, cams, and linkages.

M. E. 3313. Dynamics. Cr. 3. (2-2).
Prerequisites: C. E. 332 or M.E. 3312, Math 332. Dynamics of linear mechanical and electro-mechanical systems.

M. E. 3314, 3315. Mechanical Design. Cr. 3 each. (2-3 each).
Prerequisite: C.E. 233 Analysis of stresses in and functions of machine elements. Design of mechanical structures and machines.

For Advanced Undergraduates and Graduates

M. E. 410. Special Problems Laboratory. Cr. 1. (0-3).
Prerequisite: Concurrent enrollment in M.E. 420. Experimental studies in research and development.

M. E. 412. Physical Metallurgy Laboratory. Cr. 1. (0-3).
Prerequisite: Concurrent enrollment in M.E. 422. Metallurgical laboratory techniques, lattice and grain structure analysis, metals testing.

M. E. 420. Special Problems. Cr. 2.
Prerequisite: Concurrent enrollment in M.E. 410, senior standing. Advances and techniques in mechanical engineering technology. Oral and written report presentation.

M. E. 422. Physical Metallurgy. Cr. 2.
Prerequisite: M.E. 330. Concurrent enrollment in M.E. 412. Fundamentals of metal behavior in terms of atomic structure, energy levels and crystal imperfections.

M. E. 430. Mechanical Equipment Laboratory. Cr. 3. (0-6).
Prerequisites: M.E. 330, M.E. 333. Standards performance testing of mechanical equipment. Oral and written report presentation. Outside work required.

M. E. 431. Mechanical Equipment Laboratory. Cr. 3. (0-6).
Prerequisites: M.E. 330, Math. 332, C.E. 333. Experimental and developmental testing. Strain gage, photo-elastic, and dynamic testing techniques. Oral and written report presentation. Outside work required.

M. E. 435. Fluid Dynamics. Cr. 3. (2-2).
Prerequisites: M.E. 330, Math. 332. Hydrodynamic theory, compressible flow, dynamic lift and propulsion, dynamic similitude.

M. E. 4212, 4213. Thermodynamics. Cr. 2 each.
Prerequisites: M.E. 330, Math. 332. Reversible and irreversible processes, kinetic theory, introduction to statistical mechanics.

M. E. 4315. Heat and Mass Transfer. Cr. 3. (2-2).
Prerequisites: M.E. 330, Math. 332. Heat transfer by conduction, convection, and radiation. Mass transfer in liquids, vapors, and gases.

Department of Petroleum Engineering

PROFESSOR DUCKER.
ASSOCIATE PROFESSOR P. JOHNSON.
INSTRUCTOR J. CARTER.

The petroleum engineering curriculum is designed to equip the graduate with a knowledge of the fundamentals of mathematics, physics, chemistry, mechanical sciences, geology, economics, and specialized courses specifically related to petroleum. With this background of undergraduate work and a sound knowledge and understanding of its application, he is equipped to enter the field of petroleum engineering, to attack the problems that will be met within the petroleum industry, and to advance and develop in the profession.

Grade Requirements. As provided for under "Requirements for Graduation" elsewhere in this catalog, the Department of Petroleum Engineering permits no grade lower than C in any petroleum course to be used in fulfilling the requirements for a degree in petroleum engineering.

Mechanical Engineering Combination. For the requirements for a Bachelor of Science Degree in Mechanical Engineering in a five-year combination with petroleum engineering, see Mechanical Engineering Department.

For Undergraduates

220. Rotary Drilling Fluids. Cr. 2. (1-3).
Prerequisite: Chem. 142. A study of the testing methods for determining drilling fluid characteristics, drilling fluid problems, and the use of special drilling fluids. Laboratory exercises consist of the practice of altering properties of fresh water and special drilling fluids for drilling through troublesome zones with the rotary system.

230. Petroleum Development Methods. Cr. 3.
Prerequisite: Enrollment in Phys. 235. Exploration methods; spacing of wells; rotary and cable tool drilling methods; directional drilling; drilling hazards; oil field hydrology and well completion practices.

320. Well Logging Methods. Cr. 2.
Prerequisite: Pet. E. 230 and Phys. 236. A study of the theories of electrical, micro-electrical, radiation, optical, chemical and mechanical well-logging methods, and applications of these theories; field examples and problems.

321. Phase Behavior. Cr. 2.
Prerequisite: Phys. 236 and enrollment in M.E. 330. Introduction to the phase behavior of multiple component hydrocarbon systems. Application to the production of crude oil and condensate reservoirs, and to the separation of natural gasoline from natural gas.

330. Introduction to Petroleum Industry. Cr. 3.
Prerequisite: Junior standing in geology or engineering. A general study of the industry, including: the history of the industry; chemistry of petroleum; its occurrence in nature and its importance in the world economy; leasing and royalty; exploration, drilling and production methods; conservation, transportation and refining; economics of the industry.

333. Petroleum Production Methods. Cr. 3 (2-3).
Prerequisite: Pet. E. 230 and enrollment in Pet. E. 321. A study of the properties of reservoir fluids and characteristics of the reservoir which influence rates of recovery. Production by flowing, gas-lift and pumping methods. Oil dehydration, lease operation and lease storage. Laboratory exercises include core analysis, treatment of oil field emulsions, pumping well characteristics.

For Undergraduates and Graduates

413. Natural Gas Laboratory. Cr. 1. (0-3).
Prerequisite: Registration in Pet. E. 434 or 435. Natural gas analysis and testing; measurement and calibration of flow-metering devices, regulation and control devices; gas-phase relations, and natural gasoline techniques.

414. Production Laboratory. Cr. 1. (0-3).
Prerequisite: Registration in Pet. E. 433, or Pet. E. 434. Reserve estimation problems, fluid properties experiments, and miscellaneous data interpretation and experimental design problems.

416. Reservoir Engineering Laboratory. Cr. 1. (0-3).
Prerequisite: Registration in Pet. E. 436. Water flood, gas drive, and special displacement experiments for study of volumetric and areal sweep efficiencies, economic problems as applied to engineering studies.

420. Special Petroleum Engineering Problems. Cr. 2.
Prerequisite: Senior standing and approval of the Head of the Department.

430. Special Natural Gas Problems. Cr. 3.
Prerequisite: Senior standing and approval of the Head of the Department.

433. Reservoir Engineering Cr. 3.
Prerequisite: Pet. E. 333 and Pet. E. 321. Study of the physical properties and behavior of petroleum fluids and the mathematical expressions of their flow through the reservoir, reservoir energy and producing mechanisms, the material balance and gas drive reservoirs.

434. Natural Gas Engineering. Cr. 3.
Prerequisite: Pet. E. 333, M.E. 335. Study of the methods of production, treating, compression, distribution, measurement, analysis and utilization of natural gas, and the related thermodynamic principles.

435. Advanced Natural Gas Engineering. Cr. 3.
Prerequisite: Pet. E. 434. Study of the processes of natural gas treating, including dehydration, desulfurization, natural gasoline extraction, distillation, absorption, stripping, equilibrium and kinetic methods.
436. Reservoir Engineering. Cr. 3.
Prerequisite: Pet. E. 433. Study of water drive and condensate reservoirs, secondary recovery methods, the effects of well-spacing on recovery and methods of predicting recoverable reserves.

Department of Textile Engineering
Textile Research Laboratories

PROFESSORS FLEGE, HESSLER, PARSONS.
INSTRUCTORS AND RESEARCH PRINCIPALS LOFTON, B. K. POWER.

Textile engineering courses of study are arranged to provide fundamental training in the fields of engineering and basic science. In addition, specialized instruction is provided to train students in the application of these engineering and scientific principles to modern textile manufacturing operations.

Principal functions of the Department of Textile Engineering are: (1) to train men for professional engineering service in all phases of the highly specialized and rapidly expanding textile industries; (2) to develop men with capacity for effective leadership who can take a prominent place in the development of the textile industry and in commercial and public affairs.

The Textile Research Laboratories are available to both private and public agencies for the purpose of conducting research on textile manufacturing problems, and the utilization of textile fibers of all types.

For the past several years the laboratories have been engaged on research projects sponsored by the Cotton Research Committee of Texas. These projects have been concerned with ways and means for increasing utilization of Texas-grown cotton fibers.

The Department of Textile Engineering and the Textile Research Laboratories are centrally administered. Joint appointments are made to the staffs of both organizations. Highly trained specialists from the staff of the laboratories are thus available to serve as instructors in specialized courses offered by the department.

This consolidated program of teaching and research thoroughly prepares textile engineering graduates for further development in their profession, and provides adequately trained personnel so essential to the promotion and growth of the textile industry, particularly in Texas and the area served by the College.

For Undergraduates

235. Textile Fibers. Cr. 3.
A study of the physical and chemical properties of natural textile fibers and their practical utility in the textile industry.
333. Textile Bleaching. Cr. 3. (2-2).
Prerequisite: Current registration in Chem. 341. A study of the physical and chemical principles of the processes required to prepare yarns and fabrics for dyeing and finishing.
334. Textile Dyeing. Cr. 3. (2-2).
Theory and practice of dyeing and coloring all types of textile fibers, yarns and fabrics for industrial usage.
338. Principles of Fiber Processing II, Cr. 3. (2-3).
Prerequisite: T.E. 341. Technical and economic principles for converting fibers into yarn are covered.

341. Principles of Fiber Processing I. Cr. 4. (3-3).
Fundamental principles and practices for processing raw cotton and man-made fibers into yarn, and preparation of those yarns for fabric construction.

427. Textile Costing. Cr. 2.
Prerequisite: T.E. 338. Basic economic and accounting principles are applied in a cost analysis of textile mill operations.

428. Mill Organization. Cr. 2.
Prerequisite: T.E. 338 and 445. Production operations in a textile mill are planned and scheduled. Management problems are analyzed.

430. Manufacturing Process Control. Cr. 3. (2-2).
Methods of product testing are studied, and process performance analyzed. Test data are correlated and process control charts prepared from data obtained in mill scale operations.

431. Fabric Analysis and Advanced Design. Cr. 3. (2-3).
Prerequisite: T.E. 445. Fabrics are analyzed to provide data required for duplication or improved design. Special loom mechanisms and techniques of design of complex fabric structures are covered.

432. Man-made Fibers. Cr. 3.
Physical structure and chemical properties of commercially important synthetic fibers are studied in conjunction with production processes. Principal fields of application of those fibers in industry are covered.

435. Textile Finishing. Cr. 3.
Prerequisite: Chem. 341. A study of processes required to convert fabrics as loomed, into products ready for use by the consumer. Engineering principles and economic aspects are emphasized.

439. Cotton Marketing and Evaluation. Cr. 3. (2-2).
Economics of cotton marketing systems; instrumental and conventional methods of evaluating cotton fiber quality.

445. Fabric Design and Construction. Cr. 4. (2-6).
Theory and practice of designing and constructing fabrics. Laboratory periods are devoted to an engineering analysis of automatic weaving mechanisms and their application in fabric construction.

SCHOOL OF HOME ECONOMICS

Willa Vaughn Tinsley, Dean

The School of Home Economics consists of the Departments of Applied Arts; Child Development, Family Relations and Home Management; Clothing and Textiles; Food and Nutrition; and Home Economics Education.

Courses in the School of Home Economics are planned to meet the following purposes.

(1) To contribute to the liberal education of individuals by aiding in their development as persons and as world citizens.
(2) To provide learning experiences directed specifically toward the development of individuals in assuming their roles in home and family living.
(3) To offer opportunities for individuals to prepare themselves to fulfill the demands for positions in home economics and related fields.

The offerings in home economics are designed to serve both men and women in three groups, namely:

1. Students registered in the School of Home Economics who plan to work toward a degree in home economics, as well as those who do not expect to be applicants for a degree.
2. Students registered in other schools of the College but who wish training either for homemaking or for supplementing their degree plans. Individual courses, or a series of courses leading to a minor in home economics are available to these students.
3. Individuals in the area served by the College who are out of school, including both youth and adults, who wish to work toward an advanced degree with a major or minor in home economics, and those who wish special or refresher courses at either the undergraduate or graduate level.

Field for Graduates: A nation-wide shortage of women with training in home economics results in many interesting positions of a wide variety to choose from at the local, state, and national levels in educational, commercial, industrial, recreational, and religious fields. The College has never been able to meet the demands for its graduates in home economics.

Undergraduate Degree. The Degree of Bachelor of Science in Home Economics is conferred upon students who satisfactorily complete one of the prescribed curricula in the School of Home Economics as outlined on the following pages. The degree is given with majors in applied arts, child development and family relations, clothing and textiles, food and nutrition, and home economics education.

