

Texas Western College 1959-1960

# Texas Western College

OF THE UNIVERSITY OF TEXAS

at El Paso



1959-1960

## **C O N T E N T S**

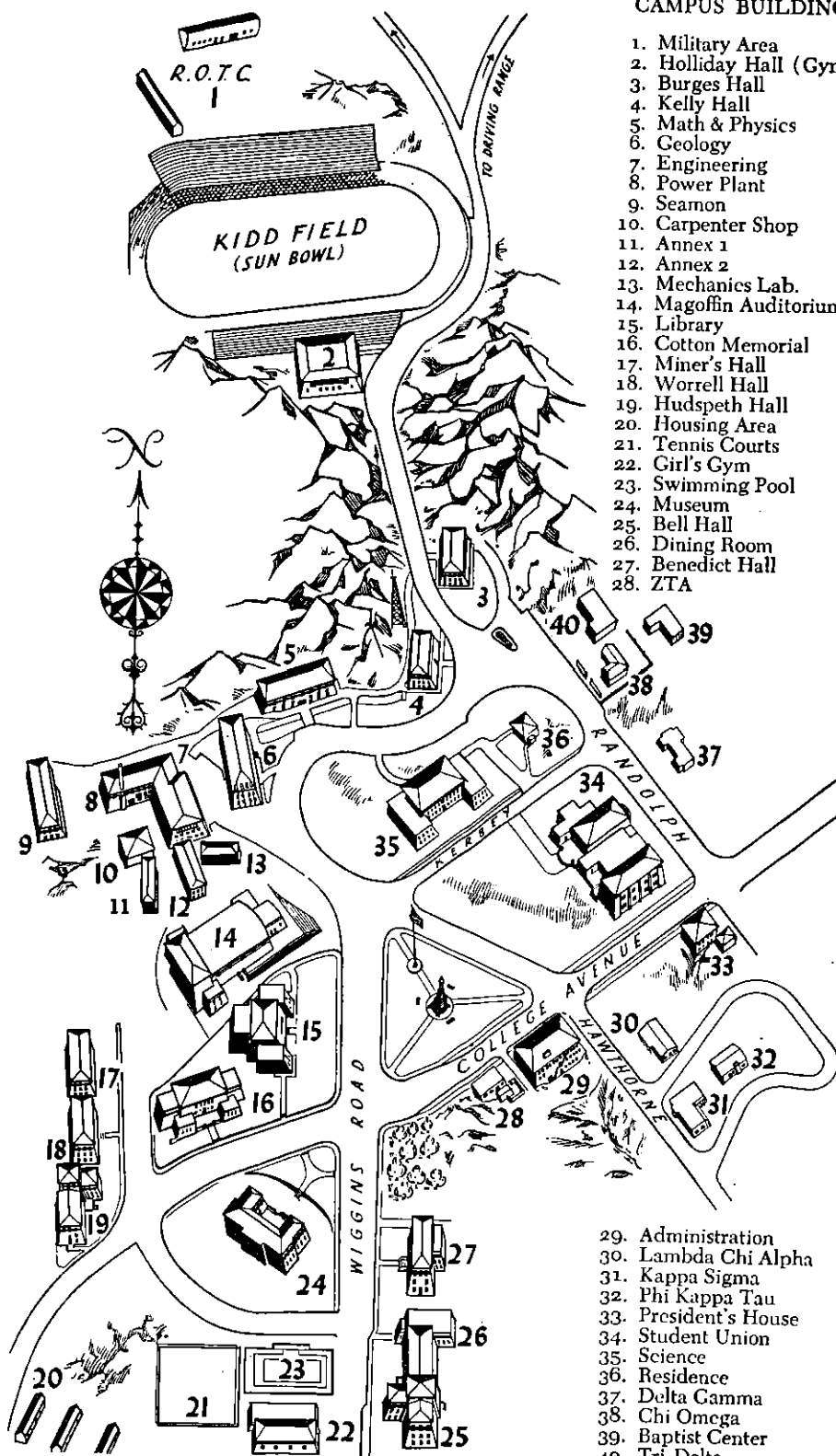
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## CAMPUS BUILDINGS

1. Military Area
2. Holliday Hall (Gym)
3. Burges Hall
4. Kelly Hall
5. Math & Physics
6. Geology
7. Engineering
8. Power Plant
9. Seamon
10. Carpenter Shop
11. Annex 1
12. Annex 2
13. Mechanics Lab.
14. Magoffin Auditorium
15. Library
16. Cotton Memorial
17. Miner's Hall
18. Worrell Hall
19. Hudspeth Hall
20. Housing Area
21. Tennis Courts
22. Girl's Gym
23. Swimming Pool
24. Museum
25. Bell Hall
26. Dining Room
27. Benedict Hall
28. ZTA

29. Administration
30. Lambda Chi Alpha
31. Kappa Sigma
32. Phi Kappa Tau
33. President's House
34. Student Union
35. Science
36. Residence
37. Delta Gamma
38. Chi Omega
39. Baptist Center
40. Tri-Delta



# Texas Western College

OF THE UNIVERSITY OF TEXAS

at El Paso

MEMBER

SOUTHERN ASSOCIATION OF COLLEGES

TEXAS ASSOCIATION OF COLLEGES

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ARTS *and* SCIENCES

MINES *and* ENGINEERING

NURSING

GRADUATE STUDY

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*Published bimonthly by* TEXAS WESTERN COLLEGE *at El Paso*

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El Paso, Texas, under the Act of August 24, 1912

*Bulletin for 1959 Fall Semester*

## CALENDAR FOR FALL SEMESTER — 1959

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

### SEPTEMBER

- 11—*Friday*. Condition, proficiency, and postponed examinations.  
Approved petition forms must be in the Office of the Registrar 4 days in advance.
- 14—*Monday*. General Faculty meeting, 3:30 p.m. Magoffin Auditorium.
- 14, 15—*Monday, Tuesday*. Freshman convocation and guidance tests.\*  
Magoffin Auditorium, 8:30 a.m.
- 14, 15—*Monday, Tuesday, 7-9:30 p.m.* Registration for night classes.  
Students must register for classes which meet 4:30 p.m. or later at this registration.
- 16, 17, 18—*Wednesday, Thursday, Friday*. Registration for day students.
- 19—*Saturday, 8:30-11:30*. Late Registration.  
Registration closes for the fall semester. After this date a student must have permission of his Academic Dean to register.
- 21—*Monday*. All classes begin.
- 24—*Thursday*. Last day for adding courses and transferring sections.

### OCTOBER

- 3—*Saturday*. Last day to register for the Graduate Aptitude Test.
- 24—*Saturday*. Graduate Aptitude Test, 1:00 p.m., Annex 1.

### NOVEMBER

- 16—*Monday*. Mid-semester reports.  
Last day courses can be dropped without grade of WF unless drop is initiated by the student's dean. Senior information forms due in academic dean's office.
- 26-28—*Thursday through Saturday*. Thanksgiving Holidays.

### DECEMBER

- 21 - January 2—*Monday through Saturday*. Christmas Vacation.

### JANUARY — 1960 —

- 4—*Monday*. Classes resume.
- 9—*Saturday, 2:00 p.m.* Arithmetic Test for Elementary Education  
Majors — Geology Building 209.
- 22-29—*Friday through Friday*. Final examinations for first semester.

\* Attendance at convocations and participation in the placement and guidance tests are required of all regular freshmen (full-time, "day" students with less than 30 semester hours college credit) who have not previously attended a long-session semester at Texas Western College.

## CALENDAR FOR SPRING SEMESTER — 1960

### FEBRUARY

- 1—*Monday*. Freshman convocation and guidance tests.<sup>o</sup>  
Magoffin Auditorium, 8:30 a.m.
- 1-2—*Monday, Tuesday*, 7-9:30 p.m. Registration for night classes.  
Students must register for classes which meet 4:30 p.m. or later at this registration.
- 2—*Tuesday*. Condition, postponed, and proficiency examinations.  
Approved petition forms must be in the Office of the Registrar 4 days in advance.
- 3, 4, 5—*Wednesday, Thursday, Friday*. Registration for day students.
- 6—*Saturday*, 8:30-11:30. Late Registration.  
Registration closes for the spring semester. After this date a student must have permission of his academic dean to register.
- 8—*Monday*. All classes begin.
- 11—*Thursday*. Last day for adding courses and transferring sections.

### MARCH

- 5—*Saturday*. Last day to register for the Graduate Aptitude Test.
- 21—*Monday*. Mid-semester reports.  
Last day courses can be dropped without grade of WF unless drop is initiated by the student's dean. Senior information forms due in academic dean's office.
- 26—*Saturday*. Graduate Aptitude Test, 1:00 p.m., Annex 1.

### APRIL

- 15-18—*Friday through Monday*. Easter Holidays.

### MAY

- 25-June 1—*Wednesday through Wednesday*. Final examinations.

### JUNE

- 4—*Saturday*. Commencement.

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

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

Board of Regents of The University of Texas

*Terms Expire, January 1961*

MRS. CHARLES DEVALL, Kilgore  
J. LEE JOHNSON, III, Fort Worth  
MERTON M. MINTER, San Antonio

*Terms Expire, January 1963*

J. P. BRYAN, Freeport  
THORNTON HARDIE, El Paso  
JOE THOMPSON, Dallas

*Terms Expire, January 1965*

W. W. HEATH, Austin  
WALES MADDEN, Amarillo  
A. G. MCNEESE, JR., Houston

BETTY ANNE THEDFORD, *Secretary*

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*President of The University of Texas*

LOGAN WILSON, PH.D., LL.D.



# TEXAS WESTERN COLLEGE

## Officers of Administration

JOSEPH ROYALL SMILEY

*President, 1958*

B.A., M.A., Southern Methodist University

Ph.D., Columbia University

CHARLES ALEXANDER PUCKETT, *Dean of Arts and Sciences, 1927*

B.A., The University of Texas; M.A., Harvard University

EUGENE McRAE THOMAS, *Dean of Mines and Engineering, 1930*

B.S., Texas College of Mines & Metallurgy; M.S., Massachusetts

Institute of Technology; E.M., Texas College of Mines & Metallurgy

ANTON HELMER BERKMAN, *Acting Dean of Graduate Division, 1927*

B.A., M.A., The University of Texas; Ph.D., University of Chicago

KATHRYN TERESA BURKE, *Dean, School of Nursing, 1957*

B.S. in Nursing Education, M.A. in Nursing Education, Columbia

University; Ed.D. in Health Education, Stanford University

JACK YUTHAS, *Dean of Student Life, 1956*

B.A., University of Wyoming; M.A., Michigan State College;

Ph.D., Purdue University

MRS. LOUISE FLETCHER RESLEY, *Acting Dean of Women, 1940*

B.A., Texas Western College; M.A., The University of Texas

LOUIS C. STAMATAKOS, *Dean of Men, 1958*

B.S., M.S., Ed.D., Indiana University

ALVIN ARLTON SMITH, *Business Manager, 1949*

B.A., M.A., North Texas State College

JOSEPH McSWAIN WHITAKER, *Registrar and Director of Admissions, 1954*

B.A., Agricultural and Mechanical College of Texas;

M.A., Texas Western College

BAXTER POLK, *Librarian, 1936*

B.A., Hardin-Simmons University; B.S. (Library Science), University

of Oklahoma; M.S. in L.S., Columbia University

REX ERVIN GERALD, *Curator of Museum, 1958*

B.A., University of Arizona; M.A., University of Pennsylvania

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Date indicates year of original appointment.

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**Administrative Assistants**

- LU VENIA EVERETT ARNOLD, *Assistant Registrar*, 1940  
B.A., Texas Western College
- HERBERT JOSEPH BELL, *Director of Health Service*, 1957  
B.S., M.D., University of Illinois
- LANIS LOY BOSWORTH, *Acting Director of Testing, Guidance, and Consultation*, 1950  
B.B.A., M.A., The University of Texas
- MIKE BRUMBELOW, *Assistant to President in Charge of Development*, 1950  
B.A., Texas Christian University
- FRANCES CLAYTON, *Assistant Librarian*, 1943  
B.A., Texas Western College; M.L.S., The University of Texas
- ROY CLARENCE FISK, *Assistant Business Manager*, 1949  
B.B.A., Texas Western College
- JOE W. DALEY, *Superintendent of Buildings and Grounds*, 1954
- JOSEPH H. HIGDON, *Auditor*, 1957  
B.S.C., Loyola University (Chicago)
- THOMAS OTIS JACKSON, *Director of Placement*, 1957  
B.B.A., Texas Western College
- BURT FRANKLIN JENNESS, *Director Emeritus of Health Service*, 1917  
M.D., Dartmouth College
- BRYAN STEELE JONES, *Director of News and Information*, 1956  
B.A., University of Arkansas
- JAMES KENNETH MARSHALL, *Assistant to Business Manager*, 1954
- MRS. FRANCES SMITH STEVENS, *Administrative Assistant, Office of the President*, 1931
-

**The Faculty**

- HAROLD EDWIN ALEXANDER, *Associate Professor of Chemistry*, 1955  
B.S., Texas Western College; M.A., Ph.D., University of Texas
- FREDERICK WILLIAM BACHMANN, *Professor of Modern Languages*, 1933  
B.A., M.A., Stanford University; Ph.D., University of Chicago
- HAROLD NOBLE BALLARD, *Assistant Professor of Physics*, 1957  
B.S., Texas Western College; M.S., Texas Agricultural and Mechanical College
- THOMAS GROCARD BARNES, *Professor of Physics*, 1938  
B.A., Hardin-Simmons University; M.S., Brown University
- ROBERT LEE BENNETT, *Ass't. Professor of Economics & Business Administration*, 1956  
B.A., M.A., University of Texas
- RALPH PORTER BENTZ, *Associate Professor of Mathematics*, 1952  
B.S., Pennsylvania State Teachers College; M.Ed., Pennsylvania State College;  
Ph.D., Peabody College
- ANTON HELMER BERKMAN, *Professor of Biological Sciences*, 1927  
B.A., M.A., University of Texas; Ph.D., University of Chicago
- CALEB ARUNDEL BEVANS, *Associate Professor of Modern Languages*, 1950  
S.B., Northwestern University; M.A., Ph.D., University of Chicago
- MRS. JANET RECATAZ BICKAL, *Instructor in English*, 1958  
A.B., Connecticut College for Women; A.M., Columbia University
- LELAH BLACK, *Assistant Professor of Business Administration*, 1946  
B.Ed., Western Illinois State Teachers College; M.A., University of Iowa
- JOHN PORTER BLOOM, *Assistant Professor of History*, 1956  
A.B., Univ. of New Mexico; M.A., George Washington Univ.; Ph.D., Emory Univ.
- CHARLES EDWIN BLOUNT, \* *Instructor in Mathematics*, 1955  
B.S., Texas Western College
- LANIS LOY BOSWORTH, *Assistant Professor of Psychology*, 1950  
B.B.A., M.A., University of Texas
- DUNCAN STEWART BOUGHNER, *Assistant Professor of Military Science & Tactics*, 1957  
B.S., Salem College; Major, Artillery, U. S. Army
- HALDEEN BRADY, *Professor of English*, 1946  
B.A., East Texas State Teachers College; M.A., University of Texas;  
Ph.D., New York University
- MICHAEL BRAND, *Associate Professor of Business Administration*, 1958  
B.A., University of Washington; M.A., University of Colorado
- FRED MEZA BREWER, *Instructor in Spanish*, 1955  
B.A., University of New Mexico; M.A., Texas Western College
- RALPH CLEMENS BRIGGS, *Associate Professor of Music*, 1950  
B.Mus., M.M., Cincinnati Conservatory of Music
- RUSSELL CHARLES BRINKER, *Professor of Civil Engineering*, 1958  
B.S.C.E., Lafayette College; M.S.C.E., C.E., University of Minnesota
- JOHN MORCAN BROADDUS, JR., *Instructor in History*, 1954  
B.A., M.A., Texas Western College
- MIKE BRUMBELOW, *Professor and Coordinator of Physical Education and Intramurals and Athletics*, 1950. B.A., Texas Christian University
- WILLIAM ANO BURGETT, *Instructor in Mathematics*, 1958  
B.S., Naval Academy; M.S., Purdue University
- KATHRYN TERESA BURKE, *Professor of Nursing*, 1957  
B.S., M.A., Teachers College, Columbia University; Ed.D., Stanford University
- ROBERT NORTHCUTT BURLINGAME, *Associate Professor of English*, 1954  
B.A., M.A., University of New Mexico; Ph.D., Brown University

\* Leave of absence, 1958-59

FACULTY

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- RICHARD WEBSTER BURNS, *Associate Professor of Education*, 1952  
 B.A., Iowa State Teachers College; M.S., Ph.D., State University of Iowa
- JOSEPH HARRY BUYS, *Professor of Military Science and Tactics*, 1958  
 B.S., Brigham Young University
- AUGUST NORBERT CARNOVALE, *Assistant Professor of Music*, 1958  
 B.M., Louisiana State University; M.A., Columbia University
- JOHN LEE CARRICO, *Associate Professor of Music*, 1951  
 B.S., M.A., Sul Ross State College; M.M., Northwestern University;  
 Ed.D., George Peabody College
- CLARENCE JOE CERVENKA, *Assistant Professor of Engineering Drawing*, 1952  
 B.S., M.S. (Industrial Education and Engineering Drawing), Agricultural  
 and Mechanical College of Texas, 1952
- ABRAHAM CHAVEZ, JR., *Instructor in Music*
- THOMAS MILLER CHISM, *Instructor in Bible*, 1956  
 B.A., Carson-Newman College; B.D., Southwestern Baptist Theological Seminary
- HAROLD COLDWELL, *Instructor in Mathematics*, 1957  
 B.S., United States Naval Academy
- RALPH MONROE COLEMAN, *Professor of Engineering Drawing*, 1946  
 B.S., M.S., North Texas State College
- MRS. MARY LILLIAN COLLINGWOOD, *Instructor in English*, 1947  
 B.A., Texas Western College; M.A., University of Michigan
- BENNY WESLEY COLLINS, *Asst. Professor of Health and Physical Education*, 1950  
 B.A., Texas Western College; M.S., University of Utah
- ROSS DAVIS COMPTON, *Instructor in Chemistry*, 1958  
 B.S., M.S., North Texas State College
- ELLEN WINIFRED COOGLER, *Assistant Professor of Art*, 1944  
 B.S., Sul Ross State College; M.A., Columbia University
- ROBERT G. COX, *Instructor in Military Science*, 1958  
 Sergeant, United States Army
- MRS. KATHLEEN CRAIGO, *Assistant Professor of Physical Education*, 1945  
 B.A., M.A., North Texas State College
- CECIL CLEMENT CRAWFORD, *Professor of Philosophy*, 1953  
 B.A., M.A., Ph.D., Washington University
- MELVIN M. CRAWFORD, *Assistant Professor of Health and Physical Education*, 1958  
 B.S., West Texas State College; M.A., George Peabody College;  
 Ed.D., The University of Texas
- JACK LEE CROSS, *Instructor in History and Government*, 1957  
 A.B., A.M., Ph.D., University of Chicago
- JAMES FRANCIS DAY, *Associate Professor of Education*, 1955  
 B.S., M.S., Utah State College; Ed.D., Stanford University
- FLOYD ARCHIE DECKER, *Professor of Electrical Engineering*, 1935  
 B.S. in E.E., E.E., Kansas State College; M.S.E., University of Michigan;  
 Registered Engineer
- JOHN WILLIAM DENNY, *Instructor in History and Government*, 1956  
 B.A., M.A., Texas Western College
- JOHN HOWARD DISMANT, *Associate Professor of Mining and Metallurgy*, 1958  
 E.M., Colorado School of Mines; M.S., Ph.D., University of Utah
- MRS. LURLINE HUGHES DOUGLAS, *Instructor in English*, 1954  
 B.A., M.A., University of Texas
- WALTER DUCOFF, *Instructor in Engineering Drawing*, 1957  
 B.S., University of New Mexico
- MRS. MARY ELEANOR DUKE, *Assistant Professor of Biological Sciences*, 1947  
 B.A., Texas Western College; M.A., University of Texas

- OLAV ELLING EIDBO, *Associate Professor of Music*, 1950  
B.A., Concordia College; M.A., Texas Western College; Ph.D., Univ. of N. Dakota
- FRANCIS ALAN EHMANN, *Instructor in English*, 1950  
B.A., Texas Western College; M.A., Harvard University
- GENE LLOYD ERION, *Associate Professor of Economics*, 1957  
A.B., Doane College; M.A., Ph.D., University of Wisconsin
- FLOYD EMMETT FARQUEAR, *Professor of Education*, 1942  
B.S., Miami University; M.A., University of Chicago; Ed.D., University of Texas
- ALONZO NEIL FOSTER, *Professor of Education*, 1951  
B.S., Southwest Texas State Teachers College; M.A., University of Missouri;  
Ed.D., Colorado State College of Education
- DONALD KEITH FREELAND, *Assistant Professor of Economics and Business Administration*, 1949. B.S., Austin College; M.B.A., North Texas State College
- FRANCIS LYLE FUGATE, *Assistant Professor of English*, 1949  
B.A., B.J., University of Missouri
- WAYNE EDISON FULLER, *Associate Professor of History*, 1955  
B.A., Univ. of Colorado; M.A., Univ. of Denver; Ph.D., Univ. of California
- MRS. GRETCHEN REINEMUND GABRIEL, *Assistant Professor of Spanish*, 1943  
B.A., M.A., Stanford University
- KENNETH ROSS GEORGE, *Instructor in Physical Education*, 1957  
B.A., Texas Western College
- REX ERVIN GERALD, *Assistant Professor of Anthropology*, 1958  
B.A., University of Arizona; M.A., University of Pennsylvania
- CHARLES HERMAN GLADMAN, *Associate Professor of Mathematics*, 1948  
B.S., M.A., Ohio State University
- MRS. LYNETTE GLARDON, *Instructor in Physical Education*, 1951  
B.A., M.A., Texas Western College
- HAROLD GODDARD,\* *Assistant Professor of Music*, 1949  
B.M., B.M.E., M.M., University of Colorado
- MANUEL GOMEZ, JR.,\* *Instructor in Electrical Engineering*, 1956  
B.S., Texas Western College
- PAUL WERSHUB GOODMAN, *Instructor in Sociology*, 1957  
B.A., M.S., Syracuse University
- JOHN FRASER GRAHAM, *Professor Emeritus of Mining and Metallurgy*, 1925  
B.S., E.M., Michigan College of Mining and Technology
- NORMAN GREGOR, *Assistant Professor of English*, 1955  
B.A., M.A., University of Minnesota; Ph.D., University of New Mexico
- GLADYS GREGORY, *Professor of Government*, 1928  
B.S., Southwestern University; M.A., Ph.D., University of Texas
- JOHN HERBERT HADDOX, *Assistant Professor of Philosophy*, 1957  
B.A., M.A., University of Notre Dame
- HENRY GLENN HAMPTON, *Instructor in Biological Sciences*, 1957  
B.A., Texas Western College
- JESSE APLEY HANCOCK, *Professor of Chemistry*, 1941  
B.S., M.S., Gonzaga University; Ph.D., University of Colorado
- FRANK RAY HARLAND, *Instructor in Speech and Drama*, 1958  
B.F.A., M.F.A., The University of Texas
- THEODORE DELANO HARRIS, *Instructor in History*, 1958  
B.A., University of Denver; M.A., Western Reserve University
- WILTZ HARRISON, *Associate Professor of Art*, 1948  
B.A., Texas Western College; M.A., University of Denver
- WADE JAMES HARTRICK, *Professor of Economics and Business Administration*, 1944  
B.A., Texas Technological College; M.B.A., Ph.D., University of Texas

\* Leave of absence, 1958-59

FACULTY

- JAMES CARDWELL HARVEY, *Assistant Professor of History and Government*, 1957  
 B.A., Southern Methodist University; M.A., University of Texas;  
 Ph.D., The University of Texas
- PAUL CLIFFORD HASSLER, JR., *Associate Professor of Civil Engineering*, 1948  
 B.S., Grove City College; M.S., University of New Mexico; Registered Engineer
- EVERETT BALDWIN HEINS, *Instructor in Business Administration*, 1957  
 B.B.A., Texas Western College
- MRS. LOZIER CONDON HENDERSON, *Associate Professor of Education*, 1949  
 B.A., University of Alabama; M.S., University of South Carolina;  
 Ed.D., The University of Texas
- RICHARD EUGENE HENDERSON, *Assistant Professor of Music*, 1952  
 B.A., College of Puget Sound; M.M., Florida State University
- CARL HERTZOG, *Special Lecturer and Director of Press*, 1948
- VIRGIL HICKS, *Associate Professor of Radio*, 1945  
 B.A., Texas Western College; M.A., University of Southern California
- MRS. ROBERTA MAY HOFFMAN, *Instructor in English*, 1955  
 B.A., Hunter College
- JOHN ANTHONY HOVEL, JR., *Instructor in Government*, 1958  
 B.A., M.A., University of Wisconsin
- MILES CONRAD HUFFSTUTLER, JR., *Assistant Professor of Mining and Metallurgy*, 1957  
 B.S., in Ch.E., University of Texas; M.Met.E., Rensselaer Polytechnic Institute
- GUY ERNEST INGERSOLL, *Associate Professor of Mining and Metallurgy*, 1947  
 E.M., University of Minnesota; Registered Engineer
- DILMUS DELANO JAMES, *Assistant Professor of Economics*, 1958  
 B.A., M.A., The University of Texas
- JOSEPH HOPKINS JAMES, *Assistant Professor of English*, 1938  
 B.A., M.A., University of Alabama
- JONES EUGENE JOHNSON, *Instructor in Business Administration*, 1958  
 B.B.A., Texas Agricultural and Mechanical College
- MRS. CLARICE MATTHEWS JONES, *Assistant Professor of Speech*, 1946  
 B.S., West Texas State College; M.A., Texas State College for Women
- BRYAN STEELE JONES, *Instructor in Journalism*, 1956  
 B.A., University of Arkansas
- CLYDE EASTMAN KELSEY, JR., *Assistant Professor of Psychology*, 1947  
 B.A., Texas Western College; M.A., University of Tulsa
- GEORGE EDWARD KISER, *Professor of Economics and Business Administration*, 1956  
 B.A., Stanford University; M.B.A., Ph.D., The University of Texas
- EDWIN JOHN KNAPP, *Professor of Mathematics and Physics*, 1931  
 Ph.B., Ph.D., University of Wisconsin
- ORVILLE CLEON KRUSCHWITZ, *Instructor in Mathematics*, 1956  
 A.B., Ohio Wesleyan University; M.A., George Peabody College
- WILLIAM WALTER LAKE, *Professor of Chemistry*, 1927  
 B.S., M.S., Ohio State University; Ph.D., University of Chicago
- EARLE JAMES LANDERS, JR., *Associate Professor of Biological Sciences*, 1956  
 A.B., M.S., University of Wyoming
- JOSEPH LEE LEACH, *Professor of English*, 1947  
 B.A., Southern Methodist University; Ph.D., Yale University
- ROBERT MILTON LEECH, *Associate Professor of Speech and Drama*, 1949  
 B.F.A., M.F.A., University of Texas
- EUGENE WALTER LEWIS, JR., *Assistant Professor of Chemistry*, 1956  
 B.S., St. Louis University; B.A., St. Mary's University;  
 M.S., Ph.D., University of Wisconsin
- MRS. MONA H. LOPER, *Instructor in Physical Education*, 1957

- RALPH LYNN LOWENSTEIN, *Assistant Professor of Journalism and Business Administration*, 1956  
B.A., M.S., Columbia University
- ROBERT JOSEPH MASSEY, *Assistant Professor of Art*, 1953  
B.A., Oklahoma Agricultural & Mechanical College; M.F.A., Syracuse University
- D. W. MAYES, *Instructor in Military Science and Tactics*, 1958  
Master Sergeant, U. S. Army
- GEORGE COURTNEY MCCARTY, *Asso. Professor of Health and Physical Education*, 1953  
B.S., M.A., New Mexico College of Agriculture and Mechanical Arts
- OSCAR HARRY MCMAHAN, *Associate Professor of Physics*, 1943  
B.S., Oklahoma Agricultural and Mechanical College; M.S., University of Arizona
- JOHN HAMILTON MCNEELY, *Associate Professor of History*, 1946  
B.A., American University; M.A., George Washington University
- JACK HOUSTON MEADOWS, *Associate Professor of Education, Coordinator of Teacher Training*, 1954  
B.S., M.A., Sam Houston State College; Ed.D., Texas Technological College
- MRS. LORAIN EXTER MERRILL, *Instructor in Music*, 1956  
B.M., M.M., American Conservatory of Music
- VLADIK ADOLPH MICULKA, *Assistant Professor of Mathematics*, 1955  
B.S., Southwest Texas State Teachers College; M.S., Texas Technological College
- JOHN JUDY MIDDAGH, *Associate Professor of Journalism*, 1948  
B.J., University of Missouri; M.A., Texas Western College
- NACIM MILEDI, *Instructor in Chemistry*, 1957  
B.S., Texas Western College
- FRANK FREEMAN MITER, *Instructor in Mathematics*, 1957  
B.S., United States Military Academy
- BARBARA MILDRED MODIC, *Instructor in Nursing*, 1958  
B.S.N., University of Pennsylvania; M.A., Teachers College, Columbia University
- ROSS MOORE, *Instructor in Physical Education*, 1940  
B.A., Texas Western College
- LEON DENNY MOSES, *Associate Professor of English*, 1927  
B.A., M.A., Columbia University
- SAMUEL DALE MYRES, JR., *Associate Professor of Government*, 1955  
B.A., M.A., Southern Methodist University;  
Ph.D., The University of Texas; LL.D., Trinity University
- LEIF NEPRUD, *Instructor in Mathematics*, 1956  
B.S., United States Military Academy
- LLOYD ALVENO NELSON, *Professor of Geology*, 1920  
E.M., Texas College of Mines; M.S., Ph.D., Univ. of Colorado; Registered Engineer
- LEONARD PAUL OCHS, *Assistant Professor of Military Science and Tactics*, 1956  
A.B., University of Missouri; Captain, United States Army
- MRS. CATHERINE BURNSIDE O'MALLEY, *Assistant Professor of Education*, 1955  
B.A., Texas Western College; M.A., University of Southern California
- ROBERT GLENN OMUNDSON, *Instructor in Mathematics*, 1957  
B.A., Texas Western College
- FLOYD BRELAND O'NEAL, *Instructor in Chemistry*, 1954  
B.S., The Citadel; M.S., Tulane University
- RAYMOND EDGAR PAST, *Associate Professor of English*, 1952  
A.B., University of Pennsylvania; M.A., Ph.D., University of Texas
- MRS. BULAH LILES PATTERSON, *Assistant Professor of Mathematics*, 1927  
B.A., University of Texas; M.A., University of Chicago
- PEARL OLIVE PONSFORD, *Assistant Professor of English*, 1936  
B.A., Wellesley College; M.A., Ph.D., University of Southern California

FACULTY

- EUGENE OLIVER PORTER, *Professor of History*, 1940  
B.A., Ohio Wesleyan College; M.A., Ph.D., Ohio State University
- CHARLES ALEXANDER PUCKETT, *Professor of Education*, 1927  
B.A., University of Texas; M.A., Harvard University
- JACK RIORDAN PYTCHER,\* *Instructor in Chemistry*, 1955  
B.S., Texas Western College
- MRS. JOAN PHELAN QUARM, *Instructor in English*, 1957  
B.A., Reading University (England) \*
- WILLIAM ROBERT PLUMBLEY, *Instructor in Health and Physical Education*, 1958  
B.A., Texas Western College
- HOWARD EDMUND QUINN, *Professor of Geology*, 1924  
E.M., M.S., University of Minnesota; Ph.D., Harvard University
- MRS. MARY KELLY QUINN, *Associate Professor of Sociology*, 1925  
B.A., Wellesley College; M.A., Boston University
- JERRY WARREN RAMSEY, *Instructor in Chemistry*, 1958  
B.A., Illinois College; M.S., Agricultural and Mechanical College of Texas
- WILLIAM WOOLSEY RAYMOND,\* *Professor of Electrical Engineering*, 1949  
B.S. (Electrical Engineering), University of Texas; M.S., University of Michigan
- JAMES BLANCHETTE REEVES, *Assistant Professor of Biological Sciences*, 1955  
B.S., M.S., Louisiana State University
- MRS. EVODIA A. REINNIKA, *Assistant Professor of Nursing*, 1958  
B.S., M.P.H., University of Minnesota
- MRS. LOUISE FLETCHER RESLEY, *Assistant Professor of Mathematics*, 1940  
B.A., Texas Western College; M.A., University of Texas
- MRS. BERTHA REYNOLDS, *Assistant Professor of Education*, 1928  
B.A., M.A., University of Colorado
- EUGENE CHARLES REYNOLDS, *Assistant Professor of Speech*, 1958  
B.A., Otterbein College; M.A., Bowling Green State
- JOSEPH CHARLES RINTELEN, JR., *Professor of Mining and Metallurgy*, 1949  
B.S., Brooklyn Polytechnic Institute; M.S., Cornell Univ.; Ph.D., Duke University
- EDGAR THOMAS RUFF, *Professor of Modern Languages*, 1945  
B.A., M.A., Northwestern University; Ph.D., University of Texas
- ALBERT PETER RUOTSALA, *Assistant Professor of Geology*, 1957  
B.A., M.S., University of Minnesota
- WILLIAM MAURICE RUSSELL, *Instructor in Modern Languages*, 1955  
B.A., Birmingham-Southern College; M.A., University of North Carolina
- ALLEN SAYLES, *Assistant Professor of Economics and Mathematics*, 1946  
A.B., University of Chicago
- ROBERT LOUIS SCHUMAKER, *Assistant Professor of Physics*, 1946  
B.S., Texas Western College; M.S., University of Arizona
- JOSEPH WALLACE SCRUGGS, *Assistant Professor of Chemistry*, 1946  
B.S., Texas Agricultural and Mechanical College; M.A., Texas Western College
- GEORGE QUINCY SEALE, *Instructor in Business Administration*, 1957  
LL.B., Southern Methodist University
- LE ROY GEORGE SELLS, *Professor of Health and Physical Education*, 1950  
A.B., Denison University; M.Ed., D.Ed., Boston University
- JOHN MCCARTY SHARP, *Associate Professor of Modern Languages*, 1949  
B.A., Westminster College; M.A., Ph.D., University of Chicago
- WILLIAM LLOYD SHEPHERD, *Assistant Professor of Mathematics*, 1952  
B.S., M.S., Oklahoma Agricultural and Mechanical College
- FRANK YUKIMASA SHIOJI, *Instructor in Chemistry*, 1956  
B.S., Texas Western College



- HARRY SCHULTZ SLUSHER, *Instructor in Mathematics*, 1957  
B.A., University of Tennessee
- MRS. GRACE KNOX SMITH, *Instructor in English*, 1953  
B.A., M.A., Texas Western College
- MRS. STELLA McMULLIN SMITH, *Assistant Professor of Business Administration*, 1946  
B.A., Bowling Green College of Commerce; M.S., University of Tennessee
- CHARLES LELAND SONNICHSEN, *Professor of English*, 1931  
B.A., University of Minnesota; M.A., Ph.D., Harvard University
- RICHARD DALE SPIESE, *Instructor in English*, 1958  
B.A., M.A., Pennsylvania State University
- LOUIS C. STAMATAKOS, *Instructor in Speech*, 1958  
B.S., M.S., Ed.D., Indiana University
- WILLIAM SAMUEL STRAIN, *Associate Professor of Geology*, 1937  
B.S., West Texas State College; M.S., University of Oklahoma
- REX WALLACE STRICKLAND, *Professor of History*, 1936  
B.A., Austin College; M.A., Southern Methodist Univ.; Ph.D., University of Texas
- ROBERT LEWIS TAPPAN, *Assistant Professor of Modern Languages*, 1954  
B.A., M.A., Texas Western College; Ph.D., Tulane University
- DUANE L. TEDRICK, *Instructor in Military Science and Tactics*, 1958  
Master Sergeant, United States Army
- PAUL EDWARD THETFORD, *Assistant Professor of Psychology*, 1957  
B.A., Louisiana State University; M.S., Tulane University
- EUGENE McRAE THOMAS, *Professor of Mining Engineering*, 1930  
B.S., (Mining Engineering), Texas College of Mines; M.S., Massachusetts Institute of Technology; E.M., Texas College of Mines; Registered Engineer
- GEORGE CAMBRIDGE TOMPKINS, *Assistant Professor of Business Administration*, 1958  
B.S., M.S., University of Illinois
- WILLIAM HARRY THONSON,<sup>o</sup> *Instructor in Art*, 1953  
B.S., Institute of Design of Illinois Institute of Technology
- JAMES ALEXANDER THORBURN, *Instructor in English*, 1956  
B.A., M.A., Ohio State University
- ENCEBRET A. THORMODSGAARD, *Professor of Music*, 1949  
B.A., Concordia College; M.A., Ed.D., Columbia University
- MRS. EDYTHE LUCILLE THREADCILL, *Instructor in Mathematics*, 1946  
B.A., Texas Western College
- WILBERT HELD TIMMONS, *Professor of History*, 1949  
B.A., Park College; M.A., University of Chicago; Ph.D., University of Texas
- JAMES HENRY TUCKER, *Instructor in Speech and Drama*, 1957  
B.S., University of Alabama; M.F.A., University of Texas
- MRS. ELEANORE HERNDON TULLEY, *Instructor in Biological Sciences*, 1958  
B.S., New Mexico State College; M.S., Iowa State College
- MARTHA RAY VANCE, *Instructor in Biological Sciences*, 1956  
B.A., Texas Western College
- HOWARD CLAY VANZANT, *Assistant Professor of Civil Engineering*, 1955  
B.S., Texas Western College
- MRS. EMILY HOLMES VOWELL, *Instructor in Geology*, 1955  
B.S., Texas Western College; M.S., University of Oklahoma
- JACK CARUTHERS, VOWELL, JR., *Instructor in History*, 1955  
B.S. in F.S., M.S. in F.S., Georgetown University; M.A., Texas Western College
- MRS. MARIE LANDAU WADDELL, *Instructor in English*, 1954  
B.A., Howard Payne College; M.A., Scarritt College

<sup>o</sup> Leave of absence, 1958-59

## FACULTY

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- MRS. ROBERTA RUTH WALKER, *Instructor in Business Administration*, 1948  
B.A., M.A., Texas Western College
- JIMMY REEVES WALKER, *Assistant Professor of Health and Physical Education*, 1958  
B.A., M.A., Texas Western College
- JOHN LEROY WALLER, *Professor Emeritus of History*, 1931  
B.S., University of Okla.; M.A., University of Colorado; Ph.D., University of Texas
- WILLIAM FLETCHER WEBB, *Assistant Professor of Modern Languages*, 1945  
B.A., M.A., University of Texas
- VERA WISE, *Professor of Art*, 1939  
B.A., Willamette University; Chicago Academy of Fine Arts; Kansas City Art. Inst.
- PHILIP WAYNE YOUNG, *Assistant Professor of Engineering*, 1957  
B.S. in C.E., Texas Western College; M.E. in S.E., Texas Agricultural and Mechanical College; Registered Engineer.
- JACK YUTHAS, *Assistant Professor of Psychology*, 1956  
B.A., University of Wyoming; M.A., Michigan State College;  
Ph.D., Purdue University
- 

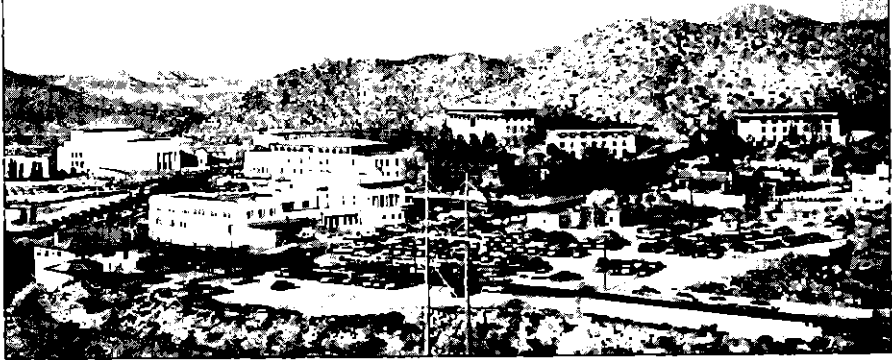
### **Part-Time Instructors**

- JACK JULES BOURQUIN, *Department of Engineering*, 1958  
B.S., Texas Western College
- JAMES D. CHAPMAN, *Department of Economics and Business Administration*, 1958  
M.B.A., Texas Technological College
- EUGENE ALAN DEAN, *Department of Mathematics and Physics*, 1958  
B.S., Texas Western College
- GILBERT R. GRADO, *Department of Engineering*, 1958  
B.S., Texas Western College
- EMILY HAMILTON, *Department of English and Speech*, 1958  
B.A., The University of Texas
- GUENTHER HINTZE, *Department of Engineering*, 1958  
M.S., Technological College of Breslau, Germany
- KENNETH L. LAFLEUR, *Department of Mathematics and Physics*, 1958  
B.S., Chicago Technical College
- ROBERT S. LIPSON, *Department of Economics and Business Administration*, 1958  
B.S., New York University
- CARLOS McDONALD, *Department of Mathematics and Physics*, 1958  
B.S., Texas Western College
- JOSE McDONALD, *Department of Engineering*, 1958  
B.S., Texas Western College
- MRS. MARJORIE THURSTON SMITH, *Department of English and Speech*, 1958  
B.S., Texas Western College
- HOWELL VICTOR ZINN, *Department of Art*, 1958  
B.F.A., University of Oklahoma
- 

### **Dormitory Staff**

- MARY L. WHITE, *Director, Women's Dormitories*
- MRS. WREN HOLLENBEAK, *Assistant Social Director, Bell Hall*
- MRS. HELEN B. MURRIE, *Social Director, Benedict Hall*
- MRS. JOE RAMSEY, *Social Director, Hudspeth Hall*
- MRS. MAY STUART, *Social Director, Worrell Hall*

*You are invited to view the campus  
at Texas Western College*



**F**OURTEEN different degrees are obtainable at Texas Western College in a wide variety of subjects from highly technical engineering degrees to liberal arts courses and teacher education programs, as well as graduate study in advanced fields.

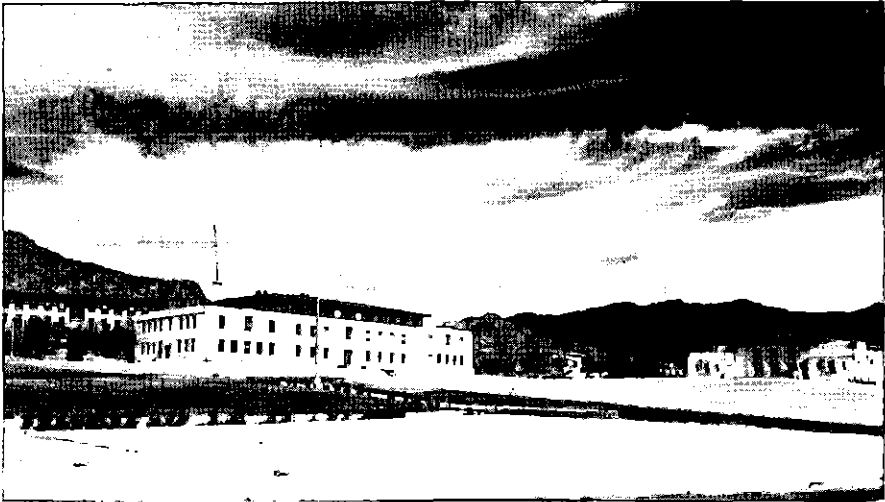
Although the college offers a range of courses from Art to Zoology, the largest departments are in English, Mathematics, and the Sciences, with library, laboratory and classroom facilities commensurate with the importance of these subjects.

### ***Student Expenses***

The tuition for a student who is a resident of Texas approximates \$112 a year (two semesters) and for non-residents about \$362. Board and room in the dormitories averages \$570 for two semesters. Although some costs may be higher in specialized fields, the average expense for books and supplies is about \$100 per year. See pages 139-142 for regulations about deposits and fees.

### ***Financial Assistance***

Several hundred students are employed on the college campus in jobs ranging from semi-skilled labor to laboratory and teaching assistants. Off campus work is also available in the El Paso area. More than 60 different scholarships are offered by organizations and industries to qualifying students. See pages 143-146 for information about scholarships and loans.



PHYSICS BUILDING

SCIENCE BUILDING

STUDENT UNION

### ***Over 4000 Students — 160 Faculty Members***

**T**EXAS WESTERN COLLEGE which has greatly expanded its facilities and staff in the last few years offers unusual opportunities through its location as well as its large faculty and well-equipped buildings.

El Paso, the fifth largest city in Texas, has the cultural advantages of a metropolitan area. There is a local symphony orchestra, under the direction of an internationally-known conductor. El Paso has a regular program of ballets, and musical and dramatic productions, and the residents of the city support many other intellectual and aesthetic activities.

Within a radius of from one to ten miles are found in great variety those geological formations and structures usually associated with the mineral industry, not only in metal mining, but in coal mining, oil fields, and non-metallic deposits as well. In opportunity for geological study, no school in the United States is more fortunately located.

One of the largest custom smelters in the world is situated near the College. Within a short distance is also a most modern electrolytic copper refinery, which has the largest capacity of any refinery in the world. Nearby are located a large cement plant, several large brick plants and three oil refineries. The manufacture of lime, tile, and other non-metallics is carried on in the immediate neighborhood of the College.

Local and adjacent industries offer opportunities for scientific and business observation. In addition to those mentioned above are non-ferrous

and potash mining, oil and natural gas production, cotton processing, textile and clothing manufacturing, and meat and vegetable packing. Several important army installations are nearby, including the famous rocket testing area at White Sands Proving Grounds in New Mexico.

### ***Buildings and Grounds***

THE PHYSICAL PLANT of the College is attractive, functional, and adequate for an extensive educational program. The campus proper, approximately sixty acres, is decidedly picturesque. The *unique architectural style* of the major buildings is Bhutanese, sometimes referred to as Tibetan, and the rugged mountainous setting is a fitting background.

In addition to administrative and academic facilities there are available for curricular and extra-curricular activities, a swimming pool, military science building, a newly enlarged Student Union Building and the *Sun Bowl* stadium. There are eight sorority and fraternity lodges adjacent to the campus, and 72 housing units available for married students.

Magoffin Auditorium has big-theater stage facilities with the most modern sound equipment—seats 1600 and is completely air-conditioned. Towering over the College is the antenna of KVOF-FM, a complete laboratory Radio Station operated by the Journalism and Radio Department.

### ***Dormitories***

THERE ARE FIVE modern and conveniently located residence halls on the campus, three for men and two for women. These five dormitories have a capacity of 350 students. Meals are served in a dining hall located between the two women's dormitories. Three meals daily are served, with the exception of Sunday night supper. All students residing in the dormitories are required to take their meals in the dining hall.



*Bell Hall – Women's Dormitory*

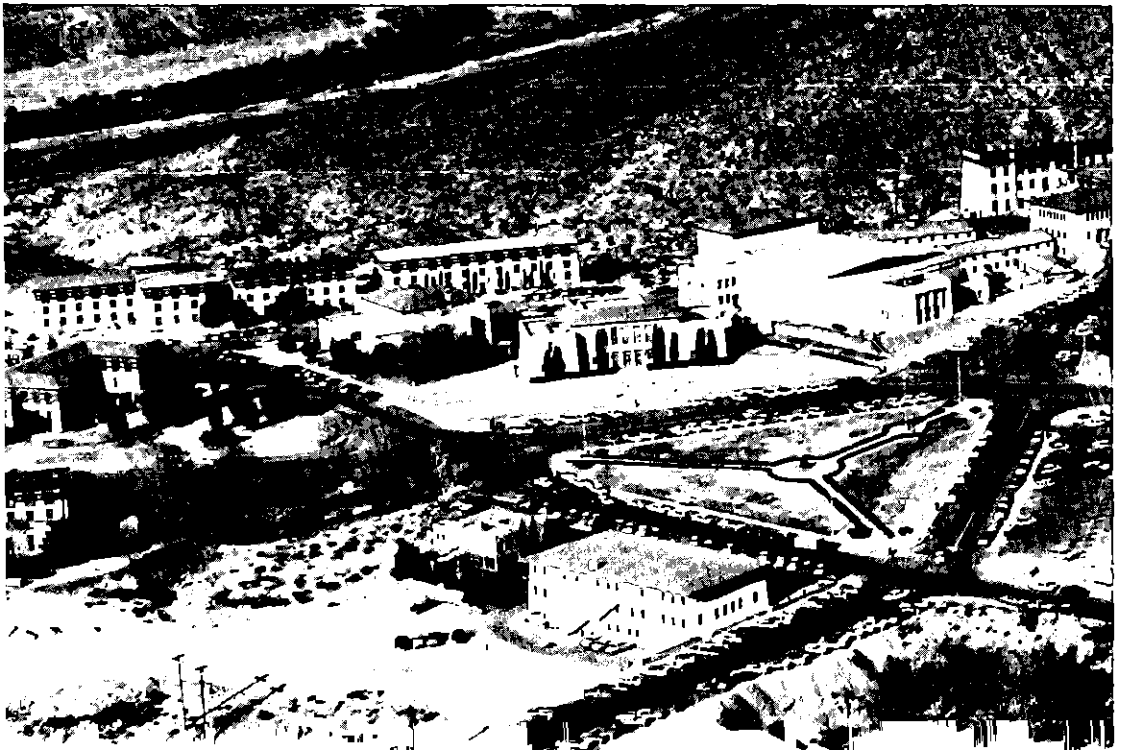
## ***History of the College***

THE PRESENT TEXAS WESTERN College of the University of Texas was created in 1913 as the School of Mines and Metallurgy by a legislative act. This act, passed by the Thirty-third Legislature, charged the institution with teaching and research in mining, metallurgy and allied subjects, and placed it under the control of the Board of Regents of The University of Texas.

The school opened in September, 1914, in the buildings of the former El Paso Military Institute, which were donated by the City of El Paso. In 1916 the Main Building burned, resulting in a decision to move to the present site west of Mount Franklin. The Thirty-fifth Legislature voted an emergency appropriation of \$100,000 for new buildings. In 1919 the Thirty-fifth Legislature made the "School" or "College" a branch of The University of Texas.

During the next several years the "College of Mines," as it became known, experienced a growth that justified expansion of its educational program. The liberal arts were included in the curriculum as early as 1927, and in 1931 the Board of Regents authorized the College to confer the degree of Bachelor of Arts. At successive dates the Bachelor of Science, Bachelor of Business Administration, and Bachelor of Music were added. In 1940 the board approved the Master of Arts degree. The degree of Bachelor of Science in Nursing was approved in 1956.

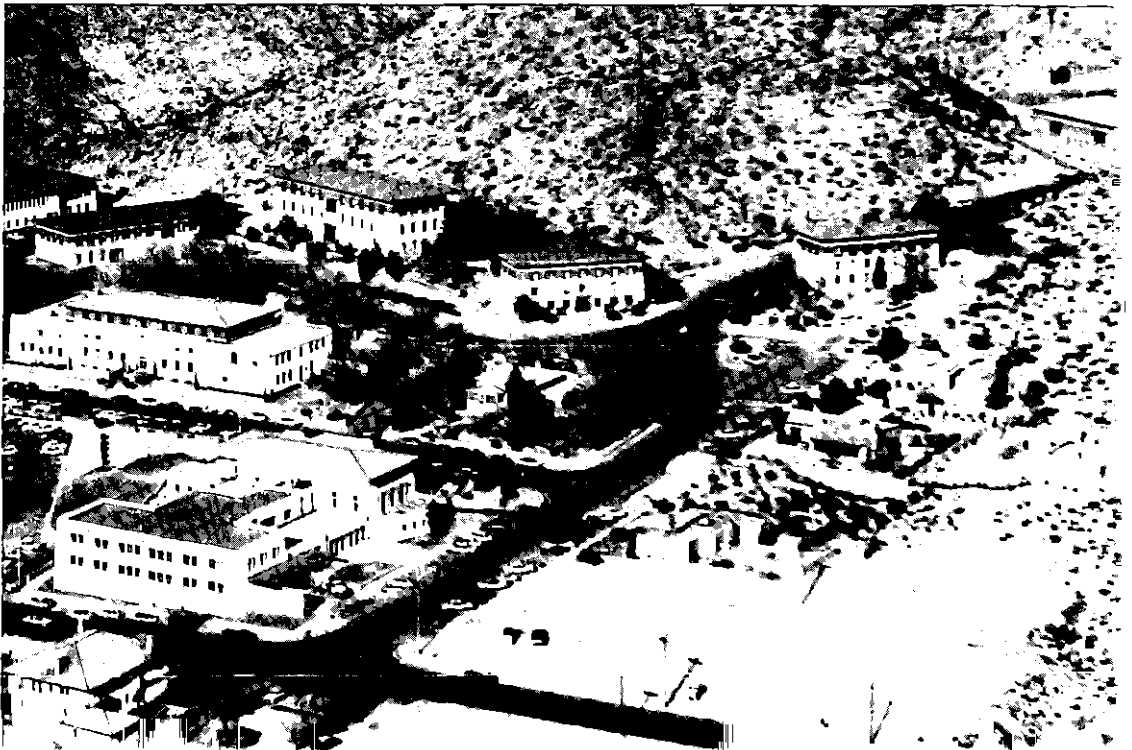
During early years the chief administrative official of the College was a dean who took his authority through the President of The University of



Texas, at Austin. In 1931 the Board of Regents provided a presidency and vested direct administrative authority in that office. From 1931 to 1950 the College operated directly under the Board of Regents. During the period September, 1950, to September, 1954, The University of Texas operated under a chancellorship system. In September, 1954, the office of Chancellor was abolished and the title of President was given to the chief administrative officer of the university system. Texas Western College retains a semiautonomous position with its president reporting directly to the president of the system.

