

BULLETIN

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# Texas Western College

OF THE UNIVERSITY OF TEXAS

El Paso, Texas

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1956-1957

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# *Texas Western College*

OF THE UNIVERSITY OF TEXAS

*Formerly the COLLEGE OF MINES AND METALLURGY*

*El Paso, Texas*

MEMBER

SOUTHERN ASSOCIATION OF COLLEGES

TEXAS ASSOCIATION OF COLLEGES

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ARTS *and* SCIENCES

MINES *and* ENGINEERING

GRADUATE STUDY

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*Published bimonthly by TEXAS WESTERN COLLEGE at El Paso*

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Volume XLI

OCTOBER, 1956

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

1956

## CALENDAR

1956

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

**September**

14—*Friday*. Condition, advanced standing, and postponed examinations. Approved petition forms must be in the Office of the Registrar four days in advance.

15—*Saturday*. General faculty meeting, 10:00 a.m., Magoffin Auditorium.

17—*Monday*. Freshman convocation and guidance tests, 8:30 a.m., Magoffin Auditorium.

This opens a program of freshman orientation and advisement.\*

17, 18, 19—*Monday, Tuesday, Wednesday*. Registration for day students.

20—*Thursday*. Classes begin.

20-21—*Thursday and Friday*, 7-9:30 p.m. Registration for night classes.

22—*Saturday*, 8:30-11:30. Special registration for teachers.

**October**

1—*Monday*. Last day of registration for Fall Semester.

**November**

9—*Friday*. Mid-semester reports. Last day courses can be dropped without grade of WF unless drop is initiated by the student's dean.

29, 30, December 1—*Thursday through Saturday*. Thanksgiving holidays.

**December**

21—*Friday*. Christmas recess begins at close of last class on Friday.

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\*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.

**January**

3—*Thursday*. Classes resume.

21-26—*Monday through Saturday*. Final examinations for first semester.

29—*Tuesday*. Freshman convocation and guidance tests,  
8:30 a.m., Magoffin Auditorium.

This opens a program of freshman orientation and advisement.\*

29, 30, 31—*Tuesday, Wednesday, Thursday*. Registration for day students.

**February**

1—*Friday*. Classes begin.

2—*Saturday*, 8:30-11:30. Special registration for teachers.

4-5—*Monday and Tuesday*, 7-9:30 p.m. Registration for night classes.

5—*Tuesday*. Condition, postponed, and advanced standing examinations.  
Approved petition forms must be in the Office of the Registrar four days in advance.

11—*Monday*. Last day of registration for Spring Semester.

**March** 23—*Saturday*. Mid-semester reports. Last day courses can be  
dropped without grade of WF unless drop is initiated by  
the student's dean.

**April** 19-22—*Easter Holidays*.

**May** 11—*Saturday*. Major examinations.

23-30—*Thursday through Thursday*. Final examinations.

**June** 2—*Sunday*. Commencement.

Summer Session 1957 First Term: June 4—July 12 Second Term: July 15—Aug. 25

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

*Board of Regents of The University of Texas*

TOM SEALY, *Chairman*  
CLAUDE W. VOYLES, *Vice-Chairman*  
BETTY ANNE THEDFORD, *Secretary*

MEMBERS

*Terms Expire, January, 1957*

L. S. OATES, *Center*  
TOM SEALY, *Midland*  
CLAUDE W. VOYLES, *Austin*

*Terms Expire, January, 1959*

LEROY JEFFERS, *Houston*  
LEE LOCKWOOD, *Waco*  
J. R. SORRELL, *Corpus Christi*

*Terms Expire, January, 1961*

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

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*President of The University of Texas*  
LOGAN WILSON, PH. D. LL. D.

# TEXAS WESTERN COLLEGE

## Officers of Administration

DYSART EDGAR HOLCOMB

*President, 1955*

B.S., Texas Technological College; M.S., Ph.D., University of Michigan  
Registered Professional Engineer

BETTY WALLACE COSBY, *Dean of Women, 1955*

B.S., Alabama Polytechnic Institute; M.S., Syracuse University

ROY CLARENCE FISK, *Assistant Business Manager, 1949*

B.B.A., Texas Western College

ALONZO NEIL FOSTER, *Director of Extension and Placement, 1951*

B.S., Southwest Texas State Teachers College; M.A., University of Missouri;  
Ph.D., Colorado State College of Education

BURT FRANKLIN JENNESS, *Director of Health Service, 1917*

M.D., Dartmouth College; Lt. Comdr., U. S. Navy, Rtd.