A degree is also given with a major in home and family life (formerly called general home economics) for those students who wish a broad background of preparation for homemaking and related occupations but who do not wish to specialize in any one of the other professional areas of home economics.

Teacher Training in Vocational Home Economics. Home economics instruction at Texas Technological College has been approved by the Federal and State Boards for Vocational Education. Students

interested in securing on graduation the legal requirements for teaching vocational homemaking in high schools should select the home economics education curriculum. To be eligible to enroll for student teaching in home economics, students must have attained an over-all grade point average of 1.00. No grade below C in home economics courses will be accepted in establishing this average. The curriculum in home economics education as outlined on Page 274 qualifies the student, upon graduation, to secure the Provisional Certificate, valid for life, in the specialized area of vocational homemaking education. This certificate may be obtained while earning either the bachelor's or master's degree.

Students transferring to this College who wish to be recommended for certification must include in their requirements for graduation at least 3 semester hours in each of the subject-matter departments in the School of Home Economics at Texas Tech. The requirement may be increased on the recommendation of the Head of the Department of Home Economics Education.

Master's Degree in Home Economics. The Graduate School offers a Master of Science Degree in Home Economics with majors in clothing and textiles, food and nutrition, and home economics education. Minors are offered in these departments as well as in applied arts and in child development, family relations, and home management. A master's degree with a major in general home economics is also given whereby a composite major composed of advanced courses approved for graduate credit in several departments may be used to complete requirements.

For further information regarding graduate work, consult the Graduate Bulletin.

Requirements for Graduation. Completion of a curriculum leading to a bachelor's degree usually requires four years. This time may be shortened by attending summer sessions. The student is not encouraged to select a major until the beginning of the sophomore year. This is done in order that the student, before choosing a professional field, may have the opportunity of becoming familiar with the courses of instruction and the possibilities available after graduation in the various fields of home economics.

The standard amount of work for a student registered in the School of Home Economics is 16 to 18 semester hours each semester. More than 18 semester hours or less than 12 semester hours cannot be taken without securing the approval of the dean.

Every student is given careful guidance in exploring the opportunities in all areas of home economics available to those with college training. Guidance of students is continued throughout the four years in order that each individual student may realize the fullest possibilities in personal development and in professional training.

Training in home economics draws from the offerings in all departments in the School of Home Economics as well as from many other areas of the College. This is shown by a study of the core curriculum required of all students majoring in any of the fields in the School of Home Economics.

Provisions are made for all majors in the School to have considerable choice in meeting degree requirements, both in deciding upon particular courses to meet the semester-hour requirement in a given field, and in free electives. However, to insure breadth in general

education as well as in the total field of home economics, all students majoring in any area of home economics are required to take a common core of courses.

REQUIREMENTS FOR BACHELOR OF SCIENCE DEGREE IN THE SCHOOL OF HOME ECONOMICS

I. Core Curriculum to provide breadth in liberal education in schools other than Home Economics ..... 46 or 48 sem. hrs.

English	12	Biological Science	6
U.S. History	6	Physical Science	6 or 8
Govt. 233-234	6	Sociology and Psychology	6
P.E. or Band	4		

II. Core Curriculum to provide breadth in liberal education in personal and family life ..... 15 sem. hrs.

Ap.A 131	3	Food & Nutr. 131	3
Ch.D. & Fam Rel. 131	3	H. Mgt. 131	3
Cloth. & Text. 131	3		

III. Courses in major field of home economics (in addition to those in Core Curriculum II above ..... 20 to 31 sem. hrs.

IV. Courses to support major field, in the School of Home Economics and in other schools of the College ..... 15 to 30 sem. hrs.

V. Electives in any school of the College ..... 10 to 21 sem. hrs.
Total requirements for graduation ..... 127 sem. hrs.

CURRICULA IN THE SCHOOL OF HOME ECONOMICS
BACHELOR OF SCIENCE IN HOME ECONOMICS

Major in Applied Arts

In addition to Core Curricula, I and II above,

III. Courses in major field, applied arts ..... 20 sem. hrs.

IV. Courses to support major field, in the School of Home Economics and in other schools of the College ..... 25 sem. hrs.

V. Electives to complete 127 sem. hrs. in any school of the College ..... 19 or 21 sem. hrs.

Students majoring in applied arts should consult with their home economics faculty adviser and the Head of the Department of Applied Arts for suggested courses to comply with the student's main interests. Students interested in (1) *interior design,* should concentrate on courses in home furnishings, housing, equipment; in (2) *recreation,* should choose electives in crafts, stagecraft, photography; and in (3) *teaching art,* should take electives in education.

Students interested in working toward a Bachelor of Arts Degree with a major in art in the School of Arts and Sciences, described on Page 135. should consult with the head of the department in which he chooses to concentrate.

BACHELOR OF SCIENCE IN HOME ECONOMICS

Major in Child Development and Family Relations

In addition to Core Curricula, I and II above,

III. Courses in major field, child development and family relations ..... 21 sem. hrs.

IV. Courses to support major field, in the School of Home Economics and in other schools of the College ..... 28 sem. hrs.

V. Electives to complete 127 sem. hrs. in any school of the College ..... 15 or 17 sem. hrs.

BACHELOR OF SCIENCE IN HOME ECONOMICS

Major in Clothing and Textiles

In addition to Core Curricula, I and II above,

III. Courses in major field, food and nutrition ..... 27 sem. hrs.

IV. Courses to support major field in the School of Home Economics and in other schools of the College ..... 21 sem. hrs.

V. Electives to complete 127 sem. hrs. in any school of the College ..... 16 or 18 sem. hrs.

Students majoring in clothing and textiles should counsel with their home economics faculty adviser and Head of the Department of Clothing and Textiles for suggested courses to comply with their choice of specialization, namely (1) *dress design,* (2) *textile analysis,* (3) *merchandising,* or (4) *teaching.*

BACHELOR OF SCIENCE IN HOME ECONOMICS

Major in Food and Nutrition

In addition to Core Curricula, I and II above,

III. Courses in major field, food and nutrition ..... 24 sem. hrs.

IV. Courses to support major field, in the School of Home Economics and in other schools of the College ..... 20 sem. hrs.

V. Electives to complete 127 sem. hrs. in any school of the College ..... 20 sem. hrs.

Students wishing to qualify for internships approved by the American Dietetic Association or to meet other special professional requirements, counsel with the Head of the Department of Food and Nutrition for selection of certain courses within the range of semester hours required above.

BACHELOR OF SCIENCE IN HOME ECONOMICS

Major in Home Economics Education

In addition to Core Curricula, I and II above,

III. Courses in major field, home economics education and education ..... 24 sem. hrs.

IV. Courses to support major field, in the School of Home Economics and other schools of the College ..... 30 sem. hrs.

V. Electives to complete 127 sem. hrs. in any school of the College ..... 10 or 12 sem. hrs.

BACHELOR OF SCIENCE IN HOME ECONOMICS

Major in Home and Family Life

In addition to Core Curricula, I and II above,

III. Courses in major field, home and family life ..... 31 sem. hrs.

IV. Courses to support major field, in the School of Home Economics and in other schools of the College ..... 15 sem. hrs.

V. Electives to complete 127 sem. hrs. in any school of the college .....18 or 20 sem. hrs.

CURRICULUM FOR PRENURSING STUDENTS

Students who contemplate the study of nursing as a profession should consult the Dean of Home Economics for the recommended curriculum.

Department of Applied Arts

PROFESSOR RANDALL.
ASSOCIATE PROFESSOR LOCKHART.
ASSISTANT PROFESSORS BEITLER, JOHNSTON, T. LOCKARD.

Applied arts provides learning experiences in such a manner that they can be used by the individual for his own personal, business or professional use. Instruction in this department is based on beliefs that:

1. Every individual desires information which will help in the selection of more beautiful articles for use in enjoyable living.
2. Every individual has some creative ability which can be developed under efficient leadership and in a sympathetic environment.
3. Applied arts can contribute to the health and happiness of the individual, the family and the community.

There is an increased demand for designers in the business world and for persons with good taste and judgment. Professional consultation is available to students desiring assistance in selecting courses for homemaking, recreation, professional, or commerical positions. A student may secure either a major or minor in the Department of Applied Arts. Experiences are offered leading to the Degree of Bachelor of Science in Home Economics with a major in applied arts.

The Departments of Applied Arts in the School of Home Economics and of Architecture and Allied Arts in the School of Engineering provide a cooperatively planned major in art leading to a Bachelor of Arts Degree in the School of Arts and Sciences. Requirements of this degree are described on Page 135.

The Department of Applied Arts requires its senior majors to submit a portfolio and to prepare an exhibit. The department reserves the right to retain, for one year, students' class projects for exhibition purposes.

For Undergraduates

111. Design. Cr. 1.
Experience in creating designs and applying them to different materials; attention given to developing an understanding and appreciation of good design in all areas. May be repeated for credit. May not be applied to a degree program in home economics.

131. Art Applied to Daily Living. Cr. 3. (2-3).
Basic knowledge and experience in art as it functions in the life of the individual, the home, the school, the office, and the community.

133. Design. Cr. 3. (1-6).
Study of the elements and principles of design and the use of basic art techniques as a means of expression.

226. Leatherwork. Cr. 2. (0-6).
Experience in designing for leatherwork. Natural characteristics and beauty of leather emphasized.

228. Appreciation of Art Today. Cr. 2.

Prerequisite: Sophomore standing. A thought-provoking approach to the meaning of beauty and the value of art training in everyday life. Gives practice in evaluating objects with reference to beauty, cost, and use.

232. Crafts Survey. Cr. 3. (1-6).

Prerequisite: Non-majors, sophomore standing; majors; 6 semester hours of applied arts or equivalent. Exploration and use of various materials; design and construction of minor crafts to use in homes, schools and recreational departments.

233. Textile Decoration. Cr. 3. (1-6).

Prerequisite: Previous training satisfactory to instructor. Methods of textile decoration and their application in linoleum block print, stencil, tie-dye, batik, silk screen.

331. Interior Design. Cr. 3. (2-3).

Prerequisite: Junior standing. Application of design principles to selection and arrangement of wall coverings, rugs, furniture, curtains, pictures, and accessories; study of house plans with emphasis on utility, beauty, and convenience.

332. Woodworking. Cr. 3. (1-6).

Prerequisite: Junior standing. Study of different woods and the finishing of wood. Experience in designing for construction and lathe works; use and care of tools; craftsmanlike habits and procedures emphasized. (Offered in fall semester).

333. Weaving and History of Textiles. Cr. 3. (2-3).

Basic fundamentals of weaving. Emphasis on a creative approach to design on the loom. Survey of development of textiles from primitive to contemporary life. $5 yarn fee.

335. Homes and Their Furnishings. Cr. 3. (2-3).

Prerequisite: Junior standing. Study of homes in the United States in relation to the exterior and interior design and how they have met the needs of the occupants in a changing civilization.

337-338. Art in Elementary Education. Cr. 3 each. (2-3).

Practical application of current art education practices in providing creative experiences for children in our schools.

3311. Advanced Crafts. Cr. 3. (1-6).

Prerequisite: Advanced standing and approval of Head of Department. A design workshop for additional study in a specific craft.

For Undergraduates and Graduates

425. Silk Screen Printing. Cr. 2. (0-6).

Creative experience in designing for the silk screen. Study of all phases of silk screen painting. Serigraphs and textiles executed.

427. Sculpture in Wood. Cr. 2. (0-6).

Creative experience in sculpture and carving executed in wood; study of the characteristics and natural beauty of available woods.

433. Advanced Interior Design. Cr. 3. (1-6).

Prerequisite: Junior standing and Ap.A. 331. Advanced work in planning and selecting furnishings for homes and public areas in the community; emphasis on sketching and rendering elevations.

434. Metal and Plastic. Cr. 3. (1-6).

Prerequisite: Junior standing. Creative problems executed in metal and plastic, including jewelry-making; structural processes; raising, bending, riveting, soldering; decorative processes; etching, saw-piercing, enameling. (Offered in spring semester).

435. Jewelry and Lapidary. Cr. 3. (1-6).

Prerequisite: Junior standing and approval of instructor. Creative problems. Rings, pins, bracelets, earrings, necklaces executed in brass, copper, silver, or gold. Local stones cut, polished and mounted.

437. Arts for Exceptional Children. Cr. 3. (2-3).

Prerequisite: Ch.D. & F.R. 438. Review of the characteristics of atypical children; application of this knowledge in unfolding the creative potentialities of each child through the use of art experiences as a vocational as well as a recreational medium.

439. Experience Training in Applied Arts. Cr. 3. (0-9).

Prerequisite: Senior standing. Arrangement for student to gain first-hand experience in business, industry, or service in some phases of applied art through cooperative provisions between department and local places of business. Course may be repeated once for credit.