The name of the school was changed to Texas Western College on June 1, 1949. This was done in order to recognize the expansion of the curriculum into various fields, thus enabling the College to present itself as an institution with a broad program, attractive to a variety of students from many different places.

Today Texas Western College, a coeducational institution with an enrollment of over 4,000 students, offers the following degrees: Engineer of Mines, Bachelor of Science in Mining Engineering, Metallurgical Engineering, Civil Engineering, and Electrical Engineering; Bachelor of Arts, Bachelor of Science in the Sciences, in Education, and in Nursing; Bachelor of Business Administration, Bachelor of Music, Master of Arts and Master of Science in Education. The College is primarily an undergraduate institution with emphasis on instruction. Proper attention, however, is given to the Masters Degree; and the curriculum is expanding on that level in accordance with faculty, facilities, and students available for graduate work.



LIBRARY BUILDING

MACOFFIN AUDITORIUM



### ***The Library***

THE OPEN-STACK COLLECTION of over 92,000 volumes is amplified by periodicals, microfilm files and a circulating collection of phonograph records, both music and literary selections. Several special collections particularly appropriate for our part of the country are maintained.

Especially notable are the geological, mining, Spanish literature and historical collections. Gifts of modern books in Spanish from Mr. John H. McNeely, a member of the history faculty, have made this collection worthy of special mention. The library is also collecting books and periodicals (both rare and current) pertaining to the social and political history of the Southwest. Valuable files of the United States Geological Survey and Bureau of Mines bulletins and reports are available.

A former student has established, anonymously, the Howard E. Quinn Fund for Geology books. The Commonwealth Foundation made contributions for the purchase of research materials in the Liberal Arts. The Jack C. Vowell Fund was given for books to be selected by the chairman of the History Department. A group from local accounting and credit organizations has established a fund for books in the field of Economics.

The library regularly receives over 800 periodicals—technical, general, literary and popular—and about ten newspapers. A microfilm file of the *El Paso Times* and other valuable local documents is available for research.

The facilities of the El Paso Public Library, the Professional Library of the El Paso Public Schools and the El Paso County Medical Society Library are available to students who wish to do specialized research. Active inter-library loan relations are maintained with other university and state libraries as well as a sponsoring membership in the Bibliographical Center for Research, Denver. This service is available to all students. Borrowers are required to pay all postage on loans from other libraries.

During 1956 the college library facilities were expanded when the building was remodeled after the Administrative Officers moved into their new building. In the 1958-59 building program the stack capacity will be practically doubled and library services again expanded.





### ***The Museum***

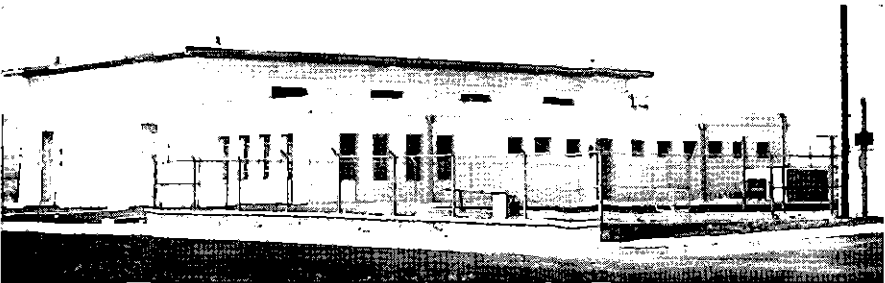
THE FIRST building a campus visitor sees as he turns onto College Avenue from the Mesa highway is the EL PASO CENTENNIAL MUSEUM which was allocated by the Commission of Control for the Texas Centennial Celebration. The building was located on the campus of the College by authority of the El Paso County Advisory Committee and was erected in 1936.

In addition to the preservation of natural and man-made objects of scientific and lay interest the Museum supplements the efforts of the College in the fields of education and research.

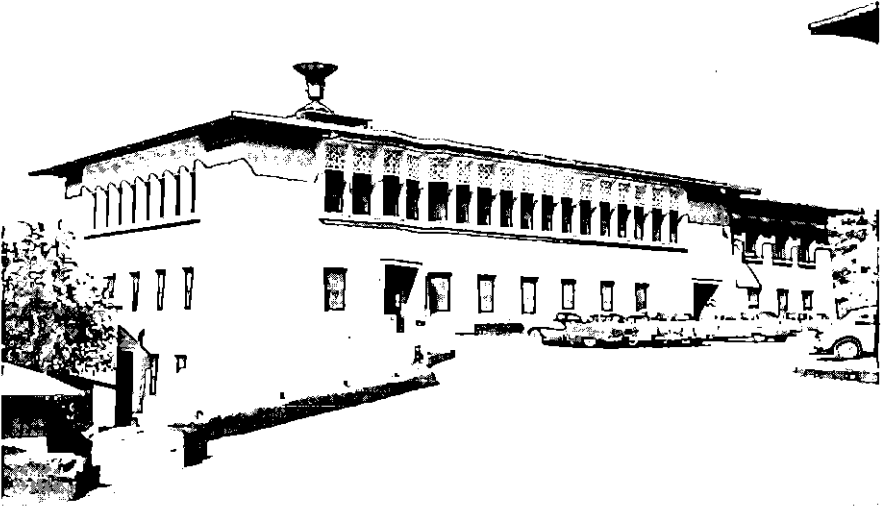
Guided lecture tours are offered to classes, clubs, and societies interested in the Museum's exhibits on anthropology, history, geology, paleontology, and zoology. The Museum's collection of Casas Grandes pottery is outstanding as is the mineral collection and the Peak collection of animal pelts and heads. Special illustrated lectures in the fields of science and natural history are offered to public school classes.

The unique location on the international border places the El Paso Centennial Museum in a position admirably suited for anthropological research in the virtually unknown regions of northern Mexico. Efforts are now being made by Museum personnel to initiate such a research program.

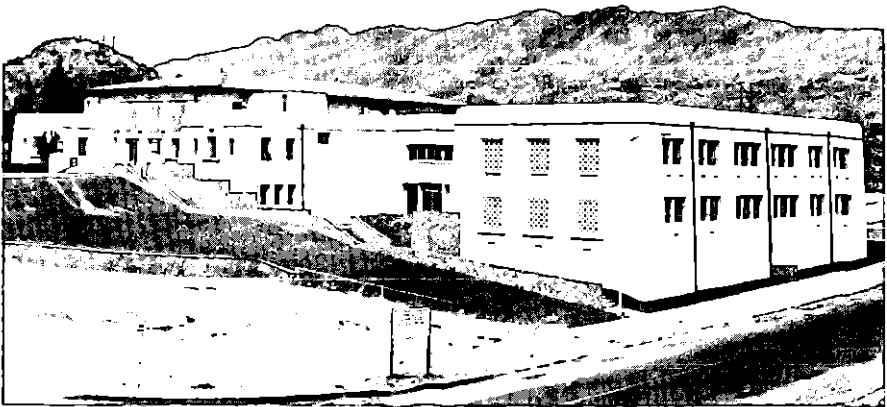
The general public and students alike are urged to visit the museum without special invitation. Except during holiday periods the building is open from eight to five, Monday through Friday; from eight to twelve on Saturday, and from two to five on Sunday.



*Women's Gymnasium and College Swimming Pool*



*Engineering Building – South Wing*



*Newly Enlarged Student Union Building*

## ***How to Enter Texas Western College***

**First:** If you do not have a personal copy of this catalog and an *Application Form*, write the Registrar, Texas Western College, El Paso, Texas. He will send them to you without charge and will be glad to answer any questions about your qualifications and about the College.

**Second:** Request the Principal or Superintendent of the high school from which you graduated to send the Registrar a complete record (transcript) of your high school work. *Transfer Students:* A student who has been enrolled in another college or university must have a complete and official transcript sent directly from the institution last attended. Sending your transcript does not obligate you to attend this college.

**Third:** When you receive the application form, fill it out and mail it to the Registrar. This is all you need to do. Within a few days, if you meet the entrance requirements, you will receive an official *Notice of Acceptance*.

**Room Reservation:** When you get your *notice of acceptance* you are eligible to apply for your dormitory room. All students whose homes are not in El Paso are required to live in the dormitories on the campus to the full capacity of the facilities. Send your application to the Business Manager, Texas Western College, enclosing a \$5 deposit.

### ***Freshman Guidance Service***

Provisions are made to assist you in getting off to a good start at Texas Western. The opening program of assemblies and personal advisory service by faculty members will introduce you to the College and acquaint you with its social and academic organizations and activities. Through the Bureau of Testing, Guidance, and Consultation, all Texas Western students are offered a complete program in aptitude testing and vocational counseling. This service aids the student in planning his college career and his life work. Note the dates, times and place of convocation and orientation exercises in the Calendar at the front of this catalog. You must attend these events so that you will have the necessary information for a good beginning in your school work at the College.

### ***Information for Veterans***

Texas Western College is approved by the Veterans Administration for the training of veterans. Provision has been made to help ex-service men and women obtain the benefits to which they are entitled. The Registrar will gladly answer questions about admission, credit for training in the armed services, college courses and programs of study.

A limited number of housing units are available on the campus for married veterans and their families. Inquiries should be addressed to the Business Manager, Texas Western College.

## **Regulations Concerning Registration**

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Admission to the College is controlled by the Faculty and administered by the Registrar. Information about registration procedures will be posted in the Administration Building several days before registration, and published in the local newspapers.

**Registration Dates:** Students are admitted four times during the year: September, January, June, and July. (See "Calendar" at front of this catalog.) Applications and transcripts should be submitted early to insure acceptance and to avoid delay in registration.

**Co-Education:** Both sexes are admitted to all branches of the College on equal terms regardless of race.

**Character:** The College is open only to applicants of good moral character.

**Health:** Each new student is required to have a physical examination at his own expense. This must be done before the students' registration can be completed. The form required may be obtained from the Admissions Office.

**Loyalty Oath:** By Act of the Texas Legislature, each applicant who is a citizen of the United States must take an oath of loyalty to the Government of the U. S.

**Hazing Pledge:** By Act of the Texas Legislature, each applicant is required to sign a pledge that he will not "encourage nor participate in hazing or rushes . . ."

**Late Registration:** Eligible students whose transcripts have been received by the Registrar will be allowed to register for

a limited time after the regular registration listed on the Calendar. Each class missed because of late registration will be counted as an absence, and classroom and laboratory work missed will be counted as zero unless the individual instructor grants the student permission to make up the work.

*Warning:* Due to class load limits, closed classes, and other factors, late registrants may expect some delay and difficulty in getting satisfactory programs. After classes have begun, the student will be asked to enroll for a reduced program, depending on the lateness of his registration. No one may register under any conditions after the final date for registration as listed in the Calendar.

**Freshman Orientation:** All regular freshmen (full-time "day" students with less than thirty semester hours college credit) who have not previously attended a long-session semester at Texas Western are required to attend convocations and take freshman tests, as noted in Calendar.

*Note:* A student's test grades do not affect his admission to the College. The tests are used for guidance into suitable major fields, and for placement in mathematics and English courses. Additional class periods are provided for the student who needs extra help in mathematics.

### **Procedure for Veterans**

As early as possible before registration, apply at the nearest Veterans Administration Office for a Certificate of Eligibility. (In case of previous attendance at another school under the Veteran's Bill, or change

of educational objective, a Supplementary Certificate is required.)

With the exception of the above requirement, veterans register in the same manner as other students, as set forth above.

### **Information for Foreign Students**

Specialized counseling is provided for students from other countries through the office of Dean of Students and the Registrar. Foreign students are counseled in all phases of their adjustment to college life from the time of their arrival on campus, and assistance is given in helping them

understand and conform with federal, state and local regulations.

Detailed information on the special problems of registration which will be encountered by foreign students may be obtained by writing the Registrar, Texas Western College, El Paso, Texas.

## **Methods of Admission to the College**

*There are three ways to qualify:*

1. High School Graduation. 2. Individual Approval. 3. Transfer from Other Colleges.

### **I. High School Graduation**

A graduate from an accredited high school with fifteen acceptable units as outlined in the following patterns and who has shown an aptitude for college studies will be granted clear admission. Drill subjects (penmanship, physical education, military training, etc.) are not acceptable. One unit of foreign language may be counted.

#### **Arts and Sciences Division**

a. English . . . . .	3
b. Mathematics . . . . .	2
c. Foreign Language, Natural Science, Social Studies . . . . .	4
d. Elective Units . . . . .	6
TOTAL . . . . .	15

#### **Mines and Engineering Division**

a. English . . . . .	3
b. Algebra . . . . .	2
Plane Geometry . . . . .	1
Solid Geometry . . . . .	½
c. Foreign Language, Natural Science, Social Studies . . . . .	4
d. Mechanical Drawing . . . . .	1
e. Physics . . . . .	1
f. Elective Units . . . . .	2½
TOTAL . . . . .	15

### **Quality Provisions Concerning High School Credits**

**Conditional Admission**—A student may be permitted to enter with a condition in any subject or group except English. Special consideration may be allowed an applicant with a strong high school record, provided he meets the English requirement and has fifteen acceptable units.

**Removal of Condition** — High school credit conditions will be removed without penalty if the student makes an average grade of C in his first thirty semester hours of work completed in the College. (See Engineering exceptions, below.) Otherwise, conditions must be removed by using college credit, on the basis of two semester hours college credit for one-half unit high school deficiency, and three semester hours for one unit deficiency.

**Engineering Exceptions** — All of the above provisions apply also to Engineering, except that mathematics, drawing and physics deficiencies must be made up after

admission to the College. A condition in algebra may be removed by taking Mathematics 3113, in solid geometry by Mathematics 2110, in mechanical drawing by Drawing 2100 and in physics by Physics 3100. While removing conditions the student must postpone part of his regular freshman work. If possible, it is better to clear admission conditions before entering the College.

#### **School of Nursing**

For admission to the basic collegiate school of nursing, an applicant must be in the upper third of her high school graduating class. An applicant must be between the ages of 17 and 35 years. When indicated, consideration will be given to applicants beyond 35 years of age. Enrollment in the School of Nursing is limited to the number for whom physical and clinical facilities and faculty are available.

#### **Basic Program Requirements:**

1. High school units of credit:
 

a. English . . . . .	3-4
b. Mathematics . . . . .	2
<i>(Algebra, Plane Geometry, Trigonometry)</i>	
c. Foreign Language . . . . .	2
<i>(2 years of one language)</i>	
d. Science . . . . .	2
<i>(Must be laboratory courses)</i>	
e. Social Studies . . . . .	3
<i>(History, Civics, Geography, Social Problems)</i>	
f. Elective Units . . . . .	2-3
TOTAL . . . . .	15
2. Interview with a representative of the School of Nursing.
3. Acceptable score on Pre-Nursing and Guidance Test.
4. A satisfactory physical (including chest x-ray and necessary immunizations) and dental health record.

These 4 factors are evaluated collectively.

## 2. Individual Approval Method

An applicant over twenty-one years old (veterans over eighteen) may, at the discretion of the Registrar, be admitted by Individual Approval. The applicant must furnish evidence that he has sufficient ability and seriousness of purpose to do the work desired with profit to himself and to the satisfaction of the College. He will be required to show that he has an adequate command of English. Applica-

tion shall be made on special forms obtainable from the Registrar.

A student admitted by Individual Approval may clear his admission condition by (1) making no grade below C in his first thirty semester hours of work completed at the College, or (2) making C average in his first sixty semester hours completed. Failure to make the required grade average will involve loss of college credit to absolve the admission deficiency.

## 3. Transfer from Other Colleges

**Eligibility** — Qualified applicants with honorable dismissal from other colleges and universities will be admitted to Texas Western. A student ineligible to return to the institution last attended will not be admitted to the College. Others who have been suspended, who have failed, have been placed on probation, or have a record of low grades may be refused admission, or admitted on probation or any other condition that seems suitable.

**Transcript** — Each applicant, including the student who seeks re-admission to Texas Western, is responsible for the direct transfer of an official transcript of his entire college record. This requirement applies to admission to the Summer Session as well as the Long Session.

Trouble and time will be saved by having the Registrar of the College last attended send a transcript directly to the Registrar of Texas Western College as soon as possible. Registration cannot be completed until this transcript is received.

An applicant who has attended another college is not at liberty to disregard his collegiate record and apply for admission on the basis of his high school record, but must submit his college record. This rule applies even if the student attended

another institution for only a brief period; it also applies without regard to whether or not the student wishes credit here for college work done elsewhere.

**Transfer of Credit** — College work completed in another accredited institution with grades of C or better may be transferred insofar as the transfer work will fit into the student's curriculum. D grades will ordinarily not be accepted. Subject to the grade requirement of C, work done in an unaccredited institution usually may be transferred in accordance with the policy of the state university of the state in which the unaccredited institution is located.

Subject to the C grade requirement, Junior College credit (freshman and sophomore levels) will be accepted up to a maximum of sixty-six semester hours insofar as the courses will fit into the student's curriculum.

### Extension and Correspondence

Not more than thirty semester hours of credit secured by extension and/or correspondence may be offered for a degree. Of that thirty semester hours not more than eighteen may be offered by correspondence.

**DEGREES OFFERED**

**At Texas Western College**

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***School of Mines and Engineering***

ENGINEER OF MINES

BACHELOR OF SCIENCE IN MINING ENGINEERING

BACHELOR OF SCIENCE IN METALLURGICAL ENGINEERING

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

---

***School of Arts and Sciences***

BACHELOR OF ARTS

BACHELOR OF SCIENCE (IN SCIENCES)

BACHELOR OF BUSINESS ADMINISTRATION

BACHELOR OF MUSIC

BACHELOR OF SCIENCE IN EDUCATION

---

***School of Nursing***

BACHELOR OF SCIENCE

---

***Graduate Division***

MASTER OF ARTS

MASTER OF EDUCATION

---

## **General Requirements for Undergraduate Degrees**

### **Degrees Offered**

*School of Mines and Engineering:* Engineer of Mines; Bachelor of Science in Mining Engineering, Metallurgical Engineering, Civil Engineering, Electrical Engineering, and Mechanical Engineering.

*School of Arts and Sciences:* Bachelor of Arts, Bachelor of Business Administration, Bachelor of Science in the Sciences and in Education, and Bachelor of Music.

*School of Nursing:* Bachelor of Science in Nursing.

No honorary degree will be conferred.

**Degree Plan**—The student should secure from his Dean by the beginning of his third year a plan for the completion of the requirements for the degree.

### **Catalog Requirements**

A student may obtain a degree according to the requirements of the catalog in force at the time of his admission to the College, or of a later catalog, subject to the restriction that all requirements must be completed within six years of the date of the catalog chosen.

Students entering Texas Western College for the first time during a summer session will be subject to the requirements set forth in the catalogue for the next long session.

### **Application for Degree**

At the beginning of the session in which he intends to graduate, the student will file a degree application with his Dean.

### **Personal Information Forms**

Each student must file a personal information form with the Placement Office by mid-semester of the semester in which he expects to graduate.

**Residence**—Work counting toward the degree must be completed in the College as follows: (1) a total of at least thirty semester hours, (2) twenty-four of the last thirty semester hours, and (3) six semester hours of advanced courses in the major subject.

### **Advanced Courses**

These are junior-senior or upper division courses and are designated by 3 or 4 as the second digit of the course number.

### **Complete Courses**

In a course extending through two semesters no credit is given toward a degree until both semesters have been completed.

### **Government and History Required**

By action of the Legislature of the State of Texas, all students entering the College after September, 1954, and all students

graduating after September 1, 1957 are required to complete six hours of work in government, covering the Federal and Texas Constitutions, Government 3210-3211. (Government 3211 not required of students who have completed four semesters of advanced R.O.T.C.)

By action of the State Legislature all students graduating from the College after July 1, 1956, must complete six hours of American History (three semester hours of which may be Texas History).

### **Grade Point Average**

The student must make an average of at least two grade points per semester hour in all courses taken at the college. In the case of interdivisional or intradivisional transfers grades of *F* or *WF* will not be counted provided they were made prior to the first transfer. Grades of *F* or *WF* made subsequent to the first transfer will be considered unless removed by repetition of the course.

### **One-Hour Courses**

All courses carrying only one hour of credit, except for those courses offered in the Division of Mines and Engineering, are subject to the following regulations:

(1) These courses may not be used to satisfy the requirements for removal of probation, (2) These courses may not be used in determining the requirements to maintain good scholastic standing, (3) Not more than eight of these one hour courses, exclusive of required courses in physical education and ROTC, may be used in fulfilling degree requirements, (4) These courses will not be used in compiling the honor roll.

### **Second Degree**

No second bachelors degree will be conferred until the candidate has completed at least twenty-four semester hours at Texas Western College in addition to those counted toward the bachelor's degree requiring the higher number of semester hours of credit. Two bachelor's degrees may not be awarded to any candidate at the same commencement.

Students working toward a second bachelor's degree will register as undergraduate students.

**Commencement**—no degree will be conferred except publicly at Commencement.

### **Absence from Commencement**

Each candidate is expected to attend in person the Commencement at which the degree is to be conferred. In case of absence, he must petition his dean in writing before the date of commencement to have the degree conferred in absentia.



# ***School of Mines and Engineering***

## **Degrees Offered**

### ENGINEER OF MINES

#### BACHELOR OF SCIENCE IN MINING ENGINEERING

*Options: 1. Mining 2. Mining-Geology*

#### BACHELOR OF SCIENCE IN METALLURGICAL ENGINEERING

#### BACHELOR OF SCIENCE IN CIVIL ENGINEERING

#### BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

#### BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

### **Engineer of Mines**

The degree of Engineer of Mines may be conferred upon graduates of Texas College of Mines who have received the degree of Bachelor of Science in Mining Engineering, and who attended a college prior to September 1, 1931. The applicant must have completed at least four years of successful professional work in mining, metallurgy, or geology, subsequent to receiving the bachelor's degree, and present a satisfactory thesis.

### **Bachelor of Science**

A candidate for a bachelor's degree in engineering must complete one of the following plans:

PLAN 1, leading to the degree of Bachelor of Science in Mining Engineering (Mining Option).

PLAN 2, leading to the degree of Bachelor of Science in Mining Engineering (Mining-Geology Option).

PLAN 3, leading to the degree of Bachelor of Science in Metallurgical Engineering.

PLAN 4, leading to the degree of Bachelor of Science in Civil Engineering.

PLAN 5, leading to the degree of Bachelor of Science in Electrical Engineering.

PLAN 6, leading to the degree of Bachelor of Science in Mechanical Engineering.

### **Special Requirements for Bachelor's Degree**

1. All candidates must take at least twenty-four hours in advanced courses, in class at the College, out of the last thirty semester hours offered.

2. Each student must make an average of at least a C in the specified courses taken in his degree-granting department.

3. In order to become a candidate for a degree, a student must (1) have satisfied all admission requirements, (2) have an over-all C average at the beginning of his last semester of attendance.

4. Each student is strongly urged to spend at least one summer in practical work related to the degree desired.

### **Work Preparatory to Other Engineering Degrees**

*Uniform Freshman Year -- Chemistry 4103-04, Drawing 2101, 2102, English 3101-02, Engineering 1101, History 3101, 3102, Mathematics 4115-16, Physical Education, or Military Science.*

Additional courses are offered at Texas Western College which will enable a student to complete at least the sophomore year for any engineering degree.

### **Abbreviations Used in Degree Plans**

Ch. . . . .	Chemistry	Go. . . . .	Government
Dr. . . . .	Drawing	Hi. . . . .	History
Ec. . . . .	Economics	M. . . . .	Mathematics
E. . . . .	English	Me. . . . .	Metallurgy
En. . . . .	Engineering	Mi. . . . .	Mining
Ge. . . . .	Geology	Ph. . . . .	Physics
Sp. . . . .	Speech		
P.E. . . . .	Physical Education		
M.S. . . . .	Military Science		

**PLAN 3 — Leading to the Degree of  
Bachelor of Science in Metallurgical Engineering**

	<i>Semester Hours</i>
Chemistry 4103-04, 2211, 4214, 4460 . . . . .	18
Drawing 2101, 2102 . . . . .	4
Economics 3101 . . . . .	3
English 3101-02, 3369 . . . . .	9
Engineering 1101, 3215, 2216, 4331, 4334, 2338, 3349 . . . . .	19
Geology 3101, 3216, 2217 . . . . .	8
Government 3210-11 . . . . .	6
History 3101, 3102 . . . . .	6
Mathematics 4115-16, 3213-14, 3325 . . . . .	17
Metallurgy 3301, 4302, 2303, 4308, 3402, 3403, 3404, 3405, 4407, 4408, 3409, 3410, 4411, 0421 . . . . .	43
Mining 1102, 3201, 2301 . . . . .	6
Physics 4215, 4216, 4317 . . . . .	12
Physical Education or Military Science . . . . .	4
<b>Total . . . . .</b>	<b>155</b>

**ARRANGEMENT OF COURSES**

*Freshman Year — Same as for Plan I*

<b>Sophomore Year</b>	
<b>FIRST SEMESTER</b>	<b>SECOND SEMESTER</b>
<i>Semester Hours</i>	<i>Semester Hours</i>
Ch. 2211, Qualitative Analysis . . . . . 2	Ch. 4214, Quantitative Analysis . . . . . 4
Eco. 3101, Principles of Economics . . . . . 3	Ge. 2217, Mineralogy . . . . . 2
Ge. 3216, Mineralogy . . . . . 3	Ma. 3214, Calculus . . . . . 3
Hi. 3102, History of The United States . . . . . 3	Mi. 3201, Elements of Mining . . . . . 3
Ma. 3213, Calculus . . . . . 3	Ph. 4216, Electricity, Magnetism and Wave Motion . . . . . 4
Ph. 4215, Mechanics and Heat . . . . . 4	*P. E. Service Course . . . . . 1
*P. E. Service Course . . . . . 1	
<b>Total . . . . . 19</b>	<b>Total . . . . . 17</b>

<b>Summer</b>	
<i>First Term</i>	<i>Second Term</i>
<i>Semester Hours</i>	<i>Semester Hours</i>
En. 3349, Heat Engineering . . . . . 3	En. 2216, Elementary Plane Surveying . . . . . 2
Go. 3210, American Government . . . . . 3	Go. 3211, American Government . . . . . 3
<b>Total . . . . . 6</b>	<b>Total . . . . . 5</b>

<b>Junior Year</b>	
<b>FIRST SEMESTER</b>	<b>SECOND SEMESTER</b>
<i>Semester Hours</i>	<i>Semester Hours</i>
En. 3215, Statics . . . . . 3	En. 4331, Electrical Circuits and Machines . . . . . 4
Ch. 4460, Physical Chemistry . . . . . 4	En. 4334, Mechanics of Materials . . . . . 4
Ma. 3325, Calculus . . . . . 3	En. 2338, Dynamics . . . . . 2
Me. 3301, General Metallurgy . . . . . 3	Me. 4302, Ore and Coal Dressing . . . . . 4
Mi. 2301, Mining Methods . . . . . 2	Me. 2303, Fire Assaying . . . . . 2
Ph. 4317, Light and Modern Physics . . . . . 4	Me. 4308, Physical Metallurgy . . . . . 4
<b>Total . . . . . 19</b>	<b>Total . . . . . 20</b>

<b>Senior Year</b>	
<b>FIRST SEMESTER</b>	<b>SECOND SEMESTER</b>
<i>Semester Hours</i>	<i>Semester Hours</i>
Me. 3403, Non-Ferrous Metallurgy . . . . . 3	E. 3369, Technical Writing . . . . . 3
Me. 3404, Hydrometallurgy . . . . . 3	Me. 3402, Ferrous Metallurgy . . . . . 3
Me. 4407, Metallography . . . . . 4	Me. 3405, Metallurgical Laboratory . . . . . 3
Me. 4408, Advanced Ore & Coal Dressing . . . . . 4	Me. 3409, Corrosion . . . . . 3
Me. 4411, Advanced Physical Metallurgy . . . . . 4	Me. 3410, Thermodynamics of Metals . . . . . 3
<b>Total . . . . . 18</b>	Me. 0421, Senior Trip . . . . . 0
	<b>Total . . . . . 15</b>

\*Not required if M.S. 2101-02 completed. Student may elect Health Education 3101 for 1 semester of P.E.

PLAN 4 - Leading to the Degree of

**Bachelor of Science in Civil Engineering**

	Semester Hours		Semester Hours
Chemistry 4103-04 . . . . .	8	Government 3210-11 . . . . .	6
Drawing 2101, 2102 . . . . .	4	History 3101, 3102 . . . . .	6
Economics 3101 . . . . .	3	Mathematics 4115-16, 3213-14, 3325 . . . . .	17
Engineering 1101, 2212, 2213, 3215, 4314, 3322, 4331, 4334, 3335, 2338, 3343, 3349, 3354, 1355, 2356, 3426, 1427, 3440, 3441, 3442, 3446, 3448, 3460, 3461 . . . . .	65	Metallurgy 3305 . . . . .	3
English 3101-02, 3369 . . . . .	9	Mining 2401 . . . . .	2
Geology 3101 . . . . .	3	Physics 4215, 4216, 4317 . . . . .	12
		Physical Education or Military Science . . . . .	4
		Speech 3101 . . . . .	3
		Approved Electives . . . . .	5
		Total . . . . .	150

**ARRANGEMENT OF COURSES**

**Freshman Year**

**FIRST SEMESTER**

	Semester Hours
Ch. 4103, General Chemistry . . . . .	4
Dr. 2101, Engineering Drawing . . . . .	2
E. 3101, Rhetoric and Composition . . . . .	3
Hi. 3101, History of the U. S. . . . .	3
Ma. 4115, Engineering Mathematics . . . . .	4
P. E. Service Course or M. S. Military Science . . . . .	1
Total . . . . .	17

**SECOND SEMESTER**

	Semester Hours
Ch. 4104, General Chemistry . . . . .	4
Dr. 2102, Descriptive Geometry . . . . .	2
E. 3102, Rhetoric and Composition . . . . .	3
En. 1101, Elementary Engineering Problems . . . . .	1
Hi. 3102, History of the U. S. . . . .	3
Ma. 4116, Engineering Mathematics . . . . .	4
P. E. Service Course or M. S. Military Service . . . . .	1
Total . . . . .	18

**Sophomore Year**

**FIRST SEMESTER**

	Semester Hours
Ec. 3101, Principles of Economics . . . . .	3
Ge. 3101, Physical Geology . . . . .	3
Go. 3210, American Government . . . . .	3
Ma. 3213, Calculus . . . . .	3
Ph. 4215, Mechanics and Heat . . . . .	4
*P. E. Service Course . . . . .	1
Total . . . . .	17

**SECOND SEMESTER**

	Semester Hours
En. 2212, Concrete Mixtures . . . . .	2
En. 2213, Plane Surveying . . . . .	2
En. 3215, Statics . . . . .	3
Co. 3211, American Government . . . . .	3
Ma. 3214, Calculus . . . . .	3
Ph. 4216, Electricity, Magnetism and Wave Motion . . . . .	4
*P. E. Service Course . . . . .	1
Total . . . . .	18

**Summer**

**First Term**

	Semester Hours
En. 4314, Field Surveying . . . . .	4
En. 2338, Dynamics . . . . .	2
Total . . . . .	6

**Second Term**

	Semester Hours
En. 3354, Fluid Mechanics . . . . .	3
Sp. 3101, Basic Principles of Speech . . . . .	3
Total . . . . .	6

**Junior Year**

**FIRST SEMESTER**

	Semester Hours
En. 4334, Mechanics of Materials . . . . .	4
En. 3349, Heat Engineering . . . . .	3
En. 1355, Fluid Mechanics Laboratory . . . . .	1
Ma. 3325, Calculus . . . . .	3
Me. 3305, Engineering Metallurgy . . . . .	3
Ph. 4317, Light and Modern Physics . . . . .	4
Total . . . . .	18

**SECOND SEMESTER**

	Semester Hours
E. 3369, Technical Writing . . . . .	3
En. 3322, Route Surveying . . . . .	3
En. 4331, Electrical Circuits and Machines . . . . .	4
En. 3335, Reinforced Concrete . . . . .	3
En. 3343, Elementary Structural Analysis . . . . .	3
En. 2356, Hydrology . . . . .	2
Total . . . . .	18

**Senior Year**

**FIRST SEMESTER**

	Semester Hours
En. 3426, Engineering Economics . . . . .	3
En. 1427, Reinforced Concrete Design . . . . .	1
En. 3441, Public Water Supplies . . . . .	3
En. 3448, Soil Engineering . . . . .	3
En. 3460, Indeterminate Structures . . . . .	3
Mi. 2401, Tunneling and Blasting . . . . .	2
Approved Elective . . . . .	2
Total . . . . .	17

**SECOND SEMESTER**

	Semester Hours
En. 3440, Highway Engineering . . . . .	3
En. 3442, Sewerage and Sewage Disposal . . . . .	3
En. 3446, Contracts and Specifications . . . . .	3
En. 3461, Structural Design and Theory . . . . .	3
Approved Elective . . . . .	3
Total . . . . .	15

\*Not required if M.S. 2101-02 completed. Student may elect Health Education 3101 for 1 semester of P.E.

DEGREE PLANS

PLAN 5 — Leading to the Degree of  
**Bachelor of Science in Electrical Engineering**

	<i>Semester Hours</i>
Chemistry 4103-04 . . . . .	8
Drawing 2101, 2102 . . . . .	4
Economics 3101 . . . . .	3
Engineering 1101, 3215, 2216, 3319, 3321, 4334, 2338, 4339, 4340, 3349, 3350, 3354, 3357, 4358, 4366, 3426, 3444, 3447, 3464, 4467, 4468 . . . . .	66
English 3101-02, 3369 . . . . .	9
Government 3210-11 . . . . .	6
History 3101, 3102 . . . . .	6
Mathematics 4115-16, 3213-14, 3325, 3326 . . . . .	20
Metallurgy 3305 . . . . .	3
Physics 4215, 4216, 4317 . . . . .	12
Physical Education or Military Science . . . . .	4
Approved Electives . . . . .	9
<b>Total</b> . . . . .	<b>150</b>

**ARRANGEMENT OF COURSES**

*Freshman Year — Same as for Plan 4*

<b>FIRST SEMESTER</b>		<b>Sophomore Year</b>		<b>SECOND SEMESTER</b>	
	<i>Semester Hours</i>		<i>Semester Hours</i>		<i>Semester Hours</i>
Ec. 3101, Principles of Economics . . . . .	3	En. 3215, Statics . . . . .	3	Co. 3211, American Government . . . . .	3
En. 2216, Elementary Plane Surveying . . . . .	2	Co. 3214, Calculus . . . . .	3	Me. 3305, Engineering Metallurgy . . . . .	3
Co. 3210, American Government . . . . .	3	Ph. 4216, Electricity, Magnetism and Wave Motion . . . . .	4	*P. E. Service Course or M. S. Military Science . . . . .	1
Ma. 3213, Calculus . . . . .	3	<b>Total</b> . . . . .	<b>16</b>	<b>Total</b> . . . . .	<b>17</b>
Ph. 4215, Mechanics and Heat . . . . .	4				
*P. E. Service Course or M. S. Military Science . . . . .	1				

<b>FIRST TERM</b>		<b>Summer</b>		<b>SECOND TERM</b>	
	<i>Semester Hours</i>		<i>Semester Hours</i>		<i>Semester Hours</i>
En. 3319, Elements of Electrical Engineering . . . . .	3	En. 3321, Elements of Electrical Engineering . . . . .	3	En. 3350, Heat Engineering . . . . .	3
En. 3349, Heat Engineering . . . . .	3	<b>Total</b> . . . . .	<b>6</b>	<b>Total</b> . . . . .	<b>6</b>

<b>FIRST SEMESTER</b>		<b>Junior Year</b>		<b>SECOND SEMESTER</b>	
	<i>Semester Hours</i>		<i>Semester Hours</i>		<i>Semester Hours</i>
En. 2338, Dynamics . . . . .	2	En. 4334, Mechanics of Materials . . . . .	4	En. 4340, Theory and Application of Electron Tubes . . . . .	4
En. 4339, Electronics . . . . .	4	En. 4358, Alternating-Current Circuits . . . . .	4	En. 4366, Direct-Current Machines . . . . .	4
En. 3354, Fluid Mechanics . . . . .	3	Ma. 3326, Differential Equations . . . . .	3	<b>Total</b> . . . . .	<b>19</b>
En. 3357, Alternating-Current Circuits . . . . .	3				
Ma. 3325, Calculus . . . . .	3				
Ph. 4317, Light and Modern Physics . . . . .	4				
<b>Total</b> . . . . .	<b>19</b>				

<b>FIRST SEMESTER</b>		<b>Senior Year</b>		<b>SECOND SEMESTER</b>	
	<i>Semester Hours</i>		<i>Semester Hours</i>		<i>Semester Hours</i>
E. 3369, Technical Writing . . . . .	3	En. 3426, Engineering Economics . . . . .	3	En. 3464, Servomechanisms . . . . .	3
En. 3444, Measurements and Instrumentation . . . . .	3	En. 4468, Alternating-Current Machines . . . . .	4	Approved Elective . . . . .	6
En. 3447, Lines and Networks . . . . .	3	<b>Total</b> . . . . .	<b>16</b>		
En. 4467, Alternating-Current Machines . . . . .	4				
Approved Elective . . . . .	3				
<b>Total</b> . . . . .	<b>16</b>				

\*Not required if M.S. 2101-02 completed. Student may elect Health Education 3101 for 1 semester of P.E.

PLAN 6 — *Leading to the Degree of*  
**Bachelor of Science in Mechanical Engineering**

	<i>Semester Hours</i>
Chemistry 4103-04 . . . . .	8
Drawing 2101, 2102 . . . . .	4
Economics 3101 . . . . .	3
Engineering 1101, 3215, 2216, 4323, 2324, 4334, 3336, 2338, 3354, 1355, 3362, 3375, 3376, 3381, 4382, 3426, 4477, 4478, 4479, 4480 . . . . .	60
English 3101-02, 3369 . . . . .	9
Government 3210-11 . . . . .	6
History 3101, 3102 . . . . .	6
Mathematics 4115-16, 3213-14, 3325, 3328 . . . . .	20
Metallurgy 3305 . . . . .	3
Physics 4215, 4216, 4317 . . . . .	12
Physical Education or Military Science . . . . .	4
Approved Electives . . . . .	15
Total . . . . .	150

**ARRANGEMENT OF COURSES**

*Freshman and Sophomore Years same as for Plan 5*

Note: The programs for the Junior and Senior years will not become available until 1960-61, and 1961-62 respectively.

**Summer**

FIRST TERM	<i>Semester Hours</i>	SECOND TERM	<i>Semester Hours</i>
En. 2338, Dynamics . . . . .	2	En. 3354, Fluid Mechanics . . . . .	3
En. 4334, Mechanics of Materials . . . . .	4	En. 3336, Manufacturing Processes . . . . .	3
Total . . . . .	6	Total . . . . .	6

**Junior Year**

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
En. 4323, Mechanisms . . . . .	4	En. 2324, Dynamics of Machinery . . . . .	2
En. 3375, Thermodynamics . . . . .	3	En. 1355, Fluid Mechanics Laboratory . . . . .	1
En. 3381, Heat Power Engineering . . . . .	3	En. 3362, Industrial Engineering . . . . .	3
Ma. 3325, Calculus . . . . .	3	En. 3376, Thermodynamics . . . . .	3
Ph. 4317, Light and Modern Physics . . . . .	4	En. 4382, Heat Power Engineering . . . . .	4
Total . . . . .	17	Ma. 3326, Differential Equations . . . . .	3
		Approved Elective . . . . .	3
		Total . . . . .	19

**Senior Year**

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
E. 3369, Technical Writing . . . . .	3	En. 3426, Engineering Economics . . . . .	3
En. 4477, Direct & Alternating Current . . . . .	4	En. 4478, Direct & Alternating Currents . . . . .	4
En. 4479, Machine Design . . . . .	4	En. 4480, Machine Design . . . . .	4
Approved Electives . . . . .	6	Approved Electives . . . . .	6
Total . . . . .	17	Total . . . . .	17

\*Not required if M.S. 2101-02 completed. Student may elect Health Education 3101 for 1 semester of P.E.

## **Suggestions for Beginning Students**

To give beginning students a picture of the college curriculum the outlines on the next three pages suggest plans for the Bachelor of Arts and the Bachelor of Science degrees. The Dean counsels students and approves their degree plan. The chairmen of departments give advice and explain special requirements for specific Majors.

The student who has difficulty in deciding what Major and Minor to choose can be guided by the plans outlined on pages 38-39 so that he will acquire the credits most applicable to the various Majors, in case he decides to change his program.

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## **Required Performance**

To stay in school and remain enrolled in the college students must maintain minimum standards, determined by grade points.

The grade of A is rated as 4 points per semester hour, a grade of B as 3 points, a grade of C as 2 points, a grade of D as one point.

A student in his first semester must make a minimum of 15 grade points; in his second, third or fourth semester he must make a minimum of 18 grade points. In the fifth and succeeding semesters he must make a minimum of 24 grade points. A student taking less than 12 semester hours must make at least a 1.5 grade point average for all work taken during the semester, or summer term.

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## **Honors at Graduation**

Honors will be granted at graduation in the following categories:

1. *Highest Honors* – Highest Honors will be granted to one person (except in case of a tie) who has the highest over-all average, based on grades and a profile which is submitted by every instructor who has taught the candidate.

In consideration of the candidate, his grade average will be given a value of 60 percent and the results of the profile a value of 40 percent.

No candidate shall be considered for Highest Honors who has less than a 3.80 grade average.

No transfer student shall be eligible for Highest Honors.

2. *High Honors* – High Honors will be granted to those students who have a minimum grade average of 3.80 and whose over-all average (grades plus profile) is not less than 3.60.

A transfer student must have had 75 percent of his work at Texas Western College to be eligible for High Honors.

3. *Honors* – Honors will be granted to those students who have maintained a minimum grade average of 3.60.

No profile will be used in the consideration of candidates for this category.

A transfer student must have had 50 percent of his work at Texas Western College to be eligible for Honors.

No student with an *F* on his record shall be eligible for Highest Honors.

No student shall be considered for any category of Honors if he has disciplinary action on his record in the Registrar's office.

# ***School of Arts and Sciences***

## ***Requirements for Undergraduate Degrees***

### BACHELOR OF ARTS

### BACHELOR OF BUSINESS ADMINISTRATION

### BACHELOR OF SCIENCE IN THE SCIENCES

### BACHELOR OF MUSIC

### BACHELOR OF SCIENCE IN EDUCATION

In the School of Arts and Sciences the College offers work leading to undergraduate degrees with majors in twenty-two fields, as well as prerequisite courses for students wishing to begin their legal and medical training at Texas Western College. In the following pages prerequisite work for the various degrees is set forth in tabular form.

### ***Bachelor of Arts***

#### ***Major Subjects***

Art	Geology	Physical Education
Biological Sciences	Government	Physics
Business Administration	History	Psychology
Chemistry	Inter-American Studies	Radio
Economics	Journalism	Spanish
English	Mathematics	Speech and Drama
French		

#### ***Minor Subjects***

Art	Geology	Philosophy
Biological Sciences	Government	Physical Education
Business Administration	Health Education	Physics
Chemistry	History	Psychology
Economics	Journalism	Radio
Education	Mathematics	Sociology
English	Metallurgy	Spanish
French	Music	Speech and Drama

**Extension and Correspondence Credit:** Not more than thirty semester hours of credit secured by extension and/or correspondence will be counted toward a degree. Not more than eighteen semester hours may be obtained by correspondence.

**Major Examinations:** At the discretion of the department concerned a major examination may be required in the major subject under the following conditions: (a) four hours written, or three hours written and one hour oral; (b) on the date fixed by the Calendar next preceding the completion of the degree; (c) the chairman of the department fixes the time and place, and supervises the examination; (d) in case of failure the student may take another examination no sooner than the next date provided in the Calendar.

## **Suggested Outline for the Bachelor of Arts Degree**

Basic Subjects generally required of all students in bold face type.

*Exceptions and variations are specified in the REQUIREMENTS for MAJORS on pages 40-44, and by the Departments at beginning of Course Descriptions.*

FRESHMAN YEAR	<i>Semester Hours</i>
<b>English 3101-02</b> .....	6
<b>American History 3101-02</b> .....	6
<b>Foreign Language</b> (completion of 4102) .....	4 (8)
<i>(Students with two years of High School credit in Language will not take 4101; but those who cannot pass beginner's examination will take 4101 and receive credit for 4 hours)</i>	
<b>Mathematics</b> .....	6
<b>Laboratory Science</b> .....	6
<b>Economics 3101</b> .....	3
<b>Health Education</b> .....	3
<b>Physical Education Service Course</b> (or Military Science) .....	2 (1)

*(16 to 19 hours are recommended for each semester)*

SOPHOMORE YEAR	
<b>English 3211-12</b> (or 3213-14 or 3215 and 3216) .....	6
<b>Government 3210-11</b> .....	6
<b>Foreign Language</b> (completion of 3201-02) .....	6
<b>Laboratory Science</b> .....	6
<b>Physical Education or Military Science</b> .....	2 (1)
<i>(a total of 3 semesters required)</i>	
<b>Courses in Major or Minor subjects</b> .....	6 (12)

THIRD AND FOURTH YEARS	
<b>Philosophy 3301 or 3311</b> .....	3
<b>"Major" subjects — advanced courses</b> .....	12
<i>(a total of 24 hours required in the Major subject)</i>	
<b>"Minor" subjects — advanced courses</b> .....	6
<i>(a total of 18 hours required in the Minor subject)</i>	
<b>Required Courses not already taken in previous years</b> .....	—
<b>Electives may be taken when all requirements have been met</b> .....	—

### **General Requirements for Bachelor of Arts Degree:**

- 123 semester hours of credits (minimum total)
- 30 hours must be taken in advanced courses
- 24 hours in Major (12 advanced)
- 18 hours in Minor (6 advanced)



## **Suggested Outline for Bachelor of Science Degree**

Rearrangement of this plan is permitted when time schedules conflict.

MAJOR SUBJECTS: *Biology, Chemistry, Geology, Mathematics, Physics.*

MINORS: *Biology, Chemistry, Geology, Mathematics, Metallurgy, Physics.*

*This plan does not apply to Bachelor of Science in Education, see p. 48.*

FRESHMAN YEAR	<i>Semester Hours</i>
<b>English 3101-02</b> .....	6
<b>American History 3101-02</b> .....	6
<b>Mathematics 4115-16</b> .....	8
<i>(Math 3101-02 may be substituted in the Biology Major, Geology Minor)</i>	
<b>Laboratory Science</b> .....	8
<b>Economics 3101</b> .....	3
<b>Health Education</b> .....	3
<b>Physical Education Service Course (or Military Science)</b> .....	2 (1)
<i>(16 to 19 hours are recommended for each semester)</i>	

SOPHOMORE YEAR	
<b>English 3211-12 (or 3213-14 or 3215 and 3216)</b> .....	6
<b>Government 3210-11</b> .....	6
<b>German 4101-02</b> .....	8
<i>(Required for Chemistry Major)</i>	
<b>Laboratory Science</b> .....	6
<b>Physical Education or Military Science</b> .....	2 (1)
<i>(a total of 3 semesters required)</i>	
<b>Courses in Major or Minor subjects</b> .....	6 (12)

THIRD AND FOURTH YEARS	
<b>Philosophy 3301 or 3311</b> .....	3
<b>Laboratory Science (other than Major or Minor)</b> .....	6
<b>"Major" subjects — advanced courses</b> .....	15
<i>(a total of 30 hours required in the Major subject)</i>	
<b>"Minor" subjects — advanced courses</b> .....	6
<i>(a total of 18 hours required in the Minor subject)</i>	
<b>Required Courses not already taken in previous years</b> .....	—
<b>Electives may be taken when all requirements have been met</b> .....	—

### **General Requirements for Bachelor of Science Degree:**

- 135 semester hours of credits (minimum total)
- 36 hours must be taken in advanced courses
- 30 hours in Major (15 advanced)
- 18 hours in Minor (6 advanced)

REQUIREMENTS for MAJORS

**Art**

**Semester Hours**

- 33—ART including basic art courses 3110, 2103-04, 2105-06, 3301-02, four hours of clays and metals (two of each) and twelve advanced hours.
- 18—MINOR SUBJECT including six advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.  
—FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES  
6—MATHEMATICS
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

**Business Administration**

**Semester Hours**

- 24—BUSINESS ADMINISTRATION including Business Administration 4111, 4112, 4361, 3320, 3321 and two other advanced hours.
- 18—MINOR SUBJECT including 6 advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.  
—FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES  
6—MATHEMATICS
- 21—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3103-04, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

\* *Philosophy 3311 is strongly recommended for Bachelor of Arts students.*

**Art — All-Levels Program**

**Semester Hours**

- 12—ENGLISH 3101-02 and 3211-12 or 3213-14 or 3215-16.
- 8—LANGUAGE: completion of 4102.
- 6—LABORATORY SCIENCE
- 6—MATHEMATICS
- 6—GOVERNMENT 3210-11.
- 6—HISTORY 3101-02.
- 3—ECONOMICS 3101.
- 3—PHILOSOPHY 3301.
- 3—INTRODUCTION TO THE FINE ARTS 3110.
- 3—HEALTH EDUCATION 3101 (men) or 3102 (women).
- 3—P. E. 1101 or 1102 and 1201 or 1202.
- 26—EDUCATION 3101-02, 3201, 3202, 3204, 3204, 4401, 4403.
- 50—ART  
Two semesters of Basic Design 2103 and Basic Drawing 2105; Life Drawing 2121, Graphics 2131, and two semesters of Metals 2141, Ceramics 2181, Painting 2211, Advertising Design 2161; Art History and Appreciation 3301, 3302; Art Teaching Methods 2391, 2392.  
6 hours of upper level art courses in one area.  
6 hours art electives.  
A total of 131 to 135 hours required. A grade average of 2.5 in the teaching field and in English is necessary for graduation and certification.

**Economics**

**Semester Hours**

- 24—ECONOMICS 3103-04, 3303, three of the following five courses: 3310, 3330, 3340, 3365, 3375; six other advanced hours.
- 18—MINOR SUBJECT including 6 advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.  
—FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES  
6—MATHEMATICS
- 19—GOVERNMENT 3210-11, Business Administration 4361, History 3101 and 3102, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

**English**

*Semester Hours*

- 24—ENGLISH including 3101-02, 3211-12 or 3213-14 or 3215 and 3216, and 12 advanced hours.
- 18—MINOR SUBJECT including 6 advanced hours.
  - FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES
- 6—MATHEMATICS
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
  - ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

**History**

*Semester Hours*

- 24—HISTORY including History 3101 and 3102, and twelve advanced hours.
- 18—MINOR SUBJECT including 6 advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
  - FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES
- 6—MATHEMATICS
- 18—GOVERNMENT 3210-11, Economics 3101, \*Philosophy 3301 or 3311, Geography 3210, and three semester hours of Sociology.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
  - ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

† A comprehensive examination in Spanish is required.

\* Philosophy 3311 is strongly recommended for Bachelor of Arts students.

**Government**

*Semester Hours*

- 24—GOVERNMENT including Government 3210-11 and twelve advanced hours.
- 18—MINOR SUBJECT including 6 advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
  - FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES
- 6—MATHEMATICS
- 12—HISTORY 3101, 3102, Economics 3101, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
  - ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

**Inter-American Studies**

*Semester Hours*

- ECONOMICS 3101-02, 3366, and three additional hours of advanced Economics. History 3101 and 3102, 3347, and either 3348 or 3349. Government 3332 or 3333. Spanish 4101-02, 3201-02, 3357, and one of the following: 3324, 3360, 3362, 3363, 3364, 33651, 3366. Psychology 3201 and Philosophy 3301 or 3311. Twelve additional hours from Business Administration, Economics, Government, History, Languages and Sociology 3336.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
- 12—LABORATORY SCIENCES
- 6—MATHEMATICS
- 6—GOVERNMENT 3210-11.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
  - ELECTIVES to make a minimum of 123 semester hours including 30 hours in advanced courses.