BAXTER POLK, *Librarian, 1936*

B.A., Hardin-Simmons University; B.S. (Library Science), University of  
Oklahoma; M.S. in L.S., Columbia University

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

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

ALVIN ARLTON SMITH, *Business Manager, 1949*

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

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

MATTHEW HENRY THOMLINSON, *Curator of Museum, 1946*

B.S., United States Military Academy; Colonel, U. S. Army, Rtd.

JOHN LEROY WALLER, *Dean of Graduate Division, 1931*

B.S., University of Okla.; M.A., University of Colorado; Ph.D., University of Texas

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

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

JUDSON FINLON WILLIAMS, *Dean of Student Life, 1940*

B.A., Hardin Simmons University; M.A., University of Missouri;  
Ed.D., University of Texas

## FACULTY

HAROLD EDWIN ALEXANDER, *Assistant Professor of Chemistry, 1955*

B.S., Texas Western College; M.A., Ph.D., University of Texas

JOHN ALFREY, *Professor of Military Science and Tactics, 1954*

Colonel, Artillery, U. S. Army

FREDERICK WILLIAM BACHMANN, *Professor of Modern Languages, 1933*

B.A., M.A., Stanford University; Ph.D., University of Chicago

MRS. MYRTLE EVELYN BALL, *Assistant Professor of Speech, 1929*

B.A., New Mexico Normal University; M.A., University of Southern California

WILLIAM HENRY BALL, *Assistant Professor of Chemistry, 1930*

B.S., University of Chicago; M.S., Iowa State College

JOHN RICHARD BALLENTINE, *Associate Professor of Mechanical Engineering, 1948*

B.S., M.S. (Mechanical Engineering), Agricultural & Mechanical College of Texas

THOMAS CROGARD BARNES, *Professor of Physics, 1938*

B.A., Hardin-Simmons University; M.S., Brown University

STEPHEN JOHN BARRES, *Instructor in Economics, 1955*

B.A., Texas Western College; M.S., Purdue University

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Date indicates year of original appointment.

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# FACULTY

- RALPH PORTER BENITZ, *Associate Professor of Mathematics*, 1952  
B.S., Pennsylvania State Teachers College; M.Ed., Pennsylvania State College;  
Ph.D., Peabody College
- JACOB JAMES BERG, *Assistant Professor of Military Science and Tactics*, 1954  
Captain, Artillery, U. S. Army
- ANTON HELMER BEREMAN, *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
- CARL HENRY BILLINGS, *Assistant Professor of Civil Engineering*, 1954  
B.S., M.S., Michigan State College
- LELAH BLACK, *Assistant Professor of Business Administration*, 1946  
B.Ed., Western Illinois State Teachers College; M.A., University of Iowa
- LANIS LOY BOSWORTH, *Assistant Professor of Psychology*, 1950  
B.B.A., M.A., University of Texas
- HALDEEN BRADY, *Professor of English*, 1946  
B.A., East Texas State Teachers College; M.A., University of Texas;  
Ph.D., New York University
- WILLIAM BREWSTER, JR., *Associate Professor of Business Administration*, 1953  
B.A., Harvard University; LL.B., M.A., Stetson University
- LONNIE K. BREWTON, *Instructor in Military Science and Tactics*, 1955  
Sergeant First Class, U. S. Army
- RALPH CLEMENS BRIGGS, *Associate Professor of Music*, 1950  
B.Mus., M.M., Cincinnati Conservatory of Music
- JOHN MORGAN 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
- ROBERT NORTHCUTT BURLINGAME, *Assistant Professor of English*, 1954  
B.A., M.A., University of New Mexico; Ph.D., Brown University
- RICHARD WEBSTER BURNS, *Associate Professor of Education*, 1952  
B.A., Iowa State Teachers College; M.S., Ph.D., State University of Iowa
- JOHN LEE CARRICO, *Assistant 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
- MRS. CATHERINE HOUSEAL CLAAR, *Instructor in Biological Sciences*, 1954  
B.A., Randolph-Macon Woman's College; M.A., Columbia University
- LOUIS ROBERT COBBS, *Instructor in Bible*, 1951  
A.B., Howard College; B.D., Th.M., Southwestern Theological Seminary
- RALPH MONROE COLEMAN, *Associate 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
- LOZIER CONDON, *Associate Professor of Education*, 1949  
B.A., University of Alabama; M.A., University of Southern California;  
Ed.D., University of Texas
- DANIEL ALLMAN CONNOR, *Instructor in Government*, 1948  
B.A., George Washington University; M.A., Texas Western College
- ELLEN WINIFRED COOGLER, *Assistant Professor of Art*, 1944  
B.S., Sul Ross State College; M.A., Columbia University
- MRS. KATHLEEN CRAIGO, *Assistant Professor of Physical Education*, 1945  
B.A., M.A., North Texas State College