4129. Laboratory for Psychology of Exceptional Children. Cr. 1. (0-3).

Prerequisite: Concurrent registration in Psy. 4229. Special consideration of individual problems, with laboratory opportunity for study of play techniques and test construction.

For Graduates

531. Special Problems. Cr. 3. (1-6).

Prerequisite: 12 semester hours in applied arts or the equivalent; 3 hours must have been taken in the medium chosen for the special problems:

A. Costume Design B. Interior Design C. Textile Decoration
D. Leather E. Metal and Plastic F. Woodworking

May be repeated for credit.

5335. Theory and Practice of Art for Elementary Teachers. Cr. 3.
Prerequisite: Graduate standing. A study of art activities and experiences which will help the child to understand and more fully enjoy the world in which we live.

Department of Child Development, Family Relations, and Home Management

PROFESSOR KNOWLES. ASSOCIATE PROFESSOR DREW.
ASSISTANT PROFESSORS ATTNEAVE, C. CAMP, GIFFORD, WOLFE.
INSTRUCTOR SIDES.

CHILD DEVELOPMENT AND FAMILY RELATIONS

Family relations and parent education are integral parts of the child development program. Students are prepared through the study of the development of the child from infancy through adulthood for homemaking, for teaching, and for work with children's organizations in the community. Majors in child development and family relations are equipped to direct nursery schools and other pre-school centers. The College Nursery School provides a laboratory for student observation and participation. Other laboratory facilities are cooperatively arranged to utilize community resources.

For Undergraduates

111. Nursery School Organization and Management. Cr. 1.
Study of content, facilities, materials and activities suited to pre-school centers. May not be applied to a degree program in home economics.

131. Personal and Family Relationships. Cr. 3. (2-3).
Guidance in helping students to grow in ability to establish and maintain more satisfying personal, family, and family-community relationships; the influence of family living on the growth and development of the individual; problems encountered in courtship, engagement and early years of marriage as they affect personal and family goals, establishing a home, and preparing for parenthood.

231. The Infant. Cr. 3.
Family preparations for the infant; development of the baby during pre-natal period and infancy; visits into homes of infants.

232. Child Guidance. Cr. 3. (2-3).
Objectives and basic philosophy of child guidance. Fundamental principles underlying behavior and methods of working with young children. Laboratory work with pre-school groups.

233. Child Growth and Development. Cr. 3. (2-3).
Studying the growth and development of young children as a basis for understanding oneself and others.

For Undergraduates and Graduates

431. Later Childhood. Cr. 3. (2-3).
Prerequisites: Educ. 232 or Psy. 130; junior standing. Development of the child through the pre-adolescent stage with emphasis on ages 6 to 12 years; a consideration of his relationships in the family and with peer groups. Laboratory experience with elementary school children.

432. Skills and Techniques in Work with Pre-School Child. Cr. 3. (2-3).
Prerequisite: Ch. D & F R. 131 or 232 or equivalent. Facilities, materials, and activities suited to the young child.

433. Family Relations. Cr. 3.
Prerequisite: Junior standing. Intensive study of special problems of living together in the family as affected by family composition, family resources, traditions and practices.

434. Adjustments of the Handicapped in the Family. Cr. 3. (2-3).
Prerequisites: 12 hours psychology; 6 hours sociology. Brief surveys of various types of handicaps; the individual's adjustment to his particular handicap; personal and social adjustments of the handicapped individual. The role of the family in guiding the handicapped. Some methods of developing skills, independence and rehabilitation. Laboratory: local clinics and schools working with handicapped persons; homes of the handicapped.

435. Student Teaching in Pre-School. Cr. 3. (1-6).
Prerequisite: Ch.D. & F.R. 432; senior standing in child development and family relations. Observation and teaching in the pre-school.

436. Parent Education. Cr. 3. (2-3).
Prerequisite: Senior standing, 6 hours in child development and family relations, Psy. 130. Materials and programs for parent groups; laboratory consists of actual work with parents of pre-school children.

438. Exceptional Children in the Family. Cr. 3. (2-3).
Prerequisite: Junior standing. Personal-social development of exceptional children (gifted, disturbed, retarded and physically handicapped); family attitudes and responsibilities in relation to such children; community resources and other agencies which supplement the family in providing for exceptional children; cooperative laboratory work with Departments of Psychology, Health and Physical Education, Speech, Applied Arts, and Education.

For Graduates

5336. Family Life Conference. Cr. 3.
Prerequisite: Graduate standing in home economics, education, psychology or sociology. Offered in summer only. Emphasis on group processes, social factors influencing family adjustments, personality adjustments, methods and techniques of counseling and teaching.

HOME MANAGEMENT

Home management aims to give students an appreciation of the value of good management in home and family living as well as to provide means of developing skills in homemaking activities. Residence in the Home Management House gives opportunity for securing actual experiences in the managerial and social aspects of homemaking, including the care of an infant. Provisions are made for married students and experienced homemakers to study special problems in home management in lieu of residence in meeting certification requirements for vocational homemaking teachers.

For Undergraduates

131. Management and Consumer Problems. Cr. 3.
Personal and family problems in use of time, money, energy; guides to better buymanship.

332. General Home Management. Cr. 3.
Philosophy of home management; work simplification; planning for family financial security and general management of all the family's resources.

For Undergraduates and Graduates

411. Household Equipment Workshop. Cr. 1.
Same as H. Mgt. 433, but organized into independent units of one credit each, which may be repeated for credit. Offered in summer sessions only.

431. Housing the Family. Cr. 3. (2-3).
Prerequisite: Junior standing in any school of the College. Study of housing as it relates to good family living. Problems of home ownership and operation are stressed, such as space needs; functional arrangement; adequate wiring, heating, lighting, plumbing; building materials; cost, financing, legal and business aspects; and new trends in housing, community, and city development.

432. Home Management Residence. Cr. 3.
Prerequisite: Senior standing in home economics. At least six weeks' residence in supervised application of skills in all phases of home living, including the care of an infant. Students pay a fixed fee for room and board. In lieu of residence in the Home Management House, married students maintaining a home in the community and mature experienced homemakers with the permission of the Dean, may work on personal managerial problems under supervision.

433. Household Equipment. Cr. 3. (2-3).
Prerequisite: Junior standing in any school of the College. Selection, operation and care of large and small household equipment; comparative study of gas and electrical appliances.

Department of Clothing and Textiles

PROFESSOR SHELDEN.
ASSOCIATE PROFESSOR L. KINCHEN.
ASSISTANT PROFESSOR GERLACH.
PART-TIME INSTRUCTORS COLEMAN, ELKINS.

The Department of Clothing and Textiles offers courses designed to develop an understanding of the selection, use and care of a wardrobe comprised of both ready-made garments and those made in the

laboratory and in the home. Courses are also offered in selecting and making fabrics and furnishings for the home. The courses are planned for three groups: namely, (1) majors in clothing and textiles, (2) majors in other departments of home economics, and (3) students not in home economics who wish to elect certain courses. The department provides training for homemaking, dress design and construction, textile study, buying and selling clothing and household fabrics, and teaching.

In addition to the courses leading to a bachelor's degree, the Department of Clothing and Textiles offers graduate work leading to the Degree of Master of Science in Home Economics.

For Undergraduates

131. Wardrobe Planning and Construction. Cr. 3. (2-3).
Planning a coordinated wardrobe. Techniques in construction of dresses and semi-tailored suits.

132. Clothing and Household Fabrics for the Beginning Homemaker. Cr. 3. (2-3).
Planned especially for students not applying for a degree in home economics. Experience in planning, buying, and caring for fabrics and clothes. Some simple construction.

231. Textiles for the Consumer. Cr. 3.
Judging fabric quality. Evaluation of consumer literature, terms, labels, laws, and advertising of yard goods, ready-mades, and home furnishings. Projects to compare home-constructed with ready-made garments. Emphasis on buymanship and care.

232. Dress Design and Dressmaker Tailoring. Cr. 3. (2-3).
Prerequisite: Cloth. 131. Principles of dressmaking and basic tailoring applied to a wool coat or suit. Fitting and designing original patterns for blouses and dresses.

233. Decorator Fabrics. Cr. 3. (2-3).
Refinishing and upholstering a chair. Making curtains, cushions, and other furnishings.

237. Costume Design. Cr. 3. (2-3).
Prerequisite: Ap.A. 131 or equivalent. Elements and principles of design applied to selection of costumes; analysis of personality and figure differences and the choice of specifically becoming line, color, texture, value. Planned to help the individual student with such problems as the selection and wearing of clothes for becomingness, appropriateness, service and economy.

331. Simplified Techniques in Dressmaking. Cr. 3. (2-3).
Prerequisite: Junior standing or sewing experience. Designed for non-home economics majors and also for transfers, adults, or evening program students: Emphasis on streamlined methods with minimum basting, principles of organization, fitting, cutting, fabric choices; adjusting machine; making a dress and semi-tailored suit.

332. Dress Design and Draping. Cr. 3. (2-3).
Prerequisite: Cloth. 232. Construction of the individual dress form. Design by draping. Emphasis on original line and use of textures.

334. Family Clothing. Cr. 3.
Prerequisite: Cloth. 131. Planning for clothing to suit various family spending patterns. Problems in shopping and designing to fit size and other needs, with emphasis on children.

For Undergraduates and Graduates

411. Special Problems. Cr. 1.
Prerequisite: Senior standing and advanced courses. Short units involving reports and individual projects in limited area, such as weaving, home decoration, wardrobe, problems; merchandising; inventory and budgets. May be repeated for 2 or 3 hours' credit.

431. Advanced Textiles. Cr. 3. (2-3).
Prerequisites: Cloth 231-232. Inherent characteristics of both natural and man-made fibers as basic guides to selecting textiles suited to specific needs. Effect of finishes on characteristics of fibers. Evaluation of consumer literature and practices, standards, laws, and current developments. Experience in using standard testing methods.

433. History and Philosophy of Dress. Cr. 3.
Prerequisite: Junior standing. Study of the effect of economics and social development of other civilizations upon the dress of the western world. Evolution of silhouette, details, and accessories of dress. Religion, psychology, government and art in relation to modern dress. Use of historic data as source material for dress design.

434. Custom Tailoring. Cr. 3. (2-3).
Prerequisite: Junior standing in clothing. Special techniques in custom tailoring and fitting. Emphasis on interfacings, linings, setting sleeves, rolling lapels and collars. Shrinking and steam pressing; tailor's plackets, pockets and buttonholes. Wool suit, mannish shirt or shirtwaist dress.

435. Home Furnishings. Cr. 3. (2-3).
Prerequisite: Senior standing. Cloth. 232 and Ap.A. 331 or parallel. Application of simplified sewing techniques and fabric choices to upholstering furniture; making interlined draperies, bedspreads, tablecloths, rugs, slipcovers for foam rubber and other cushions.

436. Advanced Pattern Design. Cr. 3. (2-3).
Prerequisite: Cloth. 232 and Ap.A. 231. Use of fundamental dart as basic theory in fitting and designing of patterns. Creative design through fullness, extensions, new structural lines, and silhouette; French dart bodice; basic and varied armholes. Making a tailored and dressy garment. Sizing and grading of patterns.

437. Demonstration Clothing. Cr. 3.
Prerequisite: Cloth. 232 and advanced standing. Planning, preparing and giving demonstrations in the field of clothing and textiles. Four types of projects; illustrated talks to adult groups in buying articles of dress, or equipment; showing how to tailor some detail before a class or on television; presenting a skit or style show; preparing publicity for newspapers, radio, exhibits.

For Graduates

511. Advanced Clothing Units. Cr. 1.
Prerequisite: Advanced clothing courses and graduate standing. May be repeated for two or three hours' credit. Short units in special areas such as preparation of patterns and fabrics, sizing to fit, illustrative material; basic techniques and principles of simplified garment construction; tailoring by simplified methods; evaluation of processes.

531. Special Problems in Clothing and Textiles. Cr. 3.
Prerequisites: Advanced clothing courses and graduate standing. May be repeated for 6 or 9 hours' credit. Projects on current problems of impertance in the personal and professional advancement of class members. Techniques and principles and how to teach them in such areas as advanced study of pattern making and alterations; standards, techniques, and principles for securing well-fitted garments; wardrobe coordination; the fashion industry; and the psychology of buying. Readings, reports, and projects in the basic factual literature and in recent developments in textiles.

5335. Textile Trends and Resources for Elementary Teachers. Cr. 3.
Prerequisite: Graduate standing in elementary education. Consumer source materials; historical and recent developments in textiles. Primitive looms and other textile industries important in history of mankind. Units of special significance for each elementary grade. Special attention to consumer problems for the personal use of class members.

631-632. Thesis. Cr. 6.