REQUIREMENTS for MAJORS

**Health and Physical Education**

Requirements for the degree of Bachelor of Arts with a major in Health and Physical Education leading to the recommendation by Texas Western College for an all-level certificate for teaching in the Public Schools of Texas.

**Semester Hours**            **PLAN I**

- 12—ENGLISH 3101, 3102,\* and 3211-12 or 3213-14 or 3215-16.
- 12—ZOOLOGY 3101, 3102 and Biology 3202, 3203.
- 6—MATHEMATICS
- 6—GOVERNMENT 3210-11.
- 6—HISTORY 3101-02.
- 3—ECONOMICS 3101.
- 3—PHILOSOPHY 3301 or 3311.\*
- 6—SPEECH
- 3—BIOLOGY 3301.
- 3—PHYSICAL EDUCATION 1101-02, 1201 or 1202.
- 3—HEALTH EDUCATION 3101 or 3102.
- 26—EDUCATION 3101, 3102, 3201, 3202, 3203, 3204, 4401, and 4403.
- 30—PHYSICAL EDUCATION: (Men) 3101, 3102, 3202, 3203, 3205, 3303, 3304, 3412, 3413, and Health Education 3302.  
(Women) 3101, 3104, 3202, 3203, 3205, 3302, 3303, 3304, 3413, and Health Education 3302.
- 6—ELECTIVES

**PLAN II**

Degree requirements leading to Bachelor of Science in Education with a first teaching subject Physical Education may be found on page 62 of the catalogue for 1958-59. The prescribed Physical Education courses for men under this program are: Physical Education 3101, 3102, 3311, 3202, 3203, 3303, 3304, 3409, 3412 and 3413. The prescribed Physical Education courses for women under this program

are: Physical Education 3101, 3104, 3311, 3202, 3203, 3302, 3303, 3304, 3413, and H.E. 3302.

*Notes*

Physical Education 3410 may be substituted for any of the advanced Physical Education courses in either Plan I or Plan II with the permission of the department chairman.

Philosophy 3301 is strongly recommended for Bachelor of Arts students in Physical Education.

A grade average of at least 2.5 is required in Physical Education courses in approving a student for graduation with a major in Physical Education.

A grade average of at least 2.5 or a proficiency test in English grammar and composition courses is required in approving a student for certification in Health and Physical Education.

**Journalism**

**Semester Hours**

- 24—JOURNALISM including Journalism 3107, 3201-02, 3305 and 3312 and six advanced hours.
- 18—MINOR SUBJECT including 6 advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.  
—FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES
- 6—MATHEMATICS
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.  
—ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

\* Philosophy 3311 is strongly recommended for Bachelor of Arts students.

**Semester Hours**

**Mathematics**

- 24—MATHEMATICS including Mathematics 4115-16, 3213-14, and ten advanced hours. If student does not have admission credits in solid geometry from high school, Mathematics 2110 is also required.
- 18—MINOR SUBJECT including 6 advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
  - FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

**Modern Language**

**Semester Hours**

- 24—Semester hours in one language including Courses 4101-02 and 3201-02 (or placement) and twelve advanced hours. Major examination required.
- 18—MINOR SUBJECT including 6 advanced hours.
  - Completion of Course 3201-02 in a second foreign language.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
- 12—LABORATORY SCIENCES
- 6—MATHEMATICS
- 21—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311; for Spanish majors: History 3347 or 3348 or 3349; for French majors: History 3342 or equivalent.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

\* Philosophy 3311 is strongly recommended for Bachelor of Arts students.

**Semester Hours**

**Psychology**

- 24—PSYCHOLOGY, including Psychology 3201 and twelve advanced hours including Psychology 3317 and Psychology 3421.
- 18—MINOR SUBJECT including 6 advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
  - FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCE including Zoology 3101-02.
- 6—MATHEMATICS
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

**Radio - Television**

**Semester Hours**

- 24—RADIO including Radio 3102, 3214-15, 3330-31 and six other advanced hours.
- 18—MINOR SUBJECT including 6 advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
  - FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES
- 6—MATHEMATICS
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

REQUIREMENTS for MAJORS

**Science**

*Semester Hours*

- 24—MAJOR SUBJECT including twelve advanced hours.
- 18—MINOR SUBJECT including six advanced hours. Minor must be another science unless otherwise recommended by the chairman of the major department and approved by the dean.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.  
—FOREIGN LANGUAGE: completion of 3201-02.
- 6—MATHEMATICS. Mathematics 4115-16 required for majors in Chemistry and Physics and for minors in Physics.
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, †Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.  
—ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

**Speech and Drama**

*Semester Hours*

- 24—SPEECH AND DRAMA including twelve advanced hours.
- 18—MINOR SUBJECT including six advanced hours.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.  
—FOREIGN LANGUAGE: completion of 3201-02.
- 12—LABORATORY SCIENCES
- 6—MATHEMATICS
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.  
—ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major and minor subjects.

†Philosophy 3301 is strongly recommended for the Bachelor of Arts in Science degree.

\*Philosophy 3311 is strongly recommended for Bachelor of Arts students.

**Pre-Law**

Students entering Texas Western College in the fall semester of 1959, or at any time thereafter, will not be permitted to offer a Pre-Law major in fulfillment of any degree requirement. It has been demonstrated by experience that the ordinary student is better prepared for the completion of his legal studies if he has obtained a bachelor's degree before admission to law school. Students having questions concerning this or any other matter relating to pre-legal studies are urged to consult the Pre-Law Advisor for additional information.

**Pre-Medical**

Students who plan to satisfy requirements for admission to a school of medicine, a school of dentistry, and a school of veterinary medicine, or a school of medical technology are requested to consult with the Chairman of the Department of Biological Sciences (Pre-Medical Advisor).

### **Bachelor of Science (Sciences)**

*Major Subjects:* Biology, Chemistry, Geology, Mathematics, Physics.

*Minor Subjects:* Biology, Chemistry, Geology, Mathematics, Metallurgy, Physics.

**Semester  
Hours**

- MAJOR: at least 30 semester hours including 15 semester hours of advanced courses. (Specified for Chemistry: Chemistry 4324, 4321-22, 4460, 4461, 6 additional advanced semester hours in Chemistry, and German 4101-02.)
- MINOR: at least 18 semester hours including 6 semester hours of advanced courses.
- 6—Another laboratory science as listed above. For the Mathematics Major, 12 semester hours of another of the sciences listed above.
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311.
- \*Philosophy 3301 is strongly recommended for the Bachelor of Science degree.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
- MATHEMATICS 4115-16 (Exception: Mathematics 3101 and 3102 may be substituted in the Biology major, Geology minor.)
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of at least 135 semester hours, including a total of 36 semester hours in advanced courses. Foreign language should be included if the student plans graduate work.

### **Bachelor of Business Administration**

**Semester  
Hours**

- 42—BUSINESS ADMINISTRATION including 4111, 4112, 4361, 3320-21, 3325-26, 3251, 3331, 3346.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
- 6—LABORATORY SCIENCES
- 6—MATHEMATICS 3103 and 3104.
- 27—SOCIAL STUDIES: Government 3210-11; Economics 3103-04, 3375; History 3101 and 3102; Philosophy, 3 semester hours; Psychology, 3 semester hours.
- 3—SPEECH
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of 123 semester hours including 30 hours in advanced courses. Not more than 66 semester hours may be in the major subjects.

### **Bachelor of Music**

*Major Subjects:* Music Theory and composition; Music Education: All-level, Vocal or Instrumental teaching; Applied Music: Orchestral Instruments; Applied Music: Organ, Piano; Applied Music: Voice.

*Note for Music Majors:* Auditions in Voice are required of all Music Majors upon entering college, in order to acquaint beginners with their potentialities and to encourage development of a broad musical background.

A private interview and a proficiency test are required in Music Theory to determine the level of study.

*Note for majors in Music Education:* A grade average of 2.5 in the teaching field, Education and Music Education, is necessary for permission to do student teaching and for graduation.

A grade average of 2.5 in oral and written English is necessary for permission to do student teaching and for graduation. If less than 2.5, English 3220 is required.

Elementary Education 3302 is required of students planning to teach reading and the language arts; Elementary Education 3303 is required of students planning to teach social studies, arithmetic, and science.

## REQUIREMENTS for MAJORS

*Note for minors in Music:* A minor in music requires participation in the ensemble of the major instrument (band, choir or orchestra), the number of semesters depending on background of student.

*Note for Graduate Students minoring in Music:* Participation in the ensemble of the major instrument required of full-time students registered for 6 or more semester hours in Music; credits are not counted towards the degree.

### Music Theory and Composition

1. (a) Music theory—35 semester hours.  
(b) Applied music—32 semester hours including 18 hours, secondary level, of the major instrument, 8 hours, or the equivalent, of piano, and 6 hours of secondary instruments.  
(c) Music education — 3 semester hours.  
(d) Music literature — 12 semester hours in addition to choral or band literature taken each semester in residence.  
(e) Participation in the ensemble of the major instrument (choir, band, or orchestra) each semester in residence. Only 8 semester hours may be offered.  
(f) Recital participation and/or attendance considered as laboratory for other music courses.  
(g) Essentials of Acoustics and Music Theory 3113.
2. English 3101-02, and 3211-12 or 3213-3213-14 or 3215 and 3216.
3. Government 3210-11; History 3101 and 3102.
4. Three semesters of Physical Education (not required of students taking three semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in the freshman and sophomore years.
5. Enough other courses to make at least 128 semester hours including a total of 30 semester hours in advanced courses. In most cases students will have more than the minimum number of hours, depending upon how they elect to satisfy requirements 1b, 1d and 1e, and upon the quality of work done in applied music.

### Music Education

For certification in All-level teaching, instrumental or vocal emphasis. (For details, consult chairman of music department.)

1. Music theory — 2111-12, 3114, 3213-14, 2315, 3411 or 3412.
2. Applied music—  
*Instrumental field:* 12 hours, secondary level, of a major instrument; 4 to 6 hours, or equivalent, of piano; 2 to 4 hours of voice and 10 hours of secondary instruments.  
*Choral field:* 12 hours, secondary level, of a major instrument (voice, piano, organ). A minimum of 8 hours of both piano, or the equivalent, and voice required; 10 hours additional, including one secondary instrument in preparation for ensemble participation; vocalists include Diction 3190.
3. Pre-Professional courses: Ed. 3101-02.
4. Music education — 3336, 3433, 3331, 3333.
- \*5. Professional Laboratory Experiences in Teaching:  
All-level Music Ed. 4401, 4402.
6. Music Literature — 3121 or 3122 and 3321 or 3322.
- \*7. Fine Arts—3110; Philosophy 3301 or 3412.
8. Physics of Sound—3106. Essentials of Acoustics and Music Theory—3113.
9. Participation in the ensemble of the major instrument (band, orchestra or choir) each semester in residence. For details, consult with department chairman.
10. Recital participation and/or attendance considered as laboratory for other music courses.
11. English 3101-02. Speech—3 semester hours.
12. Government 3210-11. History 3101 and 3102.
13. Three semesters of Physical Education (not required of students taking three semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in the freshman and sophomore years.
14. Electives—9 semester hours.
15. Enough courses to make at least 128 semester hours including a total of 30 semester hours in advanced courses.

\*Students will be assigned to choral or instrumental experiences, depending upon major instrument selected.



**Applied Music**

ORCHESTRAL INSTRUMENTS

1. (a) Music theory—20 semester hours.
- (b) Applied music—38 semester hours including 32 hours, secondary level, of the major instrument and 4 hours of piano, or equivalent.
- (c) Music education—6 semester hours.
- (d) Music literature — 12 semester hours in addition to band literature taken each semester in residence. At least two semesters of choral literature must be included.
- (e) Participation in the ensemble of the major instrument (Band or Orchestra) each semester in residence (only 8 semester hours may be offered). At least two semesters of choir must be included.
- (f) Chamber music 4 semester hours, or equivalent.
- (g) Recital participation and/or attendance considered as laboratory for other music courses.
- (h) Essentials of Acoustics and Music Theory 3113.
2. English 3101-02 and 3211-12 or 3213-14, or 3215 and 3216.
3. Government 3210-11; History 3101-02.
4. Speech—3 semester hours.
5. Three semesters of Physical Education (not required of students taking three semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in the freshman and sophomore years..
6. Enough other courses to make at least 125 semester hours including a total of 30 semester hours in advanced courses. In most cases students will have more than the minimum number of hours, depending upon how they elect to satisfy requirements 1b, 1d and 1e, and upon the quality of work done.

PIANO — ORGAN

1. (a) Music theory—24 semester hours.
- (b) Applied music—32 semester hours of piano, or organ, secondary level, piano sight reading—2 hours or minimum standards audition.
- (c) Music education—9 semester hrs.
- (d) Music literature — 12 semester hours in addition to choral or band literature taken each semester in residence. At least two semesters of choral literature must be included.
- (e) Participation in the ensemble of the major instrument (Choir, Band, or Orchestra) each semester in residence (only 8 semester hours may

be offered). At least two semesters of choir must be included.

- (f) Recital participation and/or attendance considered as laboratory for other music courses.
- (g) Essentials of Acoustics and Music Theory 3113.
2. English 3101-02 and 3211-12 or 3213-14, or 3215 and 3216.
3. Government 3210-11; History 3101-02.
4. Three semesters of Physical Education (not required of students taking three semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in the freshman and sophomore years.
5. Enough other courses to make at least 125 semester hours including a total of 30 semester hours in advanced courses. In most cases students will have more than the minimum number of hours, depending upon how they elect to satisfy requirements 1b, 1d and 1e, and and upon the quality of work done.

VOICE

1. (a) Music theory—20 semester hours.
- (b) Applied music—32 semester hours including 24 hours of voice, secondary level, and 8 hours, or equivalent, of piano.
- (c) Music education—6 semester hrs.
- (d) Music literature — 12 semester hours in addition to choral literature taken each semester in residence.
- (e) Choir each semester in residence (only 8 semester hours may be offered).
- (f) Essentials of Acoustics and Music Theory 3113.
2. English 3101-02 and 3211-12, or 3213-14, or 3215 and 3216.
3. Government 3210-11; History 3101-02.
4. Speech—3 semester hours (3214 recommended).
5. Foreign language—Courses 4101-02.
6. Three semesters of Physical Education (not required of students taking three semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in the freshman and sophomore years.
7. Enough other courses to make at least 125 semester hours including a total of 30 semester hours in advanced courses. In most cases students will have more than the minimum number of hours, depending upon how they elect to satisfy requirements 1b, 1d and 1e, and and upon the quality of work done.

### Bachelor of Science in Education

**Semester Hours**      **PLAN I - ELEMENTARY SCHOOL**

- 35—EDUCATION 3101, 3102, 3201, 3301, 3302, 3303, 3304, 3403, 3405, 4401, 4402. (A grade average of not less than 2.5 is required in this area.)
- 12—ENGLISH 3101-02 and 3211-12 or 3213-14. (A grade average of not less than 2.5 is required in English 3101-02. If less than 2.5, English 3220 is required).
- 6—SPEECH. (A grade average of not less than 2.5 is required in Speech.)
- 5—ART METHODS 2291 and Music Education 3334.
- 12—LABORATORY SCIENCES: Botany 3101, Zoology 3101, and six semester hours of Physical Science.
- 3—MATHEMATICS: 3101 and 3100 (Mathematics 3100 will not be required of the student passing satisfactorily an examination in the subject).
- 24—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, Sociology 3101, Geography 3210, Philos. 3301.
- 12—PHYSICAL EDUCATION 3205 and Health Education 3302 and 3101 (for men) or 3102 (for women); and three semesters of service courses as prescribed in freshman and sophomore years (not required of students taking 3 semesters of Military Science.)
- ELECTIVES to make a minimum total of 123 semester hours.

**PLAN II - SECONDARY SCHOOL**

- 29—EDUCATION 3101, 3102, 3202, 3204, 3305, 3311, 3419, 4403, 4404. (A grade average of not less than 2.5 is required in this area.)
- †24-30—In the first teaching subject, 12 hours of which must be advanced. (A grade average of not less than 2.5 is required in this area.)
- †18—In the second teaching subject, six hours of which must be advanced. (A grade average of not less than 2.5 is required in this area.)

†A teaching subject may be selected from one of the following: *Biology, Business Administration, Chemistry, English, Foreign Language, History, Journalism, Mathematics, Physical Education, Physics, and Speech and Drama.* When first teaching subject is *Physical Education, Chemistry 3101 will be substituted for Sociology 3101.*

**Semester Hours**

- 12—ENGLISH 3101-02 and 3211-12 or 3213-14. (A grade average of not less than 2.5 is required in English 3101-02. If less than 2.5, English 3220 is required).
- 6—SPEECH. (A grade average of not less than 2.5 is required in Speech.)
- 12—LABORATORY SCIENCES: Six semester hours of Biological Science, and six semester hours of Physical Science.
- 6—MATHEMATICS 3101 and 3102.
- 21—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, Sociology 3101 and Philosophy 3301.
- 6—PHYSICAL EDUCATION: 3 semesters (not required of students taking 3 semesters of Military Science) and Health Education 3101 (for men) or 3102 (for women) as prescribed in freshman and sophomore years.
- ELECTIVES to make a minimum total of 123 semester hours.

**PLAN III - SECONDARY SCHOOL**

Requirements listed under Plan II also apply to Plan III with the exception of the substitution of a teaching field of concentration of 42 semester hours for requirement of an academic major and minor.

A teaching field of concentration may be selected in the social studies. (For information concerning teaching field of concentration, consult the Chairman of the Department of Education.)

**PLAN IV - ALL-LEVELS**

*(Elementary and Secondary)*

An all-levels teaching field may be selected from the following: *Art, Music, and Physical Education.* (For information about an all-levels teaching field, consult the Chairman of the Department concerned.)

## **School of Nursing**

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The Fifty-Fourth Legislature of Texas authorized the establishment of a School of Nursing at Texas Western College. Two programs are offered, both leading to a Bachelor of Science degree in Nursing:

### **Basic Collegiate Program**

The Basic Collegiate Program is open to high school graduates who meet the entrance requirements. The purpose of this program is to prepare professional nurse practitioners. General education combined with professional education will give nursing majors opportunities to function as qualified practitioners in professional nursing. This program requires a minimum of four calendar years for completion. Admission requirements for the Basic Collegiate Program will be found on page 25 of this catalog.

### **Pre-Specialization Program**

The Pre-Specialization Program is open to graduate registered nurses who meet the entrance requirements and who have satisfactorily completed the Graduate Nurse Qualifying Examination. The purpose of the Pre-Specialization Program is to offer graduates of diploma programs an opportunity to enrich their background in general education and to increase their competence in professional nursing. This program also offers a foundation for nurses wishing to continue their professional preparation at the graduate level.

### **Bachelor of Science in Nursing**

<i>Academic Requirements</i>	<i>Semester Hours</i>	<i>Professional Requirements</i>	<i>Semester Hours</i>
Biological & Physical Sciences . . . . .	18	Introduction to Nursing . . . . .	3
English . . . . .	9	Survey of Nursing . . . . .	2
Speech . . . . .	3	Nutrition . . . . .	4
History . . . . .	6	Fundamentals of Nursing . . . . .	8
Government . . . . .	6	Medical & Surgical Nursing . . . . .	12
Sociology . . . . .	12	Pharmacology . . . . .	4
Mathematics . . . . .	6	Public Health Nursing . . . . .	14
Physical Education . . . . .	3	Growth and Development . . . . .	3
Psychology . . . . .	11	Maternal-Child Health . . . . .	12
Philosophy . . . . .	3	Disaster Nursing . . . . .	3
		Introduction to Research Methodology . . . . .	4
		Principles of Teaching . . . . .	2
		Principles of Administration . . . . .	2
		Team Nursing . . . . .	2
		Psychiatric Nursing . . . . .	10
	<hr style="width: 50px; margin-left: auto; margin-right: 0;"/> 77		<hr style="width: 50px; margin-left: auto; margin-right: 0;"/> 85
TOTAL . . . . .			162

**ARRANGEMENT OF COURSES**

**Freshman Year**

FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
Zoo. 3101, Zoology . . . . .	3	Bio. 3103, Anatomy & Physiology . . . . .	3
Ch. 3106, Chemistry . . . . .	3	Ch. 3107, Chemistry . . . . .	3
N 2101, Survey of Nursing . . . . .	2	N. 3103, Introduction to Nursing . . . . .	3
Hi. 3101, History . . . . .	3	Hi. 3102, History . . . . .	3
En. 3101, English . . . . .	3	En. 3102, English . . . . .	3
Ma. 3101, Mathematics . . . . .	3	Ma. 3102, Mathematics . . . . .	3
P. E. Physical Education . . . . .	1	P. E. Physical Education . . . . .	1
<b>Total</b> . . . . .	<b>18</b>	<b>Total</b> . . . . .	<b>19</b>

**Summer**

FIRST TERM	Semester Hours	SECOND TERM	Semester Hours
N. 2201, Normal Nutrition . . . . .	2	N. 3202, Public Health I . . . . .	3
P. E. Body Mechanics (New Course) . . . . .	1	Bio. 3205, Microbiology . . . . .	3
Bio. 3104, Anatomy & Physiology . . . . .	3	<b>Total</b> . . . . .	<b>6</b>
<b>Total</b> . . . . .	<b>6</b>		

**Sophomore Year**

FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
Soc. 3210, Sociology . . . . .	3	Co. 3211, Government . . . . .	3
Sp. 3101, Speech . . . . .	3	N. 5211, Fundamentals II . . . . .	5
En. 3213, English . . . . .	3	N. 7210, Medical-Surgical Nursing II . . . . .	7
Go. 3210, Government . . . . .	3	N. 2204, Pharmacology I . . . . .	2
Psy. 3201, Psychology . . . . .	3	N. 1212, Diet Therapy I . . . . .	1
N. 2205, Fundamentals I . . . . .	2	<b>Total</b> . . . . .	<b>18</b>
N. 2203, Introduction to Medical-Surgical Nursing I . . . . .	2		
<b>Total</b> . . . . .	<b>19</b>		

**Summer**

FIRST TERM	Semester Hours	SECOND TERM	Semester Hours
Psy. 3300, Psychology . . . . .	3	N. 3302, Maternal-Child Health (Pediatrics) . . . . .	3
N. 3301, Growth and Development . . . . .	3	Soc. 3211, Sociology . . . . .	3
<b>Total</b> . . . . .	<b>6</b>	<b>Total</b> . . . . .	<b>6</b>

**Junior Year**

FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
N. 3303, Maternal-Child Health II (Pediatrics) . . . . .	3	N. 3401, Medical-Surgical Nursing III (Specialties) . . . . .	3
N. 1310, Fundamentals III . . . . .	1	N. 1406, Diet Therapy II . . . . .	1
N. 1315, Pharmacology II . . . . .	1	N. 3408, Disaster Nursing . . . . .	3
N. 6307, Maternal-Child Health III (Maternity) . . . . .	6	N. 1402, Pharmacology III . . . . .	1
Psy., Mental Hygiene (New Course) . . . . .	2	Psy. 3312, Abnormal Psychology . . . . .	3
N. 3304, Public Health Nursing No. 2 . . . . .	3	N. 2411, Team Nursing . . . . .	2
Soc. 3347, Sociology . . . . .	3	N. 4416, Public Health No. 3 . . . . .	4
<b>Total</b> . . . . .	<b>19</b>	N. 2412, Introduction to Research Methodology I . . . . .	2
		<b>Total</b> . . . . .	<b>19</b>

**Summer**

FIRST TERM	Semester Hours	SECOND TERM	Semester Hours
N. 5419, Psychiatry . . . . .	5	N. 5420, Psychiatry . . . . .	5
<b>Total</b> . . . . .	<b>5</b>	<b>Total</b> . . . . .	<b>5</b>

**Senior Year**

FIRST SEMESTER	Semester Hours		
N. 4417, Public Health No. 4 (Geriatrics 2 SU) . . . . .	4	Nursing . . . . .	85
Phil. 3301, Philosophy . . . . .	3	Liberal Arts . . . . .	77
N. 2413, Introduction to Research Methodology II . . . . .	2	<b>Total</b> . . . . .	<b>162</b>
N. 2414, Principles of Teaching . . . . .	2		
N. 2405, Principles of Administration . . . . .	2		
Soc. 3349, Sociology . . . . .	3		
<b>Total</b> . . . . .	<b>16</b>		

## Graduate Division

(The Graduate Division publishes a separate bulletin with complete details)

TEXAS WESTERN COLLEGE offers work leading to the degree of Master of Arts and Master of Education. Graduate Study is under the general supervision of the Graduate Council. The program carried by any student who has been admitted to the Graduate Division is under the administration of the Dean of the Graduate Division. Work of the individual student after admission will be directed by a professor in the major field. A grade of at least *B* is required in any course counted for graduate credit. A minimum of fifty per cent of the semester hour requirements must be in graduate courses (3500 and above). Graduate courses are open to graduate students only, and have prerequisites of twelve semester hours of advanced courses in the particular field, and a minimum of a bachelor's degree.

**Majors:** Education, English, History, and Spanish.

**Minors:** Art, Biological Sciences, Business Administration, Chemistry, Economics, Education, English, French, Geology, Government, History, Mathematics, Music Education, Physical Education, Physics, Psychology, Sociology, and Spanish.

### ADMISSION TO GRADUATE DIVISION

#### 1. Qualifications of Applicants:

An applicant for admission to the Graduate Division must hold a bachelor's degree from an accredited college or university. Twenty-four (24) semester hours of undergraduate work in the major subject and twelve semester hours in the minor subject are required. Removal of any undergraduate deficiencies will be subject to action of the Graduate Dean with the exception that deficiencies in the study of the Constitutions of the United States of America and of Texas must be satisfied in accordance with the state law.

#### 2. Method of Application:

An application for admission must be made in the office of the Dean of the Graduate Division, where forms may be secured. Two complete transcripts must be provided—one for the Registrar, and one for the office of the Dean of the Graduate Division.

#### 3. Transfer of Credit:

Acceptance of graduate credits from another institution may not exceed six semester hours, and is subject to approval by the Graduate Council.

#### Undergraduate Students Taking Work for Graduate Credit

An undergraduate student who has completed 108 semester hours of the requirements for a bachelor's degree may, upon petition to the Graduate Council, take courses for graduate credit.

#### The Aptitude Test

After September 1, 1955, everyone, including graduates of Texas Western College, seeking admission to the Graduate Division with the master's degree as an objective will take the Aptitude Test of the Graduate Record Examination, prepared and scored by the Educational Testing Service of Princeton, New Jersey. This test is to be taken either prior to registration or at the first examination date thereafter. Applications for the test are to be made in the office of the Graduate Division at least three weeks in advance of the published dates of the test. A check made out to Texas Western College for the sum of \$3.00 must accompany the application.

The Aptitude Test will be given three times each year—in October, March and July.\* To be admitted unconditionally to

\* 1959: March 21, July 11, October 24;

1960: March 19, July 16.

candidacy, a student must make a score above that of the lowest quartile. Scores in both the quantitative and verbal factors will be considered.

These examinations will be administered by the Bureau of Testing and Guidance in Annex 1.

#### **Graduate Load for Teachers**

Students who are employed in full time teaching positions should be limited to three semester hours of work each semester. With the written approval of the school superintendent, as much as six semester hours of graduate credit for one semester may be approved; however, nine semester hours is the maximum that may be approved for one academic year.

#### **Graduate Load for Veterans**

Twelve semester hours of course work constitutes a full load for the regular semester; six semester hours for each term of the summer session.

#### **Admission to Candidacy**

After a graduate student has successfully completed twelve (12) semester hours of effective work toward the master's degree, a Petition for Candidacy is sent from the office of the Graduate Division which is to be signed by the student and returned to that office at the earliest possible date. The major department will then act upon the petition. If it is denied, a new petition may be made at a later date. *A student is not a candidate for the master's degree until this petition has been approved by the major department, and the student has passed the Aptitude Test.*

#### **Withdrawals and Changes**

All drops, withdrawals, or changes of any nature are handled in the office of the Graduate Dean. Requests for such changes are made in the office of the Graduate Division.

#### **Catalog Requirements**

A student may obtain a degree according to the requirements of the catalog in force at the time of his admission to the Graduate Division or of a later catalog, subject to the restriction that all require-

ments must be completed within six years of the date of admission.

#### **Residence**

The minimum residence requirements for the master's degree is one long session or three summer sessions, or one semester of the long session and two summer sessions. In the case of students doing part-time graduate work during the long session, residence will be computed in terms of semester hours completed. No graduate credit may be secured for courses taken by correspondence or extension.

#### **REQUIREMENTS FOR THE MASTER OF ARTS DEGREE**

1. A thesis (six semester hours) and twenty-four (24) semester hours of course work.
2. A major<sup>a</sup> with a minimum of eighteen (18) semester hours, including the thesis; a maximum of 24 semester hours is permissible.
3. A minor of not less than six (6) semester hours. There may be two minors of six (6) semester hours each, or one minor with a maximum of twelve (12) semester hours.
4. A transfer student must complete at least three (3) semester hours of the minor in residence.
5. There must be a minimum of fifteen (15) semester hours, including the thesis, of graduate courses (those numbered 3500 and above).

#### **REQUIREMENTS FOR THE MASTER OF EDUCATION DEGREE**

1. Thirty-six (36) semester hours of course work.
2. Not less than twenty-one (21) semester hours, nor more than twenty-seven (27) semester hours of Education.
3. A minor of not less than nine (9) semester hours nor more than fifteen (15) semester hours. There are two possibilities for a split minor: nine (9) semester hours in one subject and six (6) in another, or six (6) semester hours in each of two fields.
4. There must be a minimum of eighteen (18) semester hours of graduate courses (those numbered 3500 and above).

<sup>a</sup>When the major is in Education, there must be a minor of twelve (12) semester hours.

(See the Graduate Bulletin for complete details)

## **Research**

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### **The Schellenger Laboratories**

THE SCHELLENGER RESEARCH LABORATORIES were created by the will of Emma H. Schellenger, which established the Schellenger Foundation in Electricity as a memorial to her husband, Newton C. Schellenger, to promote, encourage, and do research and development directly or indirectly in the field of electricity.

The El Paso National Bank serves as Trustee of the Foundation. The Schellenger Foundation Committee establishes research policy:

Thomas G. Barnes, *Chairman*  
Floyd A. Decker      Oscar H. McMahan      William W. Raymond  
President Joseph R. Smiley, *Ex-officio*  
Alvin A. Smith, *Ex-officio*

The principal laboratory is located in a wing of the Engineering Building with annexes in other campus buildings. The staff is composed of more than forty faculty members and students who engage in scientific research activities under various grants and contracts which total more than \$500,000. Original research is currently being carried on in the fields of electricity, electronics, meteorology, and acoustics.

The laboratories furnish employment for many students, giving them the unusual opportunity of undergraduate participation in basic research in the fields of their major study endeavors. Employment opportunity is available to all students of the College and to all faculty members on the basis of abilities in the fields of science under current research application. Interested individuals should apply to the director of the laboratory.

As a result of such employment, undergraduate students have the opportunity for the experience and prestige to be gained from co-authoring reports and brochures. They also have the opportunity of association with scientists who visit the laboratories. During the past year the laboratories acted as host to the first national Conference on the High Atmosphere, under the sponsorship of the American Meteorological Society and the American Rocket Society, for the purpose of integrating information on the upper atmosphere which was gained during the International Geophysical Year.

The latest scientific equipment is available, including an anechoic room, climate chambers, a Bendix G-15 Computer, a Rawin Set for tracking balloon-borne meteorological instruments, and the finest electronic instruments for testing and measurement.

The laboratory is a nonprofit research organization, operating under pertinent regulations of The University of Texas. The laboratory is open to proposals for contracts and grants for pure and applied research and

development from governmental agencies, industrial organizations, and philanthropic foundations in the various fields of Physics and Mathematics and allied areas. The laboratory has a secret facility clearance. Acceptance of a particular project is dependent upon scientific personnel and laboratory facilities available at a given time. Tentative proposals and discussions of problems should be addressed to the Director, Schellenger Research Laboratory, Texas Western College, El Paso, Texas.

*Schellenger Research Laboratories Staff*

Thomas G. Barnes, *Director*

Francis L. Fugate, *Administrative Assistant*

*Physicists:* Harold N. Ballard, Eugene Alan Dean, Edwin J. Knapp,  
Carlos McDonald, Oscar H. McMahan, Robert L. Schumaker,  
Harold S. Slusher, Aurora Villegas.

*Mathematician:* Charles H. Gladman.

*Electrical:* Engineers Jack J. Bourquin, Paul Harris.

*Research Engineers:* Clarence J. Cervenka, Ralph M. Coleman,  
Paul C. Hassler, Howard C. Vanzant.

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**Gordon Ponder Memorial Heart Fund**

THIS FUND was established by Mr. and Mrs. Jack Ponder in memory of their son Gordon, who died while a student at Texas Western College. This fund is open to contributions by individuals interested in furthering heart research. Many gifts are received in memory of friends and relatives. This fund is administered by Texas Western College in conjunction with heart research carried on in the Schellenger Research Laboratories. One of the projects has been the development of an electronic vector cardiograph, which is currently undergoing tests at one of the nation's largest research medical centers.



## ***Course Descriptions***

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## ***Explanation of Course Numbering System***

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### **CREDIT MEASUREMENT**

The unit of measurement for credit purposes is the semester hour. A semester hour entails one hour of recitation and/or lecture (or the equivalent in shop or laboratory work) per week for one semester of eighteen weeks, unless otherwise specified in the course description. For each classroom hour two hours of preparation are expected. Three hours of shop or laboratory work are counted as equivalent to one classroom hour and the preparation for it. Unless otherwise stated in the course description, it can be assumed that a course will meet for one hour of recitation-lecture per week for each semester hour of credit.

### **COURSE NUMBERING SYSTEM**

Courses are designated by four digit numbers. The first number indicates semester hour value of the course, the second number indicates level of the course: all courses with a second number of 1 are freshman courses, all courses with a second number of 2 are sophomore courses, all courses with a second number of 3 are junior courses, all courses with a second number of 4 are senior courses, and all courses with a second number of 5 are graduate courses. Any course with a second number of 3 or 4 may be counted as upper division work.

### **TWO SEMESTER COURSES**

Courses requiring two semesters for completion are designated in the course description by a hyphen. For example, English 3101-02. In such cases no credit will be given until both semesters of the course have been completed. When any course requires two semesters for completion, the first semester is prerequisite for enrolling in the second semester.

### **COURSE FEES**

Laboratory and other special fees for individual courses are indicated on a per-semester basis in parentheses following course titles:

#### **GEOLOGY**

3210 Principles of Geomorphology (\$2)

#### **BIOLOGY**

3101-02 Anatomy and Physiology (\$2-\$2)

*(Two Semesters - Two Fees)*

## Art

MISS VERA WISE, *Chairman*

*Professor WISE; Associate Professor HARRISON; Assistant Professors COOGLER, MASSEY.*

The art program permits students to specialize in the following directions: Painting, design, art education, the crafts and graphics. The third digit in course numbers indicates the area; *ie*, painting 1, life drawing 2, graphics 3, metals 4, enamels 5, design 6, photography 7, clays 8, art education 9. The last digit represents, generally, the semester a course is offered, odd numbers indicating the first semester and even ones the second. A third digit 0, generally, indicates a basic course.

The Art Department reserves the right to keep a limited amount of student work for exhibition purposes for one year.

### **Basic Courses**

*For Undergraduates*

#### 2103 Basic Design (\$2)

A course stressing principles of art, color theory, dimensionality, and other design qualities. The organization of ideas into creative design. May be repeated one semester for credit.

#### 2105 Basic Drawing (\$2)

Instruction in drawing forms, actions, etc., with emphasis upon learning skill in draftsmanship and perspective. Skill in various techniques of handling pencil, ink, charcoal, etc. May be repeated one semester for credit.

#### 3110 Introduction to the Fine Arts

Enjoyments of the Arts through the understanding of their interrelationship and the expressive elements common to Music, Art, and Drama. Differences in mediums of expression and the tools of each Art. Required of Art majors. Not counted in addition to Music 3110 or Drama 3110.

#### 3211 History of Mexican Art

A survey of the art of Mexico, from the beginning of the Colonial Period to the present. The effect of the Revolution, the era of mural painting, and the national characteristics of Mexican art will be covered. *Prerequisite: Sophomore standing.*

*For Undergraduates and Graduates*

#### 3301 Art History and Appreciation

Art from Man's earliest period of esthetic expression through the Renaissance. *Prerequisite: Junior standing.*

#### 3302 Art History and Appreciation

Study of great art concepts in works of the masters through the post-Renaissance period to contemporary times. *Prerequisite: Junior standing.*

### **Specific Areas:**

#### **Painting**

*For Undergraduates*

#### 2211 Painting (\$2)

The development of painting experience and creative forms. Organization of composition. May be repeated one semester for credit.

#### 2311 Painting (\$2)

Painting experiences with exploration of mediums of expression. May be repeated one semester for credit. *Prerequisite: Two semesters of 2211.*

#### 2313 Painting (\$2)

Portrait and figure painting, with concentration on the specific problems involved, such as form, color, composition, with one or more figures, drapery and texture. Techniques of portrait painting. *Prerequisite: Two semesters of 2211.*

#### 2413 Mural Painting (\$2)

Exploration of mural techniques and media. May be repeated one semester for credit. *Prerequisite: Painting 2312.*

*For Undergraduates and Graduates*

- 2411-12 Painting (\$2-\$2)  
Emphasis on painting skills and clear expression of artistic intent. *Prerequisite:* Two semesters of 2311.

**Life Drawing** *For Undergraduates*

- 2121 Life Drawing (\$2)  
Basic study of the human form with special attention given to head, hands, and feet. Requirement of skills and techniques. May be repeated three additional semesters for credit.

- 2321 Life Drawing (\$2)  
Emphasis on esthetic factors in interpreting the human form, and composition of group studies. May be repeated three additional semesters for credit. *Prerequisite:* four semesters of 2121.

- 2265 Fashion Drawing (\$2)  
Techniques in drawing the fashion figure, mediums used, and training in newspaper and magazine reproduction. *Prerequisite:* Design 2104 and Life Drawing 2122. (This course may be taken concurrently.)

**Graphics** *For Undergraduates*

- 2131 Graphics (\$2)  
Introductory course for basic graphic processes. May be repeated one semester for credit.

- 2231 Etching (\$2)  
Experimentation with line etching for various approaches, line or value. May be repeated one semester for credit. *Prerequisite:* Two semesters of 2131.

- 2232 Lithography (\$2)  
Experimentation with lithographic processes on stone. May be repeated one semester for credit. *Prerequisite:* Two semesters of 2131.

- 2333 Lithography (\$2)  
Advanced work in lithographic mediums. Color problems developed. May be repeated one semester for credit. *Prerequisite:* Two semesters of 2232.

*For Undergraduates and Graduates*

- 2331-32 Graphics (\$2-\$2)  
Advanced work in all etching or intaglio mediums, including aquatint, lift, and soft ground. *Prerequisite:* Two semesters of 2231.

**Metals** *For Undergraduates*

- 2141 Metals (\$2)  
Basic techniques in jewelry construction. Lapidary and metal work. May be repeated three additional semesters for credit.

*For Undergraduates and Graduates*

- 2341-42 Metals (\$2-\$2)  
Basic to advanced techniques in metalsmithing. *Prerequisite:* Four semesters of 2141.

**Enameling** *For Undergraduates*

- 2151 Enameling (\$2)  
Basic techniques in enameling from jewelry forms to the enameling of hollow ware. May be repeated three additional semesters for credit.

- 2351 Enameling (\$2)  
Advanced problems in enameling. Problems of design in enamel on copper and silver. Adapted to jewelry and other forms. *Prerequisite:* Four semesters of 2151.

**Design** *For Undergraduates*

- 2261 Advertising Design (\$2)  
Application of design principles to advertising art, and study of type faces and

letter forms. May be repeated one semester for credit. *Prerequisite:* Design 2104, Drawing 2105 must be taken previously or concurrently.

- 2361 Advertising Design and Production (\$2)  
Advanced study of advertising art and production on a professional level. May be repeated one semester for credit. *Prerequisite:* Two semesters of 2261.
- 2263 Interior Design (\$2)  
Application of principles of art to home decoration problems—house planning, choice of furniture, color theory, etc., and design for modern living. May be repeated one semester for credit. *Prerequisite:* Sophomore standing.
- 2365 Three Dimensional Design  
Workshop experimentation with materials and forms in various mediums, with emphasis on excellence of craftsmanship and design. May be repeated one semester for credit. *Prerequisite:* Four hours of crafts plus basic courses.

### **Photography**

- 2171 Photography (\$2)  
Theory and technique of the photographic processes: laboratory, studio and field practice. Use of light as a creative and esthetic medium. May be repeated one semester for credit. *Prerequisite:* Concurrently or following Design 2104.

### **Ceramics**

- 2181 Ceramics (\$2)  
Methods of construction by hand, pinch pot, coil, slab modeling and casting. Methods of practice in throwing and casting in large forms. May be repeated three additional semesters for credit.

#### *For Undergraduates and Graduates*

- 2381-82 Ceramics (\$2-\$2)  
Advanced techniques in ceramics. Emphasis on study of clays, glazes, and technical aspects of ceramic production, including equipment. *Prerequisite:* Two semesters of 2181.

### **Art Education**

#### *For Undergraduates*

- 2291 Concepts, Materials and Techniques in Elementary Art (\$2)  
A course for the prospective teacher; deals with concepts, processes, and handling of material that is available for use in the elementary school. *Prerequisite or concurrently:* Education 3201.
- 2292 Concepts, Materials and Techniques in Elementary Art (\$2)  
Continuation of studies introduced in Concepts, Materials and Techniques in Elementary Art 2291. *Prerequisite:* Concepts, Materials and Techniques in Elementary Art 2291 and Education 3203 or concurrently.
- 2391 Art Teaching Methods in the Elementary School  
Lectures, demonstrations and processes in the approach to teaching art on the elementary grade level. *Prerequisite:* At least 18 hours of art and completion of Education 3203.
- 2392 Art Teaching Methods in the Secondary School  
Lectures, demonstrations and processes in the approach to teaching art on the secondary grade level. *Prerequisite:* At least 18 hours of art and completion of Education 3204.

### **Research**

- 1401 to 6401 Introduction to Research in Art Fields  
Credit will be given up to six semester hours for research satisfactorily completed by advanced students in the Art Department. Only specially qualified students approved by the Chairman of the Art Department will be accepted for this work. Credit will be granted only in the senior year on the recommendation of the Chairman of the Art Department. *Prerequisite:* Permission of the Chairman of the Art Department.

## Bible

Credit toward college degrees is given for certain courses offered under the following regulations established by the Board of Regents to maintain the equivalence of these courses with other courses given in the College:

The plant in which the courses credited are given must (1) be located in El Paso, convenient to the College; (2) contain adequate classroom facilities—rooms, seats, blackboards, charts, maps, tables; (3) provide a library of books, dictionaries, and lexicons costing at least \$500 as an initial expenditure.

The instructors by whom the courses credited are given must (1) be under the control of some permanent religious organization of recognized standing; (2) possess at least the training demanded of instructors in the College; (3) devote their time primarily to teaching; (4) be approved by the President, subject to final action by the Board of Regents.

The courses credited must (1) be in the field of historical or literary, but not exegetical or doctrinal, study of the Bible; (2) be thoroughly organized, with syllabi showing the outlines and required readings; (3) be of college grade and on a subject suitable for college instruction; (4) be given in regular classes with meetings at least equal in number, in length of period, and in amount of preparation required, to those of a College course involving the credit asked; (5) include regular tests or examinations corresponding to those of the College, to be given at the time prescribed by the College for other examinations; (6) be subject to the same regulations and oversight as regular courses given in the College.

The students enrolled in the courses for credit (1) may be credited with no more than twelve semester hours in Bible on any bachelor's degree, (2) are subject to the regulations of the catalog on the amount of work which may be carried.

	<i>Former Number</i>
<i>For Undergraduate Credit Only</i>	
3101 Survey of the Old Testament A comprehensive study of the entire Old Testament.	[ 301
3102 Survey of the New Testament A comprehensive study of the entire New Testament.	[ 302
3103 The Life of Christ An historical study of the life and teachings of Christ.	[ 303
3104 The Life of Paul An historical study of the life and missionary endeavors of the Apostle Paul.	[ 304
3107 Elementary New Testament Greek An intensive study of New Testament Greek, with reading in the first epistle of John. There will be a study of vocabularies; declension of nouns, adjectives, and pronouns; the conjugation of verbs; oral drill; grammar; and written exercises. <i>No prerequisites.</i>	[ NEW
3108 Elementary New Testament Greek Studies of Bible 3107 continued. Emphasis on inflection and syntax. A reading knowledge of New Testament Greek is required. <i>Prerequisite: Bible 3107</i>	[ NEW
3201 Comparative Religion An introduction to the study of religion, and an examination of primitive religion. Among the living religions, Zoroastrianism, Hinduism, Buddhism, Confucianism, Taoism, Shintoism, Judaism, and Christianity will be studied. <i>Prerequisite: Sophomore standing.</i>	[ 310
3301 The Social Teachings of the Bible The teachings of the Old Testament and the New Testament on the more important social institutions and problems. The main emphasis will be on the ethical teachings concerning the family, the Christian's relation to the state, economic life and relations, race relations, war, and similar areas of practical Christian living. <i>Prerequisite: Junior Standing.</i>	[ 321

## **Biological Sciences**

DR. A. H. BERKMAN, *Chairman*

*Professor BERKMAN; Associate Professor LANDERS; Assistant Professors DUKE, REEVES;  
Instructors VANCE, HAMPTON, TULLEY*

Biology 3204 may not be used to satisfy the science requirement for the  
Bachelor of Arts Degree or the Bachelor of Science Degree.

<b>Biology</b>	<i>For Undergraduates</i>	<i>Former Number</i>
3101-02 Anatomy and Physiology (\$2-\$2)		[ 606
Study of a typical animal cell: mitosis and cell division; meiosis; survey of mammalian histology, the human skeleton, muscles of the body, circulatory and nervous systems, physiology. Three lectures and two laboratory hours per week. This course is open only to pre-clinical nurses and to students in a school of nursing.		
3103-04 Anatomy and Physiology (\$2-\$2)		[ NEW
Study of the normal structures and functions of the human body. Principles of physics, chemistry, and microbiology will be correlated throughout. An introduction to pathology will be included. <i>Prerequisite:</i> Zoology 3101. For majors in nursing only.		
3201 Microbiology (\$2)		[ 312
Survey of microbes with emphasis on pathogens, bacteria and protozoans; culture technique; staining technique; histology of the blood and typing of blood groups. Two lectures and three laboratory hours per week. <i>Prerequisite:</i> Chemistry 3101-02 and Biology 3101. This course is open only to pre-clinical nurses and students in a school of nursing.		
3202 Biology of the Human Body (\$2)		[ 310
Survey of the anatomy of the human body with emphasis on the skeletal and muscular systems. Three lectures and two laboratory hours per week. <i>Prerequisite:</i> Zoology 3102. This course may not be counted for credit in addition to Zoology 3202.		
3203 Introduction to Human Physiology (\$2)		[ 311
Body functions with emphasis on their relations to physical exercise. Three lectures and two laboratory hours per week. <i>Prerequisite:</i> Biology 3202 or Zoology 3202.		
3204 Heredity (Genetics)		[ 316
Principles of heredity in their application to animals, plants, and mankind. <i>Prerequisite:</i> Sophomore standing or six semester hours of a laboratory science.		
3205 Microbiology (\$2)		[ NEW
A study of the morphology and structure of microorganisms; their role in everyday life; their environmental relations; inhibition, destruction, and removal with emphasis on pathogenic species; infection, immunity and allergy; with an introduction to hematology, serology, virology and the principles of public health. <i>Prerequisite:</i> Zoology 3101 and Biology 3103. For majors in nursing only.		
<i>For Undergraduates and Graduates</i>		
3301 Physiology of Exercise (\$2)		[ NEW
Brief review of embryogeny and histogenesis of muscles in Vertebrates; physiology of the nervous, muscular, digestive, and respiratory systems of man in relation to work and exercise; some aspects of external and internal stimuli, injuries, and health. Three lectures and two laboratory hours per week. <i>Prerequisite:</i> Biology 3203 or Zoology 3202.		
3401 Technique in Histology and Cytology (\$2)		[ 330
Fixing, imbedding, sectioning, staining and mounting tissues and cells for critical microscopical examination. One lecture and six laboratory hours per week. <i>Prerequisite:</i> Chemistry 4213, or 3221-22, or Bacteriology 3302, or 12 semester hours of zoology, or botany, and permission by the chairman of the department.		

**Bacteriology**

- 3301 General Bacteriology (\$2) [ 629A  
Principles of bacteriology; application of pure culture method employing non-pathogenic forms; bacteriological analysis of water, milk, and sewage; staining technique; preparation of media. Three lectures and three laboratory hours per week. *Prerequisite*: Twelve semester hours in any one of the natural sciences or a combination of twelve semester hours in natural sciences and junior standing.
- 3302 Pathogenic Bacteria and Immunology (\$2) [ 629B  
Survey of pathogenic bacteria with emphasis on their pathogenicity, and application of principles in isolation; introduction to immunology and haematology. Three lectures and three laboratory hours per week. *Prerequisite*: Bacteriology 3301; for juniors and seniors, the equivalent of Bacteriology 3301 as determined by the Instructor and the Head of the department.

**Botany**

*For Undergraduates*

- 3101 General Botany (\$2) [ 301  
Survey of the plant cell and plant body; mitosis and meiosis; survey of the algae and fungi coupled with an exposition of their functional relationship to man. Three lectures and two laboratory hours per week.
- 3102 General Botany (\$2) [ 302  
Life cycles and survey of mosses, ferns, and seed plants. Three lectures and two laboratory hours per week. *Prerequisite*: Botany 3101.
- 3201 Local Flora (\$2) [ 311  
Survey of flowering plants of the El Paso Region. Two lectures and three laboratory hours per week. *Prerequisite*: Six semester hours of a laboratory science, or Botany 3101 and sophomore standing.

**Zoology**

*For Undergraduates*

- 3101 General Zoology (\$2) [ 301  
Theoretical biology; survey of the invertebrates and their relationship to health problems and the economic phase of man's life. Three lectures and two laboratory hours per week.
- 3102 General Zoology (\$2) [ 302  
General survey of the protochordates, cyclostomes, the dogfish, and the frog. Introduction to animal histology and genetics. Three lectures and two laboratory hours per week. *Prerequisite*: Zoology 3101, or three semester hours of general biology.
- 3201-02 Vertebrate Zoology and Comparative Anatomy (\$2-\$2) [ 614  
Comparative study of the anatomy of the dogfish, a teleost, an amphibian (*Necturus*), the turtle, and a mammal, with emphasis on development and relationship of such evolution to developmental anatomy of man. Two lectures and four laboratory hours per week. *Prerequisite*: Zoology 3102, or six semester hours of general biology.

*For Undergraduates and Graduates*

- 3301 Vertebrate Embryology (\$2) [ 321  
Development of the chick and mammalian embryos. Two lectures and three laboratory hours per week. *Prerequisite*: Zoology 3202; for juniors and seniors, Zoology 3102 completed with a grade not lower than C, and Zoology 3201-02 concurrently. Zoology 3202 must be completed before credit can be granted for the completed course in Zoology 3301.
- 3302 Animal Cytology and Histology (\$2) [ 320  
Structure, differentiation, and functions of cells; ontogeny and histogenesis of tissues. Two lectures and three laboratory hours per week. *Prerequisite*: Zoology 3202; for juniors and seniors, Zoology 3102 completed with a grade not lower than C, and Zoology 3201-02 concurrently. Zoology 3202 must be completed before credit can be granted for the completed course in Zoology 3302.



## **Business Administration and Economics**

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DR. G. E. KISER, *Chairman*

*Professors* KISER, HARTRICK; *Associate Professors* BRAND, ERION;  
*Assistant Professors* BENNETT, BLACK, BUCKNER, FREELAND, JAMES, LOWENSTEIN,  
SMITH, TOMPKINS; *Instructors* HEINS, JOHNSON, SEALE, WALKER;  
*Lecturers* BROWN, CHAPMAN, COWART, DICKINSON, GILGER, LIPSON

Majors in this department may secure the degree of Bachelor of Business Administration or Bachelor of Arts. For those preparing particularly for business careers, the Bachelor of Business Administration degree is recommended. Students choosing the Bachelor of Arts degree may major in Economics or Business Administration.