# FACULTY

- DALE LOUIS CRAMER, *Assistant Professor of Economics*, 1955  
B.S., M.A., Bradley University
- CECIL CLEMENT CRAWFORD, *Professor of Philosophy*, 1953  
B.A., M.A., Ph.D., Washington University
- JAMES FRANCIS DAY, *Assistant 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
- JAMES REGINALD DE HAAN, *Associate Professor of Chemistry*, 1949  
B.S., College of William and Mary; Ph.D., Cornell University
- MRS. LURLINE HUGHES DOUGLAS, *Instructor in English*, 1954  
B.A., M.A., University of Texas
- MRS. MARY ELEANOR DUKE, *Assistant Professor of Biological Sciences*, 1947  
B.A., Texas Western College; M.A., University of Texas
- OLAV ELLING EIDBO, *Assistant Professor of Music*, 1950  
B.A., Concordia College; M.A., Texas Western College
- FRANCIS ALAN EHMANN,\* *Instructor in English*, 1950  
B.A., Texas Western College; M.A., University of Texas
- CHARLES GERHARD EVENSEN, *Assistant Professor of Geology*, 1955  
B.Geol.Eng., University of Minnesota; M.S., University of Arizona
- FLOYD EMMETT FARQUEAR, *Professor of Education*, 1942  
B.S., Miami University; M.A., University of Chicago; Ed.D., University of Texas
- GEORGE UNCER FORD, *Assistant Professor of Military Science*, 1953  
Lieutenant Colonel, Artillery, U. S. Army
- 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
- NELLE TREW FRANCIS,\* *Instructor in English*, 1946  
B.A., Hardin-Simmons University; M.A., University of Texas
- DONALD KEITH FREELAND, *Assistant Professor of Economics and Business Administration*, 1949. B.S., Austin College; M.B.A., North Texas State College
- WAYNE EDISON FULLER, *Instructor in History*, 1955  
B.A., University of Colorado; M.A., University of Denver;  
Ph.D., University of California
- MRS. GRETCHEN REINEMUND GABRIEL, *Assistant Professor of Spanish*, 1943  
B.A., M.A., Stanford University
- CHARLES HERMAN GLADMAN, *Assistant 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
- JOHN FRASER GRAHAM, *Professor Emeritus of Mining and Metallurgy*, 1925  
B.S., E.M., Michigan College of Mining and Technology
- NORMAN GREGOR, *Instructor in English*, 1955  
B.A., M.A., University of Minnesota
- GLADYS GREGORY, *Professor of Government*, 1928  
B.S., Southwestern University; M.A., Ph.D., University of Texas
- JESSE APLEY HANCOCK, *Professor of Chemistry*, 1941  
B.S., M.S., Gonzaga University; Ph.D., University of Colorado
- WILLIAM MARION HARDY, *Instructor in Speech and Drama*, 1954  
B.S., Duke University; M.A., University of North Carolina
- 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*, 1948  
B.A., Texas Technological College; M.B.A., Ph.D., University of Texas

\*Leave of absence, 1955-56.