Department of Food and Nutrition

PROFESSOR LAMB, ASSISTANT PROFESSOR G. HOLDEN.
INSTRUCTOR O. WOOD.
PART-TIME INSTRUCTORS CLARA McPHERSON, RUBY MARTIN.

The Department of Food and Nutrition offers courses leading to the Degree of Bachelor of Science in Home Economics with a major in food and nutrition. Courses are offered to train students to be homemakers, dietitians, food demonstrators, teachers of food and nutrition, and research workers.

In addition to the courses required for the undergraduate degree, the Department of Food and Nutrition offers work leading to the Degree of Master of Science in Home Economics.

For Undergraduates

131. Food and Nutrition. Cr. 3. (2-3).
A study of food and nutrition applied to the dietary needs of college students. The course provides experiences in dietary analysis, laboratory animal feeding, and meal management.

135. Food Selection and Preparation. (For nurses). Cr. 3. (2-3).
Principles of food selection, preparation and service with emphasis on the nutritive value of foods. For the needs of students studying nursing.

231. Food Preparation. Cr. 3. (2-3).
Principles of food preparation as applied to food groups and their use in meals.

331. Meal Planning and Table Service. Cr. 3. (1-6).
A study of current food costs, wise consumer practices and family food budgets. Planning, preparing, and serving family meals.

332. Consumer Education in Foods. Cr. 3. (2-3).
Prerequisite: Food & Nutr. 131. Food economics as it relates to the consumer, to food legislation, and to the use of time, labor, and equipment.

334. Human Nutrition. Cr. 3. (2-3).
Prerequisites: Chem. 133-134 or 141-142; Zool. 137. The essentials of an adequate diet. Food requirements of persons of different ages and the nutritive values of common food materials. Experimental work with laboratory animals.

337. Large Quantity Cookery. Cr. 3. (1-6).
Prerequisites: Food & Nutr. 331, junior standing. Meal planning, food purchasing and preparation of food in large quantity.

338. Institutional Organization and Administration. Cr. 3. (2-3).
Prerequisite: Food & Nutr. 437. Management of time, employer-employee relations, budgets and other factors leading to effective management in institutions.

For Undergraduates and Graduates

411. Nutrition and the School Lunch. Cr. 1.
Factors of acceptability of foods, nutritional requirements of the school child, methods of developing good food habits through the use of the school lunch. Analysis of the school lunch program.

415. Food Preservation. Cr. 1. (0-3).
Prerequisites: Bact. 231 or equivalent, junior standing. Methods of food preservation such as sterilization, freezing, drying, and the use of preservatives. Training in judging quality and causes of spoilage. May be repeated for credit.

431. Nutrition in Disease. Cr. 3. (2-3).
Prerequisites: Food & Nutr. 334, organic chemistry. Adaptation of diet to the sick; dietary treatment of diseases which are influenced by food.

432. Advanced Human Nutrition. Cr. 3.
Prerequisites: Food and Nutr. 334. The functions of the nutrients and their relation to the chemistry and physiology of the human body, with emphasis on nutrition of children, adults, and the aging.

434. Food Service for Special Occasions. Cr. 3. (1-6).
Prerequisites: Food & Nutr. 331, 334. Experience in preparation and service of food for special occasions; offers experience in catering.

435. Food Demonstration. Cr. 3. (2-3).
Prerequisite: Food & Nutr. 331. A study of techniques in food demonstration. Study, observation and practice demonstration methods.

436. Experimental Cookery. Cr. 3. (1-6).
Prerequisites: Food & Nutr. 331, elementary chemistry. Experimental work on the scientific factors influencing food preparation, testing recipes, developing proportions for new recipes.

For Graduates

531. Problems in Food and Nutrition. Cr. 3. (1-6).
Prerequisite: Graduate standing in food and nutrition. Areas of study chosen in consultation with major professor in the department. May be repeated for credit.

533. Readings in Nutrition. Cr. 3.
A critical study of the recent literature in the field of nutrition. Preparation and presentation of reports on selected topics. May be repeated for full credit.

5335. Principles and Applications of Nutrition for Elementary School Teachers. Cr. 3.
Prerequisite: Graduate standing in elementary education. Principles of nutrition; emphasis on nutrient and food requirements of the school child. Use of illustrative materials and animal demonstrations.

631-632. Thesis. Cr. 6.

Department of Home Economics Education

PROFESSOR V. ADAMS.
ASSOCIATE PROFESSORS NESBITT, S. WILLIAMSON.

The curriculum in the Department of Home Economics Education meets the requirements for the Provisional Certificate valid for life, in the specialized area of vocational homemaking education (formerly referred to as Smith-Hughes Certificate or Certificate of Approval). The department also makes provisions for a Master of Science Degree

in Home Economics or a Master of Education Degree with a major in home economics education. See the Graduate Bulletin for details.

For Undergraduates

331. Methods of Teaching Home Economics. Cr. 3.

Prerequisite: For majors, Educ. 232, 330 or 334; non-majors, junior standing in home economics. Philosophy and purposes basic to learning experiences; analysis of state and local homemaking programs; study of community needs; study and observation in approved centers of all phases of year-round homemaking programs and their place in the total school-community education program; selection of teaching materials; consideration of professional and technical aspects of teaching in developing competence as a teacher.

332. Advanced Methods of Teaching Home Economics. Cr. 3.

Prerequisite: H.E. Ed. 331. Development of plans for providing a total homemaking curriculum based on community needs; study and observation in approved centers of teaching; techniques in evaluation; individual preparation for student teaching.

411. Home Economics Seminar. Cr. 1.

Required of all graduating seniors in home economics during last semester of senior year. Study of recent curriculum materials and research in home economics. Aspects of professional preparation and development.

For Undergraduates and Graduates

413. Instructor Training in Home Care of the Sick. Cr. 1.

Prerequisite: Senior standing in home economics. Workshop course of one week designed to give special training in effective methods of teaching home care of the sick. Prepares instructors to teach Red Cross home nursing classes and to assist in civil defense programs in their communities.

414. Specific Problems in Teaching Home Economics. Cr. 1.

Prerequisites: Senior standing in home economics education. H.E. Ed. 461, or approval of the Head of the Department. A study of the organization and presentation of selected areas or aspects of the home economics program. May be repeated for credit.

426. Problems in Student Teaching. Cr. 2.

Prerequisite: H.E. Ed. 461 or parallel. Analysis of student teaching problems and ways and means whereby they may be solved.

433. Methods in Civil Defense for Home and Community. Cr. 3.

Prerequisite: H.E. Ed. 331. Civil defense problems which affect the home; emphasis on techniques in home care of the sick; home safety and common home emergencies. Planning for incorporating these phases into the teaching program.

435. Methods in Adult Leadership in Home Economics. Cr. 3.

Prerequisite: H.E. Ed. 331; senior standing in the School of Home Economics. Survey of community programs for home and family life education; emphasis on techniques and problems in promotion and organization of programs for adults, out-of-school youth, and parents. Interpretations to the community of homemaking programs. Designed for home economics teachers, extension workers in home economics, home service workers, and leaders and workers in other fields of home economics.

461. Student Teaching in Home Economics. Cr. 6.

Prerequisite: H.E. Ed. 332. Observation of and participation in teaching in approved centers for a full school day for half a semester, or for half a school day for a full semester.

For Graduates

531. The Organization and Administration of Homemaking Education. Cr. 3.

Organizations of typical homemaking programs on both vocational and non-vocational bases with special attention to equipment, to school-community curricula, and to management.

532. Curriculum Development in Home Economics. Cr. 3.

Philosophy, history, and development of year-round programs in home and family life education; legislation affecting home economics programs, study of state guides of curriculum development.

533. Evaluation in Home Economics. Cr. 3.

Evaluation techniques and their use in home economics education. Procedures for appraisal of progress in the total program in home economics. Development of evaluative instruments and interpretation of data in the evaluation of various types of home economics programs.

534. Techniques of Research in Home Economics. Cr. 3.

Study of methods and techniques of research in home economics. Interpretation of findings and application to selected situations and problems.

536. Problems. Cr. 3.

Study of individual and group problems according to special interests and needs of the class. May be repeated for credit.

537. Techniques of Supervision in Home Economics. Cr. 3.

Philosophy, responsibilities and techniques of supervision in home economics. Designed for experienced home economists.

631-632. Thesis. Cr. 6.

GRADUATE SCHOOL

W. B. GATES, *Dean*

Graduate Bulletin

The Graduate School publishes a separate bulletin containing a complete account of the general regulations of the Graduate School, requirements for degrees, and other information of value to graduate students. For a copy of this bulletin, those interested should address The Registrar, Texas Techno'ogical College, Lubbock, Texas.

Admission

Applicants with a bachelor's degree from an accredited college or university will be provisionally admitted on the basis of a complete transcript of their previous work. At least 30 days before registration, the prospective student (including students who hold a bachelor's degree from Texas Technological College) should make formal application for admission to the Graduate School. This application is made at the Office of the Registrar, not at the Office of the Dean of the Graduate School. Prospective graduate students who file the application late must reconcile themselves to delay and inconvenience in registration.

Everyone seeking admission to the Graduate School with the intention of working toward a graduate degree is required to take the Aptitude Test of the Graduate Record Examinations either prior to registration or at the first examination date thereafter. Details concerning the examination fee and the dates on which this examination is given at Texas Technological College may be secured from the Dean of the Graduate School. The Graduate School gives no assurance that work completed prior to the satisfaction of all requirements for admission to a degree program will be accepted for credit toward a graduate degree.

Admission to the Graduate School does not imply acceptance of a student by a department, nor does it imply admission to candidacy for a graduate degree. These are steps taken only after the applicant has satisfied certain specific requirements which are outlined in the Graduate Bulletin.

Courses

Graduate credit may be earned in certain of the courses numbered 300 and 400 and in those numbered 500 and above. The departmental material in this catalog indicates which courses may be taken for graduate credit. In a course numbered below 500, the graduate student must do additional work beyond that required of undergraduates if he wishes graduate credit.

Degrees

Texas Technological College offers work leading to the following graduate degrees: Master of Arts, Master of Arts in Teaching, Master of Business Administration, Master of Education, Master of Science, Master of Science in Agriculture, Master of Science in Chemical Engineering, Master of Science in Electrical Engineering, Master of Science in Home Economics, Doctor of Education in various areas of professional education, and Doctor of Philosophy with majors in chemistry, English, history, and psychology.

RESERVE OFFICERS' TRAINING CORPS

All physically fit male students of the freshman and sophomore years, except veterans, are required to elect either band, physical education, or Air or Military Science (ROTC). Should the student elect participation in ROTC, he agrees to continue the basic course for two academic years or completion as a prerequisite to graduation unless released for reasons beyond his control.

The Departments of the Army and the Air Force each maintain a senior division of the ROTC at Texas Technological College, which is classified as a CC (Civilian College) institution. The mission of the senior division is to produce junior officers who have the qualities and attributes essential to progressive and continued development as officers in a component of the Army or Air Force of the United States. The Departments of Air Science and Military Science and Tactics place special emphasis upon leadership to assist men in meeting life situations with success and honor. The Reserve Officers' Training Corps is not a component of the armed forces of the United States. Besides producing reserve officers, the senior division ROTC provides the principal source of procurement of junior officers for the Regular Army and Reserve and Regular Air Force. The Department of the Army offers the general military science curriculum, which qualifies graduates for appointment in any one of 15 arms and services. The Department of the Air Force maintains an AFROTC generalized course which is open to all freshman, sophomore, junior, and senior students.

The Army ROTC Program

The Army ROTC program consists of two parts: basic course and advanced course with summer camp at an Army Post or Camp.

Basic Course: A two-year course, freshman and sophomore, which consists of formal military instruction of four hours per week each academic year. The Department of Military Science and Tactics may allow up to two years' credit in the basic courses for previous honorable active service in the armed forces. Veterans of World War II who have had 6 to 12 months of active service may be given credit for one year of basic course and a veteran who has had over 12 months of service may be given credit for the entire basic course, making him eligible for consideration in the advanced course immediately provided he has attained at least full junior college standing. Certain credit may also be given for high school ROTC. In some cases, veterans without sufficient background will be required to complete certain portions of the basic course before being considered qualified for the advanced course.

Advanced Course: The advanced course consists of formal military instruction, for five hours per week over a period of not less than two academic years of 32 weeks each, and a summer camp of six weeks' duration, and is designed to qualify selected students for Reserve or Regular Army commissions in one of the several arms, services, or specialties. Entrance to the advanced course is limited to those taking an academic course on the college level who have completed the basic course or received credit for prior service. Upon successful completion of the ROTC advanced course and four years of college work, the graduate will be tendered a commission as second lieutenant in the Army Reserve.