Each student is strongly advised to consult with the advisor in his field of concentration, including Accounting, Economics, Finance, Foreign Trade, Management, Marketing, and Secretarial Studies. Students wishing to teach subjects in economics or business in high school or college should plan their courses with the aid of the department chairman.

Note to majors and minors in this department: In order that your courses may be co-ordinated and planned in advance, you are urged to counsel with the chairman of this department before registration in your sophomore year. Advice at this stage may prevent subsequent difficulties in your program. Mature students, properly qualified with adequate business education and experience, may enter courses by permission of department chairman. Students interested in the study of law should consult with his departmental advisor.

### **BUSINESS ADMINISTRATION**

<b>Secretarial</b>	<i>For Undergraduate Credit Only</i>	<i>Former Number</i>
2101 Elementary Typewriting (\$2)		[ 302
Fundamentals of touch typewriting; keyboard, techniques, copy work and page placement. Five hours per week.		
2102 Intermediate Typewriting (\$2)		[ 303
Advanced instruction in applied typewriting with emphasis upon increasing speed and accuracy; business letters and business forms; manuscript typing. Five hours per week. <i>Prerequisite:</i> Business Administration 2101 or equivalent.		
4104-05 Elementary Shorthand		[ 604
Principles of Gregg shorthand; reading, writing and elementary transcription. Five hours per week for two semesters. <i>Prerequisite:</i> Business Administration 2102 (may be taken concurrently).		
3120 Business Machines (\$2)		[ 307
Principles of operation of various adding and calculating machines. Field trips to local firms to study how the system and flow of work is mechanized in various offices.		
3201-02 Advanced Shorthand and Transcription (\$2) (\$2)		[ 3301-02
Development of speed and accuracy in shorthand and typewriting; building of vocabulary, sustained dictation and transcription practice for secretarial efficiency. Three lectures and three laboratory hours per week for two semesters. <i>Prerequisite:</i> Business Administration 4105 and 2102.		
3303-04 Secretarial Office Practice and Problems (\$2) (\$2)		[ 3303-NEW
Practice of all office procedures; duplicating and dictation machines; filing; receptionist's duties; secretarial attitudes and responsibilities; semi-executive duties. Three lectures and three laboratory hours per week for two semesters. <i>Prerequisite:</i> Business Administration 3201-02.		

3320 Business Letters [ 620  
 Scope and importance of business communication; problems in letter writing for various types of business transactions, such as sales, adjustments, credit, and collection letters. *Prerequisite:* Business Administration 2101, sophomore English, and junior standing.

3321 Report Writing [ 620  
 Techniques of business research and training in the organization and writing of business reports. *Prerequisite:* Business Administration 2101, sophomore English and junior standing.

**Accounting** *For Undergraduate Credit Only*

4111 Theory and Practice in Accounting (\$4) [ 408  
 Principles of double-entry bookkeeping, theories of general financial accounting, analysis and recording of business transactions, adjusting and closing entries; financial statements, sole proprietorship accounting, practice set. Three classroom and three laboratory hours per week.

4112 Theory and Practice of Accounting (\$4) [ 409  
 Continuation of Business Administration 4111. Partnership accounting, corporation accounting, reserves and reserve funds, manufacturing accounts, asset valuation, practice sets. Three classroom and three laboratory hours per week. *Prerequisite:* Business Administration 4111.

3211 Intermediate Accounting, First Course [ 316  
 Classification and codification of accounts; form and content of financial statements; correction of books and statements; special phases of corporation accounting; cash and receivables; inventories; investments. *Prerequisite:* Business Administration 4112.

3212 Intermediate Accounting, Second Course [ 317  
 Tangible and intangible fixed assets; liabilities and reserves; analysis and interpretation of financial statements; application of funds and cash-flow statements; quasi-reorganizations; Income Tax allocation. *Prerequisite:* Business Administration 3211.

*For Graduates and Undergraduates*

3311 Cost Accounting, First Course [ 329  
 A study covering cost procedures, cost control, cost reports, and cost analysis. Job order cost accounting and process cost accounting methods are studied. *Prerequisite:* Business Administration 4112.

3312 Cost Accounting, Second Course [ NEW  
 This course includes a study of estimated costs, budgetary control with standard costs, and cost and profit analyses for decision-making purposes. *Prerequisite:* Business Administration 3311.

3313-14 Auditing [ 330-NEW  
 A study of auditing procedures through the application of auditing principles and the adherence to auditing standards relating to assets, liabilities, and proprietorships. Preparation of audit reports. *Prerequisite:* Business Administration 3211.

3315 Federal Tax Accounting for Individuals [ 338K  
 Theory and problems, income tax forms, most recent federal revenue acts, and application of federal tax problems to everyday personal and business questions. *Prerequisite:* Business Administration 4112.

3316 Federal Tax Accounting for Partnerships and Corporations [ 338M  
 Theory and problems, estate and trust taxes, capital stock taxes, excess profits taxes, gift taxes, foreign income taxes, and problems of foreign taxpayers. *Prerequisite:* Business Administration 3315.

- 3411 Advanced Accounting, First Course [ 361  
Special phases of partnership accounting; joint venture; consignments; accounting for insurance costs; statement of affairs and accounting for insolvent concerns; compound interest; home office and branch accounting. *Prerequisite:* Business Administration 3212.
- 3412 Advanced Accounting, Second Course [ 362  
Consolidated balance sheets, consolidated income and surplus statements; holding companies; mergers. *Prerequisite:* Business Administration 3411.
- 3413 C. P. A. Problems [ 363  
A study of problems and advanced theory dealing primarily with corporation accounting, assets and liabilities, analysis of statements, and cost accounting. Current C.P.A. examination problems will be stressed. *Prerequisite:* Twelve semester hours of courses in accounting.
- 3414 C. P. A. Law Review [ 364  
Analysis of C.P.A. law examinations for recent years; fields of law covered by examinations; technique of analyzing and answering law problems and cases. *Prerequisite:* Business Administration 3325-26.
- 3420 Fundamentals of Accounting Systems [ NEW  
A study of principles to be applied in designing accounting systems, and the relationship of the system to policies, organization, and operational procedures. *Prerequisite:* Business Administration 3212 and 3312.
- 3421 Governmental and Institutional Accounting [ NEW  
Accounting principles and procedures characteristic of governmental units and institutions. *Prerequisite:* Business Administration 3212 and 3312.

### **Labor and Management**

*For Undergraduate Credit Only*

- 3121 Introduction to Business [ 601  
A general survey of the major industries in the United States with special emphasis on the competitive, technological, and historical forces underlying their growth and development.

*For Graduates and Undergraduates*

- 3322 Office Organization and Management [ 335  
Presentation of the fundamental principles and practices of office management providing essential information for the solution of office management problems. Emphasis placed on planning, organizing, and controlling office work. *Prerequisite:* Junior standing.
- 3331 Corporation Finance [ 332  
Promotion of corporations, sources of capital, capital structures, internal financial management, receiverships, reorganizations, relation of corporation finance to banking, social consequences of over-promotion. *Prerequisite:* Economics 3104 and junior standing.
- 3345 Personnel Management [ 342  
Policies and practices of planning for and organizing personnel for the purpose of procuring, developing, maintaining, and utilizing employees. *Prerequisite:* Junior standing.
- 3346 Industrial Management [ NEW  
Basic principles of industrial organization and management; problems connected with production and human relations; case studies. *Prerequisite:* Economics 3104 and junior standing.

- 3347 Foremanship and Supervision [ NEW  
 Managerial problems on the level of first-line supervisors; leadership and discipline; relations with subordinates, with superiors, and with other departments; problems of absenteeism, grievances, morale, and safety. *Prerequisite:* Business Administration 3345 or 3346.
- 3349 Purchasing [ NEW  
 The practices which underlie the sound procurement of materials, parts, supplies and equipment required in the normal conduct of a business with special attention to the meaning, scope, organization and principles of purchasing procedure; the place of value analysis, standardization and the legal aspects in the purchasing function. *Prerequisite:* Junior standing.
- 3378 Investments [ 357  
 Investment principles, investment banking, security analysis, security classification including rails, industrials, utilities, governments, and others. Principally considers investor's viewpoint. *Prerequisite:* Business Administration 4112 and junior standing.
- 3448 Methods Improvement [ NEW  
 An analysis of the procedures, processes and principles of motion economy and micromotion techniques; determining time standards and their relation to incentive systems; attendant human relations problems are examined. *Prerequisite:* Business Administration 3345 or 3346.
- 3449 Production Control [ NEW  
 A study of the function of production control and its relationship with manufacturing, sales, and technical staff departments. Observations of the techniques used by business are made by means of field trips and case problems. *Prerequisite:* Business Administration 3346.

**Business Law** *For Undergraduate Credit Only*

- 3325-26 Business Law [ 623  
 Textbook and case method. Law of contracts, agency, bailments, sales, mortgages, negotiable instruments; emphasis on Texas interpretation. *Prerequisite:* Economics 3104 or Business Administration 4112 and junior standing.

*For Graduates and Undergraduates*

- 3342 Labor Law [ Eco. 3342  
 Historical development of labor law and the rights and duties of collective bargaining. Study of applicable Federal legislation. Administrative procedure, rulings and decisions. Significant Court Cases. *Prerequisite:* Junior standing.
- 3343 Real Estate Law [ 3433  
 General principles of real estate law with particular reference to Texas. Estates and interests in land. Community and separate property. Adverse possession. Deeds, leases, and conveyancing. Liens and foreclosure procedures, etc. *Prerequisite:* Business Administration 3326.

- 3344 Trade Regulation [ NEW  
 A study of anti-trust regulation, functions and powers of the Federal Trade Commission, monopoly, conspiracies in restraint of trade, unfair competition, deceptive branding and advertising, copyright, trade mark and patent registration and infringement. *Prerequisite:* Business Administration 3325.

**Marketing and Statistics**

*For Undergraduate Credit Only*

- 3228 Insurance Fundamentals [ 359  
 The economic and social services, the important principles and practices, and the principal legal phases of all the common forms of insurance including life, property, casualty, and suretyship. *Prerequisite:* Business Administration 4112 or Economics 3104.

**3232 Real Estate Principles and Practices** [ 378  
 Fundamentals of the real estate business. The economics of real property. Ownership, titles, and interests in real estate; liens, taxes, contracts, leases, deeds; financing and investment; valuation and appraisal principles; subdivision, home ownership, and housing; insurance, ethics, licensing requirements, and operating procedures. *Prerequisite:* Economics 3104.

**3251 Marketing** [ 337  
 Considers functions, middlemen, institutions, law, policies, and practices in marketing. *Prerequisite:* Economics 3104.

**3355 Owning and Operating a Small Business** [ 367  
 A study of steps essential in planning, organizing, and operating a single proprietorship or partnership enterprise. Special emphasis on meeting local, state, and federal requirements; locating, financing, insuring, accounting, and merchandising for profit. *Prerequisite:* Business Administration 4112 and junior standing.

*For Graduates and Undergraduates*

**3350 Fundamentals of Advertising** [ 321K  
 Relation to other business functions. Study of campaigns, appropriations, media, and practical advertising activities. *Prerequisite:* Business Administration 3251 and junior standing.

**3351 Advertising, Copywriting and Special Layouts** [ 326K  
 Instruction and practice in preparing various types of copywriting and layouts. Study of marketing media, direct mail advertising, circulars, store layouts. Two classroom and two practice hours per week. *Prerequisite:* Business Administration 3350.

**3352 Public Relations** [ 358  
 Principles, techniques, and methods used in public relations; necessity and significance in the free enterprise system. Relationships include national, state, and local government, employees, customers, suppliers, social and religious institutions. *Prerequisite:* Junior standing.

**3353 Business Salesmanship** [ 339  
 Economic problems of personal selling, planning and execution of an interview, product and market analysis, building good will, salesman and employer relationship. *Prerequisite:* Business Administration 3251 and junior standing.

**3359 Storage and Warehousing** [ 346  
 Development of facilities, services, and practices by public and private warehouses; financial, transportation, and other aspects of industry. *Prerequisite:* Economics 3104, junior standing, and Business Administration 3251.

**4361 Principles of Statistics (\$4)** [ 432  
 Quantitative methods of analysis, graphic and tabular presentations, organizing and describing data; frequency distribution, measures of central tendency, dispersion, skewness, time series analysis, correlation. Three classroom and three laboratory hours per week. *Prerequisite:* Six semester hours of mathematics and junior standing.

**3362 Intermediate Statistics** [ 333  
 A continuation of the study of statistical methods and procedures with application to economic and business situations. Special emphasis on probability and theory of sampling; tests of significance and reliability; statistical induction; the normal curve; Chi-square test; analysis of variance; non-linear, multiple, and partial correlation; testing hypotheses. *Prerequisite:* Business Administration 4361.

- 3379 Credits and Collections [ NEW  
 Considers the types of credit, credit terms, organization and operation of credit department, credit analysis and appraisal, credit information, collection devices, legal aspects, and procedure with past-due and insolvent accounts. *Prerequisite:* Business Administration 4112, Economics 3104, and junior standing.
- 3450 Principles of Retailing [ 369  
 Survey of all phases of retailing, internal and external. *Prerequisite:* Business Administration 4112 and 3251.
- 3451 Market Research and Analysis [ NEW  
 Research methods and statistical techniques used in market research and analysis. Emphasis on collection of information from internal and external sources, analysis, interpretation, and presentation of research findings. *Prerequisite:* Business Administration 4361 and 3251.
- 3479 Credit Management Problems [ NEW  
 A case study of credit problems developing professional approaches to responsibilities, policies, and skills of credit management. *Prerequisite:* Business Administration 3379.

**ECONOMICS**

*For Undergraduate Credit Only*

- 3101 Survey of Economics [ NEW  
 (Open only to non-economic and non-business administration majors.)  
 A survey course on the principles of economics designed to give a broad basic understanding of our economic world. (This course may be used by non-economic and non-business administration majors to satisfy the principles requirement to advanced courses in economics.)
- 3103-04 Principles of Economics [ 3101, 3102  
 An introduction to the basic principles of Economics and an analysis of the manner in which they operate in the institutional complex of our society. For Economics and Business Administration Majors only.
- 3303 Intermediate Economic Theory [ 3203  
 A study of cost, demand, and price theory; the concepts, assumptions, and policy implications of aspects of particular equilibrium and general equilibrium theory; a critical survey of various concepts of the scope, methods, and approaches to Economics. *Prerequisite:* Economics 3104.
- 3309 Economic History of Europe [ 3410  
 A study and analysis of the major elements in the economic development of Europe from medieval period to present: agriculture, manufacturing, resources, transportation, finance, labor and economic policy. *Prerequisite:* Economics 3104.
- 3310 Economic History of the United States [ 3210  
 Survey of American economic development from colonial time to present; analysis of factors which have shaped that development. *Prerequisite:* Economics 3104.

*For Graduates and Undergraduates*

- 3321 History of Economic Thought [ 340  
 A study of the development of principal economic doctrines and schools of economic thought. *Prerequisite:* Economics 3104 and junior standing.
- 3325 Comparative Economic Systems [ 343  
 A consideration of economic foundations of the capitalistic and other systems; objective study of economic construction of fascism, socialism, communism, capitalism. *Prerequisite:* Economics 3104 and junior standing.

- 3326 **Business and Government** [ 3425  
A study of the impact of government planning upon business and the effect of governmental regulation and control upon industry, utilities, finance, and transportation. *Prerequisite:* Economics 3104 and junior standing.
- 3330 **Public Finance** [ 321  
Financial administration by agencies of local, state, and federal government; principles of taxation; sales, property, income, and inheritance taxes; analysis of government expenditures and public credit. *Prerequisite:* Economics 3104 and junior standing.
- 3340 **Labor Problems** [ 349  
An introductory course in labor-management relations, unions, management, and the government; including pertinent history, and labor legislation. *Prerequisite:* Economics 3104 and junior standing.
- 3355 **Economics of Transportation** [ B.A. 3370  
History, economic characteristics and regulation of rail, motor, air, water and pipeline transportation agencies. *Prerequisite:* Economics 3104 and junior standing.
- 3363 **Business Cycles and Forecasting** [ 345  
History and theories; prediction of commodity prices, sales volume, industrial production, industrial growth and decay, security prices, and business profits; professional forecasting service. *Prerequisite:* Economics 3104, and Business Administration 4361.
- 3365 **Introduction to International Economics** [ 3265  
Introductory course in international trade principles dealing with the principal theories of trade, foreign exchange, tariffs, and other trade barriers. Some time is devoted to import-export procedures, documents, and current problems. *Prerequisite:* Economics 3104 and junior standing.
- 3366 **Economic Survey of Latin America** [ 348  
Considers the historical setting, economic development, monetary and fiscal problems, investments, and trade practices of the area countries. *Prerequisite:* Economics 3104 and junior standing.
- 3367 **Economic Development** [ NEW  
A course designed to familiarize the student with problems of economic growth. Particular emphasis will be directed toward Latin America; an intensive case study of Mexico will be included. Topics included are a study of basic resources, industrialization, technological development, capital formation, and the growth of international trade. *Prerequisite:* Economics 3104 and junior standing.
- 3375 **Money and Banking** [ 322  
A description of the history and present characteristics of the money and banking structure of the United States. Special emphasis is placed on monetary policy as it affects the level of economic activity. *Prerequisite:* Economics 3104 and junior standing.
- 3380 **Institutional Economics** [ 3413  
A survey of institutional economics including the work of Veblen, Commons, and Ayres. The philosophical foundations of this school of thought will be examined, together with the roles of technology and institutions in molding the economy. *Prerequisite:* Nine advanced hours in economics.
- 3441 **Wage Determination** [ NEW  
A study of collective bargaining, the theoretical aspects of wages and wage determination, and the relationship between wages, production, distribution, and employment. *Prerequisite:* Economics 3340.
- 3470 **Monetary and Fiscal Policy** [ NEW  
An analysis and critique of monetary and fiscal policies and practices to facilitate economic stability and promote economic progress. *Prerequisite:* Economics 3375.

**Special Studies**      *For Graduates and Undergraduates*

2495 to 6495 Special Studies in Business Administration and/or Economics [ 679

Special studies in areas for which a separate course is not organized. Credit will vary according to work performed, value being indicated by course numbers. *Prerequisite:* Eighteen hours of Business Administration and/or Economics, six of which must be advanced; consent of instructor and the department chairman.

**For Graduate Students Only**

*Prerequisite:* Twelve semester hours of advanced courses in Business Administration and a bachelor's degree.

**BUSINESS ADMINISTRATION**

2594 Statement Analysis [ NEW  
An analytical study of different financial statements. *Prerequisite:* Twelve semester hours of advanced courses in Business Administration.

2595 Managerial Organization [ 3595  
A survey of the important literature in the field of industrial organization and management. The student has an opportunity to participate in seminar discussions of industrial management problems. *Prerequisite:* Twelve semester hours of advanced courses in Business Administration.

2596 Personnel Administration Problems [ 3596  
A survey of the important literature in the field of human relations. The student has an opportunity to participate in seminar discussions of human relations problems. *Prerequisite:* Twelve semester hours of advanced courses in Business Administration.

2598 Readings in Marketing [ NEW  
A course designed to broaden the perspective of the student in the history, institutions, middlemen, merchandising techniques, legal aspects, and current trends in the distributive process. *Prerequisite:* Twelve semester hours of advanced courses in Business Administration.

**ECONOMICS**

2597 Economic Theory [ NEW  
A systematic exposition of those tools and concepts of modern economic theory which are basic to an understanding of the functioning of an economic system, and including more specialized analysis of price theory, national income, and modern institutions. *Prerequisite:* Twelve semester hours of advanced courses in Business Administration and/or Economics.



## Chemistry

DR. W. W. LAKE, *Chairman*

*Professors LAKE, HANCOCK; Associate Professor ALEXANDER; Assistant Professors LEWIS, SCRUGGS; Instructors COMPTON, MILEDI, O'BRIEN, O'NEAL, PYTCHEP,\* RAMSEY, SHIOJI*

The minimum course requirements in Chemistry for the Bachelor of Science Degree are Chemistry 4103-04, 3211, 4213, 4324, 4321-22; 4460, 4461, and six additional advanced hours in Chemistry.

	<i>Former Number</i>
3101-02 General Chemistry (\$2-\$2)	[ 601a-b
A study of the fundamental principles of chemistry with applications in the fields of inorganic, organic, and biochemical processes. Two lectures, one demonstration hour, and two laboratory hours per week. May not be used as a prerequisite for any other chemistry course.	
4103-04 General Chemistry (\$4-\$4)	[ 801a-b
The laws and theories of chemistry; the elements and their most important compounds with reference to their production and use. For students who need a foundation for work in advanced chemistry and related sciences. Three lectures and four laboratory hours per week.	
3105 General Chemistry	[ 305
A review of the fundamental principles of elementary chemistry and their application. Required of all students who, after trial and a qualifying examination, are found insufficiently prepared to carry Chemistry 4103 and who plan to register for that course the next succeeding semester. Two lectures and one demonstration hour per week. May not be used as a prerequisite for any chemistry course other than 4103.	
3106 Chemistry for Nurses (\$2)	[ 306
Elementary principles of chemistry with applications to the nursing profession. Three lectures and two laboratory hours per week. Open only to pre-clinical nurses and to students in a school of nursing.	
3107 Chemistry for Nurses (\$2)	[ 307
A continuation of Chemistry 3106. Three lectures and two laboratory hours per week. <i>Prerequisite:</i> Chemistry 3106.	
3211 Qualitative Analysis (\$2)	[ 311
Analytical reactions from the point of view of the laws of chemical equilibrium applied to solutions of electrolytes. Analysis of the common ions using the semimicro technique. One lecture and six laboratory hours per week. <i>Prerequisite:</i> Chemistry 4103-04 with a grade of not less than C in each semester.	
2211 Qualitative Analysis (\$2)	[ NEW
Lectures the same as for Chemistry 3211 but with only three laboratory hours per week. <i>Prerequisite:</i> Chemistry 4103-04 with a grade of not less than C in each semester.	
4213 Quantitative Analysis (\$4)	[ 413
The theory and practice of quantitative chemical analysis. Two lectures and six laboratory hours per week. Three of the four credit hours may be counted as advanced. <i>Prerequisite:</i> Chemistry 3211.	

\*On leave, 1958-59.

- 4214 Quantitative Analysis (\$4) [ NEW  
A one semester course in gravimetric and volumetric analysis with special emphasis on ores and metallurgical products. Two lectures and six laboratory hours per week. *Prerequisite:* Chemistry 3211 or 2211. Not counted in addition to Chemistry 4213.
- 3221-22 Organic Chemistry (\$2-\$2) [ 621a-b  
A study of the fundamental types of carbon compounds. Two lectures and three laboratory hours per week. *Prerequisite:* Chemistry 4103-04.
- 2221-22 Organic Chemistry [ NEW  
The same as Chemistry 3221-22 but without the laboratory. Two lectures per week. *Prerequisite:* Chemistry 4103-04.
- For Undergraduates and Graduates*
- 4321-22 Organic Chemistry (\$4-\$4) [ 821a-b  
A study of the fundamental types of carbon compounds. Three lectures and five laboratory hours per week. *Prerequisite:* Chemistry 4213.
- 4324 Quantitative Analysis (\$4) [ 424  
A continuation of Chemistry 4213. Two lectures and six laboratory hours per week. *Prerequisite:* Chemistry 4213.
- 4460 Physical Chemistry (\$4) [ 460  
Properties of substances in the gaseous, liquid, and solid state; solutions; thermochemistry. Three lectures and three laboratory hours per week. *Prerequisite:* Chemistry 4213 or 4214, Mathematics 3214, and two semesters of Physics.
- 4461 Physical Chemistry (\$4) [ 461  
Homogeneous and heterogeneous equilibria; kinetics of reaction, electrochemistry, and chemical thermodynamics. Three lectures and three laboratory hours per week. *Prerequisite:* Chemistry 4460.
- 3462 Biochemistry (\$2) [ 362  
Chemistry of food substances, digestion, vitamins, enzymes, absorption, and blood. Two lectures and three laboratory hours per week. *Prerequisite:* Chemistry 3221-22 or 4321-22.
- 3463 Biochemistry (\$2) [ 363  
Immunochemistry, chemistry of respiration, hormones, intermediary metabolism, etc., with emphasis on cell metabolism. Two lectures and three laboratory hours per week. *Prerequisite:* Chemistry 3462.
- 3468 Principles of Colloid Chemistry (\$2) [ 368  
Chemical and physical conditions of the colloid state. Two lectures and three laboratory hours per week. *Prerequisite:* Chemistry 4460.
- 4450 Instrumental Methods of Analytical Chemistry (\$4) [ NEW  
A study of the more important optical and electrical methods of chemical analysis. Two lectures and six laboratory hours per week. *Prerequisite:* Chemistry 4322, Mathematics 3214, and two semesters of Physics.
- 4451 Chemical Spectroscopy (\$4) [ NEW  
A study of emission spectroscopy and its applications to chemical analysis. Two lectures and six laboratory hours per week. *Prerequisite:* Chemistry 4213 or 4214, Mathematics 3213 and two semesters of Physics.
- 2496 to 6496 Introduction to Research (\$2 or \$4) [ 296-696  
Credit will be granted, up to six semester hours, for research satisfactory completed by advanced students in the Chemistry Department. Only specially qualified students approved by the Chairman of the Chemistry Department will be accepted for this work. Credit will be granted only in the senior year on the recommendation of the Chairman of the Chemistry Department. *Prerequisite:* Permission of the Chairman of the Chemistry Department.

## Education

DR. F. E. FARQUEAR, *Chairman*

*Professors FARQUEAR, FOSTER, PUCKETT; Associate Professors BURNS, CONDON, DAY, MEADOWS; Assistant Professors O'MALLEY, REYNOLDS*

The general teacher-education program is concerned with the total education of the prospective teacher in emphasizing preparation for our American way of life, the development of moral and ethical character and proficiency in the use of oral and written English.

Furthermore, for the prospective elementary school teacher, the program is concerned with the provisions for helping him to acquire an adequate foundation in the knowledge and understanding of the elementary school child, in the organization of effective learning situations, and in the proficiency of using various instructional materials, as well as in the evaluation of children's progress.

For the prospective secondary school teacher, the program is also concerned with helping the student acquire competence in one or more teaching fields, along with professional knowledge in the field of Education which would pertain to the growth and behavior of students of secondary school age.

*For Undergraduate Credit Only*

### **Pre-Professional and General**

*Former  
Number*

- 3101 Introduction to Education [ 300  
The relationship of American public schools to social and economic changes, also problems in the development of the curriculum, instructional practices, school organization, and administration.
- 3102 Introduction to Educational Psychology [ 301  
A study of the learning process with attention given to growth and development, conditions of effective learning, adjustment, and individual differences and evaluation.
- 3310 Philosophy of Education [ 359  
Educational principles governing aims, curricula, methods, and organization, relation of individual to society, and the historical development of modern democratic concepts of education. *Prerequisite:* Nine hours of Education and junior standing.

### **Elementary Education**

- 3201 Psychology of the Elementary School Child\* [ 314  
The changes which take place in the life of the child as related to the processes of elementary education. *Prerequisite:* Education 3101 and 3102.
- 3203 Introduction to Elementary School Curriculum\* [ 318r  
An introduction to the curriculum in the elementary grades. *Prerequisite:* Education 3101 and 3102.
- 3301 Children's Literature in the Elementary School\* [ 320  
Children's literature and the administration of the recreational reading program in relation to the content subjects in the elementary school. Special reading may be done at the level in which the student is most interested. *Prerequisite:* Twelve hours of Education.
- 3302 Language Arts Materials and Methods in the  
Elementary School [ 330t  
Materials and methods of teaching language arts in the elementary school. *Prerequisite:* Education 3201.

\*The course may be taken by permission of the chairman of the department.

- 3303 Social Studies Materials and Methods in the Elementary School\* [ 331T  
Materials and methods of teaching science in the elementary school. *Prerequisite:* Education 3201.
- 3304 Science Materials and Methods in the Elementary School [ NEW  
Materials and methods of teaching science in the elementary school. *Prerequisite:* Education 3201.
- 4401 Professional Laboratory Experience in the Elementary School — A Seminar†  
A minimum of ten hours a week for one semester of laboratory observation and teaching experience in an elementary school classroom. *Prerequisite:* Eighteen hours of Education, including Education 3201, 3203, 3302, and 3303; senior standing, and permission of the department chairman. (In an all-levels program, permission by the departmental chairman concerned.)

- 4402 Professional Laboratory Experience in the Elementary School [ 328T  
A minimum of ten hours a week for one semester of laboratory teaching experience in an elementary school classroom. To be taken concurrently with Education 4401, excepting in an All-levels Program.

**Secondary Education**

- 3202 Psychology of the Secondary School Student\* [ 316  
The nature and development of the individual through the adolescent period as related to the processes of secondary education. *Prerequisite:* Education 3101 and 3102.
- 3204 Introduction to the Curriculum in the Secondary School\* [ 319C  
An introduction to the development of the curriculum in the secondary school. *Prerequisite:* Education 3101 and 3102.
- 3305 Principles of Teaching and Observation in the Secondary School [ NEW  
Consideration of types of teaching and provision for observation in the secondary school. *Prerequisite:* Education 3202 and 3204.
- 3306 Teaching High-School Journalism and Supervision of School Publications [ 343K  
Instruction in teaching high-school journalism and supervision of publications, both classroom and extracurricular. Lectures include selection of material, editing, production, and school public relations. Attention will be given to defining the problems of school public relations and the function and scope of the various types of school publications. *Prerequisite:* Fifteen hours of Education, including Education 3305.
- 3307 Materials and Methods of Teaching Commercial Subjects [ 321K  
Subject matter and methods for teaching secretarial courses, bookkeeping, arithmetic, and allied subjects in high school. *Prerequisite:* Business Administration 3301-02 and fifteen hours of Education, including Education 3305.
- 4403 Professional Laboratory Experience in the Secondary School — A Seminar†  
A minimum of ten hours a week for one semester of laboratory observation and teaching experience in a secondary school classroom. *Prerequisite:* Eighteen hours of Education, including Education 3202, 3204, and 3305, senior standing, and permission of the department chairman. (In an all-levels program, permission by the departmental chairman concerned.)

\*The course may be taken by permission of the chairman of the department.

†By staff of department concerned.

- 4404 Professional Laboratory Experience in the Secondary School† [ 327T  
 A minimum of ten hours a week for one semester of laboratory teaching experience in a secondary school classroom. To be taken concurrently with Education 4403, excepting in an All-levels Program.

*For Undergraduates and Graduates*

Prerequisites for courses listed below: Twelve semester hours of Education

**Elementary Education**

- 3403 Introduction to Educational Tests, Measurements, and Evaluation in the Elementary School [ 3309  
 Introduction to educational measurement and testing in the elementary grades. The study and use of educational tests in reference to the improvement of instruction. *Prerequisite:* Twelve hours of Education.
- 3405 Arithmetic Materials and Methods in the Elementary School [ 348K  
 Materials and methods of teaching arithmetic in the elementary school.
- 3408 Mental Hygiene and Problems of Children in the Elementary School [ 357  
 A study of the conditions and factors essential for healthful mental development. Consideration of the development of personality with special stress on the problems peculiar and unique to the school child.
- 3410 The Technique of Speech Correction in the Elementary School [ 356  
 The technique of speech correction, involving diagnosis of speech defects and disorders, phonetics, principles of speech correction, and clinical practices in speech correction.
- 3411 Clinic in Speech Correction in the Elementary School [ 357K  
 Practice in the diagnosis and treatment of speech defects. *Prerequisite:* Education 3410.
- 3412 Classroom Use of Audio-Visual Equipment and Materials in the Elementary School [ 389  
 Consideration of various kinds of audio-visual equipment and materials in relation to classroom instruction in the elementary school.
- 3413 Radio Listening as an Aid to Elementary Teaching [ 332  
 A survey course in the use of radio in the classroom. Survey of program material available and a study of methods and techniques in advance preparation and program follow-up. Survey of state "School of the Air." How television will be used in the classroom.
- 3415 Preparation and Presentation of Radio Programs in the Elementary School [ 333  
 Radio production techniques essential to the successful presentation of school programs—the program idea, writing, speaking on the microphone, timing. Survey of program material most welcomed by stations. Practical studio experience and instruction in operation of studio equipment in the Texas Western College radio studio facilities.

†By staff of department concerned.

- 3417 Educational Television — A Seminar [ NEW  
 Set up on a seminar level, allowing the student to devote his attention exclusively either to the elementary or the secondary school. The course presents the role of television in modern education. Planning and producing the educational television program for in-school viewing. Also applications of television programs and techniques as audio-visual aids.

**Secondary Education**

- 3414 Radio Listening as an Aid to Secondary Teaching [ 332K  
 A survey course in the use of radio at the high school level. Program analysis and methods and techniques of coordinating educational and public service broadcasts with high school curriculum. Study of state "Schools of the Air," survey of radio's potentialities in education. Syllabus of things to come—television as an aid to teaching.

- 3416 Preparation and Presentation of Radio Programs  
 in the Secondary School [ 333K  
 Radio production techniques essential to the successful presentation of school programs. Putting the high school music organization on the air. Development of a radio personality. Delayed broadcasting by tape recording. Possibilities of television. Practical studio experience and instruction in operation of station equipment in the Texas Western College radio studio facilities.

- 3417 Educational Television — A Seminar [ NEW  
 Set up on a seminar level, allowing the student to devote his attention exclusively either to the elementary or the secondary school.

- 3418 Current Events in Relation to Classroom Use  
 in the Secondary School [ 334T  
 Particular attention given to selection, organization, and use of current event materials in the secondary school classroom.

- 3419 Introduction to Mental, Educational Measurements,  
 and Evaluation in the Secondary School [ 355  
 Introduction to measurement in secondary education. Typical methods of measuring intelligence, character, and achievement. Elementary statistical terms and processes. Preparation for use of mental and educational tests. *Prerequisite:* Twelve hours of Education.

- 3420 Principles of Guidance in the Secondary School [ 3311  
 A foundation course concerned with principles and practices of guidance as they apply to the public school; emphasis on the guidance role of the classroom teacher. *Prerequisite:* Twelve hours of Education.

**For Graduate Students Only**

*Prerequisite:* Twelve semester hours of advanced courses in Education and a bachelor's degree.

- 3502 Problems in Education — A Seminar [ 3901  
 A course emphasizing educational research in both the elementary and secondary school fields. The student is allowed to make a choice of the field in which to carry on educational research.

- 3503 Problems in Education — A Seminar [ 3901  
*Prerequisite:* Education 3502.

- 3504 Educational Statistics — Beginning Course [ 391

- 3505 The Construction and Use of Achievement  
Examinations — A Seminar [ 391T  
Covers the theory of testing and provides practical experience in both critical analysis and construction of tests for classroom use. The student will be allowed to devote his attention exclusively either to the elementary school level or to the secondary, thereby receiving credit in elementary education or in secondary.
- 3506 Remedial Reading in the Elementary School [ 392  
Examination and appraisal of significant researches in the field of remedial reading. Attention given to the analysis and diagnosis of individual cases of reading retardation, and to corrective and remedial procedures.
- 6507 Clinic in Reading in the Elementary School [ 692k  
A course designed for the needs of experienced classroom teachers who desire to work with elementary school children in a workshop situation, diagnosing with standard and teacher-made tests, trying out methods, building competence in case study approaches, and participation in small group discussions concerning progress and new possibilities.
- 3508 Workshop in Instructional Problems [ 393  
Study of teaching problems arising in the classroom. Students will choose their own problems and those with allied interests will be grouped together to facilitate individual research. Problems at both elementary and secondary levels may be chosen by students.
- 3509 Workshop in Instructional Problems [ 393T  
Extension of Education 3508.
- 3510 Workshop in Teaching Arithmetic in the  
Elementary School [ 393k  
An opportunity for teachers to work together to extract from contemporary sources the practices, materials, and philosophy which seem applicable to the specific situations in which the individual teachers will work.
- 3511 Curriculum Construction and Organization of  
Subject Matter — A Seminar [ 394  
The student is permitted to devote his attention exclusively to a pertinent curriculum problem either in the elementary or secondary school field.
- 3512 Curriculum Problems in Science Education — A Seminar [ 394S  
The student is permitted to devote his attention exclusively to a pertinent curriculum problem in science education either in the elementary or secondary school field.
- 3513 The Curriculum in the Elementary School [ 394T  
Particular attention given to selection and organization of materials in reference to curriculum development of the elementary school.
- 3514 Child Development in the Elementary School [ 395  
Characteristics of the growth period of children in the elementary school. Consideration of the bearing of the needs of children upon the elementary school program.
- 3515 Workshop in Child Development in the  
Elementary School [ 395k  
Class and group discussions, study, gathering and evaluating materials, surveying contemporary practices, all pertaining to the growth and development of children, with emphasis on implications for the modern elementary school.

- 3516 The Psychology of Individual Differences in the Secondary School [ 395N  
The study of individual differences in intelligence, school achievement, vocational aptitudes, personality, interests and attitudes; study of varieties of group differences; and study of methods used in studying human differences.
- 3517 Psychology of Personality Development of Secondary School Student [ 395R  
Study of mental hygiene, the nature and development of personality, and personality theory and assessment.
- 3518 Counseling and Vocational Guidance in the Secondary School [ 396  
Principles, functions, and methods and techniques of counseling.
- 3519 Principles of Psychological Testing in the Secondary School [ 396K  
Study, evaluation, and use of educational and psychological tests used in the study and guidance of students. *Prerequisite:* An introductory course in tests and measurements.
- 3520 Workshop in Guidance in the Secondary School [ 396M  
Designed for administrators, counselors, teachers, senior-class or organizational sponsors. Students will choose their own problems, and those with allied interests will be grouped together to facilitate individual research.
- 3522 Supervised Practice in Counseling — A Seminar [ NEW  
Actual practice under supervision in applying the principles, tools, and techniques used in the guidance program. Students will be assigned to guidance workers in this area and supervised and instructed by an instructor in the Department of Education of Texas Western College. *Prerequisite:* Education 3311, 3504; and four of the following: Education 3516, 3517, 3518, 3519, 3535.
- 3523 Educational Trends [ 396N  
A critical consideration of selected trends in Education.
- 3524 Public School Supervision [ 397  
The purpose is to acquaint school supervisors with the modern philosophy of school supervision along with the techniques which have been found useful in the performance of the supervisory function.
- 3525 The Administration of Teaching Personnel [ 397K  
A course in ethics of the various relationships between (1) teachers and other school employees, and (2) the numerous "outside groups, interests, individuals, and officials."
- 3526 Public School Finance [ 397L  
Consideration is given to such matters as public school revenue, budget making and administration, accounting procedures and records, and school bonds.
- 3527 Public School Administration and Organization [ 397M  
Problems confronting the administrative office in local schools, such as relation of superintendent with school board and community, organization of schools, development of curriculum, and selection and promotion of teachers.
- 3528 Organization and Administration of the Elementary School [ 398E  
Problems confronting the elementary school principal will be studied. For example, teacher schedules, classroom schedules, teachers' meetings, organization of the staff, supervision, curriculum, development and related problems will be considered.



- 3529 Workshop in Educational Administration [ 397N  
 Students will choose their own problems, and those with allied interests will be grouped together to facilitate individual research.
- 3530 Workshop in School Supervision [ 397S  
 Students will choose their own problems, and those with allied interests will be grouped together to facilitate individual research.
- 3531 Principles of Public School Relations [ 397T  
 Principles, techniques, and methods used in school public relations. Relationships include the school board and the public, the superintendent in the public relations program, school personnel and the public, the public relations of professional organizations.
- 3532 Organization and Administration of the Secondary School [ NEW  
 The study of problems pertaining to teachers' meetings, organization of the staff, supervision, curriculum development, and related problems.
- 3535 The Education of Exceptional Children [ 339T & 3409  
 Consideration given to the philosophy, problems, treatment, and methods of providing appropriate education and training for exceptional children.
- 3536 Classroom Management in the Elementary School [ 329K-3407  
 The use of records and group techniques to improve human relations in the classroom.
- 3598-99 Thesis Course for Master's Degree [ 698  
*Prerequisite:* Twelve semester hours of advanced courses in Education, and permission of chairman of the department.

## **Engineering and Drawing**

MR. F. A. DECKER, *Chairman*

*Professors* DECKER, THOMAS, COLEMAN, RAYMOND,<sup>o</sup> BRINKER, BARNES;  
*Associate Professor* HASSLER; *Assistant Professors* CERVENKA, VANZANT, YOUNG;  
*Instructors* GOMEZ,<sup>o</sup> DUCOFF, BOURQUIN; *Part-time Instructors* LYON, HINTZE, GRADO

### **ENGINEERING**

- |  | <i>Former<br/>Number</i> |
|--|--------------------------|
| 1101 Elementary Engineering Problems<br>Study of the slide rule; simple engineering problems are solved using slide-rule techniques. Required of all freshman engineering students. <i>Prerequisite:</i> Mathematics 4115.   | [ 101                    |
| 3215 Statics<br>Forces in space, friction, centroids, centers of gravity, moment of inertia, radius of gyration and kinetics of rigid bodies in rectilinear translation. <i>Prerequisite:</i> Drawing 2102, Physics 4215, and registration in Mathematics 3214.  | [ 315                    |
| 4334 Mechanics of Materials (\$4)<br>Stresses and strains, in tension, and in shear; riveted and welded joints; torsion of shafts; resilience; and study of beams and columns. Three lectures and three laboratory hours per week. <i>Prerequisite:</i> Engineering 3215.  | [ 434                    |
| 2338 Dynamics<br>Principles of dynamics and application to engineering problems; motion of a particle, translation, rotation, plane motion, work and energy, impulse, and momentum. <i>Prerequisite:</i> Engineering 3215.   | [ 238                    |
| 3426 Engineering Economics<br>Application of economics to engineering and industrial problems which require a knowledge of engineering for their solution. <i>Prerequisite:</i> Economics 3101 and at least 24 semester hours of engineering courses.  | [ 326                    |
| 3469 Switching Circuits<br>Study of logical properties of circuits based on two-valued devices used in digital computers and control and telephone switching; elements of logical algebras including the propositional calculus and Boolean algebra; logical analysis and synthesis of combinational nets; optimization of series-parallel controlled-contact circuits; and sequential relay circuits. <i>Prerequisite:</i> Physics 4216 and Mathematics 3325. May be counted as Physics.  | [ NEW                    |
| 3471 Advanced Engineering Problems (\$2)<br>Original investigation of special problems in the student's field, the problem to be selected by the student with the approval of the chairman of the department. <i>Prerequisite:</i> Senior standing and consent of the chairman of the department.  | [ 371                    |
| 3472 Digital Computers<br>An introduction to digital computers including arithmetic procedures, basic programming patterns, input-output systems, storage systems, arithmetic units, methods of control, and basic timing and control sequences; comparative analysis of representative digital computing machines and their associated engineering, arithmetic, and logical design characteristics. <i>Prerequisite:</i> Engineering 3469. May be counted as Physics.   | [ NEW                    |
| 3474 Analog Computers<br>A study of the theory and practice of modern analog computers using electrical, electronic, and electromechanical elements; analysis of operational components; summers, sign changes, multipliers, dividers, integrators, trigonometric resolvers, and function generators; machine stability, errors, and checking systems. Fields of application: real-time control and simulation studies during design and evaluation of dynamic systems. <i>Prerequisite:</i> Physics 4216 and Mathematics 3326. May be counted as Physics. | [ NEW                    |

<sup>o</sup>Leave of Absence.

**Specific Areas:****Civil Engineering** MR. HASSLER, *Adviser*

- 2212 Concrete Mixtures (\$2) [ 212  
Design, control, and testing of portland cement concrete, sheet asphalt, and asphaltic concrete. One lecture and three laboratory hours per week. *Prerequisite*: Chemistry 4103-04 and Physics 4215.
- 2213 Plane Surveying [ 614  
Care and adjustment of surveying instruments, land surveying, leveling, traverses, determination of meridian, topographic and photogrammetric surveying, mapping, notekeeping, computations, and precision. *Prerequisite*: Mathematics 4115-16 and Drawing 2102. (Formerly included in Engineering 614.)
- 2216 Elementary Plane Surveying (\$2) [ 216  
Care and adjustment of surveying instruments, land surveying, traverses, leveling, notekeeping, computations, and precision. One lecture and three laboratory hours per week. *Prerequisite*: Mathematics 4115-16, and Drawing 2102.
- 4314 Field Surveying (\$4) [ 614  
Summer work; practical field course covering the topics outlined in Engineering 2213. Thirty-two hours of field work per week for six weeks. *Prerequisite*: Engineering 2213 and junior standing. (Formerly included in Engineering 614.)
- 3322 Route Surveying (\$2) [ 322  
Theory and practical application of simple, reverse and compound curves; spirals and earthwork; right-of-way; cross sections; and estimates. Two lectures and three laboratory hours per week. *Prerequisite*: Engineering 2213 and 4314.
- 3335 Reinforced Concrete [ 335  
The theory of reinforced concrete, the design of elementary beams, columns, slabs, footing and retaining walls. A study of the current design specifications. *Prerequisite*: Engineering 4334.
- 3343 Elementary Structural Analysis (\$2) [ 343  
Analysis of simple framed structures, roof trusses, girders and bridges. A study of moving loads and influence lines. Two lectures and three laboratory hours per week. *Prerequisite*: Engineering 4334.
- 3354 Fluid Mechanics [ 354  
Physical properties of fluids, hydrostatics, elements of fluid dynamics, energy and momentum equations, metering instruments, flow through pipes, orifices, and over weirs, and flow in open channels. *Prerequisite*: Physics 4215, Mathematics 3213-14, and Engineering 3215.
- 1355 Fluid Mechanics Laboratory (\$2) [ 155  
Flow through weirs, orifices, flumes, pipes, and related appurtenances; meters and gauges; field trips. Three laboratory hours per week. *Prerequisite*: Engineering 3354.
- 2356 Hydrology [ 256  
Study of precipitation, evaporation, storage, ground water, stream flow, and the phenomena of water in all its states in relation to the hydrologic cycle. *Prerequisite*: Engineering 1355.
- 1427 Reinforced Concrete Design (\$2) [ 127  
The design of complete reinforced concrete structures, including the study of current design specifications. Three laboratory hours per week. *Prerequisite*: Engineering 3335.

- 3440 Highway Engineering [ 340  
Location, design, construction and maintenance of roads and highways; planning surveys; traffic engineering; economics of highway transportation. *Prerequisite:* Engineering 2213, 4314, and 3448.
- 3441 Public Water Supplies (\$2) [ 341  
Sources, storage, treatment, and distribution of water for domestic and commercial use, including discussion of the planning, design, financing, construction, and maintenance of water supply system; and laboratory analysis of water as practiced at water works. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 2356 and Chemistry 4103-04.
- 3442 Sewerage and Sewage Disposal (\$2) [ 342  
Sewer systems, their planning, construction, design, and maintenance; and treatment and disposal of sewage, including laboratory analysis of sewage. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 3441.
- 3446 Contracts and Specifications [ 346  
Elements of contracts and specifications, including discussions of the legal problem of contractual relations. *Prerequisite:* Senior standing.
- 3448 Soil Engineering (\$2) [ 348  
Soil stability, stress distribution, compressibility, lateral earth pressure, settlement of structures, and choice of foundation types. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 3215 and senior standing.
- 1451 Water Analysis (\$2) [ 151  
Laboratory analysis of water as practiced at water works. Includes interpretation and use of analyses in respect to design and operation of water treatment plants. Three laboratory hours per week. *Prerequisite:* Chemistry 4103-04 and registration in Engineering 3441. (Included in Engineering 3441 after 1957-58.)
- 1452 Sewage Analysis (\$2) [ 152  
Laboratory analysis of sewage and trade wastes. Includes interpretation of analyses in respect to the design and operation of sewage and waste treatment plants. Three laboratory hours per week. *Prerequisite:* Engineering 1451 and registration in Engineering 3442. (Included in Engineering 3442 after 1957-58.)
- 3460 Indeterminate Structures [ 360  
An introduction to statically indeterminate structures; slope and deflection and moment distribution in continuous beams and rigid frames; a study of the deformation of trussed structures by angle changes, and virtual work. *Prerequisite:* Engineering 3343.
- 3461 Structural Design and Theory (\$2) [ 361  
Structural design in concrete, steel and timber structures, including the complete analyses of structures. One lecture and six laboratory hours per week. *Prerequisite:* Engineering 3335 and 3460.

**Electrical Engineering** MR. DECKER, Adviser

- 3319 Elements of Electrical Engineering [ 419  
Analysis of the direct-current circuit; resistance, conductance, measuring instruments, ferromagnetic circuits, permanent magnets, generated and induced emfs, inductance, core losses, network theorems, and non-linear circuits. *Prerequisite:* Physics 4216 and Mathematics 3214.
- 3321 Elements of Electrical Engineering [ 321  
The electric field, capacitance; the magnetic field, inductance; electromagnetic forces and dynamics; transients. *Prerequisite:* Engineering 3319 with a grade of not less than C.

- 4331 **Electrical Circuits and Machines (\$4)** [ 431  
Direct- and alternating-current circuits and machinery; rectifiers; motor starting and controlling devices; distribution systems; protective devices; motor applications; hoisting systems; and power factor correction. For non-electrical engineering students. Three lectures and three laboratory hours per week. *Prerequisite:* Physics 4215-16, and Mathematics 3213-14.
- 4339 **Electronics (\$4)** [ 432  
*Experimental techniques and elementary theory of circuit elements.* Includes linear passive elements, linear electronic and transistor circuits. Also includes nonlinear electronic elements such as trigger circuits. Three lecture and three laboratory hours per week. *Prerequisite:* Physics 4216, and Mathematics 3213-14. (May not be counted in addition to Physics 4339.)
- 4340 **Theory and Application of Electron Tubes (\$4)** [ 433  
Theory and applications of a wide variety of electron tubes and circuits. Includes analysis of steady state and transient response in electronic systems by means of equivalent circuits. Also included are power supplies, feedback amplifiers, television and radio circuits, microwaves, and recent electronic developments. Three lectures and three laboratory hours per week. *Prerequisite:* Engineering 4339. (May not be counted in addition to Physics 4340.)
- 3357 **Alternating-Current Circuits** [ 857a  
Instantaneous current and power; effective current and voltage, average power; vector algebra; single-phase circuit analysis; non-sinusoidal waves. *Prerequisite:* Engineering 3321 with a grade of not less than C.
- 4358 **Alternating-Current Circuits (\$4)** [ 857b  
Coupled circuits; polyphase circuits; measurements; determination of circuit parameters; transmission line calculations; wave filters; symmetrical components; short-circuit calculations; transients. Three lectures and three laboratory hours per week. *Prerequisite:* Engineering 3357.
- 4366 **Direct-Current Machines (\$4)** [ 466  
Theory, construction, testing, and application of direct-current motors and generators; starting, control, and regulating devices. Three lectures and three laboratory hours per week. *Prerequisite:* Engineering 3357.
- 3444 **Measurements and Instrumentation (\$2)** [ NEW  
Experimental procedure, errors, and accuracy; methods of measuring current, electromotive force, resistance, capacitance, inductance, frequency, flux, hysteresis of iron, and calibration of the instruments employed; study of transducers; and instrumentation methods. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 4358, and 4339.
- 3447 **Lines and Networks** [ NEW  
General transmission line circuit parameters, the exact transmission line equations, characteristic impedance, wave length, and velocity of propagation; the power transmission line and power circuit diagrams; the high frequency transmission line lossy and lossless; circle diagrams and the Smith chart; short lines as circuit elements; impedance matching, networks, and filters. *Prerequisite:* Engineering 4358 and Mathematics 3326.
- 3464 **Servomechanisms** [ NEW  
Theory and application of servomechanisms to control problems. *Prerequisite:* Engineering 4358 and 2338, Physics 4339, and Mathematics 3326.
- 4467 **Alternating-Current Machines (\$4)** [ 868a  
Theory, construction, testing, and application of transformers and alternating-current generators. Three lectures and three laboratory hours per week. *Prerequisite:* Engineering 3357, 4358, and 4366.

4468 Alternating-Current Machines (\$4) [ 868b  
Theory, construction, testing, and application of synchronous motors, converters, and induction motors; single-phase motors; starting, control, and regulating devices. Three lectures and three laboratory hours per week. *Prerequisite:* Engineering 4467.

4477-78 Direct and Alternating Currents (\$4) [ NEW  
Theory of direct – and alternating – current circuits and machinery, including power transmission and distribution, protective and control devices, motor applications, and electronics. Three lectures and three laboratory hours per week. *Prerequisite:* Physics 4215-16, and Mathematics 3213-14.