Distinguished Military Students are so designated by the Professor of Military Science and Tactics with the concurrence of the President of the College, from those ROTC students who have achieved scholastic excellence and who possess outstanding qualities of leadership, character, and aptitude for military service. This selection is made at the end of the first year of advanced work and is progressive in that a student so selected, who continues to do the same quality of work until graduation, is at that time designated a Distinguished Military Graduate. This makes him eligible to be considered for a Regular Army commission.

The U.S. Air Force ROTC Program

The Air Force ROTC program consists of two parts: the basic course, **Air Age Citizenship Education,** and the advanced course, **Air Force Officer Development,** which includes a summer camp at an Air Force Base.

Basic Course: *Air Age Citizenship Education.*

For freshmen, the course consists of formal air age instruction of four hours per week for one academic year; and (b) for sophomores four hours per week of formal air age instructions for one academic year. On the basis of previous honorable active service in the Air Force, Army, Navy, Marine Corps, or Coast Guard, a student may request a waiver of the basic course, or any portion thereof as a requirement for entrance into the advanced course. The Professor of Air Science may then waive so much of the basic course as he considers equivalent to the active service training, provided that he does not waive any portion which the student can complete prior to entrance into the advanced course. To satisfy entrance requirements for the advanced course, veterans entering at freshman or sophomore level who desire a commission through AFROTC will be required to take in phase with nonveteran contemporaries the portion of the basic program which remains.

Advanced Course: *Air Force Officer Development.*

The advanced course consists of formal officer instruction of six hours per week over a period of not less than two academic years of 32 weeks each and a summer camp of six weeks' duration. The course is designed to qualify the student for the position of a leader in the air age and a commission as a regular or reserve officer of the United States Air Force. Thirty-five hours of flying training is offered to students who qualify.

Entrance to the advanced course is limited to those who have successfully completed necessary screening and testing criteria and are taking an academic course on the college level and who have completed the basic course or received credit for prior service. Upon successful completion of the advanced course the student may be tendered a commission as a second lieutenant in the United States Air Force Reserve.

Financial Assistance

Advanced ROTC course students are paid a monetary allowance at a daily rate equal to the value of the commuted ration for a maximum of 595 days. (During the fiscal year 1956-57 this was 90 cents per day.) These figures are in addition to veteran benefits under Section 400 (b), Servicemen's Readjustment Act of 1944, and of any disability benefit authorized a veteran provided he passes the ROTC physical examination.

Uniforms and Equipment

All ROTC students are furnished officer-type uniforms, including overcoat and shoes, without cost to the student. This uniform and other property remains the property of the United States or the College. Each student is required to maintain his uniform by cleaning and proper care and to return same to the ROTC supply office in the event he leaves school or becomes separated from the ROTC for other reasons.

The Federal Government provides the necessary texts and equipment to carry out the ROTC program.

Discipline

Texas Technological College is not a military school. Discipline in the Air and Military Science Department is accomplished by instilling pride in the individual student and by a system of demerits for minor offenses, such as failure to properly maintain equipment and personal appearance. These demerits may be removed by constructive study or other work in the department. Unremoved demerits will lower the student's final grades.

Summer Camp

Members of the advanced course are required to attend camp one summer, normally between the first and second advanced years. All students going to camp receive mileage for the round trip from the College or home at the rate of 5 cents per mile; are furnished mess, housing, uniforms, and medical attention at government expense; and are paid at the rate of $78 per month while at camp. Summer camp begins about June 15 each year and is of six weeks' duration. The military training at camp will consist of both practical and theoretical instruction.

Requirements for Enrollment and Continuance

The general requirements for enrollment and continuance in the ROTC are: be a citizen of the United States, be physically qualified as prescribed by the Department of the Army or the Department of the Air Force, be accepted by the institution as a regularly enrolled student, be not less than 14 years of age and not over 23 years of age at the time of enrollment. No student will be enrolled in the advanced course after he has reached 27 years of age. He must successfully complete such general survey or screening tests as are given to determine eligibility for admittance to the basic or advanced courses, and agree in writing upon admission to the ROTC program to complete the course of instruction offered unless sooner released by the Department of the Army or the Department of the Air Force, and to accept a commission as a second lieutenant if tendered upon completion of ROTC training. Successful completion of the advanced course, once begun, is a requirement for graduation unless the student is officially released by the Department of the Army or the Department of the Air Force. A student dropped from the advanced course for the convenience of the government will not be held for credit for the advanced course for graduation.

A basic AFROTC or Army ROTC student may be released by

mutual agreement between the student's academic dean and the Professor of Air Science or Professor of Military Science and Tactics, respectively. Once a student has formally enrolled in the advanced course, *however*, he must complete the required work or be officially released by the proper military authorities. The Commandant, Headquarters AFROTC, determines the disposition of an advanced AFROTC student's case, and the Commanding General of the 4th Army determines the disposition of an advanced Army ROTC student's case. If the student is dropped for the convenience of the government, the student is not required to refund the government the commutation he has received as a contract student. A student who does not fulfill the obligations of his contract will be required to refund all commutation before he is eligible to graduate. The contract will expire if the student's attendance at school is interrupted for more than two calendar years.

Membership in the ROTC program defers students from selective service, but not registration, as long as they remain in the ROTC program (provided they are on the deferred list prescribed by the Selective Service Act of 1951). Students receiving such a deferment from the draft must agree to serve, subject to call by the Department of Army for two years or by the Department of Air Force for three years, after receipt of a commission. A student in the basic course may, on his own decision, accept the deferment if offered or elect not to accept the deferment. Advanced course students are automatically deferred on signing the advanced course contract.

Academic Credit

Credit is granted toward a degree for the completion of course in air or military science as follows:

	Fall Semester	Spring Semester	Total
Basic 1st. Year	2 hrs.	2 hrs.	4
Basic 2nd year	1 hr.	1 hr.	2
Advan. 1st. year	3 hrs.	3 hrs.	6
Advan. 2nd year	3 hrs.	3 hrs.	6

Band

An ROTC band, trained by the College Music Department, is a regular part of the ROTC program. Those students with prior band experience will be assigned to the band and will maintain practice periods and play during the normal drill period. A large number of band instruments are furnished by the government; however, students owning instruments are encouraged to use them.

Selection—Related Courses

The College Departments of Government, History, Journalism, and Psychology cooperate in offering four courses: Government 437 (Political Geography), History 3317 (Military Affairs), Journalism 433 (Public Opinion and Propaganda), and Psychology 334 (Military Psychology). Descriptions of these courses can be found in this catalog under the respective departmental listings.

Air Force Awards and Recognition of Achievement

The Department of the Air Force annually offers regular commissions to a limited number of qualified cadets in the Air Force ROTC.

The Professor of Air Science and the Commandant, Headquarters Air Force ROTC, annually award the Distinguished AFROTC Student Certificate and the Distinguished AFROTC Graduate Certificate, respectively, to those AFROTC junior students and AFROTC graduates who have achieved scholastic excellence, and who possess outstanding leadership, character, and aptitude for military service.

The Society of American Military Engineers awards annually the Society's ROTC Gold Medal with Key Replica to 10 Air Force ROTC senior students and 10 Air Force ROTC junior students throughout the United States. Award is based on outstanding Air Force ROTC and academic proficiency.

The Air Force Association of Washington, D.C., annually awards a medal to the most outstanding Air Force ROTC cadet in the junior class.

Air Force ROTC Generalized Course

The generalized course covers such special subjects as fundamentals of global geography, international tensions and security organizations, targets, weapons, aircraft, operations, creative problem solving, communicating in the Air Force, air navigation, weather, leadership and management, military justice, military aviation and the evolution of warfare. In addition, thirty-five hours of flying training is offered to students who desire pilot training in the Air Force after graduation.

The educational mission of the Air Force ROTC program at Texas Technological College is to select and prepare students, through a carefully integrated course of study, to serve as leaders and air officers in the regular and reserve components of the United States Air Force.

The general objectives of the Air Force ROTC program are:

a. To develop by precept, example and cadet participation, the attributes of character, personality, and leadership which are indispensable to every officer of the Air Force.

b. To develop an understanding of the Air Force and an understanding of its organization, missions, problems, and techniques.

c. To provide the cadet with a balanced course of training which, in conjunction with academic curriculum, will qualify him to discharge the normal duties and responsibilities which may be required of him as an officer of the Air Force.

d. To arouse in the cadet a desire to obtain an aeronautical rating in the Air Force after graduation.

GENERAL MILITARY SCIENCE CURRICULUM

The general military science curriculum is designed to prepare students for commissions as junior officers in the various arms and services of the United States Army, both regular and reserve. There is no specialization during the ROTC course; all students pursue the same subjects. Specialized training in the techniques and duties of the various branches is given at the branch schools when on active duty after graduation and commission. Recommendations for assignment to branch of service is made early in the senior year by a board consisting of officers of the department and members of the civilian faculty, based on the student's preference, his college and other training and any special aptitudes. Final assignments are made by the De-

partment of the Army based on these recommendations and the current needs of the Army.

Content of the various military science courses is shown on the following pages.

MILITARY AWARDS AND RECOGNITION OF ACHIEVEMENT

Under the Distinguished Military Student program, the Department of the Army annually offers Regular Army commissions to a limited number of especially qualified Senior ROTC graduates.

The Association of the United States Army awards a medal annually to the outstanding student in the advanced course.

The Texas Society of the Sons of the American Revolution awards a number of its Medals of Honor to outstanding cadets.

Military Science and Tactics

PROFESSOR CARVEY.
ASSOCIATE PROFESSOR HENRY.
ASSISTANT PROFESSORS ARCHER, CAVAZOS, LYONS.
SERGEANT INSTRUCTORS GARDNER, J. JOHNSON, RALLS, SHARP, THACKER.
ADMINISTRATIVE ASSISTANTS RIVERS, BASS.

Military Science and Tactics

M.S. 121-122. First Year Basic. Cr. 2.

Prerequisite: U.S. citizenship, physical, mental, and moral qualifications prescribed by the Department of the Army. Organization of the Army and ROTC; individual weapons and marksmanship; American military history; School of the Soldier and exercise of command.

M.S. 211-212. Second Year Basic. Cr. 1.

Prerequisite: M.S. 121-122 or equivalent. Map and aerial photograph reading; crew-served weapons and gunnery; School of the Soldier and exercise of command.

M.S. 331-332. First Year Advanced. Cr. 3.

Prerequisite: M.S. 211-212 or equivalent. Military teaching methods; organization, functions, and missions of the arms and services; small unit tactics and communications; School of the Soldier and exercise of command.

M.S. 431-432. Second Year Advanced. Cr. 3.

Prerequisite: M.S. 331-332. Operations to include command and staff, estimate of the situation and combat orders, military intelligence, the military team training management. Logistics, to include supply and evacuation, troop movements, motor transportation. Military administration and personal management, to include military administration, military justice. Service orientation, to include the role of the United States in world affairs and the present world situation, leadership, officer indoctrination. School of the Soldier and exercise of command.

Air Science (AFROTC)

PROFESSOR WILKERSON.
ASSOCIATE PROFESSORS GROVER, OGLETREE.
ASSISTANT PROFESSORS MORGAN, PALMQUIST.
ADMINISTRATIVE ASSISTANTS BISHOP, FULTON, HOUSE, NOLL.

AIR SCIENCE

A.S. 121. The Airplane and the Air Age. Cr. 2.

Prerequisite: Physical and mental qualifications prescribed by the Department of Air Force. This course is devoted to details of the AFROTC program; introduction to aviation; fundamentals of global geography; leadership laboratory.

A.S. 122. The Airplane and the Air Age (Continued). Cr. 2.

Prerequisite: A.S. 121 or equivalent. International tensions and security organizations; military institutions of national security; leadership laboratory.

A.S. 211. Elements and Potentials of Air Power. Cr. 1.

Prerequisite: A.S. 121-122 or equivalent. The initial phase of this course presents and explains the career opportunities for an officer in the United States Air Force. The second part of the course is devoted to the study of the elements of aerial warfare; targets and weapons.

A.S. 212. Elements and Potentials of Air Power (Continued.) Cr. 1.

Prerequisite: A.S. 121-122 and 211 or equivalent. This course completes the study of the elements of aerial warfare. It is devoted to the study of aircraft, bases, and air operations.

A.S. 331. The Air Force Officer in the Air Age. Cr. 3.

Prerequisite: A.S. 121-122 and 211-212 or equivalent. A course devoted to study of command and staff concepts; creative problem solving; communications processes; principles and techniques of learning and teaching; military justice system; cadet officer training.

A.S. 332. The Air Force Officer in the Air Age (Continued). Cr. 3.

Prerequisite: A.S. 331. Study of air navigation; weather; functions of an air base; cadet officer training.

A.S. 431. Leadership and Air Power Concepts. Cr. 3.

Prerequisite: A.S. 331-332. Career guidance; moral responsibility of the Air Force leader; leadership and management; military aviation and the evolution of warfare; leadership drill and exercise of command.

A.S. 432. Leadership and Air Power Concepts. (Continued) Cr. 3.

Prerequisite: A.S. 331-332 and A.S. 431. Military aspects of world political geography; briefing for commissioned services in the USAF; leadership drill and exercise of command. Thirty-five hours' flight instruction.

DIVISION OF EXTENSION

JACOB H. MILLIKIN, *Director*

The Texas Technological College Division of Extension offers approximately 250 courses through correspondence study for those who cannot attend regularly scheduled classes. Correspondence and extension class study courses have been approved by the Association of Texas Colleges. The Division of Extension is a member of the National University Extension Association.

Correspondence Department

The following general regulations govern correspondence courses:

Eighteen semester hours of the work for a Bachelor's Degree may be done through correspondence work. No student may register for or complete a correspondence course during the last semester or summer term before graduation, unless registration is approved by his dean because of schedule conflict or the absence of the needed course in the residence schedule. In any event, a maximum of 6 hours of the final semester's work may be completed by correspondence, provided the work does not constitute a part of the major or minor requirements toward the degree.

The minimum time for completing a course of 2 semester hours is 30 days; and for a course of 3 semester hours, 45 days.

No credit toward a degree will be given for a correspondence course on which the student has made a grade of F in residence. Failure in residence of a course for which there are alternate choices in meeting degree requirements precludes the taking of the alternate course, or courses, by correspondence.

One-half of the work required for a teacher's certificate may be completed by correspondence study.

The registration fee for each semester hour is $7 (a 3-semester-hour course costs $21). All fees are payable in advance and are not refundable. A correspondence course may not be exchanged for another course nor transferred to another person.

A student pursuing a degree program at Texas Technological College may not complete more than 6 semester hours by correspondence study during any 12-month period beginning Sept. 15, if he is enrolled full-time in both long and summer sessions, and carries a normal course load. If the course load is more than 15 hours per semester, or 6 hours each summer term, the dean of the student's school may reduce the above maximum of 6 hours by correspondence. If the student should not be enrolled during any semester, or during either or both terms of the summer session, the dean may permit a proportionate increase in the amount of correspondence work to be completed in any 12-month period beginning Sept. 15.

A resident student may begin or continue work in the Extension Division only with the approval of his academic dean for correspondence or extension class work, or assume the risk of securing credit for the work.

Correspondence courses for credit are the equivalent in content of the corresponding residence courses.

Correspondence courses for credit must be concluded by a final examination taken under the supervision of the designated person on a college campus.

Correspondence study courses are available in the following schools and departments:

AGRICULTURE

Agricultural Economics and Rural Sociology.

ARTS AND SCIENCES

Bible; Biology; Education and Philosophy; English; Foreign Languages (French, German, Latin and Spanish); Government; History, Anthropology and Sociology; Mathematics; Psychology; Health and Physical Education.

BUSINESS ADMINISTRATION

Accounting and Finance; Business Law; Economics; Marketing; and Secretarial Administration.

HOME ECONOMICS

Applied Arts.

HIGH SCHOOL

College entrance courses are available in the following fields: agriculture; business; English; foreign languages (French, German, Latin and Spanish); history and social sciences; mathematics and science.

Extension Department

Extension classes may be organized in convenient centers upon the request of a sufficient number of students, depending upon the distance from the campus. Both graduate and undergraduate courses are available.

Registration fees for extension class courses are $7 per semester hour credit. Laboratory fees may be required for courses entailing laboratory work. All fees are required in advance and are not refundable after a course is started.

A maximum of 6 semester hours of extension class credit will be allowed toward a master's degree. One-fourth of the work for a bachelor's degree may be earned through extension class and/or correspondence study work (provided that not more than 18 semester hours may be done through correspondence study alone).

ENROLLMENT

ENROLLMENT FOR THE LONG SESSION, 1957-58

	Freshmen	Sophomores	Juniors	Seniors	Graduates	Totals
Agriculture	249	192	203	214	44	902
Arts and Sciences	1,178	678	586	501	495	3,438
Business Administration	578	396	358	341	73	1,746
Engineering	1,023	772	635	538	9	2,977
Home Economics	186	112	72	72	19	461
Totals	3,214	2,150	1,854	1,666	640	9,524

Total Men Students — 7,004 Total Women Students — 2,520

ENROLLMENT FOR THE SUMMER SESSION 1957

	Freshmen	Sophomores	Juniors	Seniors	Graduates	Totals
Agriculture	24	38	51	109	61	283
Arts and Sciences	164	171	299	432	565	1,631
Business Administration	68	106	143	254	29	600
Engineering	124	210	247	237	1	819
Home Economics	75	29	28	63	58	253
Totals	455	554	768	1,095	714	3,586

Total Men Students — 2,455 Total Women Students — 1,131

EXTENSION

Individual enrollments in extension classes	59
Individual enrollments in correspondence courses	4,159
Enrollment for period Sept. 1, 1957 to Aug. 31, 1958	4,218

Attendance 1925-1958

Year	Long Session	Summer Session	Extension	Totals
1925-26	1,043	336		1,379
1926-27	1,535	677		2,212
1927-28	1,682	965	386	3,033
1928-29	2,088	1,298	820	4,206
1929-30	2,353	1,316	1,098	4,767
1930-31	2,319	1,556	1,227	5,102
1931-32	2,155	1,606	1,011	4,772
1932-33	2,332	1,288	833	4,453
1933-34	2,361	1,970	1,236	5,567
1934-35	2,684	1,956	1,403	6,043
1935-36	2,748	1,678	1,522	5,948
1936-37	3,010	1,695	1,255	5,960
1937-38	3,494	1,839	1,067	6,400
1938-39	3,896	1,932	1,137	6,965
1939-40	4,246	1,800	1,198	7,244
1940-41	4,076	1,522	1,063	6,661
1941-42	3,824	1,653	1,050	6,527
1942-43	3,079	1,140	1,273	5,492
1943-44	1,928	1,060	1,354	4,342
1944-45	2,222	1,060	2,084	5,366
1945-46	3,744	2,670	1,791	8,205
1946-47	6,095	3,067	2,625	11,787
1947-48	6,689	3,097	3,059	12,845
1948-49	6,750	3,189	3,006	12,945
1949-50	6,511	3,127	4,212	13,850
1950-51	6,124	2,745	3,627	12,496
1951-52	5,634	2,389	3,282	11,305
1952-53	5,885	2,422	2,677	10,984
1953-54	6,274	2,570	2,838	11,682
1954-55	7,229	2,900	3,467	13,596
1955-56	7,992	3,286	3,151	14,429
1956-57	9,004	3,586	3,808	16,398
1957-58	9,524		4,218	

DEGREES CONFERRED 1927-1957

SCHOOL OF AGRICULTURE

	Conferred in 1957 Men	Women	Both	Totals 1927-57
Bachelor of Science in Agriculture	176	1	177	2,221
Total for School of Agriculture	176	1	177	2,221

SCHOOL OF ARTS AND SCIENCES

Bachelor of Arts	86	50	136	3,702
Bachelor of Science	55	5	60	981
Bachelor of Science in Education	48	87	135	1,913
Bachelor of Music	3	4	7	52
Total for School of Arts and Sciences	192	146	338	6,648

SCHOOL OF BUSINESS ADMINISTRATION

Bachelor of Business Administration	200	36	236	2,826
Bachelor of Science	6		6	92
Total for School of Business Administration	206	36	242	2,918

SCHOOL OF ENGINEERING

Bachelor of Architecture	10		10	196
Bachelor of Arts				112
Bachelor of Advertising Art and Design		5	5	9
Bachelor of Commercial Arts				7
Bachelor of Science in Architectural Engineering				33
Bachelor of Science in Chemical Engineering	18		18	316
Bachelor of Science in Civil Engineering	31		31	454
Bachelor of Science in Electrical Engineering	72		72	697
Bachelor of Science in Geological Engineering				23
Bachelor of Science in Industrial Education				1
Bachelor of Science in Industrial Engineering	22		22	222
Bachelor of Science in Mechanical Engineering	39		39	554
Bachelor of Science in Petroleum Engineering	35		35	433
Bachelor of Science in Textile Engineering				150
Bachelor of Science in Textiles				19
Total for School of Engineering	227	5	232	3,226

SCHOOL OF HOME ECONOMICS

Bachelor of Science in Home Economics		73	73	1,350
Total for the School of Home Economics		73	73	1,350

GRADUATE SCHOOL

Total Masters Degrees	73	54	127	2,106
Doctor of Education	9		9	25
Doctor of Philosophy	4	1	5	14
Total Doctors Degrees	13	1	14	39
Total for Graduate School	86	55	141	2,145

HONORARY DEGREES

Doctor of Laws	1		1	12
Doctor of Science	1		1	2
Total Honorary Degrees	2		2	14
Total Degrees Conferred	889	316	1,205	18,522

SUMMARY OF DEGREES CONFERRED 1927-57

Total Bachelors Degrees	16,363	Total Men Receiving Degrees	11,952
Total Masters Degrees	2,104	Total Women Receiving Degrees	6,570
Total Professional Degrees	2		
Total Doctors Degrees	39	Total Degrees Conferred	18,522
Total Honorary Degrees	14		
Grand Total Degrees Conferred	18,522		

APPENDIX A

TEXAS TECHNOLOGICAL COLLEGE—ESTABLISHING AND PROVIDING FOR THE LOCATION THEREOF.

S. B. No. 103 Chapter 20 (Page 32)

GENERAL LAWS OF THE STATE OF TEXAS Passed by the THIRTY-EIGHTH LEGISLATURE at the REGULAR SESSION.

An Act to establish a State college in Texas, west of the ninety-eighth (98th) meridian and north of the twenty-ninth (29th) parallel, to be known as the Texas Technological College; providing for the location of such college; its government; the control of its finances; defining its leading objects and prescribing generally the nature and scope of instruction to be given; conferring upon the Board of Directors of said college the rights of eminent domain; making the necessary appropriation for the purchase of land, the location, establishing and maintenance of said college, and declaring an emergency.

Be it enacted by the Legislature of the State of Texas:

Section 1. There shall be established in this State a college for white students to be known as the Texas Technological College, said college to be located north of the twenty-ninth (29th) parallel, and west of the ninety-eighth (98th) meridian, and shall be a co-educational college giving thorough instruction in technology and textile engineering from which a student may reach the highest degree of education along the lines of manufacturing cotton, wool, leather and other raw materials produced in Texas, including all branches of textile engineering, the chemistry of materials, the technique of weaving, dyeing, tanning, and the doing of any and all other things necessary for the manufacturing of raw materials into finished products; and said college shall also have complete courses in the arts and sciences, physical, social, political, pure and applied, such as are taught in colleges of the first class leading to the degrees of Bachelor of Science, Bachelor of Arts, Bachelor of Literature, Bachelor of Technology and any and all other degrees given by colleges of the first class; said college being designated to elevate their ideals, enrich the lives and increase the capacity of the people for democratic self-government and particularly to give instruction in technological, manufacturing, and agricultural pursuits and domestic husbandry and home economics so that the boys and girls of this state may attain their highest usefulness and greatest happiness and in so doing may prepare themselves for producing from the State its greatest possible wealth.

Sec. 2. The government, control and direction of the policies of said technological college shall be vested in a board of nine (9) directors to be appointed by the Governor who shall hold office for a period of six (6) years, said board of nine (9) directors to be so divided that the terms of three (3) directors shall expire every two years, and it shall be the duty of the Governor in making the appointment of the first board of directors, to indicate in his appointment the name of the director whose term shall expire in two (2) years, the name of the director whose term shall expire in four (4) years, and the name of the director whose term shall expire in six (6) years; all of said directors to hold their office until their successors are qualified, unless a removal is made by the Governor for inefficiency or inattention to their duties as members of such board.

The board of directors of the Texas Technological College shall provide a president therefor who shall devote his entire time to the executive management of said school and who shall be directly accountable to the board of directors for the conduct thereof.