**Mechanical Engineering** MR. DECKER, Adviser

4323 Mechanisms (\$4) [ NEW  
Motion of machine parts; velocities and accelerations; study of linkages, gears, cams, belts, and chains. Three lectures and three laboratory hours per week. *Prerequisite:* Engineering 2338.

2324 Dynamics of Machinery [ NEW  
Forces acting upon machine parts taking into account their masses and inertia. *Prerequisite:* Engineering 4323.

3336 Manufacturing Processes (\$2) [ NEW  
The technique of manufacturing articles in metal; pattern-making; foundry practice; machining; welding; quality control. One lecture and six laboratory hours per week. *Prerequisite:* Mathematics 4115-16 and junior standing in engineering.

3349 Heat Engineering [ 350  
Thermodynamics, properties of gases, saturated and superheated vapors, calorimeters and mechanical mixtures; fuels, combustion, and flue gas analysis; boilers, engines, and their auxiliaries; air compressors. *Prerequisite:* Mathematics 3213-14, and Physics 4215.

3350 Heat Engineering (\$2) [ 358  
Condensers, pumps, turbines, internal-combustion engines, and the use and calibration of pressure, temperature, and velocity measuring instruments used in mechanical engineering. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 3349.

3362 Industrial Engineering [ NEW  
Application of scientific management to the operation of the factory; principles of organization, job analysis, time studies, production control, inspection, testing, safety studies, and personnel. *Prerequisite:* Junior standing in engineering.

3375-76 Thermodynamics [ NEW  
Energy equations, thermodynamic laws, properties of gases and vapors, combustion processes, heat transmission, gas cycles and thermodynamic processes with mixtures, analyses of gas and vapor cycles. *Prerequisite:* Mathematics 3213-14, Physics 4215, and junior standing in engineering.

3381 Heat Power Engineering (\$2) [ NEW  
Pressure, temperature, and power-measuring apparatus; compressors, calorimeters, fuels and fuel-burning equipment, flue gas analyses, and heat transmitting equipment. One lecture and six laboratory hours per week. *Prerequisite:* Engineering 3375 in advance or concurrently.

4382 Heat Power Engineering (\$4) [ NEW  
Continuation of Engineering 3381. Steam generators, engines, and turbines; internal-combustion engines and fuel systems; heating, air-conditioning, and refrigeration equipment; cooling towers and spray ponds. Two lectures and six laboratory hours per week. *Prerequisite:* Engineering 3381 and Engineering 3376 in advance or concurrently.

- 4479 Machine Design (\$4) [ NEW  
Force analysis, stresses, selection of machine parts for required task; fastenings, shafts, belts, springs, tolerances, and allowances. Three lectures and three laboratory hours per week. *Prerequisite*: Engineering 2324, Me 3305, and Engineering 4334.
- 4480 Machine Design (\$4) [ NEW  
Continuation of Engineering 4479. Lubrication, bearings, gears, brakes, clutches, and frames. The design of a complete machine will be made in the laboratory. Two lectures and six laboratory hours per week. *Prerequisite*: Engineering 4479.

**DRAWING** MR. COLEMAN, *Adviser*

- 2100 Mechanical Drawing (\$2) [ 203  
Introductory course for freshman engineering students who do not present mechanical drawing for entrance. Intended to serve as preparation for Drawing 2101. Use of instruments, drafting technique, lettering, orthographic projection, geometrical construction, conventions, and symbols. Two lectures and four hours of supervised drawing per week. Credit may not be used to satisfy requirements for engineering degrees.
- 2101 Engineering Drawing (\$2) [ 301  
Freehand lettering, orthographic projection, auxiliary and sectional views, dimensioning, cams, gears, assembly and detail drawing, and pictorial methods. Two lectures and four hours of supervised drawing per week. *Prerequisite*: One year of high-school mechanical drawing or Drawing 2100.
- 2102 Descriptive Geometry (\$2) [ 302  
Principal, auxiliary, and oblique views; straight- and curved-line problems; planes; intersection and development of surfaces; single-curved, warped, and double-curved surfaces; mining problems; perspective drawings. Two lectures and four hours of supervised drawing per week. *Prerequisite*: Drawing 2101 and registration in Mathematics 2110.
- 2210 Shades and Shadows, and Perspective (\$2) [ 310  
General method of oblique projection applied to the determination of shades and shadows on elementary and architectural forms; applications of one, two, and three-point perspective; development of the perspective plan and shades and shadows in perspective. Two lecture and four hours of supervised drawing per week. *Prerequisite*: Drawing 2102.
- 3211 Architectural Drawing (\$2) [ 311  
Principles of details of architectural construction in the various building materials. Student is required to apply the principles discussed in lectures and observed on occasional field trips by detailing foundations, walls, windows, doors, stairs, roofs, floors, chimneys, cabinet work, etc. Two lectures and seven hours of supervised drawing per week. *Prerequisite*: Drawing 2102.
- 3212 Architectural Drawing (\$2) [ 312  
Continuation of architectural drawing 3211 with special emphasis placed on the incorporation of details of composition into a united structure. *Working drawings* and specifications of simple buildings will be required. An integrated approach to the major architectural elements of space composition, planning, and structure will be stressed throughout the course. Two lectures and seven hours of supervised drawing per week. *Prerequisite*: Drawing 3211.

## English, Speech and Drama

DR. C. L. SONNICHSEN, *Chairman*

MR. MILTON LEECH, *Director of Speech and Drama*

*Professors* SONNICHSEN, BRADY, LEACH; *Associate Professors* BURLINGAME, LEECH, MOSES, PAST; *Assistant Professors* FUGATE, ~~C. SMITH~~, JAMES, JONES, PONSFORD;  
*Instructors* COLLINGWOOD, DOUGLAS, EHMANN, HARLAND, HOFFMAN, QUARM, REYNOLDS, G. SMITH, THORBURN, TUCKER, WADDELL;  
*Part-Time Instructors* ~~W. SMITH, H. SMITH, M. SMITH, S. SMITH~~, WALKER  
*Unen Ka*

### ENGLISH

For the degree of Bachelor of Arts twelve semester hours in English are required—English 3101-02 and English 3211-12, 3213-14, or 3215-16. English 3101-02 and English 3369 are required for the degree of Bachelor of Science in Mining Engineering; English 3101-02 and English 3211-12, 3213-14, or 3215-16 for the degree of Bachelor of Science in the Sciences. English majors are advised to take English 3211-12, but may elect English 3213-14, or 3215-16 instead of English 3211-12. English 3211-12, English 3213-14, or English 3215-16 may be presented as prerequisite to any advanced course in English.

Drama 3357 and 3358 may be counted for English credit.

	<i>Former Number</i>
<i>For Undergraduates</i>	
3100 Pre-Freshman English For beginning freshmen whose English is below the standard required for admission to English 3101.	[ 001
3101-02 Freshman English Practice in organizing information, clarifying thought, improving written expression. Required of all freshmen.	[ 601
3211-12 Outline History of English Literature Survey of English literature from the beginning to the present time with emphasis on major works and authors. <i>Prerequisite:</i> English 3101-02.	[ 612
3213-14 English and American Literature of Today A course designed for students not expecting to specialize in English. The reading includes novels, short stories, plays, poetry, and various types of non-fiction. <i>Prerequisite:</i> English 3101-02.	[ 612Q
3213 English and American Literature of Today The first semester of English 3213-14 offered for students in need of three hours independent credit in literature. <i>Prerequisite:</i> English 3101-02.	[ 312Q
3215 World Literature in Ancient and Medieval Times <i>Prerequisite:</i> English 3101-02.	[ 315
3216 World Literature from the Renaissance to the Present <i>Prerequisite:</i> English 3101-02.	[ 316
3220 Contemporary English Analysis of modern grammar, usage and style, directed toward improvement of the student's own use of the language. <i>Prerequisite:</i> English 3101-02.	[ NEW
3290 Study-Tour of Europe A six-weeks field trip through Europe to major points of literary and cultural interest, conducted by a regular member of the College Faculty. A long paper will be required of each student. This course may be counted instead of one semester of 3211-12 or 3215-16. Consult the head of the English Department for costs, dates, and required reading list. <i>Prerequisite:</i> Sophomore standing and approval of the College.	[ NEW



*For Graduates and Undergraduates*

- 3310 American Literature [ NEW  
A study of the principal American writers from the beginning to 1820. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3311 American Literature [ 336  
A study of the most important poets and prose writers from 1820 to 1870. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3312 American Literature [ 337  
A study of the most important poets and prose writers from 1870 to the present. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3313 The American Novel [ 355  
A study of the representative American novels and novelists from 1787 to the present. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3314 The Development of the American Drama [ 332  
Drama from the Colonial and Revolutionary Periods to modern times. Special attention is given to such outstanding American playwrights as Bird, Boker, Fitch, Howard, Crothers, Anderson, Hellman, O'Neill, Tennessee Williams and Arthur Miller. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3317 The English Language [ 358  
Investigation of the growth, structure, and relationships of the English Language with special emphasis on the development of modern English. Attention will be given to the theory of language and its functions in human life and progress; the great language groups; development from the Anglo-Saxon to modern times. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3318 The English Language [ 359  
A continuation of English 3317. English in recent times. Dialects; usage; influence of scientific developments, war, radio, etc.; foreign elements; word building; other topics leading to an understanding and appreciation of the student's native language. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3320 Shakespeare: The Earlier Plays [ 320  
Detailed study of some of the plays composed before 1601, with a rapid reading of others belonging to the same period. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3321 Shakespeare: The Later Plays [ 321  
Detailed study of some of the great tragedies, followed by a rapid reading of other plays written after 1600. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3322 Elizabethan and Jacobean Drama [ 356  
Development of the comedy, the tragedy, and the chronicle history from earlier types of the drama in England. Plays of Lyly, Marlowe, Greene, Beaumont and Fletcher, Dekker, Jonson, Middleton, Webster, and their contemporaries related to the literary fashions of the times. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3325 English Poetry and Prose, 1600-1660 [ 345  
Representative metaphysical, classical, Cavalier, and religious poets, including Donne, Jonson, Herrick, Herbert, and others; prose works by Bacon, Browne, Fuller, Walton, Burton, and others. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3326 English Poetry and Prose, 1660-1700 [ 346  
The literature of the Restoration, exclusive of the drama, with emphasis on the work of Pepys, Dryden, Bunyan, Hobbes, Milton, and others. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.

- 3329 **Early Eighteenth-Century Prose and Poetry** [ 339  
The background of the English Classical Period in the writers of the Restoration. The philosophic, religious, social, and literary ideas and ideals of the period. The work of Defoe, Addison and Steele, Swift, Pope, and their contemporaries. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3330 **Later Eighteenth-Century Prose and Poetry** [ 340  
The decline of Neo-Classicism and the rise of Romanticism. Johnson, Boswell, Goldsmith, and Burke will be especially considered on the one hand; Thomson, Gray, Collins, Young, Chatterton, Cowper, Blake and Burns on the other. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3331 **English Romantic Poetry, The Earlier Phase** [ 329  
Rapid survey of Romanticism in the eighteenth century, followed by a more detailed consideration of the work of Burns, Scott, Coleridge, and Wordsworth. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3332 **English Romantic Poetry, The Later Phase** [ 330  
Consideration of the work of Byron, Shelley, Keats, and some of their contemporaries. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3335 **Early Nineteenth-Century Prose** [ 343  
The prose of Lamb, Landor, Coleridge, Hazlitt, DeQuincey, Macaulay, and their contemporaries considered in relation to the intellectual and social backgrounds of their time. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3336 **Later Nineteenth-Century Prose** [ 344  
The prose of Carlyle, Newman, Ruskin, Arnold, and their contemporaries, together with an examination of the religious, critical, and social movements of the later Victorian period. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3339 **Victorian Poetry** [ 322  
Consideration of the poetry of Browning primarily, and study of such minor poets as Arnold, Clough, James Thompson, and others. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3340 **Victorian Poetry** [ 323  
Consideration of the poetry of Tennyson primarily, and study of such minor poets as Swinburne, Morris, D. Rossetti, Christina Rossetti, and others. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3344 **Contemporary Poetry** [ 334  
The social and intellectual movements which arose in England and America between late Victorian times and the immediate past, and the expression of these movements in verse. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3347 **An Outline History of the English Novel** [ 327  
Prose fiction in England from the Middle Ages to the nineteenth century, particular attention being given to the novels of Richardson, Fielding, Smollett, Walpole, Burney, Jane Austen, and Scott. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3348 **An Outline History of the English Novel** [ 328  
A continuation of English 3347, with study of typical works of Dickens, Thackeray, the Brontes, George Eliot, Hardy, and Meredith. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3350 **The English Novel after 1900** [ 357  
Reading in such Edwardian and Georgian novelists as George Moore, John Galsworthy, Joseph Conrad, Arnold Bennett, Somerset Maugham, D. H. Lawrence and James Joyce. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3351 **The English Novel since 1920** [ NEW  
Reading in the work of the later Joyce, Virginia Woolf, Wyndham Lewis, Aldous Huxley, Evelyn Waugh, Graham Greene, Christopher Isherwood, Joyce Cary, Kingsley Amis, and John Wain. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.

- 3353 **The Short Story** [ 341  
The literature and technique of the short story; its development from earliest times; typical specimens from the short-story literature of England, America, Russia, France, and other countries. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3355 **The Drama in England since 1660** [ 331  
Representative plays of the Restoration, of the eighteenth and nineteenth centuries, and of such modern playwrights as Jones, Pinero, Barker, St. John Hankin, Shaw, Coward, Galsworthy, Maugham, Dane, etc. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3361 **Writing** [ 325  
A course for students seriously interested in developing their power of written expression. *Prerequisite:* English 3211-12, 3213-14, or 3215-16 and consent of the instructor.
- 3362 **Non-Fiction Writing** [ 326  
Study and practice in the techniques of writing contemporary non-fiction. *Prerequisite:* English 3211-12, 3213-14, or 3215-16 and consent of the instructor.
- 3367 **Fictional Techniques** [ 353  
Study and practice in the techniques of contemporary fiction. *Prerequisite:* English 3361 or consent of the instructor.
- 3368 **Short Story Writing** [ 354  
Study and practice in the techniques of the contemporary short story with particular attention to plotting. *Prerequisite:* English 3367 or consent of instructor.
- 3369 **Technical Writing** [ 324  
For engineering students and others specializing in technical subjects. Training in assembling and evaluating technical information, outlining, preparing reports and specifications, and expressing effectively the student's own ideas. *Prerequisite:* English 3101-02 and junior standing.
- 3371 **Life and Literature of the Southwest** [ 342  
A study of the social background of the Southwest and its reflection in literature. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3372 **Introduction to Folklore** [ 365  
Survey of the types and characteristics of folk literature with particular emphasis on the folklore of the Southwest and Mexico. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3373 **Life and Literature of the South** [ 377  
Literature of the Old and New South, especially as it reflects the institutions and traditions of the region. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3385 **Russian Literature in Translation** [ NEW  
From the beginnings through the Golden Age of the nineteenth century. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3386 **Russian Literature in Translation** [ NEW  
From the end of the Golden Age to the present. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3390 **Study-Tour of Europe for Advanced Students** [ NEW  
A six-weeks field trip through Europe to major points of literary and cultural interest, conducted by a regular member of the College Faculty. A long paper will be required of each student. Consult the head of the English Department for costs, dates, and required reading list. *Prerequisite:* Junior standing and approval of the College.
- 3411 **Milton** [ 370  
An introduction to the work and times of John Milton. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.

- 3413 Chaucer: The Canterbury Tales [ 380  
An introduction to the work and times of Geoffrey Chaucer. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3415 Literary Criticism [ 375  
The development of literary criticism as seen in the works of leading critics from Plato to the present. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3416 American Literary Criticism [ 376  
The development of critical thought in America from 1783 to the present, with emphasis on the status and problems of literary criticism in the twentieth century. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3420 Problems in Writing [ 360  
Individual conferences with the instructor on work in progress by advanced writing students. *Prerequisite:* Six hours of writing courses or the equivalent, and consent of the instructor. May be repeated for credit.
- 3431 The Folk Ballad [ NEW  
A study of European balladry, particularly British and Spanish ballads and their American offshoots. The role of frontiers in the development of the heroic ballad, with the Texas-Mexican border as a focal point. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3432 The Folktale [ NEW  
Traditional tales, both oral and written, of Europe, Asia, and America. Theories, type and motif classification, and techniques for studying oral tales. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.
- 3450 The European Short Novel [ NEW  
French, Italian, German, Spanish and Russian masterpieces in translation. *Prerequisite:* English 3211-12, 3213-14, or 3215-16.

#### **For Graduate Students Only**

*Prerequisite:* Twelve semester hours of advanced courses in English and a bachelor's degree.

- 3511 Methods of Research and Bibliography [ 390  
The basic course for graduate work in English.
- 3515 Graduate Reading Course [ 391  
Reading of a selected list of English and American masterpieces. Each student will work independently and no regular classes will be held, but discussion groups will be met regularly by members of the English staff. A three-hour written examination will be scheduled during the regular examination period. Students who make a grade of B or better will be excused from taking the Master's Oral in the English Major.
- 3520 Studies in Poe\* [ 392
- 3525 Studies in Emerson, Thoreau and Whitman\* [ 393
- 3530 Studies in the Life and Literature of the Southwest\* [ 394
- 3535 Studies in American Thought\* [ 396
- 3540 Studies in Melville, Hawthorne and Dickinson\* [ NEW
- 3545 Studies in the Origin and Development of  
Literary Naturalism\* [ NEW
- 3598-99 Thesis Course [ 698  
Confer with the department head immediately after registration.

\* Seminar.

**SPEECH AND DRAMA**

Students wishing to major in this area may place special emphasis on either Speech or Drama. Those planning to teach in the public schools are advised to take courses in both Speech and Drama.

As part of the twenty-four-hour requirement, students who wish to emphasize Speech are required to take Speech 3101, Speech 3103, Drama 3113, and either Speech 3215 or 3219.

Those who specialize in Drama are required to take Speech 3103, Drama 3113, Drama 3214, and six hours of Rehearsal and Performance.

English 3314 and 3355 may be counted for credit in Drama.

**Speech** *For Undergraduates*

- 3101 Basic Principles of Speech [ 301  
*Emphasis on the development of poise and confidence in extemporaneous discourse, directness of approach, the conversational spirit, appropriate body action, the use of the voice.*
- 3102 Platform Speaking [ 309  
 Planning, organizing, and delivering speeches intended to inform, to entertain, and to inspire, including speeches for various types of special occasions. *Prerequisite:* Speech 3101 or 3103 or 3107 or 3120.
- 3103 Voice and Diction [ 303  
 A course intended to develop clear articulation and enunciation, correct pronunciation, proper vowel placement, and control of the speaking voice. Required of all Speech and Drama majors and strongly recommended for Radio majors. May not be counted for credit in addition to Speech 3107.
- 3107 Speech for Foreign-Language Students [ 307  
 Practice in the use and comprehension of oral English and in the acquisition of *sounds and rhythms of standard speech*. Open to any student interested in the correction of a speech defect. May not be counted in addition to Speech 3103.
- 3120 Beginning Oral Interpretation [ 302  
 Practice in the oral interpretation of literature and study of the techniques involved.
- 3219 Business and Professional Speaking [ 319  
 A practical course designed to help the student meet situations in the business and professional world. Stress will be laid on the principles of organization and presentation of material and on the techniques of after-dinner speeches, sales talks, introductions, public discussions, political speeches, etc. *Prerequisite:* Six hours of Speech.
- 3305 Oral Interpretation [ 320  
 A course for developing an adequate mental and emotional response to the meaning of literature with emphasis on improvement in voice, pronunciation, and enunciation. *Prerequisite:* Six hours of Speech or Junior standing.
- 3306 Techniques of Public Discussion [ 323  
 A course intended to develop skill in leading and participating in discussion groups of all kinds. Attention is given to forums, panels, round tables, and symposiums, and to actual practice in the discussion of current problems. *Prerequisite:* Six hours of Speech or junior standing.
- 3315 Argumentation and Debate [ NEW  
 Study and practice in the techniques of formal debating. *Prerequisite:* Six hours of Speech or junior standing.

3333 **Direction of Speech Curriculum and Activities** [ 333  
 For teachers of speech in elementary and secondary schools, emphasizing the development of an effective speech program, methods of criticism, correction of speech difficulties, and direction of speech activities. *Prerequisite:* Six hours of Speech or Junior standing.

3410 **Principles of Speech Correction** [ NEW  
 A study of the nature, causes, and treatment of speech disorders and defects, designed to give classroom teachers basic skills in working with the speech-defective child. *Prerequisite:* Junior standing. May not be counted in addition to Education 3410.

**Drama** *For Undergraduates*

3110 **Introduction to Fine Arts** [ 304  
 The enjoyment of the Arts through an understanding of their inter-relationship and of the expressive elements common to Music, Art, and the Drama. Not counted in addition to Art Methods 3110 and Music Literature 3110.

3113 **An Introduction to Drama** [ 308  
 A beginning course designed to familiarize the student with the major areas of theatre art, including acting, directing, lighting, costuming, playwriting, technical production, scenic design, types and styles of drama.

1111 **College Players** [ 202-216  
 The campus acting and producing organization. Members are required either to act or to do technical work in the major production, and in addition must appear in one student-directed play. May be taken four semesters for credit.

3121 **Beginning Drama Workshop** [ 306  
 A lecture-laboratory course in play production involving all phases of dramatic art and leading to the public presentation of major dramas. Registration in this course enrolls the student as a member of the company for the annual Summer Play Festival. May be repeated for credit.

2130 **Rehearsal and Performance** [ NEW  
 Evaluation of acting and crew work in major departmental productions, experimental theatre productions, and laboratory workshop productions. A minimum of six laboratory hours weekly for one semester.

3213 **Contemporary Theatre** [ 313  
 Analysis of methods of design, lighting, costuming and acting used in current theatre productions. Two lecture and four workshop hours per week. *Prerequisite:* Drama 3113.

3214 **Acting** [ 314  
 A workshop course in which a student may develop his ability to analyze a character and create a role. Two lecture and four workshop hours per week. *Prerequisite:* Six semester hours of Speech and/or Drama or Sophomore standing.

3218 **Dramatic Script Writing** [ 318  
 The principles of script writing for the stage, radio, and television. Drama majors will be required to write an original one-act play. Radio and Television majors will be required to write an original half-hour script. *Prerequisite:* English 3101-02 and Sophomore standing. May be repeated for credit.

2230 **Rehearsal and Performance** [ NEW  
*Prerequisite:* Drama 2130 with a grade of at least B and sophomore standing. A minimum of six laboratory hours weekly for one semester.

1311 **College Players** [ 226-232  
 May be taken four semesters for credit.

- 3320 Advanced Drama Workshop [ 326  
 A lecture-laboratory course in play production involving further work in the rehearsal and production of major dramas. Students enrolled will be given leading assignments in the Summer Play Festival productions. May be repeated for credit. *Prerequisite:* Six hours of Drama courses, or the equivalent, and junior standing.
- 3321 Advanced Acting [ 330  
 Detailed study of characterization and styles of acting through assignment of individual roles and group rehearsal of scenes. Two lecture and four workshop hours per week. *Prerequisite:* Drama 3214 and junior standing. May be repeated for credit.
- 2330 Advanced Rehearsal and Performance [ NEW  
*Prerequisite:* Drama 2230 with a grade of at least B and junior standing. A minimum of six laboratory hours weekly for one semester.
- 3332 Technical Production and Design [ 336  
 Detailed study of the technical problems of theatre production. Methods of constructing and handling scenery, lighting, backstage organization, designer's drawings, properties, and sound effects. Two class and four workshop hours per week. *Prerequisite:* Six hours of Drama courses and junior standing.
- 3340 A History of Costume [ 340  
 A study of costumes from the earliest times to the present and their use on the stage. Practical application in designing and executing costumes for actual production. *Prerequisite:* Junior standing.
- 3350 Creative Dramatics in the Elementary School [ NEW  
 Methods of developing original dramatizations with children and of creating plays from children's literature. Two lectures and one demonstration workshop weekly. *Prerequisite:* Junior standing.
- 3357 The Development of the Early Theatre [ 327  
 A survey of the development of theatre art from the earliest times through the later Elizabethans. Discussions include plays, playwrights, actors, costumes, and technical devices of each period. *Prerequisite:* English 3211-12, 3213-14, or 3215-16 and junior standing.
- 3358 The Development of the Modern Theatre [ 328  
 A survey of the development of theatre art from the Restoration to Broadway. Goethe, Ibsen, Maeterlinck, Pirandello, Chekhov, Synge, Shaw, O'Neill, Anderson, and others are studied as well as the actors, costumes, and technical devices in each period. *Prerequisite:* English 3211-12, 3213-14, or 3215-16 and junior standing.
- 3425 Directing [ 331  
 Study of techniques in direction, emphasizing style, type of play, mood, dramatic values and effects. Each student is required to direct a short play and prepare a complete production script of his project. Two class and four workshop hours per week. *Prerequisite:* Drama 3113 and junior standing.
- 2430 Advanced Rehearsal and Performance [ NEW  
*Prerequisite:* Drama 2330 with a grade of at least B. A minimum of six laboratory hours weekly for one semester.
- 3432 Advanced Technical Production [ 337  
 Detailed study of the technical problems of theatre production through participation in actual production situations. Two class and four workshop hours per week. *Prerequisite:* Drama 3332.

## Geology and Geography

DR. H. E. QUINN, *Chairman*  
Professors QUINN, NELSON; Assistant Professors STRAIN, RUOTSALA;  
*Assoc Professor*  
Instructor VOWELL.

### GEOLOGY

Students intending to major in geology must consult with department before committing themselves to a particular program of study, particularly in choosing the field of their minor. Those wishing preparation in the field of mining geology will find a comprehensive four year program set forth in the degree plans in the front of this catalog.

Students who elect to work for the Bachelor of Science Degree in the Sciences with a major in geology are advised to follow the program set forth in the degree plans of this catalog and in addition obtain adequate training in chemistry, at least an elementary course in physics, preferably physics through electricity, mathematics through calculus, a course in ordinary surveying, and drawing through descriptive geometry. The student should also elect the English course in technical writing, and a course in public speaking. Students intending to major in the paleontological field should be adequately grounded in the biological sciences.

- |  | <i>For Undergraduates</i> | <i>Former Number</i> |
|--|---------------------------|----------------------|
| 3101 Physical Geology (\$2)  |                           | [ 301                |
| A critical study of the principles of physiography and dynamic and structural geology. Three lectures and two laboratory hours per week. (For engineering and science major students three laboratory hours will be required each week.)   |                           |                      |
| 3102 Historical Geology (\$2)  |                           | [ 302                |
| A critical study of the principles of stratigraphy, paleogeography and organic developments. Three lectures and two laboratory hours per week. (Three laboratory hours will be required each week of students majoring in engineering or science.)   |                           |                      |
| 3210 Principles of Geomorphology (\$2)   |                           | [ 310                |
| Analysis of geomorphic processes and land forms with special reference to conditions and surface expression in North America and their interpretation from topographic and geologic maps and aerial photographs. Two lectures and three laboratory hours. <i>Prerequisite</i> : Geology 3101 and 3102.   |                           |                      |
| 3211 Introduction to Geophysics  |                           | [ NEW                |
| A general survey of the fundamentals of geophysics and the application of these techniques in prospecting for mineral deposits, petroleum, natural gas, and ground waters. <i>Prerequisite</i> : Mathematics 4116.   |                           |                      |
| 3216 Mineralogy (\$4)  |                           | [ 316                |
| Crystallography and blow pipe analysis; a study of the crystallographic, chemical and physical characteristics of minerals and mineral determination by blow pipe methods. Classification of minerals. One lecture and six laboratory hours per week. <i>Prerequisite</i> : Chemistry 3102 (Chemistry 4104 for engineering students and science majors; or Chemistry 4103-04 in advance, or concurrently for engineering students and science majors with sophomore standing). |                           |                      |
| 2217 Mineralogy (\$4)  |                           | [ 217                |
| Determinative mineralogy. Largely devoted to the identification of minerals by physical characteristics. Six laboratory hours per week. <i>Prerequisite</i> : Geology 3216.  |                           |                      |
| 3217 Mineralogy (\$2)  |                           | [ 317                |
| Determinative mineralogy. Same as Geology 2217 with an additional hour of lecture per week. <i>Prerequisite</i> : Geology 3216.  |                           |                      |



4218 Invertebrate Paleontology (\$4) [ 418  
 A study of the structure and classification of invertebrates and their development and geologic significance. Two lectures and six laboratory hours. *Prerequisite:* Geology 3101 and 3102.

4219 Paleontological Stratigraphy (\$4) [ 419  
 A comprehensive study of the stratigraphy of North America and especially of West Texas and the Southwest. The last two hours count as advanced. Two lectures and six laboratory hours per week. *Prerequisite:* Geology 4218.

*For Undergraduates and Graduates*

4321 Advanced General Geology (\$4) [ 421  
 Certain topics of general geology such as petrology, structural geology and stratigraphy are expanded in an advanced and quantitative manner. Three lectures and three laboratory hours per week. *Prerequisite:* Geology 2217 or 3217, and Geology 3101 and 3102.

3322 General Economic Geology [ 322  
 A study of the occurrence of mineral deposits and ore deposits. *Prerequisite:* Geology 2217 or 3217.

4323 Structural Geology (\$2) [ 423  
 A study of the principles and theories of structural geology. Special attention is given to primary and secondary rock structures particularly with reference to those important in mining, petroleum and engineering operations. (Three lectures and three laboratory hours per week.) *Prerequisite:* Geology 4321 and Drawing 2101, or permission of the chairman of the department.

3324 An Introduction to Geochemistry [ NEW  
 An introductory course treating of the scope, methods, and literature of geochemistry and specifically of the chemistry of minerals and rocks and rock-weathering. *Prerequisite:* Mathematics 3214, in advance or concurrently, Chemistry 4104, and Geology 2217 or 3217.

3325 Sedimentary Rocks (\$2) [ 325  
 A study of the sedimentary rocks to be carried on both in the field and the laboratory. Students registering for this course must furnish their own transportation. Two lectures and one afternoon in the field or laboratory per week. *Prerequisite:* Twelve hours of Geology.

4327 Petrology and Petrography (\$4) [ 427  
 The determination, origin and subsequent history of minerals and rocks as revealed in mineral grains and thin sections by the petrographic microscope. Three lectures and three laboratory hours per week. *Prerequisite:* Geology 4321 in advance or concurrently.

3461 Advanced Economic Geology (\$2) [ 361  
 Mining Geology, ore guides, methods of examination, preparation of reports, study of ore minerals under the microscope, etc. Two lectures and three laboratory hours per week. *Prerequisite:* Geology 3322 or senior standing.

2462 Geology of the Southwest [ 262  
 A detailed study of the regional, stratigraphic, structural, and economic geology of Texas, New Mexico, Arizona and Northern Mexico. *Prerequisite:* Senior standing.

4463 Geology of Petroleum and Natural Gas (\$2) [ 463  
 A study of the origin, migration and accumulation of petroleum and natural gas. Three lectures and three laboratory hours per week. *Prerequisite:* Geology 4219, 4321 and 4323; or permission of the chairman of the department.

GEOLOGY AND GEOGRAPHY

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- 2464 Field Geology (\$4) [ 264  
A field study of an area near the college and the application of quantitative standards to the mapping and geologic field studies. A typed report and satisfactory geologic map is required. One lecture and one afternoon in the field per week. *Prerequisite*: Six semester hours of advanced courses in geology.
- 6465 Field Geology (summer) (\$4) [ 665  
A six week summer course in field geology. The work will involve the preparation of topographic and geologic maps, cross-sections and columnar sections, and detailed structural studies of a region of sedimentary and igneous rocks. Plane table and other mapping techniques will be used. A report will be required of each student. Five hours of lecture and thirty-two hours of field work per week for one summer session. *Prerequisite*: Senior standing or permission of the chairman of the department.
- 0421 Geology Field Trip (Transportation: \$50.00) [ 074  
A survey trip of about two weeks over regions of geologic interest. Required for graduation in the Bachelor of Science in Mining Engineering. *Prerequisite*: Senior standing.

**GEOGRAPHY** (See Page 103 for Historical Geography)

- 3103 Elements of Geography (\$2) [ 303  
A study of the major geographic realms emphasizing the relation of man to the various natural elements of his environment. Three lectures and two laboratory hours per week.
- 3104 Elements of Geography (\$2) [ 304  
A continuation of Geography 3103. Three lecture hours and two laboratory hours per week. *Prerequisite*: Geography 3103.

## **Health and Physical Education**

DR. L. G. SELLS, *Chairman*

MR. MIKE BRUMBELOW, *Coordinator of P.E., Intramurals and Athletics;*  
*Professors SELLS, BRUMBELOW; Associate Professor McCARTY;*  
*Assistant Professors COLLINS, CRAIGO, CRAWFORD, WALKER;*  
*Instructors GEORGE, GLARDON, MOORE, LOPER, PLUMBLEY*

The service courses are provided (1) to promote vigorous, mental, emotional, social and physical health; (2) to further the education of the individual through physical activities; (3) to develop motor skills; and (4) to prepare for leisure time activity. Definite instruction is given in class periods and students are graded on skills, knowledge, and achievement. Class instruction is supplemented by a varied program of intramural sports for men and for women which gives an opportunity for additional participation and recreation.

The service courses for men are designed to provide vigorous, strenuous, and aggressive activities that will be of lasting value. All men students will be given instruction in the following activities: Touch football, tumbling, gymnastics, speedball, volleyball, tennis, basketball, baseball, track, swimming, and other minor sports. Students may elect golf, horseback riding and pistol and rifle instruction.

The service courses for women are designed to provide activities that are mentally and physically stimulating, as well as promoting grace, vigor and poise through group and individual instruction in dancing, swimming, field hockey, archery, volleyball, tennis, tumbling, and other minor sports. Students may elect golf, horseback riding and pistol and rifle instruction.

A student must complete the service courses and Health Education 3101 (for men) or 3102 (for women) during the first two calendar years he or she attends Texas Western College. (*Note: This allows fulfilling the requirements during the Summer Sessions.*)

<b>HEALTH EDUCATION</b>	<i>For Undergraduates</i>	<i>Former Number</i>
3101 Personal Hygiene (Men)		[ 301
Study of personal, home and community health problems. Emphasis and stress on physical fitness, prevention of disease, safety, establishment of proper health habits, and knowledge to use effectively medical science.		
3102 Personal Hygiene (Women)		[ 302
Study of personal, home and community health problems. Emphasis and stress on physical fitness, prevention of disease, safety, establishment of proper health habits, and knowledge to use effectively medical science.		
3211 Health Service for Elementary School Children		[ 312K
The scope of health service with emphasis upon the purpose, technique, and adaptation of health examinations of school children. <i>Prerequisite:</i> Sophomore standing.		

*For Undergraduates and Graduates*

3301 Community Hygiene		[ 320
Consideration of health of people as a group and with the social and governmental agencies which are concerned with environmental control and health protection. Three hours of lecture per week and special field trips. <i>Prerequisite:</i> Junior standing or permission of the chairman of the department.		
3302 School Health Problems		[ 330
Major problems of the organization and administration of school health programs will be analyzed. Three hours of lecture and special field trips. <i>Prerequisite:</i> Junior standing or permission of the chairman of the department.		
3303 Modern Problems in Health Education		[ 339
A study of the normal functioning of every integral part of the human body. Care and prevention of communicable diseases will be discussed and the value of the new drugs in the treatment of such. This course will try to give the individual a concept in the modern method for a healthful life. <i>Prerequisite:</i> Junior standing or permission of the chairman of the department.		

- 3304 Principles of Health Education [ 341  
 Individual and community health problems will be discussed. Hygienic effects to be realized from an organized health program and a discussion of the prevention of communicable diseases in schools, communities, and cities will be presented. *Prerequisite:* Junior standing or permission of the chairman of the department.
- 3305 Safety Education [ 352  
 Emphasizes the problem of safety in the world today. A part of the course deals with general problems of safety education. Strong emphasis is given to the place of safety education in the public schools. Considerable time is devoted to a plan of safety instruction in the elementary, junior, and senior high school. *Prerequisite:* Twelve semester hours of Health and Physical Education or permission of the chairman of the department.
- 3306 Methods and Materials in Health Education [ 360  
 The field of health education, problems in administering the program, teaching aids for the health teacher, the teacher's part in health protection of children. *Prerequisite:* Junior standing or permission of the chairman of the department.
- 3307 Methods and Materials in Health Education [ 360L  
 The scope of Health Education in the Elementary School. Problems in administering the school health education program. Teaching aids and methods for the teacher responsible for health instruction. The teacher's part in the health protection of children. *Prerequisite:* Junior standing or permission of the chairman of the department.

**PHYSICAL EDUCATION** *For Undergraduates*

- 1102 Service Course for Freshmen Women (\$2) [ 202  
 Three hours per week. Golf, \$25.00 additional fee per semester. May be repeated for credit.
- 1101 Service Course for Freshmen Men (\$2) [ 201  
 Three hours per week. Golf, \$25.00 additional fee per semester. May be repeated for credit.
- 1201 Service Course for Sophomore Men (\$2) [ 203  
 Three hours per week. Golf, \$25.00 additional fee per semester. May be repeated for credit.
- 1202 Service Course for Sophomore Women (\$2) [ 204  
 Three hours per week. Golf, \$25.00 additional fee per semester. May be repeated for credit.
- 3101 Principles and Philosophy of Physical Education [ 305  
 A study of the history, principles and philosophy of physical education and its relationship to the objectives of general education.
- 3102 Methods in Physical Education [ 306  
 Theory and practice in Physical Education activities that are applicable to the elementary and junior high-school boy, with special emphasis on elementary tumbling, apparatus, calisthenics, pyramid building, stunts, and games. Open to men only.
- 3103 Fundamentals of Minor Sports for Women [ 307  
 Rules, playing regulations, teaching procedure for the following: Tennis, badminton, archery, ping pong, swimming, and horseshoes. Open to women only.
- 3104 Fundamentals of Major Sports for Women [ 308  
 Rules, playing regulations, teaching procedure for the following: Basketball, volleyball, softball, speedball, soccer and field hockey. Open to women only.

- 3311 Organization and Administration of Physical Education** [ 318K-3201  
The place of Physical Education in the total educational situation will be presented, along with fundamental aspects of a well-rounded Physical Education program. Particular emphasis on the administrative problems underlying a functional program. *Prerequisite:* Physical Education 3101 and 3102 for men, 3103 and 3104 for women.
- 3202 Kinesiology** [ 319K  
The mechanical and anatomical study of the Physical Education program as a basis for the analysis of activities in coaching, the selection and adaptation of activities in curriculum construction, and in corrective procedures. *Prerequisite:* Physical Education 3101 and 3102 for men, 3103 and 3104 for women.
- 3203 Curriculum Construction** [ 321  
A study of the principles of curriculum construction, the philosophy of play, content, progression and organization of the play program for all levels of the educational program. A curriculum to meet a specific situation will be outlined. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3204 Physical Education for Elementary Schools** [ 321L  
Philosophy of play, content, progression and organization of the play program for elementary and junior high schools. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3205 Methods and Materials for Elementary Schools** [ NEW  
Consideration is given to the methods and materials of instruction, the content, progression, organization and philosophy of the play program including rhythms for the Elementary and Junior High levels. *Prerequisite:* Twelve semester hours of physical education or permission of the chairman of the department.
- 3301 Techniques, Methods and Materials of Instructions in Rhythms** [ 331W  
Country, folk, tap and modern dance for the elementary grades. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3302 Techniques, Methods and Materials of Instruction in Rhythms for High School Grades** [ 332W  
A class in rhythmical materials in social, country, folk, tap and modern dance. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3401 Coaching Football** [ 331  
Coaching methods in football. Conditioning, practice schedules, and fundamentals are to be stressed. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3402 Coaching Basketball** [ 332  
Coaching methods in basketball. Conditioning, practice schedules, and fundamentals are stressed. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3403 Coaching Baseball and Track** [ 333  
Coaching methods in baseball and track, conditioning, practice schedules and fundamentals are to be stressed. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.

- 3408 Football and Basketball Officiating [ 363  
 Opportunity will be provided for a student to learn and interpret the rules and playing regulations, the mechanics of officiating and the psychological aspects of officiating football and basketball. Three hours of lecture per week and/or field experience in officiating. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3409 Athletic Injuries, Training and First Aid [ 365  
 In addition to the standard first aid course as outlined for the American Red Cross, the recognition and prevention of injuries in Physical Education and Athletics as well as the treatment and care for the usual athletic injuries are emphasized. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3412 Fundamentals and Philosophy of Major Sports [ NEW  
 Consideration is given to methods and techniques, conditioning, practice schedules, fundamentals and to the philosophy of major sports. *Prerequisite:* Twelve semester hours of physical education or permission of the chairman of the department.
- 3413 Growth and Development of the School Child [ NEW  
 The correlation between growth and developmental changes and the chronological ages of the school child with emphasis on gross motor development. A study of the physiological changes that are characteristic of the various age levels of the school child and their relationship to the child's emotional, social, and mental development. *Prerequisite:* Twelve semester hours of physical education or permission of the chairman of the department.

*For Undergraduates and Graduates*

- 3303 Tests and Measurements in Health and Physical Education [ 356  
 A study of tests will be made, both in Health and Physical Education as to their purpose and use, scoring and interpretation. *Prerequisite:* Twelve semester hours in Physical Education or permission of the chairman of the department.
- 3304 Current Methods and Materials in Physical Education [ 357  
 A laboratory and demonstration course presenting Physical Education instruction materials and methods. Students will be used in demonstrations. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3404 Organization of Community Recreation [ 350  
 Methods of organizing and directing community recreation. The nature and scope of a public recreation program, the various agencies providing recreation and the problems for administering a comprehensive program. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3405 Recreational Leadership [ 351  
 Students will be given an opportunity to assemble a wide variety of recreational materials suitable to the varied interests of children, adolescents and adults. Actual leadership experience will be provided. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3406 Methods and Materials in Teaching Physical Education for Women [ 353  
 Theory and practice in the technique of sports and activities included in the Physical Education program for the elementary school. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department. Open only to women.

- 3407 Corrective Physical Education [ 355  
The need for emphasis on prevention and correction of defects as a part of the Physical Education program. The specific exercise treatment for certain functional and structural conditions in co-operation with the school physician. Three hours of lecture per week and special field trips. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.
- 3410 Undergraduate Seminar [ 389  
Directed study in selected areas of Physical Education. This may be substituted for a deficiency in the required advanced physical Education courses in the Physical Education major. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department. May be repeated for credit.
- 3411 Administration of Athletics in Schools and Colleges [ 364  
A study will be made of current controversies and problems in the conduct of athletics, organization of athletic departments, selection of staff, sports program, purchase and care of athletic equipment, management of varsity and intramural athletics, maintenance of facilities and equipment. *Prerequisite:* Twelve semester hours of Physical Education or permission of the chairman of the department.

**For Graduate Students Only**

*Prerequisite:* Twelve semester hours of advanced courses in Health and Physical Education and a bachelor's degree.

- 3501 Seminar in Health and Physical Education [ 390  
A seminar with emphasis on research in health and physical education in both the elementary and secondary school fields. The course will include methods of research, selecting a problem and preparing a written report on the study of the problem. May be repeated for credit.
- 3502 Critical Analysis of Professional Literature [ 392  
Designed for advanced students in the field of health, physical education, recreation and safety. Major emphasis will be placed upon health and physical education. Thorough study and consideration will be given to the literature in the field which is likely to have the greatest influence on programs, procedures and practices in health, physical education, recreation and safety in the school and community.
- 3503 Supervision of Health and Physical Education [ 394  
The purpose of this course is to present and discuss the responsibilities of the supervisor of health and physical education in the school and community. Observation, techniques, standards of judging instruction, the supervisory conferences, cooperative supervision, basic foundation of curriculum construction and lesson planning. Emphasis is placed on the common problems met by the supervisors in health and physical education in elementary and secondary schools.

## **History, Government and Sociology**

DR. REX W. STRICKLAND, *Chairman*

*Professor Emeritus* WALLER; *Professors* STRICKLAND, GREGORY, PORTER, TIMMONS;  
*Associate Professors* QUINN, MYRES, FULLER, MCNEELY;  
*Assistant Professors* BLOOM, GERALD, HARVEY, CROSS;  
*Instructors* BROADDUS, VOWELL, DENNY, HOVEL, GOODMAN, HARRIS

### **HISTORY**

Government 3326 may be counted for History in satisfying the major or minor requirements.

*For Undergraduates*

*Former  
Number*

- 3101 History of the United States [ 301  
Survey of the factors that have affected the growth of American democracy; European background, American environment, development of social and political institutions, conflict with imperial control and separation, constitution making—state and national, Jeffersonian republicanism and Jacksonian democracy, the Civil War.
- 3102 History of the United States [ 302  
Reconstruction, the Industrial Revolution and its influence upon American industry, economic imperialism, American participation in world affairs, the First World War and after, economic depression. The New Deal, and the Second World War.
- 3106 History of Western Civilization (to 1715) [ NEW  
Ancient civilizations, Greece and Rome, Christianity; medieval civilization in the West, eastern Europe; the Renaissance, Protestant Reformation, dynastic and religious wars, the expansion of Europe, divine right monarchy, triumph of parliamentary government in England.
- 3107 History of Western Civilization (since 1715) [ NEW  
International affairs in the eighteenth century, the Enlightenment, French Revolution and Napoleon, revolution and counter-revolution, the industrial revolution, the western democracies in the nineteenth century, central and eastern Europe, the intellectual revolution, imperialism, World War I, democracies and dictatorships, revolt against colonialism, World War II and after.
- 3212 The Ancient World [ 312  
A survey of the ancient civilizations—Babylonian, Chaldean, Assyrian, Persian, and Egyptian; more intense study of the Greek history with its art and culture and its spread over the Mediterranean world; Roman history with its system of law, its early beginnings and expansion over Europe, rise and decline of the Roman Empire. *Prerequisite:* Sophomore standing or six semester hours of History.
- 3213 Medieval Europe [ 313  
Decline of the Roman Empire, Germanic kingdoms, Eastern Roman Empire; rise of Islam and the Crusades, the medieval church, rise of cities, feudalism, the origin of the universities, culture of the Middle Ages. *Prerequisite:* Sophomore standing or six hours of History.
- 3217 A General Survey of the History of Texas [ 317  
*Prerequisite:* Sophomore standing or six semester hours of History.
- For Graduates and Undergraduates*
- 3323 Europe, 1870-1920 [ 323  
A survey of the different countries of Europe and their internal development to 1920. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.



- 3324 Europe after 1920 [ 324  
*Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3325 History of the United States, 1607-1787 [ 325  
 Settlement and development of the Colonies, representative principles of government, westward expansion of the Colonies with the resulting economic and political problems, mercantilism and the British Imperial policy, colonial participation in the English and French conflicts in America, the American Revolution, state making and constitutional development during and after the Revolution. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3326 History of the United States, 1787-1829 [ 326  
 Confederation and Constitution, formulation of foreign policy, Jeffersonian Democracy and Hamiltonian Federalism, expansion and development of Jacksonian Democracy, rise of nationalism and conflict over states' rights. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3327 A Social and Intellectual History of the United States [ NEW  
 The American Character and the molding forces of environment and immigration, religion and philosophy, literature and art, science and scholarship, the liberal temper and the conservative defense. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3330 History of the Far East [ 330  
 Modernization of the nations of the Far East with particular attention given to China and Japan. The social, political, economic, and intellectual aspects of this transformation are considered in the light of the impact of Western influences. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3331 Russian History [ 331  
 From the earliest times to 1900 with special attention given to the institutions, Literature, Church and Foreign Policy. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3332 The Near East in Modern Times [ 332  
 A study of the break-up of the Ottoman Empire in Western Asia; the Succession States; Arabic nationalism and the rise of Israeli; Modern Egypt, Iran and Iraq. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3333 History of Russia (since 1900) [ NEW  
 Will include the background of the Revolution of 1905, World War I, and revolutions of 1917, with special emphasis on the Soviet State since 1917. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3335 History of the United States, 1829-1850 [ 335  
 Jacksonian Democracy, expansion of the United States into the Southwest and Far West, development of the controversy over states' rights, slavery and cotton capitalism. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3336 History of the United States, 1850-1865 [ 336  
 Slavery controversy; Rise of the Republican Party, new leaders; Civil War, its causes, economic and social factors, military operations, results. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.

- 3340 Renaissance and Reformation, 1300-1648 [ 340  
*Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3341 The Old Regime, 1648-1789 [ 341  
 Absolutism in France, Prussia, Austria, Russia, social and economic development, international relations, scientific and intellectual revolution, enlightened despotism. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3342 The French Revolution and Napoleon [ 342  
*Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3343 Liberalism and Nationalism, 1815-1870 [ 343  
 The Metternichian system and its breakdown, the industrial revolution, the 1830 and 1848 movements, radicalism, the Second French Empire, unification in Italy and Germany, Russian development, international relations. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3347 Latin America: The Colonial Period [ 347  
 A survey of the history and institutional development of Spanish and Portuguese America in the Colonial period. *Prerequisite:* Twelve semester hours of History, or six semester hours of History and six hours of other social science.
- 3348 Latin America: The National Period [ 348  
 South America since 1810, with special emphasis upon Argentina, Brazil, Chile, the Monroe Doctrine and Pan-Americanism. *Prerequisite:* Twelve semester hours of History, or six semester hours of History and six hours of other social science.
- 3349 Latin America: The National Period [ 349  
 The History of Mexico, Central America, and the Caribbean area since 1810. *Prerequisite:* Twelve semester hours of History, or six semester hours of History and six hours of other social science.
- 3350 Diplomatic History of the United States:  
 Growth and Empire [ 350  
 International relations of the United States in growing from thirteen colonies to forty-eight states, from an infant confederation to a far-flung empire. Emphasis on basic foreign policies. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3351 Diplomatic History of the United States:  
 World Leadership [ NEW  
 International relations of the United States as a world leader, in an after two world wars. Emphasis on post-World War II problems. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3353 A Survey of Political and Social Britain from 1815-1895 [ 353  
 Tory England, the beginnings of reform, leaders and events in the making of modern Britain. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3354 Britain and the Empire from 1895 to the Present [ 354  
 The Boer War, the Empire and foreign relations, the Liberal party and internal reform, the World War, the Treaty, Britain since 1919. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.

- 3355 History of the United States since the Civil War [ 355  
 Reconstruction, industrial development and regulation, sectionalism, grangers, greenbackers, populism, silver crusade, passing of the frontier, civil service reform, rise of imperialism. *Prerequisite*: Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3356 Contemporary History of the United States [ 356  
 Rise of the United States as a world power, growth of trusts, imperialism and world trade, progressivism, Roosevelt and Wilson, World War and reconstruction, Republican prosperity, depression and world unrest. *Prerequisite*: Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3359 Trans-Mississippi West (to 1860) [ 359  
 American expansion into Texas and the Far Southwest; Santa Fe trade; Texas Revolution and Independence; Texas Republic, English and American Rivalry in Texas and California; Mexican War and acquisition of California. *Prerequisite*: Twelve semester hours of History, or six hours of History and six hours of other social science.
- 3360 Trans-Mississippi West (after 1860) [ NEW  
 The mining frontier; railroad expansion; day of the cattlemen; the farmer frontier; populist movement; reclamation and conservation. *Prerequisite*: Twelve semester hours of History, or six hours of History and six hours of other social science.

**For Graduate Students Only**

*Prerequisite for Graduate Courses*: Twelve (12) semester hours of advanced courses in History and a bachelor's degree.

- 3580 Studies in Regional History (Seminar) [ 390  
 3581 Historical Method and Historiography\* (Seminar) [ 391  
 3582 Studies in Modern European History (Seminar) [ 392  
 3583 Studies in Latin-America History (Seminar) [ 393  
 3584 International Aspect of Texas History, 1803-1850 (Seminar) [ 394  
 3585 Studies in the Middle Period of American History:  
 Selected Topics (Seminar) [ 395  
 3598-99 Thesis Course for the Master's Degree [ 698

\* *Required of all History majors in the M.A. Degree.*

**GEOGRAPHY** (See page 94 for Physical Geography)

- 3210 Cultural Geography [ 310  
 A study of other nations and other peoples, to better appreciate and understand their way of life. Racial and cultural backgrounds, political, social and economic developments and geographic physical factors are considered, initially by world regional patterns, followed by variations within political subdivisions. *Prerequisite*: Six semester hours of History, or sophomore standing. Not counted as laboratory science.

**GOVERNMENT** For Undergraduates

- 3210 American Government† [ 610a  
 The government of the United States—national, state, and local with special emphasis upon the Constitutions of the United States and Texas. This course meets teacher certification requirements for out-of-state graduate students. *Prerequisite*: Sophomore standing.

- 3211 American Government† [ 610b  
The government of the United States—national, state and local with special emphasis upon the Constitution of the United States. *Prerequisite:* Government 3210.
- For Graduates and Undergraduates*
- 3321 American State and Local Government [ 321  
Origin and growth of state constitutions; organization and work of state departments; local governments; relation between state and local governments. *Prerequisite:* Government 3210-11.
- 3322 American State and Local Government [ 322  
Organization, powers, functions, and business methods of state and local administrative agencies; problems of integration, centralization, budget and fiscal control. Plans for reorganization and cooperation with federal and local agencies. Special reference to Texas. *Prerequisite:* Government 3210-11.
- 3323 The Governments of Great Britain and the Empire [ 323  
Rise of English political institutions, a critical analysis of the English and British systems of government; the larger problems of the British Empire. *Prerequisite:* Government 3210-11.
- 3324 The Governments of Continental Europe [ 324  
The governments and politics of France, Italy, Switzerland, Germany, and Russia, with some attention given to lesser European countries. *Prerequisite:* Government 3210-11.
- 3325 The Party System in The United States [ 325  
An historical survey of the political party as a reflection of social and economic thought in the United States. Attention will be given to the role of the party in national politics and its relation to the functions of the Federal Government. Occasional reference will be made to the party systems of other democratic nations. *Prerequisite:* Government 3210-11.
- 3326 American Constitutional Development [ NEW  
(Constitutional Law, Constitutional History)  
The impact of changing conditions upon the interpretation of the United States Constitution from 1789 to the present. Major emphasis will be placed upon the process of judicial review and its effect upon the executive and legislative branches of the American Government. Approximately one-third of the course will be concerned with constitutional problems raised since 1933. *Prerequisite:* Government 3210-11.
- 3330 International Politics [ 330  
Principles and political problems involved in foreign policies and international relations of the states of the world with particular emphasis on nationalism and imperialism. *Prerequisite:* Government 3210-11.
- 3331 International Organization and Administration [ 331  
The development of the machinery and procedure of international government for the peaceful settlement of international disputes. *Prerequisite:* Government 3210-11.
- 3332 The Government and Politics of Mexico [ 332  
and the Caribbean Area  
The constitutional development, governmental organization, and contemporary political problems of representative states, with special attention to Mexico. *Prerequisite:* Government 3210-11.
- † Government 3210 and 3211 fulfill the legislative requirement of the State of Texas for a course on the Constitutions of the United States and Texas.

- 3333 The Government and Politics of South America [ 333  
The governmental structure and politics of the principal South American countries. *Prerequisite:* Government 3210-11.
- 3334 American National Government and Administration [ 334  
The making of the national government, the principles of the Federal system, Citizenship and Constitutional Rights, the organization of Congress, the National Executive and National Court System. *Prerequisite:* Government 3210-11.
- 3335 American National Government and Administration [ 335  
A general view of the powers of Congress; National Executive and National Court System; the organization, personnel work of the Civil Service and of the Budget Bureau. *Prerequisite:* Government 3210-11.
- 3336 Elements of Political Theory [ 336  
An introduction to the study of political theory through a presentation of some major political concepts, both ancient and modern. Emphasis will be placed on the contest in Western political thought between absolutism, modern totalitarianism, and constitutionalism. *Prerequisite:* Government 3210-11.
- 3337 American Political Thought [ NEW  
The origins and development of American principles of democracy and representative government. Attention will be given to the shifting intellectual and social context of our political tradition in order to show its influence upon the concepts of formal political theorists. *Prerequisite:* Government 3210-11.
- 3343 Foreign Policies of the United States [ 343  
The historical development and present organization of the Department of State and of the Foreign Service; the nature of the foreign relations power and the conduct and control of American foreign relations. *Prerequisite:* Government 3210-11.
- 3344 The Conduct of American Foreign Affairs [ 344  
Origin and development of fundamental principles of American diplomacy concerning neutrality, recognition, naturalization and expatriation, and promotion of trade and commerce with special attention devoted to post-war problems. *Prerequisite:* Government 3210-11.

**SOCIOLOGY**

*For Undergraduates*

- 3101 Introduction to Sociology [ 310  
Study of the individual in group action. Includes broad consideration of heredity and environment, and a study of the major social institutions and processes.
- 3102 Social Problems [ 311  
Physical and mental defectiveness considered from the sociological viewpoint; defects in social organization; poverty and dependency. Social controls applied to social problems.
- 3103 Nature of Man (Anthropology) [ 3210  
Systematic survey of human prehistory and varieties of social and cultural phenomena as illustrated by typical primitive and non-literate societies. May not be used as a prerequisite to advanced courses in sociology.
- 3104 Social Institutions (Anthropology) [ 3211  
An evaluation of theories concerning the origin and growth of primitive societies and cultures with references to approaches developed in contemporary anthropology and related social sciences. May not be used as a prerequisite to advanced courses in sociology.

3214 The Community [ 345  
 Methods of studying the community; social anatomy; a comparative study of communities; analysis of the underlying forces and social processes which make for natural groups and institutions to meet industrial, religious, educational, governmental, and leisure time needs; disorganization and reorganization of modern communities. *Prerequisite:* Sophomore standing or Sociology 3101 and 3102.

3215 Marriage and Family Life [ 325  
 A study of the factors involved in an adequate preparation for marriage, marital adjustment and parenthood. *Prerequisite:* Sophomore standing or Sociology 3101 and 3102.

*For Graduates and Undergraduates*

3320 Fields of Social Work [ 320  
 A survey of the various fields of social work now operating, both public and private in sponsorship, with particular attention to those organized on regional and national basis; and an examination of the methods used in the various fields considered. *Prerequisite:* Twelve hours in Sociology or junior standing and six hours in social sciences.

3333 Juvenile Delinquency [ 333  
 A study of the causative factors in juvenile delinquency. Attention is given to the methods of social analysis, the clinical approach, the interrelation of physical, mental and social factors in delinquency. *Prerequisite:* Twelve hours of Sociology or junior standing and six hours of social sciences.

3336 Comparative Cultures [ 336  
 A study of the folkways, changing mores, and the growth of democratic ideas in the United States and the Republic of Mexico. Special emphasis upon the fusion of cultures along the border. *Prerequisite:* Twelve hours of Sociology or junior standing and six hours in the social sciences.

3347 Population Problems and Immigration [ 347  
 Population movements and their social control; problems of population, distribution, and assimilation, consideration of Americanization programs and immigration laws. *Prerequisite:* Twelve hours of Sociology or six semester hours of social science and junior standing.

3348 Criminology [ 348  
 Causes, characteristics, and relief of crime, with consideration of mental, physical, economic and social factors in crime. A sociological analysis and evaluation of penal methods. *Prerequisite:* Twelve hours of Sociology or six semester hours of social science and junior standing.

3349 The Family [ 349  
 A study of the development of the family as a social institution. Emphasis is placed upon the American family and the problems which confront it today. *Prerequisite:* Twelve hours of Sociology or six semester hours of social science and junior standing.

3350 Child Welfare Problems [ 350  
 The development of the rights of the child in relation to parental rights, as evidenced in the child labor laws, juvenile court, adoption, mother's aid legislation, the changing status of the illegitimate child, and public organization for more effective administration of other laws relating to child dependency, delinquency and neglect. *Prerequisite:* Twelve hours of Sociology or six semester hours of social science and junior standing.

## Journalism, Radio and Television

VIRGIL HICKS; JOHN MIDDACH, *Co-Chairmen*

*Associate Professors* HICKS, MIDDACH; *Assistant Professor* RALPH LOWENSTEIN;

*Instructor* JONES; *Lecturers* BRUCE BROOKS, HERTZOG;

*Radio Consultant* KARL O. WYLER; *Director of Educational Programming* NICOLL

Realizing the need for professionally trained young men and women in the fields of journalism, radio and television, Texas Western College offers a complete major in each field with full four-year programs. The Department of Journalism, Radio and Television is organized on a professional basis. Its programs aim to provide students with that broad background in English, economics, political science, business, and related fields, plus a realistic professional training under seasoned journalists and widely experienced radio instructors. Upon approval by the Chairman of the Department, Business Administration 3350, 3351, and 3352 will be accepted for credit as part of a major or minor in Journalism.

<b>JOURNALISM</b>	<i>For Undergraduates</i>	<i>Former Number</i>
3101 Introduction to Journalism		[ 301
Orientation course into the background of newspaper work and other journalistic fields. Brief history of American newspapers. Designed to acquaint students with general newspaper practices.		
3102 Introduction to News Writing		[ 302
A beginning course covering basic principles of news writing and editing, making use of exercises and assignment materials necessary to practice and apply the principles.		
3106 Introductory Course in Public Relations		[ 306x
Orientation course to acquaint the student with the various public relations media and how to use them. Set up on an elementary basis primarily for the non-journalism and radio major, this course presents the role of public relations in modern business, education, government, civic affairs, etc. Instruction and practice in writing news releases for newspapers, radio and television.		
3107 Elementary Photography (\$5)		[ 307
Instruction and practice in the processes of News Photography. Discussion of lenses and cameras, along with the actual photographic process. Capabilities of the press camera; exposure and development of film; printing and finishing news pictures. Two lectures and four laboratory hours per week.		
3108 Fields of Photography (\$5)		[ 308
A continuation of Elementary News Photography with special emphasis on press photography. A survey of the various fields of photography including a practical working knowledge of cameras and their most effective uses. Two lectures and four laboratory hours per week. <i>Prerequisite:</i> Journalism 3107 or permission of the chairman of the department.		
3201 News Gathering and Reporting		[ 311
Instruction and practice in interviewing and writing: Discussion of news sources, news values, and various types of news stories; study of the organization of the newspaper staffs and the news gathering associations. Required of all students majoring in Journalism. Two lectures and four practice hours per week. <i>Prerequisite:</i> Sophomore standing including English 3101-02.		
3202 News and Copy Reading		[ 312
Theory of writing newspaper copy and writing headlines. Special instruction by leading newspaper men and women. Required of all students majoring in Journalism. Two lectures and four practice hours per week. <i>Prerequisite:</i> Sophomore standing including English 3101-02.		

JOURNALISM

- 3203 Current Events [ 316k  
 A study of current events in the daily newspaper and interpretation of these current events in regard to the social welfare, future and progress of the world. *Prerequisite:* Sophomore standing.
- 3204 The American Newspaper [ 317  
 Critical examination of the newspaper as a social agency; the influence shaping its content and attitudes; the effect of the newspaper on public opinion, morality, popular taste, style, and standards of living. *Prerequisite:* Sophomore standing or consent of the chairman of the department.
- 3303 The Special Article [ 322  
 Methods of gathering material for newspapers and magazine feature stories through interviews, research, and observation; study of feature story form and style; discussion of markets for literary material; practice in writing feature stories. *Prerequisite:* Journalism 3201 or 3202, or English 3211-12.
- 3305 News Editing [ 324  
 Study of newspaper style books; instruction in headline writing; study of newspaper make-up; practice in reading newspaper copy for errors in fact, English, and style; also practice in writing headlines and rewriting news stories. Required of all students majoring in Journalism. Two lectures and four practice hours per week. *Prerequisite:* Journalism 3201 or 3202.
- 3306 Teaching High-School Journalism, Supervision of School Publications [ 323k  
 Instruction in the teaching of high-school journalism and supervision of publications, both classroom and extracurricular. Lectures include selection of material, editing, production, and school public relations. *Prerequisite:* Junior standing or consent of the chairman of the department.
- 3307 The Small Daily and Weekly Newspaper [ 325  
 Study of news methods, make-up, advertising problems, and business management of the small-town newspaper. *Prerequisite:* Junior standing or consent of the chairman of the department.
- 3312 Editorial Writing and Page Direction [ 340  
 Instruction and practice in writing newspaper editorials and page columns. Early emphasis on structure and style, make-up, and policies. Practice in writing the signed column. Required of all students majoring in Journalism. *Prerequisite:* Junior standing or consent of the chairman of the department.
- 3350 Fundamentals of Advertising [ 321k  
 Survey of advertising principles used in all media of communications. Practice in writing advertisement headlines and copy. Discussion of advertising's role in small and large business enterprises. *Prerequisite:* Junior standing or consent of the chairman of the department.
- 3351 Advertising, Copywriting and Special Layouts [ 326k  
 Instruction and practice in the technique of preparing various types of advertising copy and layouts. Study of marketing media, direct mail advertising, circulars, and store layouts. Two class and two practice hours per week. *Prerequisite:* Journalism 3350.
- 3352 Public Relations [ 358  
 Principles, techniques, and methods used in public relations; necessity and significance in the free enterprise system. Relationships include national, state and local governments; employees; customers; suppliers; social and religious institutions. *Prerequisite:* Junior standing or consent of chairman of the department.
- 3401 Public Affairs in the News [ NEW  
 Panel discussions, lectures and field visits comprise this course, which is primarily designed for the senior student needing advanced elective credit having a direct relationship to his major area of study. How the operations of government, politics, the courts, labor and business are reported and interpreted in the news will be studied. *Prerequisite:* Junior standing or consent of the chairman of the department.



- 3418 Current Events in Relation to Classroom Teachers Use in Secondary School [ 334T  
 A study of current events in the daily newspapers, national news magazines, and radio, and interpretation of these current events in regard to the social development of the secondary school pupil. *Prerequisite:* Junior standing or consent of the chairman of the department.

**COLLEGE PUBLICATIONS**

*For Undergraduates*

- 1104-05 Publications [ 204  
 Work on the staff of one of the college publications. Members are required to be on the staff of at least one of the official college publications and to work at prescribed periods under supervision. Three hours per week for two semesters. May not be taken for credit at the same time a student is enrolled in Journalism 3201 or 3202. *Prerequisite:* Consent of the chairman of the department.
- 1204-05 Publications (second year) [ 214  
 Further work on the college publications with increased responsibility. Three hours per week for two semesters. *Prerequisite:* Journalism 1104-05 and consent of the instructor.
- 1304-05 Publications (third year) [ 227  
 Further work on the college publications with increased responsibility. Three hours per week for two semesters. *Prerequisite:* Journalism 1204-05 and consent of the instructor.
- 1404-05 Publications (fourth year) [ 237  
 Further work on the college publications with increased responsibility. Three hours per week for two semesters. *Prerequisite:* Journalism 1304-05 and consent of the instructor.

**RADIO — TELEVISION**

Television and radio courses are designed to accomplish a two-fold purpose: To give the student training and background in every phase of non-technical television and radio; and, to provide the skills and experience necessary for a position in the industry. *Facilities are modern and complete.* Texas Western College owns and operates its own Frequency Modulation radio station KVOF-FM, which provides a daily broadcast service to the El Paso city and county schools. KVOF-FM is staffed entirely by students working in modern control rooms and studios, using standard commercial equipment. The department also maintains campus carrier-current station KVOF, providing ten hours daily of programs slanted at dormitory residents. Remote broadcast lines are maintained to El Paso's commercial stations for the purpose of relaying college programs. Texas Western television facilities are new, modern, and complete, offering the prospective television student unsurpassed opportunities for learning every phase of this fascinating medium. Using a complete RCA two-camera television chain, students write, produce and direct their own programs which are released by closed-circuit to TV receivers on the campus. Campus television facilities are also employed in the teaching of college courses by closed-circuit. An investment of more than \$150,000 is represented in the studios, lighting facilities, cameras, video controls and associated equipment to make Texas Western's TELEVISION CENTER one of the most complete educational television plants in the country. Upon approval by the Chairman of the Department, Education 3413, 3414, 3415, 3416, and 3417 will be accepted for credit as part of a major or minor in Radio-Television.

*For Undergraduates*

- 3101 Survey of Radio and Television [ 301  
 A survey of the American System of Broadcasting including personnel, equipment, terms, station and network organization in television and radio. Practice given in station operational procedures.

- 3102 Introduction to Radio [ 302  
 An introductory course to acquaint the beginning student with basic studio and control room equipment and practices. Microphone types and techniques, control board operation, tape recordings. Introduction to educational broadcasting. *Prerequisite:* Radio 3101, or consent of the chairman of the department.
- 3105 Radio-Television News Processing [ 305  
 A study of the leading world news telegraph services, news writing styles pertinent to radio broadcasting, and the techniques of processing news material for radio broadcast. Laboratory practice under actual radio newsroom conditions is made possible by use of 24-hour daily leased wire Associated Press facilities in the KVOF-FM newsroom.
- 3214 Introduction to Television [ 314  
 An introductory course to acquaint the student with the equipment terms and personnel of television. Radio and television announcing. The development of an effective, friendly radio and television personality. ( Three lectures per week.) *Prerequisite:* Radio 3102 or consent of the chairman of the department.
- 3215 Telecommunications (\$2) [ 315  
 Writing for television and radio, program planning and building, audience surveys, audience promotion. Introduction to film techniques in television. Three lectures per week. *Prerequisite:* Radio 3214 or consent of the chairman of the department.
- 3218 Dramatic Script Writing [ 318  
 Beginning principles of dramatic script writing for stage, radio and television. Drama majors will be required to write an original one-act play. Radio and television majors will be required to write an original half-hour script for either radio or television. *Prerequisite:* Completion of English 3101-02 and sophomore standing. Not to be counted in addition to Drama 3218.
- 3320 Television Production I (\$2) [ 320  
 A practical approach to the presentation of commercials, news films and live programs as encountered in the daily operation of the average commercial television station. Beginning instruction in camera work, video and audio control. Survey of educational television. Two lectures and three laboratory hours per week. *Prerequisite:* Six hours of television-radio courses or junior standing.
- 3321 Television Production II (\$2) [ 321  
 Advanced television production. Lighting and staging of television forums, quiz shows and dramatic materials. Skills of the technical director. Further camera training. Actual student participation in every phase of television studio and control activity. Two lectures and three laboratory hours per week. *Prerequisite:* Six hours of television-radio courses or junior standing.
- 3323 Production in Educational Television [ 323  
 Television production problems peculiar to educational television. A companion course to Education 3417, providing opportunity for participation in the production and direction of programs planned for in-school viewing. Content of the course will include basic instructions in staging, lighting, and camera work in the field of educational television. Class members will participate with the staff and crew for daily demonstration programs to be broadcast on the closed-circuit facilities of TWC-TV. *Prerequisite:* Junior standing.
- 3330 Television-Radio Station Management (\$2) [ 330  
 Complete survey of management problems in the television-radio industry. Information relating to network affiliation, staff training, public service policies, systems of records, legal restrictions. Survey of job opportunities. Counselling with industry personnel. Required of all television-radio majors. Two lectures and four laboratory hours per week. *Prerequisite:* Six hours of television-radio courses or junior standing.
- 3331 Seminar in Telecommunications [ 331  
 Studies in the literature of television and radio; current bibliography and publications; evaluation of philosophies; research problems in mass communications.

Required of all television-radio majors. Recommended for students majoring or minoring in education. Two lectures and four laboratory hours per week. *Prerequisite*: Six hours of television-radio courses or junior standing.

- 3413 Radio Listening as an Aid to Elementary Teaching [ 332  
A survey course in the use of radio in the classroom. Survey of program material available and a study of methods and techniques in advance preparation and program follow-up. Survey of state "School of the Air." How television will be used in the classroom. *Prerequisite*: Junior standing
- 3414 Radio Listening as an Aid to Secondary Teaching [ 332K  
A survey course in the use of radio at the high school level. Program analysis and methods and techniques of coordinating educational and public service broadcasts with high school curriculum. Study of state "Schools of the Air," survey of radio's potentialities in education. A survey of things to come; television as an aid to teaching. *Prerequisite*: Junior standing.
- 3415 Preparation, Presentation of Radio Programs, Elementary Grades [ 333  
Radio production techniques essential to the successful presentation of school programs. The program idea, writing, speaking on the microphone, timing. Survey of program material most welcomed by the stations. Practical studio experience and instruction in operation of station equipment in the Texas Western studio facilities. *Prerequisite*: Junior standing.
- 3416 Preparation and Presentation of Radio Programs, High School [ 333K  
Radio production techniques essential to the successful presentation of school programs. Putting the high school music organization on the air. Development of radio personality. Delayed broadcasting by tape recording. Possibilities of television. Practical studio experience and instruction in operation of station equipment in the Texas Western studio facilities. *Prerequisite*: Junior standing.
- 3417 Educational Television — A Seminar [ NEW  
The course is set up on a seminar level with the work divided to provide concentration in either the elementary or secondary school area. The class is conducted by means of closed circuit television and demonstrates an instruction technique that has had wide acceptance. Students see and hear the lectures and demonstrations in a television viewing room; instruction originates in the campus television studios. Opportunity is provided for students to do practice teaching over the closed circuit television system. *Prerequisite*: Senior standing and eighteen hours of education or radio-television.

### **Radio Station KVOF-FM**

*For Undergraduates*

- 1104-05 Radio Station KVOF-FM [ 204  
Work on the staff of Radio Station KVOF-FM. Three hours per week for two semesters. *Prerequisite*: Consent of the chairman of the department.
- 1204-05 Radio Station KVOF-FM (second year) [ 214  
Work on Radio Station KVOF-FM with increased responsibility. Three hours per week for two semesters. *Prerequisite*: Radio 1104-05 and consent of the instructor.
- 1304-05 Radio Station KVOF-FM (third year) [ 227  
Work on Radio Station KVOF-FM with increased responsibility. Three hours per week for two semesters. *Prerequisite*: Radio 1204-05 and consent of the instructor.
- 1404-05 Radio Station KVOF-FM (fourth year) [ 237  
Work on Radio Station KVOF-FM with increased responsibility. Three hours per week for two semesters. *Prerequisite*: Radio 1304-05 and consent of the instructor.

## **Mathematics and Physics**

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DR. E. J. KNAPP, *Chairman*

*Professors* KNAPP, BARNES; *Associate Professors* McMAHAN, BENTZ, GLADMAN;  
*Assistant Professors* RESLEY, SCHUMAKER, MICULKA, SHEPHERD, BALLARD, PATTERSON,  
SAYLES; *Instructors* THREADCILL, KRUSCHWITZ, COLDWELL, SLUSHER, OMUNDSON,  
BURCETT; *Part-time Instructors* NEFRUD, MITER, E. BARNES, DEAN, McDONALD, LAFLEA

### **MATHEMATICS**

Six semester hours of Mathematics are required for the degree of Bachelor of Arts. Students wishing a more complete course in Mathematics and students who plan to major or minor in Mathematics or Physics should take Mathematics 4115-16.

Students planning to major or minor in other sciences should check the degree requirements of their majors and minors in regard to Mathematics. Students majoring or minoring in Mathematics or Physics should take Mathematics 2110 in the second semester of the freshman year unless solid geometry is offered for entrance.

Some of the advanced courses are given in alternate years.

Physics 3451 and 3452 may be counted as Mathematics credit.

	<i>Former Number</i>
<b>3100 Advanced Arithmetic</b>	[ NEW
For students who are required by their major departments to take supplementary training in arithmetic. Credit may not be counted toward a degree or serve as a prerequisite for any course in mathematics.	
<b>3101 Introductory Mathematics</b>	[ 304
An introductory course designed to fit the needs of liberal arts students who do not plan to study mathematics beyond a one-year course. The objectives are to give the student an appreciation of mathematics as a language for expressing ideas and an understanding of the simple important problems of algebra, trigonometry, and business mathematics. This course leads to Mathematics 3102, 3104, or 3106.	
<b>3102 Introductory Mathematics</b>	[ 309
A continuation of the study of elementary mathematics as introduced in Mathematics 3101 with emphasis on applications. Topics studied include algebra, trigonometry, elementary statistics, and business mathematics. <i>Prerequisite:</i> Three semester hours of Mathematics.	
<b>3103 Intermediate Algebra</b>	[ 3113, 305
Not counted in addition to Mathematics 3101.	
<b>3104 Mathematics of Investment</b>	[ 307
Elementary course in the theory and application of the mathematics of finance. Topics covered include logarithms, progressions, simple and compound interest, annuities, amortization, perpetuities. May be applied toward the mathematics requirement or elective hours for the Bachelor of Arts Degree. <i>Prerequisite:</i> Three semester hours of Mathematics.	
<b>3106 Trigonometry</b>	[ 306
<i>Prerequisite:</i> Three semester hours of mathematics.	
<b>2110 Solid Geometry</b>	[ 208
Required of candidates for engineering degrees who do not present solid geometry for entrance. This course or high school solid geometry is required of all students beginning calculus. Counts toward academic degrees but not toward engineering degrees. <i>Prerequisite:</i> One year of high school geometry.	

- 4115 Engineering Mathematics [ 803a  
 Algebra, trigonometry, and analytical geometry combined to give the student a foundation for the study of calculus, the natural sciences, and engineering. The first three or four hours of classes are devoted to a review of high school algebra. Students not possessing a satisfactory working knowledge of algebra at the end of this period are transferred to Mathematics 3103. *Prerequisite:* One year of high school geometry and one and one-half years of high school algebra.
- 4116 Engineering Mathematics [ 803b  
 Continuation of Mathematics 4115. *Prerequisite:* Mathematics 4115.
- 3213-14 Calculus [ 613  
 In this course differential calculus and integral calculus are carried on together. In differential calculus, special attention is given to the derivation of formulas and to the application of derivatives to the solution of problems in maxima, rates, velocity, acceleration, and geometrical applications. The work in integral calculus drills the student in the integration of forms occurring in mathematics and physics; in evaluating areas and volumes, and in the derivation and application of the fundamental formulas of hydrostatics. The last two hours counted as advanced. *Prerequisite:* Mathematics 2110 unless solid geometry is presented for entrance, and Mathematics 4116.
- For Undergraduates and Graduates*
- 3325 Calculus [ 325  
 The topics of Mathematics 3214 are extended to include the differentiation and integration of a wider class of functions and the applications of these processes to the solution of a wider range of problems: Moments of inertia, series, partial differentiation, and multiple integrals. *Prerequisite:* Mathematics 3214.
- 3326 Differential Equations [ 326  
 Study of the common types of ordinary differential equations of geometry, mathematics, mechanics, and electricity. *Prerequisite:* Mathematics 3214.
- 3421 Theory of Equations [ 333  
 Theory of polynomials, cubic and quartic equations, approximate methods, determinants, symmetric functions, and other topics. *Prerequisite:* Math. 3214.
- 3422 Modern College Geometry [ 337  
 A course in modern plane geometry involving an extension of some of the material of elementary geometry, together with an introduction to projective geometry. *Properties of the triangle, properties of the circle, similitude, inversion, cross ratio, and principle of quality. Prerequisite:* Mathematics 3214.
- 3423 Vector Spaces and Matrix Algebra [ NEW  
 An introduction to the algebra of vector and matrices, and to linear transformations on vector spaces. *Prerequisite:* Mathematics 3214.
- 3435 Higher Mathematics for Engineers and Physicists [ 335  
 Designed to help the student in senior and graduate work in engineering, mathematics, physics and certain fields of chemistry. Line integrals and Green's Lemma. Surface integrals. Introduction to complex variables, analytic functions, Cauchy's theorem, Cauchy's integral formula, infinite series, residues and elementary mappings. Introductory vector analysis, gradient, directional derivative, Stoke's theorem, the divergence theorem. *Prerequisite:* Mathematics 3325.
- 3436 Higher Mathematics for Engineers and Physicists [ 336  
 Continuation of Mathematics 3435. Additional work with partial derivatives and infinite series, Fourier series, series solutions of differential equations, Bessel functions, Laplace transforms, the Gamma function. *Prerequisite:* Mathematics 3325.

PHYSICS

**PHYSICS**

*For Undergraduates*

- 3100 Introduction to Physics [ NEW  
A lecture course for engineering students who do not present one unit of high school physics for entrance.
- 4103-04 General Physics (\$4 - \$4) [ 801  
Mechanics, heat, electricity, magnetism, sound, and light. Physics 4103-04 and 3101-02 may not be counted for credit by the same student. Three lectures and two laboratory hours per week. May not be counted in addition to Physics 4215 or 4216.
- 3106 Elementary Theory of Sound [ NEW  
A study of sound as related to speaking, singing, and to musical instruments. It includes physical principles of sound production, transmission, interference, hearing, resonance, pitch, quality, musical intervals, stringed instruments, wind instruments, acoustics of rooms, and associated electronic equipment.
- 4213-14 Second-Year Physics (\$4 - \$4) [ 612  
First semester: Light, electricity, and magnetism. Second semester: Mechanics, heat, and sound. For students majoring in physics. Calculus is used throughout the course. Three lectures and three laboratory hours per week. *Prerequisite:* Mathematics 3213 concurrently and six hours of physics. May not be counted in addition to 4215-16 or any other sophomore course in physics.
- 4215 Mechanics and Heat (\$4) [ NEW  
Three lectures and three laboratory hours per week. *Prerequisite:* Mathematics 3213 concurrently and one unit of high school physics or three credit hours of college physics. Not counted in addition to Physics 4103 or 4104.
- 4216 Electricity, Magnetism, and Wave Motion (\$4) [ NEW  
Three lectures and three laboratory hours per week. *Prerequisite:* Mathematics 3213 or 3214 concurrently and Physics 4215. Not counted in addition to Physics 4103 or 4104.

*For Undergraduates and Graduates*

- 4317 Light, Sound, and Modern Physics (\$4) [ NEW  
Three lectures and three laboratory hours per week. *Prerequisite:* Physics 4216 and Mathematics 3214.
- 3322 Heat [ 339  
Advanced topics. *Prerequisite:* Mathematics 3214 and six semester hours of physics. Omitted, 1959-60.
- 3323 Light [ 340  
Advanced topics. *Prerequisite:* Mathematics 3214 and six semester hours of physics. Omitted, 1959-60.
- 3325 The Particles of Modern Physics [ 351  
A study of gaseous ions, electrons, cathode rays, isotopes, alpha, beta, and gamma rays, positrons, neutrons, atomic nuclei, atomic fission, and the various accelerators of charged particles. The most recent developments and applications will be emphasized. *Prerequisite:* Mathematics 3214 and six semester hours of physics.
- 3326 The Particles of Modern Physics [ 352  
Continuation of Physics 3325. Further study of positrons, neutrons, cosmic rays, mesons, artificial radioactivity, and atomic fission. A short introduction to wave mechanics is given. *Prerequisite:* Mathematics 3214 and six semester hours of physics.

- 4339 Electronics (\$4) [ 437  
Experimental techniques and elementary theory of circuit elements. Includes linear passive elements, linear electronic and transistor circuits. Also includes nonlinear electronic elements such as trigger circuits. Three lectures and three laboratory hours per week. *Prerequisite:* Physics 4214 or Physics 4216. May not be counted in addition to Engineering 4339.
- 4340 Theory and Applications of Electron Tubes (\$4) [ 438  
Theory and applications of a wide variety of electron tubes and circuits. Includes analysis of steady state and transient response in electronic systems by means of equivalent circuits. Also included are power supplies, feedback amplifiers, television and radio circuits, microwaves, and recent electronic developments. Three lectures and three laboratory hours per week. *Prerequisite:* Mathematics 3214 and Physics 4339. May not be counted in addition to Engineering 4340.
- 3341 Electricity and Magnetism [ 334  
Maxwell's field equations are postulated and conventional laws of electricity and magnetism are derived from electromagnetic theory. Vector theory is developed in the course as needed. Three lectures per week. *Prerequisite:* Physics 4214 or 4216 and Mathematics 3214.
- 3342 Electricity and Magnetism [ 335  
Continuation of Physics 3341. Includes electromagnetic waves and radiation systems and Lorentz transformation of field vectors. Some elementary circuit theory is derived from electromagnetic theory. Three lectures per week. *Prerequisite:* Physics 3341.
- 2343 Advanced Laboratory Practice in Electricity (\$2) [ 232  
A course covering theory and practice in the measurement of electrical and magnetic quantities. Certain phases of modern physics are discussed and dealt with in the laboratory. The sensitive galvanometer is studied in detail. Attention is given to various types of bridges. Measurements are made of such quantities as the charge on the electron, the ratio of charge to mass, and other quantities related to modern physics. Electrical discharge through gases and attendant phenomena are also studied. One lecture and three laboratory hours per week. *Prerequisite:* Physics 4214 or 4216.
- 2344 Advanced Laboratory Practice in Electricity (\$2) [ 233  
A continuation of Physics 2343. *Prerequisite:* Physics 4214 or 4216.
- 4445 Electromagnetic Waves and Radiating Systems (\$4) [ NEW  
Application of Maxwell's equations to electromagnetic wave transmission, reflection, and refraction, including the study of guided waves, transmission lines, and antennas. Three lectures and three laboratory hours per week. *Prerequisite:* Physics 4340 or Engineering 4340 or Physics 3342. Omitted 1959-60.
- 3347 Fundamentals of Acoustics [ NEW  
The principles underlying the generation, transmission, and reception of acoustic waves. Mathematical analyses of the various types of vibration of solid bodies. Propagation of plane and spherical sound waves through fluids, transmission and absorption phenomena, resonators and filters. *Prerequisite:* Six hours of physics and six hours of calculus. (Offered 1957-58 and subsequently when demand is sufficient.)
- 3451 Analytical Mechanics [ 341  
Equilibrium and motion of a particle and a rigid body in two and three dimensions. May be counted as three advanced hours in Physics. *Prerequisite:* Mathematics 3214 and ten credit hours in physics or six credit hours in mathematics and Mathematics 3436.
- 3452 Analytical Mechanics [ 342  
Continuation of Mathematics 3451. May be counted as three advanced hours in mathematics. *Prerequisite:* Mathematics 3451.

## ***Military Science and Tactics***

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COL. JOSEPH H. BUYS, *Commandant*

*Professor BUYS; Assistant Professors MAJ. BOUGHNER, CAPT. OCHS*

Courses offered by this department are designed to produce junior commissioned officers who by their education, training, and inherent qualities are suitable for continued development as officers in the United States Army. Training in military leadership is emphasized. Instruction is provided in subjects common to all branches of the Army.

Students who qualify as "Distinguished Military Graduates" are eligible for appointment as commissioned officers in the Regular Army.

Military Science Courses are offered during the long session only, except that appropriate courses will be offered during the summer session for those students in the Co-operative Engineering Program.

The first two years (Military Science 2101-02 and 2201-02) form the *Basic Course*. The second two years (Military Science 3301-02 and 3401-02) form the *Advanced Course*. All Military Science courses are elective, but enrollment in either the Basic or Advanced Course constitutes an agreement by the student to complete the two years of the course in which he enrolls as long as he remains eligible.

**ELIGIBILITY:** Normally a student may enroll only in the Military Science Course that corresponds to his academic year in College, and he may be permitted to begin Military Science only if sufficient time remains in College to complete all Military Science Courses by the time he obtains a baccalaureate degree. Enrollment is limited to students who can qualify for a degree prior to becoming 28 years of age. Credit for as much as one semester of the Basic Course may be granted for high school ROTC and credit for as much as all of the Basic Course may be granted for previous active military service. In exceptional cases students may be authorized to complete the Military Science Courses in less than four years. Inquiries pertaining thereto should be directed to the PMS&T. Subject to the above requirements a student may enroll in the Basic Course providing he is a regularly enrolled student at Texas Western College, is a citizen of the United States, and is physically qualified. Upon completion of the Basic Course he may, subject to the above requirements, enroll in the Advanced Course providing he is selected by the President of the College and the Professor of Military Science and Tactics.

If accepted for the Advanced Course, the student will be required to execute a written agreement with the Government to continue the course as long as he remains in good standing in the College, and, upon graduation, to accept a commission in the United States Army Reserve if such a commission is tendered. Once enrolled, completion of the Advanced Course, including summer camp, is a prerequisite to graduation, unless the student is relieved of his contractual obligations by the Fourth Army commander.

**SUMMER CAMP:** Advanced Course students are required to attend a 6 weeks' summer camp between their junior and senior academic years. A student may be authorized to postpone attendance at camp until the summer following his graduation if cogent reasons therefor exist. Such postponement will not preclude a student's obtaining his degree at graduation time.

All regularly enrolled students are furnished necessary uniforms, texts, and equipment on a loan basis. A twenty-dollar deposit is required at the time of registration to cover loss or damage of the property. The Government pays all Advanced Course students a subsistence allowance of \$.90 per day for not more than 595 days and \$78.00 per month for the six weeks summer camp. Veterans' payments are not affected by the payment of the above allowances.

Students not meeting the requirements for formal enrollment may, with the permission of the President of the College and the Professor of Military Science and Tactics, enroll informally for academic credit only. They will not receive monetary allowances nor be issued Government uniforms.

Upon successful completion of the four-year ROTC program and graduation a student is tendered a commission in the United States Army Reserve and will be required to serve a tour of active duty. The length of this tour will depend upon the requirements of the Army and will consist either of six months or two years. It will include a course of instruction at an officers' basic school.



**Basic Course****2101-02 Military Science I [ 401**

Organization of the Army and Reserve Officer's Training Corps (ROTC); Individual Weapons and Marksmanship; American Military History; Leadership, Drill and Command. Two classroom hours and one drill hour per week. Academic credit: four hours.

**2201-02 Military Science II [ 402**

Map and Aerial Photograph Reading; United States Army and National Security; Crew Served Weapons and Gunnery; Leadership, Drill, and Command. Two classroom hours and one drill hour per week. *Prerequisite:* Military Science 2101-02 or equivalent military training. Academic credit: four hours.

**Advanced Course****3301-02 Military Science III [ 610**

Leadership; Military Teaching Methods; Organization, Functions, and Missions of the Branches of the Army; Small Unit Tactics and Communications; Leadership, Drill and Command. Four classroom hours and one drill hour per week. *Prerequisite:* Junior standing, basic course or equivalent military training, and selection by Professor of Military Science and Tactics and President of College. Academic credit: six hours.

**3401-02 Military Science IV [ 620**

Operations; Logistics; Army Administration and Military Justice; Service Orientation; Leadership, Drill, and Command. Four classroom hours and one drill hour per week. *Prerequisite:* Military Science 3301-02. Academic credit: six hours.

## **Mining and Metallurgy**

DR. J. C. RINTELEN, JR., *Chairman*

*Professors RINTELEN, THOMAS; Associate Professors INGERSOLL, DISMANT;*

*Assistant Professor HUFFSTUTLER; Instructor McDONALD;*

*GRAHAM (Professor Emeritus)*

### **MINING**

*Former  
Number*

- 3201 Elements of Mining [ 310  
A study of prospecting, development, earth and rock excavation, explosives, tunneling, shaft sinking, timbering, boring, underground transport, and hoisting. *Prerequisite:* Geology 3216 and Physics 4215.
- 2101 History of Mining [ 211  
Highlights of mining eras and mining districts. *Prerequisite:* Open to all students. Not given in 1959-60.
- 1101 History of Mining [ 111  
Highlights of mining eras and mining districts. *Prerequisite:* Open to all students.
- 1102 The Mineral Industry (\$2) [ 112  
An introductory course in which field trips are made to industrial plants and mines related to the mineral industry. Three laboratory hours per week. Open to all students.
- 2301 Mining Methods [ 221  
A comprehensive study of mining methods. *Prerequisite:* Mining 3201.
- 3302 Mine Surveying (\$2) [ 322  
Theory and practice of problems encountered in shaft plumbing, surveys for patenting mining claims, and other conditions peculiar to mine surveying. Two lectures and three laboratory hours per week. *Prerequisite:* Mining 2301, and Engineering 4314.
- 2304 Mine Surveying; Summer Field Work (\$2) [ 224  
A practical field course in mine surveying. A complete survey and map of one of the mines in the vicinity of the College are required. Students are required to pay all expenses for their transportation and board while on this trip. *Prerequisite:* Mining 3302. Eight hours daily for two weeks, starting Monday two weeks prior to registration.
- 2401 Tunneling and Blasting [ 237  
Methods of excavation and material handling in tunneling and hard-rock foundation. Handling of explosives, placement of charges, safety precautions, ventilation. *Prerequisite:* Junior standing.
- 3402 Mine Valuation and Report (\$2) [ 363  
A study of sampling, ore estimation and mining reports. In the laboratory the student is required, from a sampled mine or exploration, to determine the value of the property, select a mining method, suggest suitable equipment and write a detailed report. *Prerequisite:* Completion of the requirements for the Bachelor of Science Degree by the end of the following fall semester. Two hour lectures and three laboratory hours per week. *Prerequisite:* Mining 2301.
- 3403 Management [ 364  
Many of the applications of economics to mining are considered. *Prerequisite:* Mining 2301.
- 3404 Mine Plant [ 366  
A study of underground haulage, hoisting plant, compressed air plant, rock drills and pumping. *Prerequisite:* Mining 2301.

- 3405 Mine Plant (\$2) [ 368  
A study of mine ventilation and mining law. *Prerequisite:* Mining 2301. Two lectures and three laboratory hours per week.
- 0421 Mining Trip (Transportation fee: \$50.00) [ 074  
At the end of the senior year, graduating seniors spend the last two weeks of the second semester on a trip of inspection which will include visits to the mining and metallurgical departments of companies within the scope of the planned itinerary. Required for graduation. *Prerequisite:* Completion of the requirements for the Bachelor of Science degree by the end of the following fall semester.

**METALLURGY**

- 3101 Introduction to Metallurgy (\$2) [ 310  
An elementary course in the extraction of metals from ores, and the industrial application of metals and alloys. Two lectures and three laboratory hours per week. Open to all students.
- 3301 Metallurgical Engineering Principles [ 321  
A study of the fundamental engineering principles applied to metallurgical processes. *Prerequisite:* Chemistry 4103-04. Two semesters of physics.
- 4302 Ore and Coal Dressing (\$4) [ 423  
The principles governing the process employed in the liberation and separation of the minerals and coal dressing. In the laboratory the student becomes familiar with milling machinery and methods of separation. Three lectures and three laboratory hours per week. *Prerequisite:* Geology 2217 and two semesters of physics.
- 2303 Assaying (\$2) [ 324  
A study of slags and the determination by fire methods of gold, silver, and lead in minerals, ores, and products of mills and smelters. One lecture and three laboratory hours per week. *Prerequisite:* Chemistry 4214.
- 3305 Engineering Metallurgy (\$2) [ 326  
A course in the metallurgy and metallography of commercial metals and alloys. Two lectures and three laboratory hours per week. *Prerequisite:* Chemistry 4103-04, and two semesters of physics.
- 4308 Physical Metallurgy (\$4) [ 472  
A theoretical study of the metallic state concerned with the physical and mechanical characteristics of metals and alloys. Three lectures and three laboratory hours per week. *Prerequisite:* Chemistry 4460.
- 3402 Ferrous Metallurgy [ 360  
A course in the metallurgy and fabrications of iron, steel and related alloys. One-third of the course will be devoted to calculations pertaining to the subject. *Prerequisite:* Chemistry 4103-04, two semesters of physics and Math 4115.
- 2402 Ferrous Metallurgy [ 260  
Same as Metallurgy 3402 except that the calculations are omitted. *Prerequisite:* Chemistry 4103-04 and two semesters of physics.
- 3403 Non-Ferrous Metallurgy [ 361  
The smelting and refining of non-ferrous metals. One-third of the course will be devoted to calculations pertaining to the above subjects. *Prerequisite:* Chemistry 4103-04, two semesters of physics and Math 4115.

METALLURGY

- 2403 Non-Ferrous Metallurgy [ 261  
 Intended for those students who select the mining option and is the same as Metallurgy 3403 except that the calculations are omitted. *Prerequisite:* Chemistry 4103-04 and two semesters of physics.
- 3404 Hydrometallurgy (\$2) [ 362  
 The leaching methods employed in metallurgy, and the electro-deposition of non-ferrous metals. Two lectures and three laboratory hours per week. *Prerequisite:* Metallurgy 3301.
- 3405 Metallurgical Laboratory (\$2) [ 364  
 The student receives an individual problem, or problems, which he handles as research work. At times this work will consist of problems submitted to the College from various fields of metallurgy. Nine laboratory hours per week. *Prerequisite:* Metallurgy 4308 or 4302.
- 3406 Metallurgical Laboratory (\$2) [ NEW  
 Continuation of Metallurgy 3405.
- 2405 Metallurgical Laboratory (\$2) [ 264  
 This course handles part of the work covered by Metallurgy 3405 and is intended for those students who wish to do some research work but cannot devote the time necessary for full credit toward graduation. Six laboratory hours per week. *Prerequisite:* Metallurgy 3305 or 4302.
- 4407 Metallography (\$4) [ 473  
 The metallography and heat treatment of various metals and alloys. Three lectures and three laboratory hours per week. *Prerequisite:* Metallurgy 4308.
- 4408 Advanced Ore and Coal Dressing (\$4) [ 463  
 Advanced principles of ore dressing, ore testing, flowsheets, and mill design. Three lecture and three laboratory hours per week. *Prerequisite:* Metallurgy 4302.
- 3409 Corrosion [ 375  
 A study of corrosion, passivity, and protection of metals and alloys. *Prerequisite:* Chemistry 4103-04 and two semesters of physics.
- 3410 Thermodynamics of Metals [ NEW  
 The thermodynamics of metals and metallurgical processes. *Prerequisite:* Metallurgy 4308.
- 4411 Advanced Physical Metallurgy (\$2) [ NEW  
 A theoretical study of the instrumentation concerned with the physical characteristics of metals and slags. Three lectures and three laboratory hours per week. *Prerequisite:* Metallurgy 4308.
- 0421 Metallurgical Trip (Transportation Fee: \$50.00) [ 074  
 At the present time this trip will be taken with Mining 0421. When it is to the best interests of the metallurgical students to deviate from the route of the Mining 0421 trip, such changes will be made, but in the main, the two trips will be taken together. Required for graduation. *Prerequisite:* Completion of the requirements for the Bachelor of Science degree by the end of the following fall semester.

## Modern Languages

DR. EDGAR T. RUFF, *Chairman*

*Professors* RUFF, BACHMANN; *Associate Professors* BEVANS, SHARP; *Assistant Professors* WEBB, GABRIEL, TAPPAN; *Instructors* BREWER, RUSSELL

### Registration Instructions:

- a) Native speakers — register for 4102, subject to placement
- b) No previous courses in the language — register for 4101
- c) Two units in high school — register for 4102 (review)
- d) One, three, or four units — confer with Department for placement

Courses 4101-02 and 3201-02 should be taken without interruption and supplemented with Courses 3108, 3110, 3111, and 3114 as needed for fluency.

\*Undergraduate courses indicated by an asterisk are given regularly on a three-year cycle and do not come up in the two years covered by this catalog.

### FRENCH

*Former  
Number*

- 4101-02 Fundamentals of Reading, Writing and Speaking [ 801  
Oral drill, dictation, grammar, reading of elementary and intermediate texts, conversation, written exercises. Three recitation and two workshop hours.
- 3108 Conversational French [ 308  
*Intended to broaden the vocabulary of French 4101 for conversational use. A supplementary course for students who do not already speak French. Extensive use of audio-visual aids. Conducted in elementary French. Prerequisite: With or after French 4101.*
- 3110 Civilisation française [ 310  
Illustrated lectures in intermediate French. Extensive use of travelogs, slides and films of everyday life to teach conversational French. *Intended as a supplement to required courses for students who do not already speak French. Prerequisite: French 4101.*
- 3111 La France contemporaine [ 311  
A conversational course in intermediate French based on a study of the provinces of France. Extensive use of slides, films, and travelogs to teach vocabulary and conversational usage. A supplementary course for students who do not already speak French. *Prerequisite: French 4101.*
- 3201-02 Intermediate Readings in the Modern Period [ 612  
Readings from the nineteenth and twentieth centuries. Oral and written summaries, some grammar review. *Prerequisite: French 4102.*

### *For Graduates and Undergraduates*

- 3321 The Literary History of France [ 321  
A survey of French culture and literature, stressing the parallel development of French institutions, thought and art forms. Conducted in French. *Prerequisite: French 3202.*
- 3332 The French Classical Period\* [ 332
- 3333 Masterpieces of French Literature [ 333  
A survey of the masterpieces of French literature, including the *Chanson de Roland*, Montaigne's *Essais*, etc. At least four important works will be read in class. Outside reading reports. *Prerequisite: French 3202.*
- 3335 Modern Novel: Early Period\* [ 335
- 3336 Modern Drama: Early Period\* [ 336
- 3337 Modern Novel: Later Period [ 337  
A study of the French novel during the last half of the nineteenth century. *Emphasis on the naturalistic and realistic movements. Prerequisite: French 3202.*

- 3339 The Short Story° [ 339
- 3340 Modern Drama: Later Period [ 340  
The French drama of the last half of the nineteenth century: Becque, Curel, Brieux, Rostand, Maeterlinck, etc. *Prerequisite:* French 3202.
- 3357 Advanced Composition and Grammar Review° [ 357
- 3358 Contemporary French Literature° [ 358
- 3377 The History of French Poetry: A Survey [ 377  
*Prerequisite:* French 3202.

**For Graduate Students Only**

*Prerequisite:* Twelve hours of advanced courses in French and a Bachelor's degree.

- 3590 Seminar [ 390
- 3591 Graduate Reading Course: Seminar [ 391

**GERMAN**

- 4101-02 Fundamentals of Reading, Writing and Speaking [ 801  
Oral drill, dictation, grammar, reading of elementary and intermediate texts, conversation, written exercises. Three recitation and two workshop hours.
- 3108 Conversational German [ 308  
Intended to broaden the vocabulary of German 4101 for conversational use. *Prerequisite:* With or after German 4101.
- 3110 German Civilization [ 310  
An intermediate course in conversational German. Extensive use of slides and films of everyday life to teach spoken German. A supplementary course for students who do not already speak German. *Prerequisite:* German 4101.
- 3201-02 Intermediate Readings in the Modern Period [ 612  
Readings from the nineteenth and twentieth centuries. Oral and written summaries, some grammar review. *Prerequisite:* German 4102.

**SPANISH**

- 4101-02 Fundamentals of Reading, Writing and Speaking [ 801  
Oral drill, dictation, grammar, reading of elementary and intermediate texts, conversation, written exercises. Three recitation and two workshop hours.
- 3201-02 Intermediate Readings in the Modern Period [ 612  
Readings from the nineteenth and twentieth centuries. Oral and written summaries, some grammar review. *Prerequisite:* Spanish 4102.
- 3108 Conversational Spanish [ 308  
Intended to broaden the vocabulary of Spanish 4101 for everyday use. A supplementary course for students who do not already speak Spanish. Extensive use of audio-visual aids. *Prerequisite:* With or after Spanish 4101.
- 3110 Cultura hispánica [ 310  
Illustrated lectures in intermediate Spanish. Extensive use of travelogs, slides and films of everyday life to teach conversational Spanish. A supplementary course for students who do not speak Spanish. *Prerequisite:* Spanish 4101.
- 3111 España contemporánea [ 311  
A conversational course in intermediate Spanish based on a study of the provinces of Spain. Extensive use of slides, films and travelogs to teach vocabulary and conversational usage. A supplementary course for students who do not already speak Spanish. *Prerequisite:* Spanish 4101.

- 3114 **México contemporáneo** [ 314  
 A conversational course in intermediate Spanish based on a study of city and rural life in the various regions of Mexico. Extensive use of slides, films and travelogs to teach vocabulary and conversational usage. A supplementary course for students who do not already speak Spanish. *Prerequisite:* Spanish 4101.
- For Graduates and Undergraduates*
- 3321 **The Literary History of Spain** [ 321  
 A survey of Spanish culture and literature, stressing the parallel development of Spanish institutions, thought and art forms. Conducted in Spanish. *Prerequisite:* Spanish 3202.
- 3324 **The Literary History of Mexico** [ 324  
 Principal movements and writers in Mexican literature. Emphasis on the novel of the Revolution. Conducted in Spanish. *Prerequisite:* Spanish 3202.
- 3328 **Golden Age Drama** [ 328  
 A study of the leading dramatists: Lope de Vega, Tirso de Molina, Calderón de la Barca, Ruiz Alarcón, Moreto and others. *Prerequisite:* Spanish 3202.
- 3332 **Classical Spanish Prose** [ 332  
 A study of the Spanish picaresque, chivalresque and pastoral novels and shorter forms. Some consideration of mystic and satirical masterpieces. Outside reading reports. *Prerequisite:* Spanish 3202.
- 3333 **Masterpieces of Spanish Literature** [ 333  
 Extensive readings from masterpieces of Spanish literature. At least four complete works including the *Poema del Cid*, *Libro de Buen Amor*, *la Celestina*, etc. *Prerequisite:* Spanish 3202.
- 3335 **Modern Novel: Early Period** [ 335  
 The Spanish novel of the first half of the nineteenth century: Fernán Caballero, Alarcón, Valera, Pereda, Pérez Galdós, Pardo Bazán, etc. *Prerequisite:* Spanish 3202.
- 3337 **Modern Novel: Later Period** [ 337  
 The Spanish novel of the second half of the nineteenth century: Palacio Valdés, Blasco Ibañez, Baroja, León, Pérez de Ayala, Concha Espina, etc. *Prerequisite:* Spanish 3202.
- 3339 **The Cuento and Short Story**° [ 339
- 3341 **Modern Spanish Drama**° [ 341
- 3357 **Advanced Composition and Grammar Review** [ 357  
 Examination of the best modern Spanish business, epistolary, journalistic and polemic styles. Original composition on topics of current interest. *Prerequisite:* Spanish 3202.
- 3358 **Contemporary Spanish Literature** [ 358  
 Spanish literature in the first half of the twentieth century, the "Generation of '98," etc. *Prerequisite:* Spanish 3202.
- 3360 **The Regional and Historical Novel in South America** [ 360  
 A study of the famous regional and historical novels of South America, exclusive of Brazil. At least one representative author of each country or region. Special attention to major regional language differences. Outside reports. *Prerequisite:* Spanish 3202.
- 3361 **Don Quixote** [ 361  
 The literary value and influence of the *Quijote*. Traditional and modern interpretations. The life and times of Cervantes. Collateral readings and reports. *Prerequisite:* Spanish 3202.
- 3362 **The New World in Spanish Literature: (Northern Hemisphere)** [ 362N  
 A literary study of the diaries, accounts and biographies of the Spanish explorers in the New World: Columbus' *Diario de Navegación*; Cortes' *Cartas de Relación*;

- Cabeza de Vaca's *Naufragios*; Castañeda's *Jornada de Cíbola*, etc. Special attention to the American Southwest. *Prerequisite*: Spanish 3202.
- 3363 The Literary History of Argentina [ 363  
The principal movements and writers in Argentine literature. At least four representative works will be read in class. Conducted in Spanish. *Prerequisite*: Spanish 3202.
- 3364 Contemporary Poets of Latin America\* [ 364
- 3365 Contemporary Urban Novel of Latin America\* [ 365
- 3366 The New World in Spanish Literature [ 362S  
(Southern Hemisphere)  
A literary study of the diaries, accounts and biographies of the Spanish explorers and *conquistadores* in the New World: Cabeza de Vaca's *Comentarios*. El Inca Garcilaso de la Vega's *Comentarios reales*; Ercilla's *La Araucana*, etc. *Prerequisite*: Spanish 3202.
- 3377 History of Spanish Poetry [ 377  
A survey of Spanish poetry to the middle of the twentieth century. *Prerequisite*: Spanish 3202.