Sec. 3 In addition to the courses provided in technology and textile engineering, the said Texas Technological College shall offer the usual college courses given in standard senior colleges of the first class and shall be empowered to confer appropriate degrees to be determined by the board of directors and shall offer four-year courses, two-year courses, or short-term courses in farm and ranch husbandry and economics and the chemistry of soils and the adaption of farm crops to the peculiar soil, climate and condition of that portion of the State in which the college is located, and such other courses and degrees as the board of directors may see fit to provide as a means of supplying the educational facilities necessary for this section of the State, and it shall be the duty of the board of directors to furnish such assistance to the faculty and students of said college as will enable them to do original research work to apply the latest and most approved method of manufacturing and, in general, to afford the facilities of the college for the purpose of originating, developing, supporting and maintaining all of those agencies (physical, mental and moral) for the development of the physical, mental and moral welfare of the students who attend the college and for the further purpose of developing the material resources of the State to their highest point of value and usefulness by teaching the arts of commerce and manufacturing. All male students attending this college shall be required to receive such instruction in military science and tactics as the board of directors may prescribe which shall, at all times, comply in full with the requirements of the United States Government now given as a prerequisite to any aid now extended or hereafter to be extended by the Government of the United States to State institutions of this character and all such white male students shall, during their attendance at such college, be subject to such military discipline and control as the board of directors may prescribe.

Sec. 4. The chairman of the State Board of Control and the State Superintendent of Public Instruction, the President of the University of Texas, the President of the College of Industrial Arts of Texas, and the President of the Agricultural and Mechanical College of Texas shall constitute a board charged with the responsibility for the location of the Texas Technological College, a majority of whom shall be authorized to act under the terms of this bill in the location of said school; said board being restricted in the choice of the location to the area mentioned in Section 1 of this act and as soon after the passage and approval of this act as practical, said locating board shall make careful investigation of proposed sites for the said institution. Consideration shall be given to climatic conditions, supply of water, accessibility and such other matters as appropriately enter into the selection of the desirable location of an institution of this kind. It is further provided that the said locating board shall not be influenced to any degree in the determination of its selection of a location by offers and promises of bonuses and gifts, directly or indirectly, to the State of Texas, as a consideration for the location of said college at any particular place, but a primary consideration which shall outweigh all others in the minds of the members of the locating board, shall be to locate this college where it can, in the future, render the greatest service to the State and to the section of the United States for which it is especially intended; but this is not to be interpreted to mean that the board of directors shall not have authority to accept gifts of land, money for students' loans, permanent improvement or any other objects of value when tendered for the purpose of more completely carrying out the purpose of this act; said gifts to be made after said school is located and established and if a suitable location for said college is offered by any city or community. The lands bought shall be so located that the administration building will be within convenient distance to the residence section of the town where located, or the place where the students reside.

Sec. 5. The said locating board shall have authority to select approximately two thousand (2,000) acres of land for the site of said college and agree with the owner or owners thereof upon the price to be paid therefor, which said agreement shall be reduced to writing by the said locating board, signed and delivered to the board of directors herein provided for, who shall thereupon have full authority to contract for the purchase of said land for said purpose, and upon the approval of the title thereto by the Attorney General of the State of Texas, to pay for said land and any improvements thereon in any sum not to exceed one hundred and fifty thousand ($150,000) dollars.

Sec. 6. It is further provided that, when said locating board has selected a site for said college, it shall be the duty of said board to make a full and complete report of all details connected with the selection of the site for the said college to the Governor of the State of Texas. The filing of this report with the Secretary of State shall legally constitute the establishing of the college.

Sec. 7. The board of directors of the said Texas Technological College is hereby vested with the power of eminent domain to acquire for the use of said college such land as may be necessary for the purpose of carrying out its purposes by condemnation proceedings such as are now provided for railroad companies under the laws of the State of Texas.

Sec. 8. There is hereby appropriated from the general revenues of the State, not otherwise appropriated, the following sums, or so much thereof as may be necessary:

1. Twenty-five hundred ($2,500) dollars of the available revenue of the State, or so much thereof as may be necessary, to become available upon the passage and approval of this act, for the purpose of paying the expense of the locating board in determining the location of said institution.

2. One hundred and fifty thousand ($150,000) dollars of the available revenues of this State, or so much thereof as may be necessary, to become available September 1, 1923, for the purchase of the necessary lands for the location and establishment of said school, and any portion of which amount not used for the purchase of lands shall be available for the purposes provided in the following sections thereof.

3. Five hundred thousand ($500,000) dollars for the fiscal year ending August 31, 1924, for the purpose of providing necessary utilities, machinery, permanent improvements, equipment and buildings for said college.

4. Three hundred and fifty thousand ($350,000) dollars for the fiscal year ending August 31, 1925, for the purpose of providing necessary utilities, machinery, permanent improvements, equipment and buildings for said college; and

5. In the event any portion of the sums hereby appropriated should not be used for and during the year for which they are hereby appropriated, such sums shall become available for the succeeding year, for the purposes herein provided, and for no other.

Sec. 9. The fact that Texas is producing annually millions of dollars worth of raw materials, which are being shipped to distant factories to be made into finished products together with the fact that Texas has no adequate institution for teaching technology and the art of textile manufacturing and the fact that the needs of that portion of the State where this college shall be located are inadequately supplied with educational institutions, create an emergency and an imperative public necessity for this act to take effect at once and for the suspension of the constitutional rule requiring bills to be read on three separate days, it is therefore enacted that said rule be suspended and this act take effect and be in force on and after its passage.

INDEX

A

Absence Regulations, 92
Academic Credit (ROTC), 287
Academic Regulations, 92
Academic Withdrawal, Enforced, 101
Accounting and Finance, 215, 220
Activities, Extra-Curricular, Eligibility for Participation in, 84
Activities, Forensic and Dramatic, 87
Activities, Student, 84
Adding Courses and Changing Sections, 58, 94
Address, Change of, 60
Administration, Officers of, 12
Admission, 50
  Application and Credentials, 50
  By High School Certificate, 51
  Credit for Educational Achievements During Military Service, 54
  Freshman Testing, Orientation, 51
  From Other Colleges and Universities, 53
  Health Requirements, 51
  Of Graduate Students, 54
  Of Mature Students, 53
  Recommendations for Particular Curricula, 52
  Selective, 50
  To Candidacy for Graduation, 105
  To Graduate School, 283
  Uniform Requirements, 51
Advertising, 186, 215, 230
Advertising Art and Design 242, 244, 258
Agricultural Economics, 112, 121
Agricultural Education, 113, 122
Agricultural Engineering, 113, 123
Agricultural Science, 114
Agriculture, School of, 52, 111
Agronomy, 115, 116, 125
Aid, Vocational Rehabilitation, 82
Air Force Awards and Recognition of Achievement, 287
Air Force ROTC, 285, 289
All-College Programs, 105
Allied Arts, 135, 242, 255
Animal Husbandry, 117, 127
Annual Cost, Estimate of, 60
Anthropology (courses), 184
Anthropology, History and Sociology, 181, 184
Appendix A, 295
Application and Credentials, New Students, 50
Applied Arts, 135, 273, 275
Applied Music, 194
Architects, Licensed, 255
Architecture, Advertising Art and Design, 242, 244, 258
Architecture and Allied Arts, 242, 255
Army ROTC, 284, 289
Art Institute, 49
Arts and Sciences, School of, 133
Association of Women Students, 86
Association, Student, 85
Astronomy (courses), 190
Athletics, Eligibility for Intercollegiate, 85
Attendance (1925-1958), 293
Audio-Visual Service, West Texas Cooperative, 47
Awards, 79
Awards, and Loans, Fellowships, Scholarships, 62
Awards, Special, 63

B

Bachelor's Degree (see Degrees)
Bacteriology, 138, 143
Band, 133, 190
Band, ROTC, 201, 287
Biblical Literature (staff), 38
Biblical Literature, Courses in, 210
Bilingual Secretarial Program, 109
Biology, 142, 143
Board in College Dormitories, Charges for Room and, 61
Board of Directors, 11
Board of Student Organizations, 86
Bookstore, The College, 47
Botany, 138, 144
Bulletins, College, 48
Business Administration, School of, 52, 212
Business Law (courses), 223
Business Education and Secretarial Administration, 223

C

Calendar, 2
Calendar, College, 6
Campus Plot Plan, 4, 5
Candidacy for Graduation, Admission to, 105
Casa Linda, Cooperative House, 62
Changing Sections and Adding Courses, 94
Chemical Engineering, 146, 234, 247, 259
Chemistry, 139, 147
Child Development and Family Relations, 273, 277
Civil Engineering, 235, 248, 260
Classification of Students, 94
Clothing and Textiles, 274, 278
Clubs and Societies, 89
Code of Student Affairs, 89
College, The
  Government, 44
  History, 44
  Instruction Schools and Departments, 43
  Location, 44, 295
  Library, 49
College Bookstore, The, 47
College Bulletins, 48, 283
College Calendar, 6
Commercial Art (see Architecture)
Contents, Table of, 3
Cooperative House, Casa Linda, 62
Coordinating Agencies, Student Organization, 92
Correspondence Department, 291
Counseling Center, Testing and, 45
Counseling, Rehabilitation, 204
Course, Dropping a, 94
Course Numbers, 95
Courses (by Departments)
  Accounting and Finance, 220
  Agricultural Economics, 121
  Agricultural Education, 122
  Agricultural Engineering, 123
  Agronomy, 125
  Air Science, (AF ROTC), 289
  Animal Husbandry, 127
  Applied Arts, 275
  Architecture and Allied Arts, 255
  Biblical Literature, 210
  Biology, 142
  Business Education and Secretarial Administration, 223
  Chemistry and Chemical Enginering, 146, 259
  Child Development, Family Relations and Home Management, 277, 278
  Civil Engineering, 260
  Clothing and Textiles, 278
  Correspondence (see Extension)
  Dairy Industry, 129
  Economics, 225
  Education and Philosophy, 149
  Electrical Engineering, 262
  English, 159
  Food and Nutrition, 280
  Foreign Languages, 163
  Geology, 167
  Government, 169
  Health and Physical Education, and Recreation, Men, 172, Women, 177
  History, Anthropology and Sociology, 181
  Home Economics Education, 281
  Horticulture and Park Management, 130
  Industrial Engineering and Engineering Drawing, 264
  Journalism, 185
  Management, 228
  Marketing, 229
  Mathematics, 187
  Mechanical Engineering, 266
  Military Science, 289
  Music, 190
  Petroleum Engineering, 267
  Physics, 201
  Psychology, 203
  Speech, 207
  Textile Engineering, 269
Courses, Adding, and Changing Sections, 58, 94
Courses, Graduate, 283
Credentials, Application and, 50
Credit, Academic (ROTC), 287
Credit, Enrollment Without, 95
Credit for Educational Achievements During Military Service, 54
Cultural Opportunities, 88
Curriculum, Prenursing, 275
Curricula
  Agriculture, 112
  Arts and Sciences, 133
  Business Administration, 137, 214

Engineering, 233, 246
Home Economics, 273
Curricula, Recommendations for Particular, 52
Curriculum, Stenography, 219

D

Dairy Industry, 118, 119, 129
Degrees Conferred, 1927-1957, 294
Degrees, General Requirements, 103, 134, 137
Bachelor of Advertising Art and Design, 244
Bachelor of Architecture, 242
Bachelor of Arts, 134
Recreation, 175
Bachelor of Arts in Teacher Education, 149
Bachelor of Business Administration, 213
Bachelor of Music, 190
Bachelor of Science, 137, 214
Bachelor of Science in Agriculture, 112
Bachelor of Science, Business Administration, 214
Bachelor of Science in Chemical Enginering, 234, 247
Bachelor of Science in Civil Enginering, 235, 248
Bachelor of Science in Education, 149, 174
Bachelor of Science in Electrical Engineering, 236, 249
Bachelor of Science in Home Economics, 273
Bachelor of Science in Engineering Physics, 237, 250
Bachelor of Science in Industrial Engineering, 238, 251
Bachelor of Science in Mechanical Engineering, 239, 252
Bachelor of Science in Petroleum Engineering, 240, 253
Bachelor of Science in Textile Engineering, 241, 254
Combination, Bachelor of Arts and Bachelor of Science, 245
Doctor of Education, 283
Doctor of Philosophy, 283
Master of Arts, 214, 283
Master of Business Administration, 214, 283
Master of Arts in Teaching, 283
Master of Education, 283
Master of Science, 283
Master of Science in Agriculture, 283
Master of Science in Chemical Engineering, 283
Master of Science in Electrical Engineering, 283
Master of Science in Home Economics, 272, 283
Degrees, Graduate, 105, 283
Degrees, Undergraduate, 103
Dentistry, Subjects Preparatory to, 135, 136
Departmental Organizations, 90
Departments of Instruction (see Courses)
Dietetics (see Food and Nutrition)
Directors, Board of, 11
Directory, Official, 11
Discipline (ROTC), 286
Doctor's Degree (see Degrees)
Dormitories, Charges for Room and Board, 61
Dormitory Reservations, 61
Dormitory Staff, 41
Dormitory Supervisory Service, 45
Dormitory Supervisory System, 83
Dramatic Activities, Forensic and, 87
Drawing, Engineering (courses), 264
Dropping a Course, 94
Duplicate Receipt Fee, 58

E

Economics, 225
Economics, Agricultural, 112, 121
Education, Agricultural, 113, 122
Education, Business, 223
Education and Philosophy, 149
Education, Home Economics, 274, 281
Education, Physical, 133, 172, 177
Education, Teacher, 105, 149
Elementary Program, 150, 151
Electrical Engineering, 236, 249, 262
Eligibility for Intercollegiate Athletics, 85
Eligibility for Participation in Extra-Curricular Activities, 84
Enforced Academic Withdrawal, 101

Engineering, Agricultural, 113, 123
Engineering, Agricultural, 113, 123 247, 259
Engineering, Civil, 235, 248, 260
Engineering Curricula, 233
Engineering Drawing, Industrial Engineering and, 238, 251, 264
Engineering, Electrical, 236, 249, 262
Engineering, Industrial, 238, 251, 264
Engineering, Liberal Arts Approach to, 110
Engineering, Mechanical, 239, 252, 266
Engineering Petroleum, 240, 253, 267
Engineering Physics, 237, 250, 264
Engineering School of, 52, 232
Engineering Seminar, 264
Engineering, Textile, 241, 254, 269
Engineers, Registered Professional, 255
Engineers' Show, 88
English, 159
Enrollment, 1927-1957, 294
Enrollment and Continuance Requirements for (ROTC), 286
Enrollment Without Credit, 95
Entomology, 132, 144
Estimate of Annual Cost, 60
Evening Program, Registration Fee for, 56
Exemption from Fees Because of Honorable Discharge from the Armed Forces, 59
Expenses,
  Change in Schedule, 58
  Duplicate Receipt Fee, 58
  Exemption from Fees, Military, 59
  Faculty Fee, 58
  General Property Deposit 57
  Graduation Fee, 58
  Laboratory Fees, 57
  Locker, 58
  Matriculation, 57
  Miscellaneous Special Fees, 57
  Music Fees for Private Instruction, 58
  Payment of Fees, 55
  Refund of Fees, 58
  Registration Fee for Evening Program, 56
  Registration Fee for Non-resident Students, 55
  Registration Fee for Resident Students, 55
  Student Union Fee, 57
  Summary of Registration, 59
  Towel Fee, 58
  Visitor's Fee, 57
Ex-Students Association, (staff), 42
Extension Department, 292
Extension, Division of, 291
Extension, Enrollment, 103, 293
Extra-Curricular Activities, Eligibility for Participation in, 84

F

F, Grade of, 97
Faculty, 14
Faculty Gym Fee, 58
Family Relations, Child Development and, 273, 277
Fees, (see Expenses).
Fees, Exemption from, 59
Fees, Payment of, 55
Fees, Registration, 55
Fellowships, Scholarships, Awards, and Loans, 62
Finance, Accounting and, 215, 222
Financial Assistance (ROTC), 285
Five-Year Programs in School of Engineering, 245
Food Service (staff), 41
Food and Nutrition, 274, 280
Foreign Languages, 109, 163, 166
Forensic and Dramatic Activities, 87
French 109, 164, 165, 166
Freshman Pre-Registration Guidance and Testing, 51
Freshman Progress Reports, 102
Freshman Curricula
  Agriculture, 112
  Arts and Sciences, 133, 137
  Business Administration, 214
  Engineering, 233, 246
Funds, Loan, 81

G

General Property Deposit, 57
Geography (courses), 169
Geology, 140, 167
German (courses), 164, 165, 166
Government, 169
Government (of College), 44
Grade of **F**, 97
Grade of **Incomplete**, 97
Grade of **In Progress**, 96

Grade of **WP** or **WF**, 97
Grade Points and Official Grades, 98
Grades, 96
Graduate Assistantships, Scholarships, and Fellowships, 63
Graduate Degrees, 105, 283
Graduate School, 283
Graduate Student, Admission of, 54, 283
Graduation, Admission to Candidacy for, 105
Graduation Fee, 58
Graduation Requirements for, 103
Graduation Under a Particular Catalog, 104
Graduation With Honors, 62
Greek, 162
Guidance and Testing, Freshman Pre-Registration, 51

H

Health and Physical Education, Men, 172, 174
Health and Physical Education, Women, 177, 178
Health Requirements, 51
Health Services, Student, 46
High School Certificate, Admission by, 51
History (courses), 181
History, Anthropology and Sociology, 181
History of the College, 44
Holidays (see Calendar, College)
Home Economics, School of, 52, 271
Home Economics, Education, 274, 281
Home Economics Open House, 88
Home and Family Life, 271
Home Management, 277, 278
Honor Roll, 62
Honorary Organizations, 89
Honors, Graduation With, 62
Horticulture and Park Management, 119, 130
Hour, Semester, 95
Hours Allowed, Number of Semester, 95
Housing (see Dormitory Reservations)
Hyphenated Courses, 95

I

Incomplete, Grade of, 97
Industrial Engineering and Engineering Drawing, 238, 251, 264
In Progress, Grade of, 96
Institute, Art, 49
Instructional Schools and Departments, 43
Intercollegiate Athletics, Eligibility for, 85
International Trade, 216
Intramural Sports Program, 87, 173

J

Journalism, 185
Judging Teams, 111

L

Laboratories, Textile Research, 39, 50
Laboratory Fees, 57
Languages, Foreign, 163
Latin (courses), 164, 166
Latin American Area Studies, 109
Law, Business (courses), 223
Law, Preparation for the Study of, 108
Lectures, Willson, 88
Liberal Arts Approach to Engineering, The, 110
Library, 49
Licensed Architects, 255
Life, Student, 83
Literature, Biblical (courses), 210
Literature, Music, 199
Loan Funds, 81
Loans, Fellowships, Scholarships, Awards, 62
Location (of College), 44

M

Management, 228
Marketing, 229
Master's Degree (see Degrees)
Mathematics, 134, 140, 187
Matriculation Fee, 57
Mature Students, Admission, 53
Mechanical Engineering, 239, 252, 266
Medical Service for Students (see Student Health Service)
Medicine, Pre-Veterinary, 118
Medicine, Studies Preparatory to, 135, 136

Midsemester Reports, 102
Military Awards and Recognition of Achievement, 289
Military Band, 201, 287
Military Science and Tactics (courses), 289
Military Service, Credit for Educational Achievements During, 54
Miscellaneous Special Fees, 57
Motion Pictures, Educational, 47
Museum Association, West Texas, 48
Museum Staff, 39
Music, 190
Music, Applied, 194
Music Education, 192, 193, 199
Music Fees, 58
Music Literature, 199
Music Organizations (student), 87
Music Theory, 200
Mutual Interest Organizations, 91

N

Nonresident Student, Definition of, 55
Nonresident Students, Registration Fee for, 55
Number of Semester Hours Allowed, 95
Numbering System, 95
Nutrition, Food and, 274, 280

O

Observatory, Seismological, 49
Office Management, 218
Officers of Administration, 12
Official Directory, 11
Official Grades, Grade Points, and, 98
Open House, Home Economics, 88
Organization Co-ordinating Agencies, Student, 92
Organizations, Board of Student, 86
Organizations, Departmental, School and/or Professional, 90
Organizations, Honorary, 89
Organizations, Musical, 87
Organizations, Mutual Interest, 91

P

Park Management, Horticulture and, 119, 120, 130
Payment of Fees, 55
Petroleum Engineering, 240, 253, 267
Philosophy (courses), 158
Physical Education for Men, 172, 174
Physical Education for Women, 177, 178
Physical Education Required, 98
Physics, 141, 201
Placement Service, The, 47
Plot Plan, Campus, 4, 5
Poultry Husbandry, 118, 128
Preparation for the Study of Law, 108
Predental Requirements, 135, 136
Pre-Law Major, 170, 218
Requirements, 137
Premedical Requirements, 135, 136
Prenursing Curriculum, 275
Pre-Veterinary Medicine, 118
Probation, Scholarship, 99
Professional Organizations, 90
Programs, All-College, 105
Progress Reports, Freshman, 102
Property Deposit, 57
Psychology, 203
Public Administration, 218
Publications (student), 87

R

Readmission of Students Who Have Been Dropped, 101
Recognition of Achievement, Military Awards and, 289
Recognition of Scholarship, 62
Recognition Service, 89
Recreation (All-College Program), 110
Recreation, (courses), 175, 179
Refund of Fees, 58
Registered Professional Engineers, 255
Registration Expenses, Summary of, 59
Registration Fee for Evening Program, 56
Registration Fee for Nonresident Students, 55
Registration Fee for Resident Students, 55
Regulations, Absence, 92
Regulations, Academic, 92, 99
Rehabilitation Counseling, Special Program in, 204

Requirements for Admission, Uniform, 51
Requirements for Enrollment and Continuance (ROTC), 286
Requirements for Graduation, 103
Requirements, Health, 51
Religious Emphasis Week, 88
Religious Organizations (see Mutual Interest Organizations)
Reports, Freshman Progress, 102
Reports, Midsemester, 102
Research, Textile, 50, 269
Research Staff, Textile, 39
Reservations, Dormitory, 61
Reserve Officers Training Corps, 284
Resident Student, Definition of, 55
Resident Students, Registration Fee for, 55
Retailing, 219
Room and Board in College Dormitories, Charges for, 61
Room Reservations, 42, 61
ROTC Program, Army, 284
ROTC Program, USAF, 285
Rural Sociology, 122

S

Satisfactory Scholastic Progress, 99
Scholarships, Fellowships, Awards and Loans, 62
Scholarship Honors, 62
Scholarship Probation, 99
Scholarship, Recognition of, 62
Scholarship Regulations, 96
Scholarship Regulations Applicable to the Summer Session, 101
Scholastic Progress, Satisfactory, 99
Schools and Departments, Instructional, 43
Schools of Instruction
Agriculture, 111
Arts and Sciences, 133
Business Administration, 212
Engineering, 232
Extension, Division of, 291
Graduate School, 283
Home Economics, 271
School Organizations, 90
Sciences, (admission), 52
Secondary Program, 150, 152
Secretarial Administration, 213, 219
Secretarial Administration, Business Education and, 223
Secretarial (Spanish or French) Program, Bilingual, 109
Seismological Observatory, 49
Semester Hour, 95
Semester Hours Allowed, Number of, 95
Service Clubs (see Clubs and Societies)
Show, Engineers, 88
Show, Varsity, 88
Smallpox Vaccination Certificates, 51
Societies, Clubs and, 89
Sociology (courses), 185
Sociology, History and Anthropology, 181
Sociology, Rural, 122
Southwest Collection, 48
Southwest Collection, (staff), 39
Spanish, 109, 164, 165, 166
Special Awards, 63
Special Fees, Miscellaneous, 57
Speech, 207
Sports Program, Intramural, 87, 173
Staffs in Special Departments, 40
Stenography Curriculum, 219
Student Activities, 84
Student Association, 85
Student Health Service, 46
Student Health Service (staff), 39
Student Life, 83
Student Organization Coordinating Agencies, 92
Student Organizations, Board of, 86
Student Publications, 87
Student Services, 45
Student Teaching, 153
Student Union, 57, 86
Students, Association of Women, 86
Students, Classification of, 94
Study of Law, Preparation for the, 108, 218
Summer Camp (ROTC), 286
Summer Session, Calendar, 9, Scholarship Regulations Applicable to the, 101
Supervisory Service, Dormitory, 45, 83
Supervisory Staff (Dormitories), 42

T

Table of Contents, 3
Teacher Education, 105, 149
Teaching Certificates, 106
Tech Union, 86
Testing and Counseling Center, 45
Testing and Counseling Center, (staff), 42
Testing, Freshman Pre-Registration Guidance and, 51
Textile Enginering, 241, 254, 269
Textile Research Laboratories, 39, 50, 269
Textiles, Clothing and, 274, 278
Transfer from One School to Another, 103
Transfers (from other Colleges and Universities), 53
Tuition, (see Expenses)

U

Undergraduate Degrees, 103
Uniform Requirements for Admission, 51
Uniforms and Equipment (ROTC), 286
Union, Tech, 86

V

Vaccination Certificates, Smallpox, 51
Varsity Show, 88
Veterinary Science, 118, 129
Visiting the Course as an Auditor, 95
Visitor's Fee, 57
Vocational Home Economics Teacher Training, 271
Vocational Rehabilitation Aid, 82, 204

W

West Texas Cooperative Audio-Visual Services, 47
West Texas Museum Association, 48
WP or **WF**, Grades of, 97
Willson Lectures, 88
Withdrawal, Enforced Academic, 101
Withdrawal from College, 102
Women Students, Association of, 86

Z

Zoology, 142, 145