**For Graduate Students Only**

*Prerequisite*: Twelve hours of advanced courses in Spanish and a Bachelor's degree.

- 3590 Seminar [ 390  
Spanish and Spanish-American literary or linguistic problems to be announced by the instructor at the beginning of each semester.
- 3591 Graduate Reading Course: Seminar [ 391
- 3592 Seminar on the History of the Spanish Language (Phonology) [ 392
- 3593 Seminar on the History of the Spanish Language (Morphology) [ 393
- 3594 Cervantine Studies: Seminar [ 394
- 3595 Seminar on the Latin American Novel [ 395
- 3596 Old Spanish Literature: Seminar [ 396
- 3598-99 Thesis Course for the Master's Degree [ 698  
Confer with the head of the department immediately upon registration.

**RUSSIAN**

- 4101 Written and Spoken Russian [ 401  
An intensive course designed to enable the more mature student to master the fundamentals of written and spoken Russian. *Prerequisite*: Completion of Course 4102, or equivalent, in a foreign language with a grade of at least B, or permission of the head of the department. Two double recitation hours per week.
- 4102 Written and Spoken Russian [ 402  
A continuation of Russian 4101. Intermediate graded readings. *Prerequisite*: Russian 4101.
- 3108 Conversational Russian [ 308  
Intended to broaden the vocabulary of Russian 4101 for oral use. Attention also will be given to basic military terminology. *Prerequisite*: With or after Russian 4101.



## Music

DR. E. A. THORMODSGAARD, *Chairman*

*Professor* THORMODSGAARD; *Associate Professors* BRIGGS, CARRICO, EIDBO;  
*Assistant Professors* CARNOVALE, GODDARD, HENDERSON; *Instructors* CHAVEZ, MERRILL

The various curricula in the Department of Music have been designed to satisfy several objectives: Teacher training, professional training, and avocational interest.

The Bachelor of Arts degree curriculum without teaching credential is primarily for those with an avocational interest in music or as a basis for advanced study in the field of Fine Arts. The Bachelor of Music degree offers several possibilities for students with an avocational interest as well as those preparing for teaching or advanced study.

Students completing the course of study as outlined for teacher training will fulfill all requirements of the State Board of Education for full-time all-level teaching in Texas Public Schools in the fields of instrumental or choral direction.

Information on scholarships is available through the Head of the Music Department. Students receiving scholarships are required to participate in all performances by ensembles of which they are members in order to continue their eligibility for scholarships.

The following courses of instruction may be adjusted to the particular needs of the individual through permission of the Head of the Music Department.

<b>THEORY</b>	<i>For Undergraduates</i>	<i>Former Number</i>
2111-12 Sight Singing and Dictation	Rhythmic, melodic and harmonic dictation; one through four-part sight singing. Theory 3113-14 taken concurrently. Two lectures and one workshop hour per week.	[ 402
3113-14 Essentials of Acoustics and Music Theory	The combination, transmission and effects of musical sounds, utilizing symbols. The logic of order in music as exemplified in acoustics, overtone series, scales, diatonic harmony, rhythm, melody writing, non-harmonic devices, simple modulation. Supplementary ear training in four-part dictation and keyboard practice. Open to all students. Three lectures and one workshop hour per week.	[ 601
2211-12 Sight Singing and Dictation	A continuation of Music Theory 2112. Two lectures and one workshop hour per week. <i>Prerequisite:</i> Music Theory 2112, or equal.	[ 611
3213-14 Harmony	Continuation of melodic and harmonic dictation and part writing; harmonic analysis and simple forms; seventh chords; altered chords; keyboard practice. Three lectures and two workshop hours per week. <i>Prerequisite:</i> Music 3113-14.	[ 611
<i>For Undergraduates and Graduates</i>		
2311, 2312 Counterpoint	(2312 Seminar) Continuation of melodic and harmonic dictation; mixed chords; foreign modulation. Survey of sixteenth and eighteenth century contrapuntal techniques as exemplified in Palestrina and Bach. Introduction to Composition. Two lectures per week. <i>Prerequisite:</i> Music 3213-14.	[ 221C, 221K
2313-14 Seminar: Composition	Modern styles of composition, including techniques from the Schillinger System, are integrated with traditional theory and composition in a practical course covering the smaller forms in vocal and instrumental music. <i>Prerequisite:</i> Theory 3213-14 or equivalent.	[ 459
2315, 2316 Form and Analysis	(2316 Seminar) Detailed study of the logic of musical structure as exemplified in representative works beginning with song forms and including the larger forms. <i>Prerequisite:</i> Music 3213-14.	[ 418a, 418b
3411 Choral Arranging	A study of basic principles of writing, arranging, and editing choral music from two to eight parts. Emphasis upon music suitable for public school choral groups. <i>Prerequisite:</i> Music 3213-14.	[ 357

- 3412 Instrumentation and Orchestration** [ 352  
 A study of orchestral and band instruments by classification. The range capabilities and limitations, timbre, transposition, etc. Practical experience in scoring for various combinations of instruments from trios to full orchestra and band. *Prerequisite:* Music 3213-14 and four semester hours, or equivalent, of class instruments.
- 2413-14 Seminar: Advanced Composition** [ 460  
 A continuation of Music 2313-14 with emphasis upon modern music and larger forms. *Prerequisite:* Music 2313-14.
- 2415 Dance Band Arranging** [ 250  
 A study of melodic, harmonic, and rhythmic devices and styles used in modern music; practical experience in scoring for various combinations of dance groups. *Prerequisite:* Music 3213-14 and 4 semester hours or equivalent, of class instruments.

**LITERATURE***For Undergraduates*

- 1141 Band Literature\*** [ 202M, 212M, 222M, 232M  
 A study of selected works in the field of band literature. Concurrent registration with band is required. *Prerequisite:* placement.
- 1151 Choral Literature\*** [ 202, 212, 222, 232  
 A study of selected works in the field of choral literature. Concurrent registration with choir or chorus is required. *Prerequisite:* placement.
- 1165 Chamber Music and Ensembles\* (\$2)** [ 208, 218  
 A Brass Ensemble, Reed Ensemble, the All-Girl Instrumental Ensemble, the Girls' Drum Corps, and Stringed Ensembles are available to instrumentalists. The Madrigal Club, Men's Choral Ensemble, Ladies' Choral Ensemble and the Symphonic Choir are available to vocalists, the latter primarily intended for the Evening School. Emphasis is upon the reading of music and the study of selected works characteristic to the performing group. *Prerequisite:* Preceding course or placement.
- 3110 Introduction to Fine Arts** [ 304  
 Survey of the Arts. Enjoyment through understanding their interrelationship and the expressive elements common to Music, Art and Drama. Differences in media of expression and in the tools of each art. Not counted in addition to Art 3110 and Drama 3110.
- 3121 Introduction to Musical Literature** [ 301K  
 A non-technical course for all students which, through directed listening, aims to increase the enjoyment and appreciation of potential music lovers. A brief survey of musical literature from the beginning of music through Modern Music, hearing recordings of representative works of each period, with major emphasis on the development of music up to the Classical Period.
- 3122 Trends in Musical Literature** [ 301L  
 A survey, through directed listening, of the trends found in the great musical literature of the world, from the beginning of music through Modern Music; major emphasis on understanding the literature and styles of the Classical through Modern Periods.
- 3123 Twentieth Century Music**  
 The history and development of jazz, its representative music and performers, and its influence on serious music. *Prerequisites:* Music Literature 3121, or 3122, or concurrent registration. Alternated with 3121 and 3122.
- For Undergraduates and Graduates*
- 3321 Music History** [ 331  
 Chronological survey of the composers and their works through directed listening beginning with Greek Music and continuing through the Baroque period, with emphasis on the growth of our culture. *Prerequisite:* For music majors, Theory 3214 and junior standing; for others, 6 hours of music and junior standing.

\*May be repeated for credit.

- 3322 Music History [ 334  
Chronological survey of the composers and their works through directed listening beginning with the Classic Period and continuing through contemporary music, with emphasis on the growth of our culture. *Prerequisite:* For music majors, Theory 3214 and junior standing; for others, 6 hours of music and junior standing.
- 3323, 3324; 3423, 3424 Opera Workshop [ 346a-b, 347a-b  
Opera scores are studied to develop familiarity with operatic literature. Public performances are presented. This course is designed for voice majors and students interested in the opera field. *Prerequisite:* Junior standing and permission of the instructor, and preceding course in each case.

### MUSIC EDUCATION *For Undergraduates*

- 1101 Professional Laboratory Experiences [ NEW  
Observation of instrumental and vocal performances by individuals, groups, and classes of all age levels (elementary school, secondary school and college) under the guidance of public school and college instructors. Participation required in one or more performance media. Required of all music majors each semester in residence. May be repeated for credit.
- 1131, 1231, 1331 Administration of Band [ 102, 112, 122  
Planning and executing Summer camp, band and twirling activities. Lectures and laboratory experiences, private and group instruction, and ensemble participation for one week at off-campus resort. Four hours daily. *Prerequisite:* permission of instructor. Offered Summer Sessions only.
- 3136 Church Music Materials, Organization and Direction  
Basic problems in the administration and direction of a church music program; the multiple choir system, including adolescent and boy voices; organization of the rehearsal; the church year calendar and program building; conducting technique and choral dictation. *Prerequisite:* permission of the chairman of the department. Offered Summer Sessions only.

#### *For Undergraduates and Graduates*

- 3331, 3332 Choral Methods, Techniques and Conducting [ 351, 351F  
A study of unique problems in choir organization including the selection of voices. Special attention is given to rehearsal techniques, phonetics, literature, interpretation, and baton techniques. *Prerequisite:* For music majors, 20 hours in music and junior standing; for others, Music Theory 3114 and junior standing.
- 3333 Conducting Methods and Materials [ 352K  
Selected problems in conducting, including instrumental experiences. Methods of developing good posture, baton techniques; fundamental principles in obtaining balance, color, shading, interpretation, score reading, etc. Program building and practical application of the conducting of smaller concert numbers. *Prerequisite:* For music majors, 20 hours in music and junior standing; for others, Music Theory 3114 and junior standing.
- 3334 Teaching of Music in the Elementary Schools [ 375  
Consideration of music in relation to the child voice and song repertory, rhythm bands, dramatic play, discriminating listening, as determined by the child's stage of growth. Discussion and presentation of curricular plans and materials. Required for Elementary Education Majors. (Approved by Texas Education Agency toward legal requirements for teaching in elementary schools.) *Prerequisite:* Junior standing in Education.
- 3335 Teaching of Music in the Elementary Schools [ 375K  
Continuation of Music Education 3334, with emphasis on activities suitable for the classroom teacher. For Elementary Education Majors. *Prerequisite:* Music Education 3334, or equivalent musical training.

- 3336 Teaching of Music in the Elementary Schools [ 376  
Pre-adolescent growth and development as the basis of procedures in the teaching of music in the Elementary grades. Designed to meet the needs of the special music teacher. The child voice, its development and classification. Introduction of notation, song materials, rhythm bands, appreciation methods and creative music for children. For Elementary School Music Majors. *Prerequisite:* Junior standing in music education, and Theory 3214.
- 3337 Advanced Instruction in Playing Techniques for Elementary Teachers [ 324  
Advanced methods in remedying individual playing faults characteristic of various performance levels. Lecture-demonstrations presented by outstanding teachers and performers. Class functions as demonstration group on all instruments. Credit varies according to work performed, value indicated by course number 1337, 2337, 3337. *Prerequisite:* Junior standing, and Theory 3214. Offered Summer Sessions only.
- 3431 Advanced Conducting [ 381  
Practical advanced training in choral and instrumental problems in conducting for students who have had considerable training or experience. *Prerequisite:* Music Education 3331, 3333 or advanced conducting experience.
- 3432 Methods of Instrumental Instruction and Supervision [ 377  
The techniques of group instrumental instruction, organization and administration of school bands and orchestras, program building, instructional aids, planning and executing marching formations. *Prerequisite:* Theory 3214, Applied Music 2292 or equivalent, and junior standing.
- 3433 Teaching of Music in the Junior and Senior High Schools [ 376K  
The study of adolescent growth and development, and related procedures in the teaching of music in the upper level grades and in high school. Choral and instrumental music materials, organization of ensembles, teaching of music appreciation and theory, and integration with the entire school program; public school music as it is related to the life and needs of a community. *Prerequisite:* Junior standing in music education, and Theory 3214.
- 3434 Workshop in Advanced Choral Methods and Materials [ 378  
Organization of various kinds of choral groups in high schools, churches, colleges and communities; group tone production; general music classes; study of various types of choral material. *Prerequisite:* Junior standing, and Theory 3214.
- 3435 Seminar: Selected Problems in Music Education [ 380  
The student may receive individual instruction and guidance in the area in which a specific need is demonstrated. Credit may be received in the elementary or secondary school field. *Prerequisite:* 6 hours of Education, 6 hours of Music, senior standing and consent of the instructor.
- 3436 Church Music Materials, Organization and Direction  
Continuation of 3136. Required of students planning to be "Ministers of Music." *Prerequisite:* Music Education 3136, or equivalent training and experience, and senior standing. Offered Summer Sessions only.
- 4401 Professional Laboratory Experience in the Elementary Grades [ 328K  
A minimum of 10 hours per week for one semester of laboratory observation and teaching experience in the elementary school music classes. For all-level teacher certification. *Prerequisite:* 6 hours of Education, 6 hours of upper level Music Education, senior standing and approval of Music Faculty Teacher Education Committee.
- 4402 Professional Laboratory Experience in the Elementary Schools and Junior and Senior High Schools [ 328L  
A minimum of ten hours per week for one semester of laboratory observation and teaching experience in the light of the over-all elementary, junior, and senior

high school music program. For all-level teacher certification, particularly for elementary music teachers. *Prerequisite:* Music Education 4401, or concurrent registration, and approval of the Music Faculty Teacher Education Committee.

- 4403 Professional Laboratory Experience in the Junior and Senior High Schools [ 327K  
A minimum of 10 hours per week for one semester of laboratory observation and teaching experience in the Junior and Senior High School music classes. For secondary school music certification. *Prerequisite:* 6 hours of Education, 6 hours of upper level Music Education, senior standing and approval of the Music Faculty Teacher Education Committee.
- 4404 Professional Laboratory Experience in the High School [ 327L  
A minimum of 10 hours per week for one semester of laboratory teaching experience in the secondary school music classes. For secondary school teacher certification. *Prerequisite:* Music Education 4403, or concurrent registration, and approval of the Music Faculty Teachers Education Committee.
- For Graduate Students Only*
- 3531, 3532 Seminar: Problems in Music Education [ 390, 390K  
Educational research in the elementary and secondary school fields. Each student may conduct research on a problem of his own selection in his field of major interest. May be taken for credit in supervision, if desired. *Prerequisite:* 12 semester hours of advanced courses in Music.
- 3533 Workshop in Problems in Music Education [ 393  
Discussion of rehearsal and teaching problems and practical experience in working with instrumental groups of secondary and elementary levels. Two lectures and three laboratory hours per week. *Prerequisite:* 12 semester hours of advanced courses in Music.
- 3534 Workshop in Musical Interpretation [ 394  
Teaching musicianship; class participation in the development of meaningful interpretation of selected works, instrumental and vocal, working with visiting soloists and groups; for conductors and performers. *Prerequisite:* 12 semester hours of advanced courses in Music.
- 3535, 3536 Seminar: Field Work in Music Education [ 395, 395K  
The student works individually on a selected topic with an assigned specialist in that area under supervision of department head. *Prerequisite:* 12 semester hours of advanced courses in Music.

#### APPLIED MUSIC

Placement auditions are required on the major and secondary instruments. Students who demonstrate adequate proficiency on any required instrument (or voice) will be encouraged to substitute other courses outside of the music area. Students will perform before the Music Faculty at the close of each semester. The audition at the close of the second year also determines admission to upper division courses.

A grade of "B" is required on the major instrument for permission to continue with the succeeding course.

For full description of the course of study for any Applied Music course consult the chairman of the department.

*Only Secondary Level courses numbered 2300 and above may be taken for graduate credit.*

#### Ensembles — Band, Choir, Orchestra, Chorus, Varsitonians

A fully equipped symphony orchestra, a concert and marching band, a dance band—the Varsitonians, small chamber groups and two large choirs are maintained. These organizations are open to all students who wish to enjoy the performance of a great variety of music. On special occasions each year, several organizations are combined in large productions including operas and oratorios. Home concerts and concert tours are a part of the program. Consent of instructor is required for admission.

MUSIC

- 1143 Band, Choir, Orchestra, Varsitonians\* (\$2) [ 201, 211, 221, 231  
Three hours per week. *Prerequisite*: permission of instructor.
- 1155 Chorus\* (\$2) [ 205, 215, 225, 235  
A mixed singing organization open to all students interested in any kind of choral work. Audition is not required. Oratorios and operas are presented with orchestral accompaniment, occasionally in combination with the Texas Western Choir. Three hours per week. *Prerequisite*: Permission of instructor.
- 1102 Golddiggers (\$2) (Accepted in lieu of P.E. 1102 during fall term) [ 204  
A course for girls in dancing, twirling, pom pom and marching activities; participation in football shows, including an all-expense-paid trip, and other public appearances. After one season of Golddigger participation, advanced students are eligible for positions in "The Rockettes," a very select group within the Golddigger organization. *Prerequisite*: admission by try-out only.

**Group Instruction** For Undergraduates

Class Voice, Piano, High Strings, Low Strings, Reeds, Brass, Percussion  
Credit granted only when taken as a minor or elective. Open to all students interested in playing instruments or in singing. Group study of instruments listed, teaching methods and fundamentals.  
These courses will be designated as Voice 2171, Piano 2171, etc.

- 2171, 2172, 2271, 2272, 2371, 2372 (\$4) [ 206, 206κ, 216, 216κ, 226, 226κ  
Two classes and six practice hours per week. *Prerequisite*: Preceding course or placement. (Exception: only \$2.00 for Class Voice.)

- 3190 Diction  
A survey course in Italian, German and French pronunciation; free translation. Open to all.

- 2373-74 Piano Sight Reading Class (\$2) [ 227  
Emphasis on actual playing experience and sight reading at the piano. Two classes per week. *Prerequisite*: Junior standing and permission of instructor.

- 2493 Pedagogy of Voice  
Psychological and physiological problems in voice-building; study of the boy voice, the "monotone," of registers in all voice classifications. Methods of voice development through song literature. Repertoire and effective interpretation. *Prerequisite*: Senior standing in music, or equivalent in vocal study and experience, Voice 2292, and permission of instructor.

**Individual Instruction**

Junior and Senior courses on the secondary level may be used for undergraduate and graduate credit, may be repeated for credit on the undergraduate level.

Individual lessons are intended for students who wish to specialize in voice, piano and orchestral instruments as well as for those who wish to play or sing for pleasure only. Students are expected to study on the campus with members of the College music faculty.

**SECONDARY LEVEL**

- 3491 Selected Problems in Applied Music (\$5 & \$45) [ 369  
Designed to meet the needs of students in specific areas omitted in previous studies. Required of students who have not taken courses on their major instruments at Texas Western College within three years of graduation. Two thirty-minute lessons and twelve practice hours per week. *Prerequisite*: Applied Music 2292, senior standing in Music, or equivalent in music, and experience, and permission of instructor.

- 3492 Selected Problems in Applied Music (\$5 & \$45) [ 369κ  
Two 30-minute lessons and 12 practice hours per week. *Prereq.*: Music 3491.

\* May be repeated for credit.

**Piano, Organ**

Courses designated as Piano 2181-82, Piano 2281-82, Organ 2181-82, etc.

PRIMARY: For non-majors and students needing preparatory study; Undergraduate credit only.

2181-82, 2281-82, 2381-82, 2481-82 (\$5 & \$20) [ 405, 405L, 405M  
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Preceding course or placement.

3181-82, 3281-82 (\$5 & \$40) [ 605, 605L  
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement.

3381-82, 3481-82 (\$5 & \$45) [ 605M, 605N  
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement.

SECONDARY: For majors in Theory, Music Education, and qualified students.

2191-92, 2291-92, 2391-92, 2491-92 (\$5 & \$20) [ 409, 419, 429, 439  
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Preceding course or placement.

3191-92, 3291-92 (\$5 & \$40) [ 609, 619  
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement.

3391-92, 3491-92 (\$5 & \$45) [ 629, 639  
Two thirty-minute lessons and nine practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement.

**For Majors in Applied Music**

4191-92, 4291-92 (\$5 & \$40) [ 809, 819  
Two thirty-minute lessons and fifteen practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement.

4391-92, 4491-92 (\$5 & \$45) [ 829, 839  
Two thirty-minute lessons and fifteen practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement.

**Orchestral and Band Instruments**

(Flute, Oboe, Clarinet, Bassoon, Saxophone, Violin, Viola, Violoncello, String Bass, Cornet or Trumpet, French Horn, Trombone or Baritone, Tuba, Percussion, Harp)

PRIMARY: For non-majors and for students needing preparatory study; Undergraduate credit only.

2181-82, 2281-82, 2381-82, 2481-82 (\$5 & \$20) [ 405, 405L, 405M  
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Preceding course or placement.

3181-82, 3281-82 (\$5 & \$40) [ 605, 605L  
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement.

3381-82, 3481-82 (\$5 & \$45) [ 605M, 605N  
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement.

SECONDARY: For majors in Theory, Music Education, and qualified students.

2191-92, 2291-92, 2391-92, 2491-92 (\$5 & \$20) [ 409, 419, 429, 439  
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Preceding course or placement.

MUSIC

3191-92, 3291-92 (\$5 & \$40) [ 609, 619  
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course of placement.

3391-92, 3491-92 (\$5 & \$45) [ 629, 639  
Two thirty-minute lessons and nine practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement.

**For Majors in Applied Music**

4191-92, 4291-92 (\$5 & \$40) [ 809, 819  
Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* Preceding course or placement.

4391-92, 4491-92 (\$5 & \$45) [ 829, 839  
Two thirty-minute lessons and fifteen practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement.

**Voice**

During the first two years of vocal study there is considerable emphasis on voice building, using methods of the old Italian school. Varying amounts of song literature are studied depending upon the progress of the individual. Voice building is continued throughout the junior and senior years, although increasing emphasis is placed upon coaching.

At the end of the senior year the student should be able to sing in three foreign languages, including in his repertoire four operatic arias, four oratorio arias, twenty classics and twenty standard modern songs.

**PRIMARY:** For non-majors and for students needing preparatory study; Undergraduate credit only.

These courses are designed for all students interested in singing and for those who require preparation for the college level course in voice. Students with vocal and hearing difficulties, including "monotones," are urged to take these courses. All students studying primary or secondary voice are expected to participate in one of the two college choirs.

2181-82, 2281-82, 2381-82, 2481-82 (\$5 & \$20) [ 405, 405L, 405M  
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Preceding course or placement.

3181-82, 3281-82 (\$5 & \$40) [ 605, 605L  
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement.

3381-82, 3481-82 (\$5 & \$45) [ 605M, 605N  
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement.

**SECONDARY:** For music majors and all qualified students.

2191-92, 2291-92, 2391-92, 2491-92 (\$5 & \$20) [ 409, 419, 429, 439  
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Preceding course or placement.

3191-92, 3291-92 (\$5 & \$40) [ 609, 619  
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Preceding course or placement.

3391-92, 3491-92 (\$5 & \$45) [ 629, 639  
Two thirty-minute lessons and nine practice hours per week. Recital participation. *Prerequisite:* Preceding course or placement.



## **Nursing**

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DR. KATHRYN T. BURKE, *Dean*

*Professor BURKE; Assistant Professors, ARKINS, REINIKKA;*

*Instructor, MODIC; Lecturers, MUNOZ, SCHAAF;*

Resource personnel in specialized areas.

Since nursing is a social institution in our American culture, it is fundamentally influenced by existing and potential social and community needs. Those concerned with the pre-planning, initiation, and implementation of the basic collegiate curriculum at Texas Western College will give consideration to the identification of these needs combined with long-range plans for contributing to social and health betterment.

The curriculum includes knowledges and skills necessary for individualized patient care and for health conservation in all aspects of social betterment. It will provide learning opportunities for an integration of these knowledges and for their application in meaningful situations. The curriculum will give to each student the opportunity to realize optimal development.

The objectives of the basic professional curriculum are to graduate a professional nurse practitioner:

- a. Who is prepared to assume first-level positions in nursing and who is interested in health conservation and in all aspects of social betterment.
- b. Who is prepared to initiate, plan, provide, and evaluate comprehensive patient care.
- c. Who is prepared to use her professional learnings with maximum self-satisfaction combined with contributions to social welfare.
- d. Who is prepared to assume an active role in professional progress and who is motivated to realize her full potentialities in contributing to the growth of nursing as a profession.
- e. Who has acquired a degree of self-understanding, who is progressing toward self-direction and self analysis in her professional role.

MAJOR: NURSING

MINOR: SOCIAL SCIENCE

### 2101 Survey of Nursing

This course traces the growth and development of the educational systems in nursing; examines current situations and problems in education; evaluates the methods which the profession is using to solve them.

### 3103 Introduction to Nursing

This course examines nursing practice as it occurs today; evaluates its effectiveness in meeting health needs of people; provides laboratory experiences through visitation to health agencies. *Prerequisite:* 2101 or taken concurrently with 2101.

### 2201 Normal Nutrition

Principles of human nutrition including essentials of the normal diet at varying ages and under varying physical states; consideration given to food selection in regard to differing cultural and socio-economic conditions.

### 3202 Introduction to Community Health

This survey course includes a summary of the contributions of government, voluntary agencies, and industry to the total health of a community and to individual persons. Proper methods of referrals and interagency cooperation are discussed. Field trips are planned to emphasize lecture material.

### 2203 Medical and Surgical Nursing I

An introduction to the study of the care of patients with acute and long-term conditions which necessitate therapy. *Content will include an examination of preventive factors, modern therapy and the combined efforts of the health team in the interest of health restoration and rehabilitation. Prerequisite:* 2201, 3103 and required science courses.

**2205 Fundamentals of Nursing I**

An introduction to the study of nursing needs of patients in the hospital and community. Aspects of cultural, psychological, physical and pathological differences presented in relation to individual patient care. (Concurrent with 2203.)

**7210 Medical and Surgical Nursing II**

Medical-Surgical Nursing is a part of the basic curriculum which will further the development of basic concepts of individualized patient care. The content is structured around selected medical and surgical problems related to patients as members of family groups. Learnings from all areas including the basic social and biological sciences, inter-personal relations, fundamentals of nursing, diet therapy, pharmacology and public health are correlated with new learnings leading toward comprehensive patient care. *Prerequisite:* 2203.

**5211 Fundamentals II**

A study of selected patients with nursing needs; correlation of medical and surgical nursing, pharmacology, diet therapy, inter-personal relations, and nursing skills in relation to comprehensive patient care. (Concurrent with 7210.)

**2204 Pharmacology I**

Introducing the nursing major to the science of drug action, to the knowledge of the various types of drugs, to the forms in which they are administered, and to the proper manner for giving them. (Concurrent with 7210.)

**1212 Diet Therapy**

Planning, preparing and serving special diets in relation to specific medical and surgical problems as part of comprehensive patient care. (Concurrent with 7210.)

**3301 Growth and Development**

The study of the physical, mental, emotional and social aspects of growth and development from birth to adulthood. Particular emphasis placed upon the child as an individual. Experience with well children will be integrated throughout. (Concurrent with Child Psychology 3300.) *Prerequisite:* Junior standing.

**3302-03 Maternal-Child Health I and II**

Maternal-Child Health I and II will involve the nursing of children; professional laboratory experiences will be provided in regard to all age groups from the newborn infant to the adolescent who is ill or who has a limitation of living. Emphasis will be placed upon continuity of care, the child as an individual and the effect of illness on normal growth and development. *Prerequisite:* 3301.

**6307 Maternal-Child Health III**

The maternity portion of the Maternal-Child Health Program, will include professional laboratory experiences in prenatal care, labor and delivery, post-partum care, newborn nursery, complications of pregnancy on continuity of care basis, structured around the family-centered approach. *Prerequisite:* Junior standing.

**1310 Fundamentals III**

A study of the nursing needs of the ill child. Aspects of growth and development will be considered in the adaptation of nursing skills to fit the needs of the child. (Concurrent with 3303.) *Prerequisite:* 5211.

**1315 Pharmacology II**

Consideration of specific drugs and their adaptations as related to Maternal-Child Health. (Concurrent with 3303 and 6307.)

**3304 Public Health Nursing II**

This course consists of nursing in relation to public health agencies. In order to emphasize the role of the nurse as a part of a community health team this course includes the organization of public health agencies, their purpose in a democratic society, and their functions in meeting the needs of a community. *Prerequisite:* 3202 and Government 3211.

**3401 Medical and Surgical Nursing III**

Plans for comprehensive patient care are developed, implemented and evaluated both in the class room and in the clinical areas of hospitals and other community agencies. This course includes medical-surgical nursing and the specialties, pharmacology and diet therapy. *Prerequisite:* 7210.

**1402 Pharmacology III**

Consideration of the use of various drugs in specific situations as related to medical-surgical specialties and Disaster Nursing. (Concurrent with 3401.)

**1406 Diet Therapy**

Planning, preparing, and serving of special diets in relation to specific medical and surgical specialties as part of comprehensive patient care. *Prerequisite:* Junior standing. (Concurrent with 3401.)

**3408 Disaster Nursing**

Study of the principles and technics employed in: (1) disaster planning for individuals, hospitals and other community agencies for the purposes of preparing and mobilizing the community and minimizing the effects of mass destruction weapons on the population and their possessions; (2) the planning, organization, and functioning of disaster relief stations in the event of thermo-nuclear and atomic attack; (3) the management of mass casualty victims with particular emphasis on the responsibilities of the nurse in providing care, assisting other professional personnel and in the teaching and supervision of available untrained lay personnel. *Prerequisite:* Junior standing.

**2411 Team Nursing**

A study of the philosophy, principles, and utilization of team nursing with particular emphasis upon the purposes of team nursing; the development of leadership qualities of the professional nurse practitioner; the significance of group participation in planning, providing, and evaluating comprehensive patient care. *Prerequisite:* Senior standing.

**2412-13 Introduction to Research Methodology I and II**

Discussion of problems and issues encountered in any aspect of comprehensive patient care from various clinical areas. Guidance of the student in self-evaluation of the present role and in orientation to the future role of professional nurse practitioner. Emphasis will be placed upon group participation and individual initiative. *Prerequisite:* Senior standing.

**2414 Principles of Teaching**

Study of the basic principles and technics of learning, application of the learning process in regard to the teaching of individuals and their families and in relation to the teaching of groups in hospitals, public health agencies and community health programs. (Concurrent with 2413.)

**2405 Principles of Administration**

A study of the principles underlying the administrative process, application of these principles in regard to nursing functions in hospitals, public health agencies and other community health programs. (Concurrent with 2413.)

**4416-17 Public Health Nursing III and IV**

Lectures include application of the principles of nursing care technics in settings other than the hospital. Professional laboratory experience includes practice within a public health agency, clinics, schools and industry with services to different age groups including geriatrics. *Prerequisite:* 3304.

**5419-20 Psychiatric Nursing I and II**

The study of the principles and practices involved in the care and rehabilitation of the mentally ill as individuals, family members, and members of the community. Consideration of the physical, mental, emotional, moral, and socio-economic factors contributing to the development of mental illness with special attention to the manner and degree to which the "normal" psychodynamic processes of the personality differ in regard to psychiatric patients. Emphasis will be placed on the importance of these learnings for the improvement of patient care in all clinical areas. Professional laboratory experiences will be provided in the interest of establishing wholesome nurse-patient and nurse-group relationships. *Prerequisite:* Psychology 3312.

## **Philosophy and Psychology**

DR. C. C. CRAWFORD, *Chairman*

*Professor CRAWFORD; Assistant Professors KELSEY, BOSWORTH, THETFORD, HADDOX;  
Part-time Special Lecturer FIERMAN; Part-time Instructors HACKETT, RENNICK*

<b>PHILOSOPHY</b>	<i>Former Number</i>
3101 Introductory Logic The validities and fallacies of both deductive and inductive thinking.	[ 312
3102 Introduction to Philosophy The problems of matter, life, mind, truth and value.	[ 314
3201 Ancient and Medieval Philosophy Philosophic thought from Thales to Bacon and Hobbes. <i>Prerequisite:</i> Sophomore standing.	[ 319
3202 Modern Philosophy Philosophic thought from Descartes and Spinoza to the present. <i>Prerequisite:</i> Sophomore standing.	[ 320
3211 Philosophies of Life The historic philosophies of life and their moral, esthetic and religious values. <i>Prerequisite:</i> Sophomore standing.	[ 316
3212 Latin-American Philosophy Latin-American thought viewed against the background of continental, and especially Spanish, influences. Some philosophers to be considered: Ortega y Cassett, Unamuno, Vasconcelos, Caso and Reyes. <i>Prerequisite:</i> Sophomore standing.	[ NEW
<i>(The prerequisite for each of the courses listed below is Junior standing.)</i>	
3301 Ethics Man's internal and external relationships, in the individual, social, and universal orders respectively.	[ 330
3311 Philosophy of Science A study of the inter-relationships of the physical, biological, and psychological sciences.	[ 331
3321 Philosophy of Civilization The philosophies of the various phases of human culture, such as language, myth, ritual, art, politics, and history.	[ 332
3322 Philosophy of Religion A study of the origin, nature and validity of the concepts of religious thought.	[ 333
3401 Symbolic Logic A study of contemporary mathematical logic.	[ NEW
3402 Metaphysics A study of being as such, and hence of the validity of the postulates of the sciences.	[ NEW
3411 Epistemology A study of the ways of knowing and of the criteria of truth.	[ NEW
3412 Aesthetics The philosophy of art.	[ NEW

**PSYCHOLOGY**

- 3201 Introduction to Psychology [ 310  
A survey of basic principles in general psychology. *Prerequisite:* Sophomore standing.
- 3204 Advanced General Psychology [ 341  
Special emphasis on contemporary problems in psychology. *Prerequisite:* Psychology 3201.
- 3300 Child Psychology [ 314  
Principles of growth and development from infancy to adolescence. *Prerequisite:* Psychology 3201.
- 3302 Theory of Personality [ 378  
Personality development of the individual from adolescence to maturity. *Prerequisite:* Psychology 3201.
- 3306 Personnel Psychology [ 340a  
A survey of principles and methods used for selection and placement in personnel management and industry. *Prerequisite:* Six semester hours of psychology including Psychology 3201, or junior standing in Business Administration or Engineering.
- 3308 Principles of Counseling [ 340b  
A survey of the basic principles underlying counseling techniques, with an introduction to the major systems of counseling. *Prerequisite:* Six semester hours of psychology including Psychology 3201.
- 3311 Clinical Psychology [ 343  
A study of clinical problems, case study methods and discussion of psychological tests used in common clinical situations. *Prerequisite:* Six semester hours of psychology including Psychology 3201.
- 3312 Abnormal Psychology [ 352  
A study of abnormal personality processes in terms of their origins, manifestations, and treatment. *Prerequisite:* Six semester hours of psychology including Psychology 3201.
- 3315 Social Psychology [ 351  
A study of the influence of social control of human behavior. *Prerequisite:* Six hours of psychology including Psychology 3201.
- 3317 Psychological Statistics (\$2) [ 350  
A survey of the basic statistical concepts and techniques used in Psychology and the Social Sciences. Two lectures and two laboratory hours per week. *Prerequisite:* Six semester hours of psychology including Psychology 3201.
- 3401 Psychological Testing (\$2) [ 353  
Introduction to and training in the administration, scoring, and interpretation of psychological tests. Two lecture and two laboratory hours per week. *Prerequisite:* Six semester hours of psychology including Psychology 3201.
- 3402 Practicum in Intelligence Testing (\$2) [ NEW  
Instruction and practice in the administration, scoring, and interpretation of intelligence tests. Emphasis on the Wechsler-Bellevue and Stanford-Binet tests. Two lecture and two laboratory hours per week. *Prerequisite:* Psychology 3401.

PSYCHOLOGY

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- 3411 Physiological Psychology (\$2) [ 361  
Basic psychological processes in relation to structure and function. *Prerequisite:* Six semester hours of psychology including Psychology 3201.
- 3412 Psychology of Speech Pathology [ 360  
Basic psychological processes in relation to speech defects. Emphasis on origins, manifestations, therapy and testing techniques. *Prerequisite:* Psychology 3311.
- 3421 Experimental Psychology (\$2) [ 362  
A survey of theories and techniques of experimentation on infrahuman and human behavior. Two lectures and two laboratory hours per week. *Prerequisite:* Six semester hours of psychology including Psychology 3201 and 3317 or its equivalent.
- 3422 Advanced Statistics (\$2) [ NEW  
Selected advanced statistical concepts and techniques used in Psychology and other sciences. Two lectures and two laboratory hours per week. *Prerequisite:* Psychology 3317 or its equivalent.
- 3441 Motivation and Learning [ NEW  
Consideration of the basic problems involved in motivation and in learning with special emphasis on the relation to personality. *Prerequisite:* Nine semester hours in psychology including Psychology 3201.
- 3452 Independent Research [ 371I  
Independent student work under the supervision of the staff. *Prerequisite:* Twelve hours of psychology including Psychology 3201.
- 3453 Independent Research [ 371II  
Continuation of Psychology 3452. *Prerequisite:* Psychology 3452.
- 3454 Independent Research [ 371III  
Continuation of Psychology 3453. *Prerequisite:* Psychology 3453.

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# ***Official Regulations***

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## ***Student Expense***

[TUITION]

## ***Financial Aid to Students***

[SCHOLARSHIPS AND LOANS]

## ***Regulations Affecting Student Life***

[CONDUCT- DISCIPLINE]

## ***Extra Curricular Activities***

[ORGANIZATIONS]

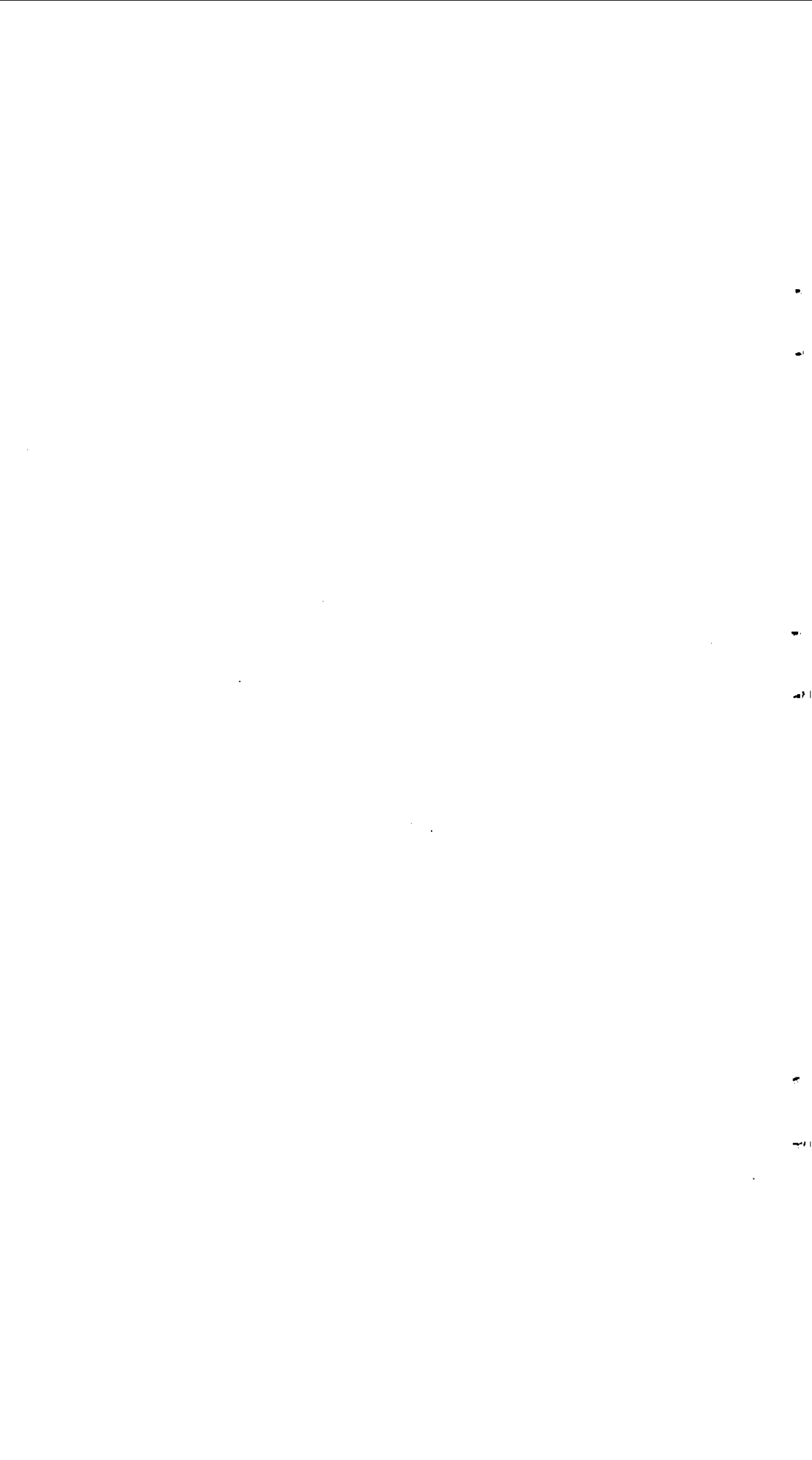
## ***Scholastic Regulations***

[GRADES]

## ***Statistics***

## ***Index***

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## **Student Expenses**

Average registration cost for RESIDENT liberal arts students runs from \$72.00 to \$79.00 per semester. Average registration cost for RESIDENT engineering students runs from \$72.00 to \$88.00 per semester. Registration and laboratory fees are payable on a semester basis at the beginning of each semester and must be paid in full before the student will be permitted to enter class or laboratory. The Business Office does not cash checks. However, checks are accepted in settlement of obligations to the College.

### **Tuition and Registration Fees**

Under the authority of House Bill No. 265 enacted into law by the Fifty-fifth Legislature, The Board of Regents has fixed rates of tuition or registration fees as follows:

#### **Long Session (each semester)**

Semester Hours	Resident	Non-resident
12 or more)	\$50.00	\$200.00
11	47.00	183.50
10	43.00	167.00
9	39.00	150.50
8	35.00	134.00
7	31.00	117.50
6	27.00	101.00
5	23.00	84.50
4	19.00	68.00
3 or less)	15.00	51.50

#### **Summer Session (each term)**

Semester Hours	Resident	*Non-resident
6 (or more)	\$25.00	\$ 87.50
5	23.00	75.00
4	19.00	60.00
3 (or less	15.00	45.00

\*These rates for non-resident students are effective for the 1959 Summer Session only. The rates for the 1960 Summer Session will be approximately 15 per cent higher.

### **Resident and Non-Resident Students**

(The definitions of RESIDENT and NON-RESIDENT as used herein are not necessarily the same as those in ordinary usage.)

1. A student under 21 years of age is classified as a RESIDENT student if his parents are living in the State of Texas at the time of his registration and have lived within the state for a period of at least 12 continuous months immediately prior to the date of registration.
2. A student over 21 years of age is classified as a RESIDENT student if he has lived within the State of Texas for a period of 12 months, not enrolled in an educational institution, subsequent to his twenty-first birthday and immediately prior to his

registration and if he lives in the State on the date of said registration.

3. The 12 months requirement of the preceding paragraph may be satisfied wholly or in part under the provisions of paragraph 1 above providing residence in the State is continuous up to and including the date of registration.

4. Officers, enlisted men and women, selectees or draftees of the Army, Navy, Air Force, 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 husbands or wives 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 for 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.

Wives and children of military personnel are required to have on file in the Business Office, during their period of enrollment, a letter from their husband's or father's Commanding Officer certifying to their status as a military dependent, and to the fact that the husband or father is stationed in Texas.

Out-of-State military personnel stationed within the borders of this state whose tuition is paid in full or in part through contractual agreement with the Federal government must be classified as non-residents. Living on military post or base does not constitute residence in the state.

5. A student under 21 years of age is classified as NON-RESIDENT if his parents do not reside in the State of Texas or have not lived within the State during the full 12 months prior to his registration.
6. A student over 21 years of age who comes from out of the State of Texas is classified as a NON-RESIDENT student unless he has resided within the State for 12 full months, not enrolled in an educational institution, prior to the date of registration.
7. An alien is classified as a NON-RESIDENT, except as provided in paragraph 9 of next section.

**Legal Residence**

The following statements are intended to clarify certain points and answer some of the questions that may arise. For additional information see the Business Manager.

1. The legal residence of one who is under 21 years of age is that of the father. Upon death of the father, the legal residence of a minor is that of the mother.
2. If the parents are divorced, the residence of a minor is the same as that of the parent with whom he has lived during the 12 months preceding registration. If he has not lived with either parent, the residence of the father shall control. If custody is granted to some person other than a parent, the residence of that person shall control for so long as the minor actually makes his home with such person.
3. The residence of a wife is that of her husband.\*
4. Individuals who have come from without the State of Texas and who are within the State primarily for educational purposes are classified **NON-RESIDENT**. Registration in an educational institution within 12 months after having arrived in the State is considered as evidence that the individual is in the State for educational purposes.
5. The fact that an individual or family has bought property, established a business, paid taxes, voted, has become the legal ward of or has been adopted by a Texas resident does not affect the 12 months residence requirement.
6. The fact that a student is self-supporting or is supported wholly or in part by a Texas resident does not affect his classification as **RESIDENT** or **NON-RESIDENT**.
7. Appointment as member of the teaching or research staff or the holding of a scholarship, or assistantship does not affect the residence status of a student.
8. If the parents of a **RESIDENT** student under 21 years of age move out of the State, that student is classified as **NON-RESIDENT** for all subsequent semesters.
9. In the case of an alien who has applied for naturalization in the United States, the 12 months period required to establish residence begins with the date of acceptance of his petition for citizenship.

\*Exception: A woman student of the College who is classified as a resident student and, while so classified, marries a non-resident student of the College will be permitted to continue to pay the resident fee for the two long sessions immediately following such marriage.

10. It is the responsibility of the student to pay the correct fee at the beginning of each semester or term for which he may register.

**Penalties for Payment of Wrong Fee**

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 right to legal residence in Texas under the State law and College rules, to raise the question with the Business Manager and have such question settled prior to registration. There can be no change of residence except upon express authorization by the Business Manager. Attempt on the part of a non-resident to evade the non-resident fee will be taken seriously and may lead to expulsion.

Any student who wrongfully pays the Texas rather than the non-resident fee is subject to a fine of ten (\$10.00) dollars for each such violation.

**REFUND of Tuition Fees**

Refund of the registration and tuition fee is made under the following conditions and no others:

Upon presentation of his receipt at the Business Office showing payment of fees, a student withdrawing officially will receive a refund of fees as follows:

During first week of class work .....	70%
During second week of class work .....	60%
During third week of class work .....	40%
During fourth week of class work .....	20%
During fifth week & thereafter	<i>No Refund</i>

In no case shall the total refund exceed 70 per cent of the registration and tuition fees paid.

There will be no refund made of course and/or laboratory fees after the student has met the course or laboratory session. The dropping of courses will not result in reducing the semester hour load for refund purposes.

An immediate refund will not be made to a student who withdraws within fifteen days after the payment of his fees, but, upon request, a check covering all refunds due will be mailed to the address left with the Business Manager. The registration receipt must be presented when making a claim for a cash refund.

A student who enters the second semester, not knowing his first semester grades, and is required to withdraw because of failure in the work of the first semester will have all of his registration and tuition fee for the second semester refunded.

No refund provided for above will be granted unless applied for within one year after official withdrawal.

#### Exemption of Ex-Service Men

Men and women who are classified as residents of Texas for educational purposes and who served in the Armed Forces in World War I, World War II, the Korean conflict, or in certain of the auxiliary services, and were honorably discharged therefrom (except those who were discharged because of being over the age of 38 or because of a personal request), and who are not eligible for educational benefits provided for veterans by the United States Government, are exempted from the payment of tuition and certain required fees but not from the payment of deposits. To obtain this exemption, the student must present his service record or discharge papers to the Business Manager each time he registers. He must also produce evidence that he is not eligible for educational benefits provided for veterans by the United States Government. Exemption from fees described above also extends to children of members of the Armed Forces who were killed in action or died while in the service during World War II.

#### Miscellaneous Required Fees

*Student Union Fee* — Under the authority of Senate Bill No. 359, recently enacted into law by the 54th Legislature, the Board of Regents have authorized a Student Union Fee in the amount of \$4.00 for each semester of the Long Session and \$2.00 for each term of the Summer Session for the purpose of constructing, equipping and maintaining the Student Union Building. This fee is required of all students registering for course work on campus including full time and part time students enrolled for day and/or evening classes.

Refund of the fee will be made only under the same conditions as the Tuition and Registration fee.

*Special Examination* — A fee of \$1.00 is required of persons who wish to take an advanced standing examination, an examination to remove a condition, or an examination to be given at a time other than that for which it is regularly scheduled. Permission of the Dean must be secured in advance.

*Graduation* — A graduation fee of \$5.00 is required of candidates for graduation. A receipt showing payment of or exemption from this fee must be presented to the respective Dean at the time the degree application is filed. This fee must be paid

each time an application for degree is filed and under no circumstances is subject to refund.

*Student Activity Fee* — There is a Student Activity Fee of \$15.00 for the Fall Semester and \$10.00 for the Spring Semester of the Long Session. During the Fall Semester registration, the fee may be paid for both semesters for the reduced price of \$20.00. During the Summer Session the fee is \$3.00 per term.

The fee entitles the student to the following: admission to all athletic events, admission to all social activities sponsored by the Student Association; admission to artist programs; hospitalization; *The Prospector*; *El Burro*; *Student Handbook*; intramural activities; Student Union Building privileges; admission to the College swimming pool. In addition, the fee helps support the following student activities: *The Flowsheet*, Texas Western's yearbook; Co-Ed Association; Band; and the debate team.

Refund of the fee will be made only under the same conditions as the Tuition and Registration fee.

#### DEPOSITS

General Property Deposit . . .	\$ 7.00
Military Property Deposit . . .	20.00
Dormitory Deposit . . . . .	5.00

*General Property Deposit* — Every student other than an extension student must make a general property deposit of \$7.00. This deposit is subject to charges for property loss or damages or breakage or violation of rules in any College library or laboratory, failure to return keys furnished by the College, or for damage to or loss of any other College property. If the charges incurred in any term or semester exceed fifty per cent of the deposit, the student, upon notice from the Business Manager, will be required to restore the deposit to the original amount by paying such charges immediately. Students having charges in excess of the deposit must pay the excess immediately; pending payment, no credit will be allowed on the work of that semester or term, and the student will be ineligible to re-enter the College.

Deposits will be refunded only when a student ends his career at the College. No refund will be made to a student who plans to continue his education here, either at the close of the Long Session or Summer Term.

A general property deposit which remains without call for refund for a period of four years from the date of last attendance at the College shall be forfeited and shall become operative to the permanent use and purpose of the Student Property Deposit account. Such funds will be invested and the income therefrom will be used for scholarship purposes and for the support of a general Student Union program. This policy applies to deposits heretofore paid as well as to those paid in the future.

**Military Property Deposit** — Students enrolling in Military Science courses are required to make a deposit of \$20.00. This deposit is subject to charges for military property lost, damaged, or destroyed, and is required to be restored to \$20.00 at the end of each year. If at the end of any semester the deposit is reduced because of charges to \$10.00 or less, it must be restored at that time to \$20.00. This deposit will be refunded in the same manner as the student general property deposit.

**Warning:** Property issued to students enrolled in Military Science courses belongs to the United States Government. Every precaution must be taken to prevent loss or damage. All items must be accounted for at time of withdrawal or end of course.

## DORMITORIES

The College considers it a distinct advantage for all boarding students to live in the dormitories on the campus. Every attention will be given for the improvement of the social and educational life of boarding students.

All students whose homes are not in El Paso are required to live in the dormitories on the campus to the full capacity of the facilities.

There are four very modern and conveniently located residence halls, and a central cafeteria for all students. The buildings are fireproof in construction, well-furnished, fully equipped with modern facilities for furnishing meals, and include proper recreational rooms for the social life of resident students.

As soon as a decision to attend Texas Western College has been made, room reservations should be made by sending a deposit of \$5.00 to the Business Office of the College. Also, it is required that a student desiring his name on the room reservation list must file a personal data form with the Business Manager. The blank form may be secured in advance from the Business Office and forwarded

along with the deposit. If a deposit is received without the data form, the deposit will be held in suspense and a data form mailed to the student for completion. Upon return receipt of the form, a receipt will be issued for the deposit and the student's name entered on the reservation list. The deposit is refunded at the close of the semester, provided the student does not withdraw from the dormitory before that time, and provided there is no deduction for breakage. The deposit will be refunded to those students who cannot be accommodated or to those who cancel their reservations ten days prior to the opening of the session. A room reservation is cancelled and the room deposit is forfeited if the room is not claimed by 11:00 P.M. the last day of registration before classes begin. Room and roommate assignments are sent to new students after August 1st.

The charges for room and board per person will be \$285.00 per semester. The entire amount may be paid on registration, or the student may pay \$71.25 during registration and the balance in three payments of \$71.25 each which shall be due on or before such dates as will be announced. The College reserves the right to change the charges for room or board or both by giving written notice of such increases thirty days before the change.

### Room Rent and Board

Per semester, per person . . .	\$285.00
Extra Dormitory Charges, per semester:	
Corner room, per person . . .	\$10.50
Single room (if available) . . .	21.25
Single corner room (if available)	42.50

### Rooming and Boarding Houses

Texas Western College maintains annually official lists of rooming houses for men and for women. Any rooming house is eligible to a place upon one of these official lists and to receive the publicity through the College accruing therefrom, provided it complies with the College regulations.

In order to be placed upon this official list, the proprietor must be of good moral character and must be willing to co-operate with the College in carrying out its regulations. All houses on the official list are subject to inspection by representatives of the College Health Service or by the Dean of Student Life. The College reserves the right to remove at any time any house from the official list for cause deemed sufficient by the Committee on Student Living Accommodations.

## Financial Aid to Students

Texas Western College students can obtain financial assistance through the College in several ways: Employment by the College, placement in part-time off-campus jobs through the Bureau of Placement Services, scholarships, and loan funds.

### Employment by the College

More than a hundred students are employed by the College in jobs ranging from semiskilled laborers to student readers, research assistants, and laboratory and teaching assistants. Payment is normally on an hourly basis, the rate depending upon the individual's knowledge and prowess. Students work varying hours, in accordance with their academic loads and the requirements of their jobs.

Many husbands and wives of students have full-time jobs with the College, enabling their spouses to devote full attention to academic work during the period of college attendance. The El Paso area, of course, provides many additional opportunities for such employment.

### Placement Bureau

For the student who wishes to contribute to his income while attending college, the Bureau of Placement Services acts as an employment agency. The bureau makes every effort to assist students in securing employment, but the College assumes no responsibility for guaranteeing employment.

As an additional service, seniors and graduates may file records of their training and experience for submission by the bureau to both national and local employers and interviewers. Many graduates receive career jobs through the bureau.

Address applications and correspondence: *Director of Placement Services, Texas Western College, El Paso, Texas.*

### Scholarships

Scholarship awards begin April 1, and no application is accepted for the fall semester after August 15. The amount in parentheses is a single annual stipend unless otherwise indicated. Except as noted, applications or requests for information should be addressed: *Dean of Student Life, Texas Western College, El Paso, Texas.*

Abdou: *Mrs. Nimrith Kadane Abdou Memorial Scholarship* (\$300) for students recommended by the Dean of Nursing.

Abdou: *Salim N. Abdou, Sr., Memorial Scholarship* (\$150, two annually) for male students. Primary consideration given to students majoring in Business Administration. Established by Sammy N. Abdou, Jr.

*Accredited School Scholarship* (tuition, two semesters—unlimited) to the valedictorians, either boys or girls, graduating from accredited secondary schools located in the State of Texas. The honor student must be certified through the Texas State Department of Education and meet specific requirements as to grades. Particulars may be obtained from high-school principals.

*Advertising Club of El Paso* (\$200) to a male student of Journalism, Radio-TV, or Commercial Art who is interested in advertising.

*Alpha Delta Kappa Scholarship* (\$100) to a senior woman student majoring in Education.

*Alpha Psi Omega Scholarship* (\$50, four annually) to incoming El Paso freshmen who plan to major in Speech or Drama.

*Alta Vista Parent-Teacher Association Scholarship and Grant* (\$125) to a needy freshman Education student who has attended Alta Vista School.

*American Association of University Women* (\$100) to a senior or a graduate woman majoring in any field.

*American Smelting and Refining Company* (\$500) to a senior majoring in Metallurgy, selected by the Chairman of the Department of Metallurgy and the Dean of the School of Engineering.

*American Society for Metals Foundation for Education and Research* (\$500) to a sophomore pursuing a Metallurgy course, selected by the Chairman of the Department of Metallurgy and the Dean of the School of Engineering.

Belding: *C. D. Belding Memorial Scholarship* (\$100) to a student majoring in Physical Education. The money is applied to tuition and fees.

SCHOLARSHIPS

*Border Hoo Hoo No. 7, International Organization of Lumbermen* (\$200) with no restrictions.

*B'nai B'rith Scholarship* (\$100) to a student in the Social Science field. This scholarship is provided by the Rube Weinstein Lodge No. 509.

*Brown: Roger Brown Company* (\$300) to a student from Texas, New Mexico, Arizona or Old Mexico who participates in one of the major sports and has high scholastic standing.

*Captain John Chappell Chapter Colonial Dames of the XVII Century* (\$50) for a deserving female student.

*Commonwealth Foundation* (\$100-\$150) with no restrictions.

*Cooley: Mary Cooley Memorial Scholarship* (\$100) to a Music major recommended by the chairman of the department.

*Cotton Memorial* (numerous awards, \$100-\$500) to outstanding women students. The total amount awarded approaches \$16,000 annually.

*Darbyshire Steel Company, Incorporated* (two awards of \$250) to deserving students majoring in Civil or Mechanical Engineering or taking preparatory work in Architectural Engineering.

*Delta Nu of Delta Kappa Gamma* (\$125) to a senior woman who is interested in teaching. Recommended by the Chairman of the Education Department.

*DeWitt and Rearick* (\$500) to a student in the Department of Economics and Business Administration, selected by the chairman of the department on the basis of scholastic achievement and need.

*El Paso Bowling Association* (\$150) with no restrictions.

*El Paso Business and Professional Women's Club* (\$100) to a student recommended by the Dean of the School of Nursing.

*El Paso Chapter, Associated General Contractors of America* (\$250) one or two awards to junior or senior male students majoring in Civil, Mechanical or Electrical Engineering and who is a resident of Texas, New Mexico or Arizona.

*El Paso Chapter, Texas Society of Certified Public Accountants* (\$50) (\$100) respectively, to an outstanding junior and senior specializing in Accounting. Selection is by the Chairman, Department of Economics and Business Administration.

*El Paso City Panhellenic Congress* (two awards of \$150) to a freshman and an upperclass woman who are El Paso County residents.

*El Paso Herald Post* (\$100) to a Journalism major.

*El Paso Machine and Steel Works Incorporated Scholarship* (\$250) to an Engineering student recommended by the Dean of the School of Engineering.

*El Paso Music Teachers Association* (\$75) to a Music student recommended by the chairman of the department.

*El Paso Piano Company* (\$100) to a Music student recommended by the chairman of the department.

*El Paso Press Club Scholarship* (\$100) to a student majoring in Journalism, Radio or TV.

*El Paso Retail Florists Association Scholarship* (\$100-\$200) to a Nursing student who is in financial need, recommended by the Dean of the School of Nursing.

*El Paso Symphony Association* (various awards totaling \$500 or more) Music majors specializing in orchestral instruments. Awards are selected by the Chairman of the Music Department.

*El Paso Teachers Association* (\$150) to a student in the teaching profession. The applicant must have graduated from an El Paso high school. Selection is by the Chairman, Department of Education.

*El Paso Times* (\$100) to a student majoring in Journalism.

*Feinberg: Sarah Feinberg Memorial Scholarship* (\$450) to a male Pre-Medical major of demonstrable scholastic ability and proven financial need. The recipient must be a graduate of an El Paso City or County high school.

*Haag Tractor Company Scholarship* (\$300) to a local male student majoring in Civil or Mining Engineering. Recommended by the chairman of the department.

Henderson: *Percival Henderson Scholarship* (\$50-\$150) to Engineering majors.

Hoard: *Lucy Claire Hoard Memorial* (\$100) to a woman Education major on the department chairman's recommendation.

Horwitz: *Mr. and Mrs. Louis Horwitz Memorial Scholarship* (\$200) to a worthy student with primary consideration to pre-medical study.

*Hubbert Music Company* (two awards of \$100) to Music majors, \$50 each semester to be applied toward tuition and fees on the recommendation of the Chairman of the Department of Music.

*Kennecott Copper Corporation Scholarship* (\$500) to a student majoring in one of the following fields: Education, Engineering, Business Administration, Chemistry, Geology, Geophysics, Industrial Arts and Vocational Education, Journalism, Health and Recreation, Law, Nursing, Medicine, Medical Technology, or Psychology.

*Lakeside Harmony Shop* (\$125) to a local high school student or band member upon recommendation of the Chairman, Department of Music.

*Lambda Chi Alpha Fraternity* (\$100) to an outstanding student.

*Lions Club of El Paso* (\$250) without restriction.

Lipscomb: *Abner S. Lipscomb Scholarship* (\$300) without restriction.

*Monroe, Licht and Higgins Scholarship* (\$200) to an outstanding Engineering student, preferably Civil Engineering.

*Phelps Dodge Foundation* (Two awards of \$500) to junior or senior Metallurgy majors, to be selected by the Chairman of the Department of Metallurgy and the Dean of the School of Engineering on the basis of academic achievement and financial need.

*Purchasing Agents Association of El Paso* (\$200) to Business Administration major on recommendation of the department chairman.

*Radio and TV Station KTSM* (\$200) to students in the field of Radio Education, the stipend covering tuition and fees for both semesters.

*Ramsey Steel Company, Incorporated, Scholarship* (\$500) to student in Civil Engineering.

*RCA Scholarship* (\$100) to a student in the field of Radio and TV, \$50 each semester to be applied toward tuition and fees.

*Rehabilitation Scholarship* (various awards of tuition and other services) to civilian students who have certain physical handicaps, awarded by the State Board of Vocational Education, through the Vocational Rehabilitation Division, provided the vocational objectives selected by the student have been approved by a representative of the division. Address inquiries: Rehabilitation Office, Room 19, El Paso Technical Institute, El Paso, Texas; or Post Office Box 212, El Paso, Texas; or Mr. J. J. Brown, 302 Walton Building, Austin 11, Texas.

*Rodeo Fund* (\$500) without restrictions.

*Rotary Club* (\$400) to worthy students.

*Roth Society Memorial Scholarship* (\$100) to a student in the field of Psychology or Philosophy on recommendation of the department chairman. This award is given by the Roth Society of Texas Western College in the name of Dr. J. M. Roth.

Roth: *Dr. J. M. Roth Memorial Scholarship* (\$100) to a student majoring in Philosophy or Psychology. This award is provided by the Rube Weinstein Lodge No. 509.

Sayers: *Mrs. Maude M. Sayers* (\$250) to a deserving student in need of financial aid.

*Scholarship for Foreign Students* (various awards) to worthy foreign students. These awards have been made available by the Board of Regents of The University of Texas. To be eligible, a foreign student must have demonstrated his ability to speak and write English satisfactorily; he must have a grade average of C or better on course work taken at Texas Western during his last two semesters in residence and must be in need of financial assistance in order to continue his education at the College. Applications are made to the Chairman, Scholarship Committee, Texas Western College, El Paso, Texas.

*Sertoma Club of El Paso* (\$400) without restrictions.

## FINANCIAL AID

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*Standard Oil Company of Texas Scholarship* (\$500) preferably to a senior student in Geology, recommended by the chairman of department.

*State National Bank* (\$500) for male students in the field of Business Administration.

*Stevens Estate* (three to five four-year annual awards of \$1,250 each) available for outstanding students preparing themselves for the fields of the ministry, medicine, law, science or engineering. The recipients are screened by personal interviews and other special selection techniques.

*Vowell Scholarship* (\$300) to a worthy

student with primary consideration to an Engineering student.

*White Spur 20-30 Club* (\$100) with preference to needy Upper Valley residents.

*Woman's Auxiliary of Texas Western College* (various awards totaling approximately \$900 annually).

*Zimmerman: Dr. Isabella Zimmerman Memorial Scholarship* (\$50) to a woman English Major, advanced student of good scholastic standing. This award of at least \$50 given annually by the Pilot Club of El Paso honors a former faculty member of the English Department of Texas Western College. Make application to Dr. Pearl Olive Ponsford, English Department.

## Loan Funds

Various funds are available to students who need financial assistance to be able to continue their college educations. All loans are made at a low rate of interest and under such other terms that borrowers will be able to meet their obligations without undue difficulties.

Applicants for loans will be expected to show need for assistance and must be able to supply satisfactory references. Applications should be made as early as possible before date of registration. For additional information, write or see the Business Manager of the College.

*Ex-Students' Memorial*—Under the will of

the late William Clifford Hogg, \$25,000 was granted to the Ex-Students' Association and the College for the establishment of this fund. Only the income from the fund may be loaned. It is administered by a board of directors consisting of the administrative officers of the College and the Ex-Students' Association.

*Women's Auxiliary*—This loan fund was established by the Women's Auxiliary for Texas Western College. Emergency loans are made to needy students of high scholastic standing. The fund is administered by a faculty committee. For information concerning the terms of this loan fund consult the Business Manager.

*Other Loan Funds*—Information pertaining to other loan funds available to students, not administered by the College, may be obtained from the Business Manager.



# **Regulations Affecting Student Life**

## **Student Services**

The Dean of Students, Dean of Men, and Dean of Women are student personnel officers, and are concerned primarily with student welfare. These officers are available to talk over personal or organizational problems, and to answer questions that concern members of the student body. These officers supervise student housing, the student scholarship program, and student activities. Through these officers a student may apply for emergency loans, part-time employment, and counseling service.

The Bureau of Testing and Guidance is another student welfare service. This office administers the Freshman testing program and makes its services available to all those who wish counseling or vocational selection help.

In addition, there is a college health service, and a placement service which aids students in finding jobs. Various student organizations, led by the student government, render such services as activities orientation and providing tutoring service.

## **CONDUCT**

Discipline of the College will be so administered by the faculty as to maintain a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present as his own the work of another, or any work which he has not honestly performed, or to pass any examination by improper means, is regarded by the faculty as a most serious offense, and renders the offender liable to immediate suspension. The aiding and abetting of a student in any dishonesty is held to be an equally serious offense.

The possession of any material not allowed by the instructor during an examination is considered *prima-facie* evidence of intention to use such material illegally.

### **Discipline**

1. Through matriculation at the College, a student neither loses the rights nor escapes the responsibility of citizenship.
2. Obedience to the law being a primary duty of the citizen, the conviction of the student for violation of law renders him subject also to disciplinary action on the part of the College.
3. A jury indictment for a felony or other offense of serious character suspends the student, without prejudice, until acquitted.
4. All students are expected to show re-

spect for properly constituted authority and to observe correct standards of conduct. Illegal conduct, improper use of alcoholic beverages, gambling, dishonesty, conduct inconsistent with general good order, and failure to respond promptly to official notices may subject the student to disciplinary action.

5. Persons not registered in the College when guilty of misconduct that affects college life and work, if former or prospective students, will have the known circumstances inscribed in their records as presumptions against their moral characters. They will not be later admitted to the College unless they can prove moral desirability.

### **Penalties**

The following penalties may be imposed: admonition; probation; suspension of social rights and privileges; suspension of eligibility for official athletic and non-athletic extracurricular activities; suspension of eligibility for any student office or honor; publication of the name of the offender, his offense, and the penalty imposed; increase in the number of courses required for a degree; cancellation of credits for scholastic work done; suspension from the College; expulsion; or such other penalty as the Faculty Committee on Discipline deems proper.

### **Probation**

Disciplinary probation will be for a definite period and carries with it the following condition during the period of such probation: any further violation of College regulations during the time of probation will cause such student to be suspended for a period to be determined by the Faculty Committee on Discipline.

A student on probation may not hold office in any organization connected with the College, nor represent the College in any of its activities.

A student on probation who absents himself from any class exercise or neglects any class work, except for reasons considered imperative by his Dean, will be dropped from the College rolls for the remainder of the session.

Absences and neglect on the part of such student, not explained to his Dean within one day—beforehand if possible—will be presumed to be without excuse and will effect the dropping mentioned above.

A student on probation may not be initiated into any social or honorary organization.

### Suspension from the College

A student suspended from the College shall remain off the campus of the College during the entire period of his suspension, excepting when summoned by an administrative official of the College, or when an appointment with an official has been previously arranged. A student while under suspension may not room or board in a dormitory or rooming house where other students are living, nor frequent a fraternity or sorority lodge. He may not be initiated into an honorary or social organization. A student under suspension may not receive credit at Texas Western College for college work done, by correspondence or in residence, at either this or any other institution during the period of suspension, except when allowed by the Faculty Committee on Discipline. This privilege shall not be allowed in cases involving cheating.

### Expulsion from the College

A sentence of expulsion means permanent severance from the College. A sentence of expulsion shall be reviewed by the administrative officers, who, when in doubt about its propriety, shall return the case to the trial committee with the reason for so doing.

These penalties may be imposed singly or in any combination upon individuals, or groups, or organizations.

In every case in which a student is found guilty of any offense by the Faculty Committee on Discipline and in any other matter in which an emergency arises, parent or guardians will be informed and asked to co-operate with the authorities.

### Debts

The following policy was adopted by the Board of Regents of The University of Texas on October 25, 1958.

The College is not responsible for debts contracted by individual students or by student organizations. On the other hand, the College expects all students and student organizations to conduct themselves honorably in all commercial transactions. The College will not assume the role of a collection agency for organizations, firms and individuals to whom students may owe

bills, nor will the College adjudicate disputes between students and creditors over the existence or the amounts of debts. A student, however, is expected to perform his contractual obligations and in the event of conduct on the part of a student clearly demonstrating a flagrant disregard of his commercial obligations (refusal to pay or meet admitted debts or obligations will be thus construed), action will be taken appropriate to the age of the student and other circumstances:

(1) In the event of such conduct, the parents of minors will be notified and requested to intervene.

(2) In the case of a married student or a student over 21 years of age, the student will be requested to make prompt payment or to negotiate a reasonable plan for payment with his creditor or creditors.

(3) In the event that the actions prescribed in (1) and (2) above do not result in the payment or agreement to pay admitted obligations, one or more of the following actions, as determined appropriate in the particular case, may be taken:

- (a) A bar against readmission of the student.
- (b) Withholding of the student's grades and official transcription.
- (c) Withholding of a degree to which the student otherwise would be entitled.

### Bad Checks

A student who gives the College a bad check, the fault not being that of the bank, and who does not make it good within five days will be dropped from the College. A student or a College organization who gives a bad check in a commercial transaction, and does not make it good within five days will be subject to disciplinary action by the Faculty Committee on Discipline. The College will not accept a check from a student who has once given a bad check.

### Hazing

A student who violates his pledge of hazing, or who engages in, instigates, or encourages any type of class rush not specifically approved by the College will be liable to suspension or expulsion.

## EXTRACURRICULAR ACTIVITIES

Any college exists for one reason and one reason only—academic or professional training. However, once a student has made the difficult academic adjustment to college, extracurricular activities can play an important recreational and educational part in his college life.

### Athletics

Texas Western College is in the Border Intercollegiate Conference and participates in a variety of intercollegiate sports. This allows not only for student participation but also gives students, staff, and community residents a great deal of spectator enjoyment. There is also a large intramural athletic program, and all students are invited to engage in sports and recreation of their choosing. The Physical and Health Education Department, Student Association, and Dean of Students sponsor these activities.

### Organizations

Other major participation areas include student publications, governmental organizations, four national sororities, one local and four national fraternities, music and drama groups, and departmental organizations. There are close to seventy different groups from which a student may choose his activities. They are:

*Accounting Club*—organization of Business Administration students specializing in accounting.

*Activities Bureau*—helps new students to find the activities to which they wish to belong.

*Alpha Chi*—scholastic honorary for Juniors and Seniors.

*Alpha Phi Gamma*—honorary journalism society.

*Alpha Epsilon Rho*—honorary radio society.

*Alpha Phi Omega*—local fraternity for Engineers.

*Alpha Psi Omega*—honorary drama society.

*Alpha Sigma Nu*—national metallurgy engineers society, collegiate branch.

*American Institute of Electrical Engineers*—collegiate branch of professional society.

*American Institute of Mining, Metallurgical, and Petroleum Engineers*—collegiate branch of professional society.

*American Society of Civil Engineers*—collegiate branch of professional society.

*Association for Childhood Education*—organization of future teachers of elementary schools.

*Baptist Student Union*—campus organization of Baptist Students.

*Beaux Arts*—for study of art appreciation.

*Belles*—organization of non-sorority girls in the dormitories.

*Campus Colleagues*—social group of non-Greek men and women.

*Chenrizig*—scholastic and service honorary for senior women.

*Canterbury Club*—campus organization of Episcopalian students.

*Chi Omega*—this is a national social sorority.

*Christian Science*—a campus organization of Christian Science students and faculty members.

*Co-Ed Council*—co-ordinating group for all women's organizations.

*College Band*—sponsored by the Music Department.

*College Choir*—sponsored by the Music Department.

*College Players*—drama group which puts on plays.

*Cosmopolitan Club*—to assist foreign students in adjusting to college life at Texas Western College.

*Delta Delta Delta*—this is a national social sorority.

*Delta Gamma*—this is a national social sorority.

*Delta Psi Kappa*—honorary Physical Education society.

*Delta Sigma Pi*—Professional society for men Business majors.

*Engineering Council*—co-ordinating group for all Engineering activities.

STUDENT LIFE

- Gold Diggers*—girls pep squad that marches with the band.
- Inter-Dormitory Council*—representatives from men's and women's dorms who coordinate the athletic, social, cultural and scholarly activities among dormitory students.
- Inter-Faith Council*—co-ordinating group for all religious clubs on campus.
- Interfraternity Council*—co-ordinating group for fraternities.
- Intramural Athletic Board*—co-ordinating group for intramural athletics.
- Junior IFC*—co-ordinating group for all fraternity pledges
- Junior Pan American Roundtable*—study and information group on Pan American countries.
- Kappa Delta Pi*—honorary education society.
- Kappa Pi*—this is an honorary art society.
- Kappa Sigma*—this is a national social fraternity.
- Lambda Chi Alpha*—national social fraternity.
- LDS Deseret*—campus organization of Mormon students.
- Literary Society*—this group encourages interest in and knowledge of literature through meetings, group discussions, and lectures. It is open to all students.
- Music Educators National Conference*—student chapter for those going into Music professionally.
- Newman Club*—campus organization of Catholic students.
- Orange Key*—scholastic and service honorary for Freshmen and Sophomore men.
- Panhellenic Council*—co-ordinating group for sororities.
- Phi Alpha Theta*—honorary history society.
- Phi Gamma Nu*—professional society for women Business majors.
- Phi Kappa Tau*—this is a national social fraternity.
- Phrateres International*—national non-Greek social group for women.
- Physical Education Majors Club*—sponsored by PE department.
- Pi Delta Phi*—this is an honorary French society.
- Pre-Law Club*—students interested in the profession of law.
- Pre-Med Club*—students interested in the profession of medicine.
- Psychology Club*—students interested in psychology.
- Roth Society*—social organization for Jewish men and women.
- Sardonyx*—scholastic and service honorary for Junior and Senior men.
- Scubbard and Blade*—ROTC honorary society.
- Scholaris*—scholastic honorary for Freshman and Sophomore women.
- Sigma Alpha Epsilon*—national social fraternity.
- Sigma Delta Pi*—this is an honorary Spanish society.
- Sigma Gamma Epsilon*—honorary society for earth sciences.
- Society of Exploration Geophysicists*—professional society for Geologists.
- Student Union*—co-ordinating group for the Union building and its activities.
- United Campus Christian Fellowship*—(UCCF)—this group is an inter-denominational religious organization consisting of the following groups: Presbyterian of the U. S., Presbyterian of the United U. S., Churches of Christ, United Lutherans of America, Episcopalians of the U. S. A., African Methodist Episcopal, Congregational Christian, Christian Churches, and the Churches of the Nazarene.
- Wesley Foundation*—campus organization for Methodist students.
- Westminister*—campus organization for Presbyterian students.
- Women's Athletic Association*—organization sponsoring intramurals for women.
- Zeta Tau Alpha*—this is a national social sorority.

## Annual Events

And of course there are a number of all-campus activities every year in which a student may participate. Some of these are:

### Snow Fiesta

Texas Western students journey to Ruidoso or Cloudcroft each year for the Snow Fiesta, an event which usually takes place between the Fall and Spring semesters. Students meet at the ski run during the day to enjoy sledding, tobogganing, skiing, skating, and snowball fights. To climax the day's activities, a dance is held in the evening and the queen is crowned.

### Homecoming

Homecoming activities, usually held in November of each year, center around a Border Conference home football game. Ex-students return to town for a series of parties and meetings and are guests of honor at open houses given in each sorority and fraternity lodge. A prize is awarded for the best decorated float entered in a downtown parade, and prizes are also awarded to the winners in the four divisions set up by the Ex-Students Association. The sororities also decorate their lodges. After the football game, a dance is given in the Student Union ballroom. The football queen is crowned at intermission.

### Co-Ed Ball

This is the traditional all-college Christmas dance, when the girls make the dates, pay expenses, send flowers, use their own cars, call for their boy friends, and do the tagging. The Co-Ed Association makes this affair one of the most popular and original throughout the year.

### Variety Show

The Variety Show held each December is an important activity in which different organizations participate. Each group puts on a ten minute skit in competition for a trophy and a percent of the proceeds from the event. Each group plans and produces its own skit.

### Campus Chest

Each fall a drive is held on campus to raise money for charitable distribution.

### Beard Growing Contest

January 1st is more than New Year's Day at Texas Western College. It is also the day when men on the campus start

growing beards to compete in the annual beard contest which is judged at the Hard Luck dance held on or near St. Pat's Day. Originally an engineering tradition, beard growing has spread to the East Side.

### St. Pat's Day

On March 17th, St. Patrick's Day, Texas Western engineers journey to Orogrande for an all-day picnic during which freshman engineers are initiated into the order of St. Pat, patron saint of engineers. The initiation is traditionally held in one of the many mines around the area.

### Hard Luck Dance

The Hard Luck Dance, sponsored by the engineers, is held on the closest Saturday to March 17th, St. Pat's Day. The beard growing contest is judged during the intermission—with prizes awarded to the longest and the prettiest beards and the one showing the most effort with the least results. A prize is also awarded the man and woman wearing the best hard luck costumes.

### Western Day

The Southwestern Championship Rodeo, held in El Paso each year, heralds Western Day at Texas Western College. On that day the "no slacks on campus" rule is relaxed and co-eds and campus men all dress in Western clothes, complete with boots and cowboy hats.

### Sing Song

The annual fraternity-sorority sing-song, held late in the Spring semester, is a concert in which the various choruses compete for a cup. This event has grown in size to the point where many organizations other than the Greeks compete.

### Beauty Contest

The Flowsheet annually sponsors this contest to select a beauty queen and several runners-up for the yearbook's feature section. In a preliminary contest about 12 finalists are selected from entries made by the social organizations on the campus. At the final contest, the beauty is crowned and presented with a bouquet of roses.

### Senior Luncheon

Each Spring the Co-Ed Association honors graduating senior women with a luncheon in the women's dormitory. This is the final social gathering for the senior women before graduation.

### Religion in Life Week

In the life of every wholly developed individual a spiritual foundation is essential. Speeches by religious leaders, informal discussions, and personal conferences are presented as a means of acquainting—or reminding—the student of religion's vital place in his world. Catholic, Jewish, and Protestant authorities are given the opportunity to encourage the student in his spiritual quest.

### All TWC Day

A day of social and sports events is set aside each year as All-Texas Western College Day. Held usually in May, the day's activities open with a baseball game between the faculty and the seniors. Social organizations compete in a swimming meet. Highlight of the day is the annual beauty revue at which "Miss TWC" is selected from entries made by campus organizations.

### Spring Festival

The Spring Festival is held each year in connection with All-TWC Day. Every

organization on campus sets up a booth of games or refreshments for the festival. A dance closes the day's events.

### Flowsheet Queen

Each year a nationally known celebrity is asked to act as judge in the Flowsheet Queen Contest. The identity of the queen, who is selected from photographic entries, is not revealed until the yearbook is distributed in May. Any girl who is a student is eligible to compete.

### Honors Day

Sardonyx, junior and senior men's honorary organization at Texas Western College, sponsors, each spring, the annual Honors Day ceremony. At this traditional Honors Day, Texas Western College gives public recognition to those students who excel in scholarship and citizenship. The students being honored are in one or more of the following groups: (1) Members of Texas Western College honor societies; (2) Members of national honor societies; (3) Students who merit recognition for distinction in citizenship and scholarship; and (4) Student Council representatives.

# Scholastic Regulations

## Credit Measurement

The unit of measurement for credit purposes is the semester hour. A semester hour entails one hour of recitation and/or lecture (or the equivalent in shop or laboratory work) per week for one semester of eighteen weeks, unless otherwise specified in the course description. For each classroom hour two hours of preparation are expected. Three hours of shop or laboratory work are counted as equivalent to one classroom hour and the preparation for it. Unless otherwise stated in the course description, it can be assumed that a course will meet for one hour of recitation-lecture per week for each semester hour of credit.

## Selecting Courses

Although every effort is made to advise students, the final selection of courses is the responsibility of the individual student. All required freshman numbered courses in the student's curriculum must be completed by the time the student reaches senior classification; otherwise, no credit will be granted toward fulfilling degree requirements for the courses even though the courses must be completed. Inter-collegiate as well as intra-collegiate transfer students who lack required freshman number courses must register for one or more such courses each semester until all requirements have been completed. Transfer students with senior classification will receive credit for required freshman numbered courses provided the conditions as stated above are fulfilled.

## Course Fees

Laboratory fees and other special fees required for individual courses are indicated in course descriptions. Per semester cost follows course title, for example:

### GEOLOGY

3210 Principles of Geomorphology (\$2)  
*(one semester)*

### BIOLOGY

3101-02 Anatomy and Physiology (\$2-\$2)  
*(two semesters)*

## Adding Courses

A course may be added within the stipulated time limit by (a) authorization of the Dean, (b) validation by the Business Office, and (c) filing with the Registrar.

## Changing Courses

A course may be changed within the stipulated time limit by (a) authorization of the Dean, (b) validation by the Business Office, and (c) filing with the Registrar.

## Changing Sections

Once a student has registered for a given section of a course, the section may not be changed at the request of the student until after the fourth day of classes after the close of the regular registration period. Instructors may change students from one section to another at any time for the purpose of balancing enrollments in sections, correcting scheduling errors, and for any other necessary purpose. Changing the section of a course requires (a) authorization by the head of the department concerned, (b) validation by the Business Office, and (c) filing the change with the registrar.

## Dropping Courses

A course may be dropped by (a) authorization of the Dean and (b) filing with the Registrar. The grade to be given by the instructor will be WP or WF depending upon the student's standing in the course at the time.

On the recommendation of the instructor concerned, approved by his Dean, a student may at any time be required to drop a course because of neglect, excessive absence, or lack of effort. In such case the grade is entered on the student's record as WF.

## Late Registration

Each class missed because of late registration will be counted as an absence, and classroom and laboratory work missed will be counted as zero unless the individual instructor grants the student permission to make up the work.

## Absences from Classes

(a) Uniform and punctual attendance upon all exercises in a course in which he is due is strictly required. Absences will be considered as non-performance of work.

(b) A student has no right to be absent from any exercise in a course in which he is registered, except (1) for serious illness, or (2) by action of College rule, or (3) for other unavoidable circumstances. Ab-

sences caused by serious sickness or other unavoidable circumstances, in case the work missed has been done to the satisfaction of the instructor, shall not count toward dropping a student from a course.

(c) When, in the judgment of the instructor, a student has been absent to such a degree as to impair his status relative to credit for the course, the instructor shall report the absences and the student to his Dean; and, upon recommendation from the instructor, the Dean may drop the student from the course.

(d) Absences incurred by a student prior to his registration are not to be charged against said student, provided the work missed because of late registration is made up satisfactorily by the mid-semester report date.

#### **Absence from Tests**

A student absent from a test during the semester is graded zero on that test, unless for urgent reason he is given by the instructor the privilege of taking a postponed test at a time to be set by the instructor.

#### **Tardiness**

Repeated tardiness will be considered as equivalent to absence from class, and reported as such.

#### **Amount of Work**

*Engineering Students*—Beginning freshmen may not register for more than nineteen semester hours except with permission of the Dean. Sophomores, juniors, and seniors may not register for hours in excess of those prescribed in the course of study except in accordance with the grade point rule (39 grade points during their preceding semester), and in no case may they register for more than twenty-one semester hours.

*Arts and Science Students*—Beginning freshmen may not register for more than nineteen semester hours except with permission of the Dean.

Other students, with permission of the Dean, may register for more than nineteen semester hours if the grade score has been 39 points for the preceding semester. A full summer session may be counted as a semester.

In no case may a student register for more than twenty-one semester hours.

A student may not register for more than seven semester hours in classes scheduled during the evening hours without the written permission of his Dean.

#### **Official Notices**

Official notices are posted on bulletin boards, read to classes and sent to students individually. Students are held responsible for knowledge of and compliance with such notices.

#### **Classification**

*Regular Students*—Those who are registered for twelve or more credit hours.

*Irregular Students*—Those who are registered for less than twelve credit hours.

*Freshmen Students*—Engineering students having less than thirty hours of credit; Arts and Science students having less than thirty hours of credit.

*Sophomore Students*—Engineering students: thirty or more, but less than sixty-six semester hours; Arts and Science students: thirty or more, but less than sixty semester hours.

*Junior Students*—Engineering students: sixty-six or more, but less than one hundred and four semester hours; Arts and Science students: sixty or more, but less than ninety semester hours.

*Senior Students*—Engineering students: one hundred and four or more semester hours and until graduation; Arts and Science students: ninety or more semester hours and until graduation.

#### **Examinations**

*General Regulations*—All of the written work handed in by students is considered to be their own product, prepared without unauthorized assistance. Students are invited to co-operate with their instructors in maintaining the integrity of examinations and are strongly urged to inform them, without specifying the offenders, if cheating goes on in their classes.

Students are expected (a) to remain in the examination room during the examination or quiz period; (b) to refrain from talking or smoking; and (c) to leave all notes and books where they will not be accessible during the examination or quiz, unless otherwise directed by the instructor.

#### **Final Examinations**

The Faculty has ruled that exemption from examinations may not be given. To encourage preparation for examinations, the Faculty has further ruled that during the last seven days of each semester before examinations no written examination or review shall be given; and all essays,



theses, synopses, and the like must be handed in before this period begins.

In all examinations, account is taken of the student's use of English and of the form of the paper in general, the grade being lowered because of deficiencies in these regards as well as in the subject-matter proper.

Examinations are three hours in length and at the end of three hours all papers are taken up.

A student absent from a final examination without an excuse from the Dean is graded *F* and required to repeat the semester's work if credit is desired for the course. However, if compelled to be absent from the final examination on account of illness or other imperative cause, the student is entitled to take a postponed examination. (See Postponed Final Examinations.)

#### Postponed Final Examinations

Postponement of the final examination is subject to the following conditions:

1. Only in case of absence due to illness or other imperative and unavoidable cause.
2. Permission to be obtained from the Dean, validated by the Business Office for a fee of one dollar, and filed with the Registrar at least four days before the date of the examination.
3. Must be taken within a year from the date from which the examination was postponed.
4. Must be taken at a date fixed by the Calendar or at a regular final examination in the course, such time to be determined by the Dean.
5. The grade during the period of postponement to be *Px*.
6. Absence from a postponed examination, after a permit has been granted, gives a grade of *F* in the course.
7. The Registrar supervises the examination.

#### Proficiency Examinations

These are examinations for credit and are subject to the following conditions:

1. Permission to be obtained from the head of the department and validated by the Business Office for a fee of one dollar, and filed with the Registrar at least four days before the date of the examination.
2. Must be taken at a date fixed by the Calendar.
3. Will be searching in character, strictly graded, and four hours in length.
4. The passing grade is *B*.

5. Absence from the examination, after a permit has been granted, gives a grade of *F*.

6. No student is eligible who has registered for or has been given a grade in the course.

7. The Registrar supervises the examination.

8. Student must currently or previously be registered in the College.

9. Credit thus earned is applicable toward a degree from this College only.

#### Scholarship

Grades are given by semester; however, in a course extending through two semesters no credit is given toward degrees until both semesters of the course have been completed.

#### Grades and Grade Points

The grades used are: *A* (excellent), *B* (good), *C* (average), *D* (inferior but passing), *F* (failure), *WP* (withdrawal from the course with a passing grade), *WF* (withdrawal from the course with a failing grade), *Pr* (in Progress), *Inc.* (incomplete), and *Px* (postponed final examination).

In the case of students who drop courses or who withdraw from school the following grades apply:

1. A student who drops a course before mid-semester reports are filed in the registrar's office will receive a grade of *WP* if passing and *WF* if failing. The student will receive a grade of *WF* in any course dropped after the mid-semester unless the drop is initiated by the student's Dean.
2. Students who officially withdraw from college during the semester will receive, grades of *WP* in courses which they are passing and *WF* in courses which they are failing.

A grade of *A* will be rated as four points per semester hour, a grade of *B* as three points per semester hour, a grade of *C* as two points per semester hour, and *D* as one point per semester hour.

The grade point average is determined by multiplying the number of semester hours of *A* grades by four, the hours of *B* by three, the hours of *C* by two, and the hours of *D* by one. The total of these values is then divided by the sum of the semester hours of *A*, *B*, *C*, *D*, *F*, *WF*, *Inc.*, and *Px*.

#### Higher Work after Failure

If a student makes an *F* in a course, he may not take up a more advanced course in the same subject until the course is taken again and satisfactorily completed.

**Incomplete Work**

Grades for work not completed may be obtained by two distinct and separate methods:

1. At the end of any semester a student may be given a grade of *Px* if he unavoidably is absent from the final examination in a course, and such absence is approved by the respective Dean. This procedure obligates the student to take a Postponed Examination in the course as a part of the removal-of-*Px* grade.
2. At the end of the semester a grade of *Incomplete* may be given in exceptional circumstances and with the permission of the instructor and the proper Dean. When the grade of *Incomplete* is given at the end of the first semester, the work missed must be completed before grades are reported at the end of the second semester. If the *Incomplete* is given at the end of the second semester or at the end of either term of the Summer Session, it must be removed before grades are recorded for the fall semester following.

When the student is given the grade of *Incomplete*, or *Px*, the grade points for the course will be considered as if the grade were *F* in calculating the standing of the student.

If *Px* or *Inc* grades are removed within the first two weeks of the semester immediately following the one in which they were received, the scholastic standing of the student will be adjusted according to his earned grades. *Px* examinations will be given within two weeks after the close of each semester.

**Repetition of Course**

If a student repeats a course, the official grade is the last one made.

**Honor List**

At the close of each semester the Registrar's Office will issue an honor list which will include the names of all students who, during the semester, have been registered for not less than fifteen hours of work and who have a grade point average of at least 3.2 without any grades of *Px*, *Inc.*, *WF*, or *F*. (If a *Px*, or *Inc.* is removed within two weeks after the end of the semester the last grade earned will be considered.)

One-hour courses in such subjects as Physical Education, Band, Gold Diggers, Choir, Orchestra, College Players, Radio and Journalism will be counted neither in the student's load nor his grade average.

In publishing the honor list the En-

gineering and the Arts and Sciences divisions will be listed separately.

Students whose grades are all *A* will be given special mention.

**Semester Reports**

Grade reports are mailed to parents and guardians in November and March and at the end of each semester. The mid-semester reports sent out in November and March do not become an official part of the student's record, but merely serve to inform the student and the parents of student's progress during the course of the semester. Students may receive copies of all grade reports at the Office of the Registrar.

Self-supporting students over 21 years of age, if they request it of the Registrar in writing, may have their grade reports sent to them instead of their parents.

**Standard of Work Required**

The grades *Px*, *Inc.*, and *F* will not be considered passing. (If *Px*, or *Inc.* are removed within two weeks after the end of the semester, the student's status will be adjusted.)

**REQUIRED MINIMUM****Academic Performance****Regular Students (12 or more hours)**

1. If a student is in his first semester, he must make a minimum of 15 grade points.
2. If a student is in his 2nd, 3rd, or 4th semester, he must make a minimum of 18 grade points.
3. If a student is in his 5th or any succeeding semester, he must make a minimum of 24 grade points.

**Irregular Students (Less than 12 hours)**

The number of semesters for which a student may have been enrolled in another College will be counted in determining the proper semester as listed above.

A student taking less than twelve semester hours must make a minimum average of 1.5 grade points in all work taken during the semester. However, a student will not be removed from good standing if he is registered for only one course and is in his first semester of attendance at the College, or has not been in attendance at the College during the preceding academic year.

A student in good standing does not incur any scholastic penalty by attending a Summer Session, except that a student who fails all his work must have the per-

mission of his Dean before he may re-enter the College.

Except for those offered in the School of Mines and Engineering, no one-hour course nor grade points earned on any one-hour course may be counted in determining the above minimum standard of performance.

### Scholastic Probation

A student who fails to attain the required minimum at the end of a semester will be placed on Scholastic Probation.

The student will be warned by his Dean and his parents will be notified by the Registrar.

A student who withdraws while on Scholastic Probation will be continued in that status for the next semester or summer session of attendance.

Scholastic probation shall mean that a student may not:

1. Register for more than sixteen hours except by written permission of his Dean.
2. Represent the College in any intercollegiate contest, hold any collegiate office or elective collegiate position, or officially represent the College in student activities taking place off campus.
3. Be absent from classes, except under extenuating circumstances, without being dropped from the rolls of the College by the Registrar at the request of his Dean.

### Removal of Scholastic Probation

A student taking twelve or more semester hours may return to good standing by meeting the requirements outlined under Minimum Academic Performance.

A student taking less than twelve semester hours may return to good standing:

1. By making a minimum average of 1.70 grade points in all work taken. However, this section may not be used to remove Scholastic Probation incurred while a regular student.
2. By attending a Summer Session and passing a minimum of nine semester hours with a C average in all courses taken.

A student attending the Summer Session while on Scholastic Probation and taking less than nine semester hours will be continued on that status for the next period of attendance.

### Enforced Academic Withdrawal

A student shall be dropped:

1. When he fails to remove Scholastic Probation in his next period of attendance.
2. When he does not pass any of his work in a semester.

A student ineligible for registration because of academic failure may submit a petition to his Dean for re-instatement. Each such application will be considered on its merits. A student so re-instated will be on such terms of Scholastic Probation as the Dean may require.

### Readmission of Students Dropped for Scholastic Reasons

A student who has been dropped for reasons stated under Enforced Academic Withdrawal is eligible for readmission on Scholastic Probation after the following time intervals have elapsed:

1. Dropped for the 1st time: (a) Failure at end of the first semester—the succeeding second semester and the summer session. (b) Failure at the end of the second semester—the succeeding summer session and the first semester. (c) Failure at the end of the Summer Session—the succeeding first semester.
2. Dropped for the 2nd time: One calendar year.
3. Dropped for the 3rd time: Two calendar years, and approval of the Academic Council by written petition through the Registrar.

### Official Withdrawal

A student may withdraw from the College with the consent of his Dean and clearance of all financial obligations with the Business Office. If he is a minor he must present a written statement from his parent, guardian, or sponsor indicating that the responsible party has knowledge of the student's intent to withdraw.

### Unofficial Withdrawal

Withdrawal from the College without consent of the student's Dean constitutes an unofficial withdrawal. In such cases the student will receive a grade of *WF* in each course for which he was registered. Students who withdraw unofficially must comply with the regulations listed under Readmission.

## DEGREES CONFERRED

	CONFERRED IN 1957			CONFERRED IN 1958			TOTAL CONFERRED		
	Men	Women	Both	Men	Women	Both	1916-1958		
<b>ENGINEERING:</b>									
Engineer of Mines . . . . .	---	---	---	---	---	---	49		
Bachelor of Science in Mining Engineering . . . . .	13	---	13	4	---	4	367		
Bachelor of Science in Engineering:									
Civil . . . . .	15	---	15	---	---	---	120		
Electrical . . . . .	25	1	26	---	---	---	147		
Bachelor of Science in Civil Engineering . . . . .	---	---	---	11	---	11	11		
Bachelor of Science in Electrical Engineering . . . . .	---	---	---	28	---	28	28		
Bachelor of Science in Metallurgical Engineering . . . . .	---	---	---	9	---	9	9	731	
	53	1	54	52	---	52			
<b>ARTS and SCIENCES:</b>									
Bachelor of Arts . . . . .	103	94	197	103	123	226	2991		
Bachelor of Science in the Sciences . . . . .	41	3	44	59	7	66	479		
Bachelor of Business Administration . . . . .	61	10	71	58	5	63	616		
Bachelor of Music . . . . .	4	7	11	5	5	10	88		
Bachelor of Science in Education . . . . .	---	---	---	---	1	1	1	4175	
	209	114	323	225	141	366			
<b>GRADUATE:</b>									
Master of Arts . . . . .	21	36	57	9	25	34	705	705	
<b>TOTAL DEGREES CONFERRED . . . . .</b>							<b>5611</b>		

## Statistical Summaries

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### STUDENTS

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ENGINEERING:	LONG SESSION, 1957-58		
	Men	Women	Total
Postgraduates . . . . .	5	---	5
Seniors . . . . .	93	1	94
Juniors . . . . .	136	2	138
Sophomores . . . . .	217	---	217
Freshmen . . . . .	548	3	551
Non-credit . . . . .	2	---	2
TOTAL . . . . .	1001	6	1007

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ARTS and SCIENCES:			
Postgraduates . . . . .	311	179	490
Seniors . . . . .	346	182	528
Juniors . . . . .	311	166	477
Sophomores . . . . .	217	388	634
Freshmen . . . . .	869	568	1437
Non-credit . . . . .	12	7	19
TOTAL . . . . .	2237	1348	3585

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<i>Total Individual Students . . . . .</i>	3238	1354	4592
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	SUMMER SESSION, 1958		
	Men	Women	Total
Students registered in the first term . . . . .	937	612	1549
Students registered in the second term . . . . .	773	458	1231
TOTAL . . . . .	1710	1070	2780
<i>Total Individual Students in Summer Session . . . . .</i>	1148	769	1917

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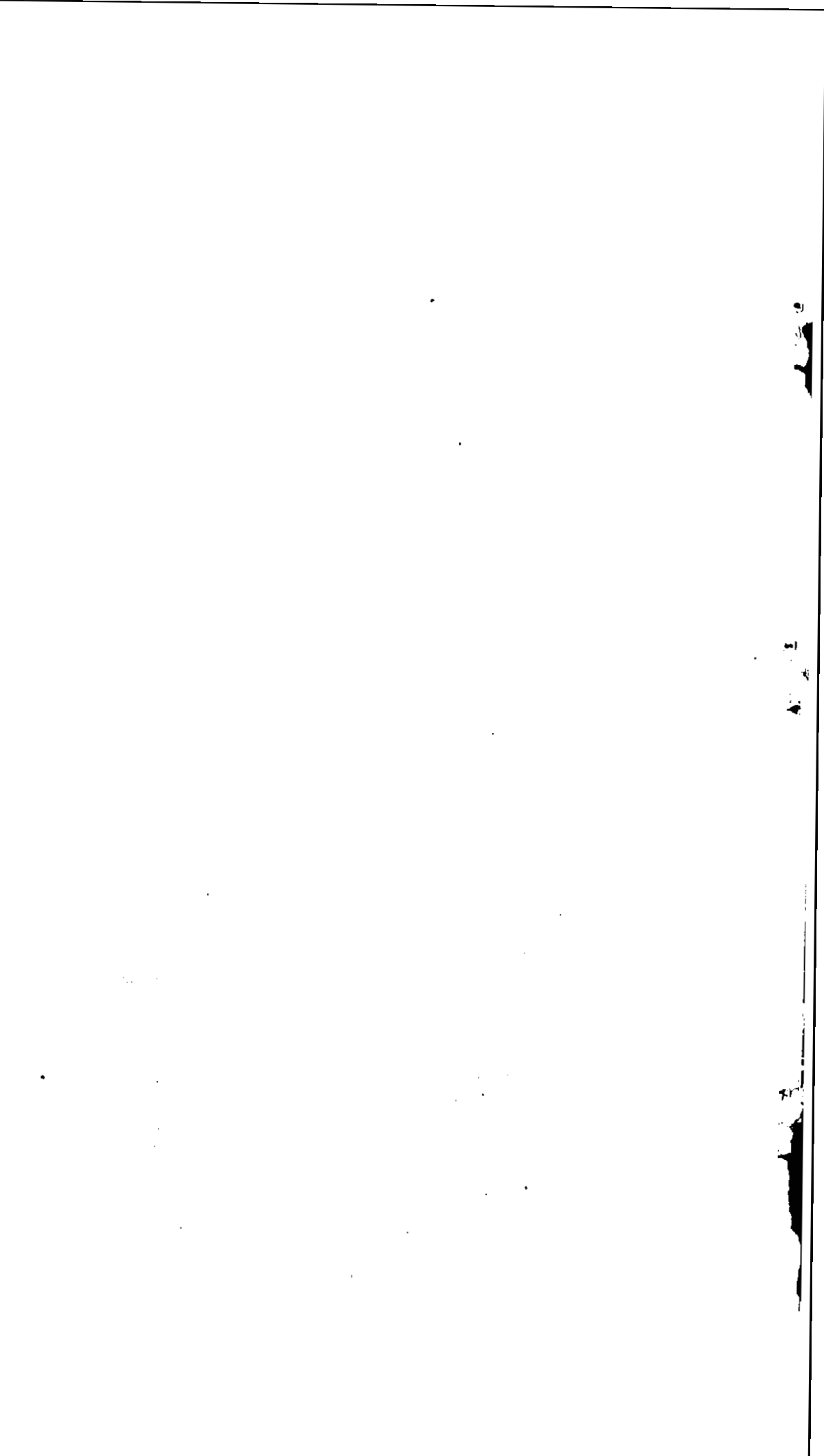
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### ***Identification of Minerals, Ores and Rocks***

ONE OBJECTIVE of Texas Western College is to be of assistance in the economic development and exploitation of the natural resources of the State. In pursuance of this objective the College will examine and identify minerals, rocks and ores sent for determination. It will also advise as to the possible economic value represented by such specimens.

At times inquiries may be made of the College which should properly be handled by some other State or Federal agency. The College will direct such inquiries into the proper channels.

The College does no commercial assaying, but it will be glad to refer the inquirer to a commercial assayer who can do the work requested. The College assumes no responsibility for the safe arrival of packages sent to it.



EL PASO, TEXAS