# FACULTY

- PAUL CLIFFORD HASSLER, JR., *Assistant Professor of Civil Engineering*, 1948  
B.S., Grove City College; M.S., University of New Mexico
- RICHARD EUGENE HENDERSON, *Instructor in Music*, 1952  
B.A., College of Puget Sound; M.M., Florida State University
- CARL HERTZOG, *Special Lecturer and Director of Press*, 1948
- WILLIAM LAMAR HEUSER, *Instructor in Economics and Business Administration*, 1955  
B.S., Denver University; M.A., University of Colorado
- VIRGIL HICKS, *Assistant Professor of Radio*, 1945  
B.A., Texas Western College; M.A., University of Southern California
- WILLIAM LYLE HODGE, *Assistant Professor of Military Science and Tactics*, 1954  
B.A., Texas Wesleyan College; Major, Artillery, U. S. Army
- GUY ERNEST INGERSOLL, *Associate Professor of Mining and Metallurgy*, 1949  
E.M., University of Minnesota; Registered Engineer
- MRS. VERBA WOOD ITURRALDE, *Instructor in Mathematics*, 1955  
B.S., Roanoke College; M.A., Northwestern University
- JOSEPH HOPKINS JAMES, *Assistant Professor of English*, 1949  
B.A., M.A., University of Alabama
- MRS. CLARICE MATTHEWS JONES, *Assistant Professor of Speech*, 1946  
B.S., West Texas State College; M.A., Texas State College for Women
- CLYDE EASTMAN KELSEY, JR., *Assistant Professor of Psychology*, 1947  
B.A., Texas Western College; M.A., University of Tulsa
- WILLIAM ABBOTT KIRBY, *Instructor in Mathematics*, 1953  
B.A., M.A., University of Wyoming
- EDWIN JOHN KNAPP, *Professor of Mathematics and Physics*, 1931  
Ph.B., Ph.D., University of Wisconsin
- WILLIAM WALTER LAKE, *Professor of Chemistry*, 1927  
B.S., M.S., Ohio State University; Ph.D., University of Chicago
- JOSEPH LEE LEACH, *Professor of English*, 1947  
B.A., Southern Methodist University; Ph.D., Yale University
- ROBERT MILTON LEECH, *Assistant Professor of Speech and Drama*, 1949  
B.F.A., M.F.A., University of Texas
- SALVADOR FRANCIS MAGGIO, *Instructor in Military Science and Tactics*, 1953  
Master Sergeant, U. S. Army
- ROBERT JOSEPH MASSEY, *Instructor in Art*, 1953  
B.A., Oklahoma Agricultural & Mechanical College; M.F.A., Syracuse University
- GEORGE COURTNEY MCCARTY, *Asso. Professor of Health and Physical Education*, 1953  
B.S., M.A., New Mexico College of Agriculture and Mechanical Arts
- WILLIAM HOWARD McDILL, *Assistant Professor of Civil Engineering*, 1945  
B.S. in C.E., Missouri School of Mines and Metallurgy
- OSCAR HARRY MCMAHAN, *Associate Professor of Physics*, 1943  
B.S., Oklahoma Agricultural and Mechanical College; M.S., University of Arizona
- JOHN HAMILTON MCNEELY, *Assistant Professor of History*, 1946  
B.A., American University; M.A., George Washington University
- JACK HOUSTON MEADOWS, *Assistant Professor of Education*, 1954  
B.S., M.A., Sam Houston State College; Ed.D., Texas Technological College
- CONRAD FREDERICK MEYER, *Assistant Professor of Biological Sciences*, 1954  
B.S., M.S., Syracuse University; Ph.D., Cornell University
- VLADIK ADOLPH MICULKA, *Instructor in Mathematics*, 1955  
B.S., Southwest Texas State Teachers College; M.S., Texas Technological College
- JOHN JUDY MIDDACH, *Assistant Professor of Journalism*, 1948  
B.J., University of Missouri; M.A., Texas Western College
- ROBERT MOATS MILLER, *Assistant Professor of History*, 1951  
B.A., Grinnell College; M.A., Ph.D., Northwestern University
- STERLING H. MORGAN, *Instructor in Military Science and Tactics*, 1955  
Master Sergeant, U. S. Army
- ROSS MOORE, *Instructor in Physical Education*, 1940  
B.A., Texas Western College

# FACULTY

- LEON DENNY MOSES, *Associate Professor of English*, 1927  
B.A., M.A., Columbia University
- LLOYD ALVENO NELSON, *Professor of Geology*, 1920  
E.M., Texas College of Mines; M.S., Ph.D., University of Colorado;  
Registered Engineer
- HUGH P. NICHOLSON, *Associate Professor of Mining and Metallurgy*, 1955  
B.S., E.M., Iowa State College; M.S., University of Illinois
- JOHN MELVIN NORRIS, JR., *Instructor in English*, 1954  
B.A., Louisiana Northwestern College; M.A., Kansas University
- EINAR ARTHUR OLSEN, *Associate Professor of Health and Physical Education*, 1955  
B.S., Ed.M., University of Maine; Ed.D., Boston University
- MRS. CATHERINE BURNSIDE O'MALLEY, *Assistant Professor of Education*, 1955  
B.A., Texas Western College; M.A., University of Southern California
- FLOYD BRELAND O'NEAL, *Instructor in Chemistry*, 1954  
B.S., The Citadel; M.S., Tulane University
- RAYMOND EDGAR PAST, *Assistant Professor of English*, 1952  
A.B., University of Pennsylvania; M.A., Ph.D., University of Texas
- MRS. BULAH LILES PATTERSON, *Instructor in Mathematics*, 1927  
B.A., University of Texas; M.A., University of Chicago
- MILLARD J. PENNINGTON, *Instructor in Military Science and Tactics*, 1954  
Sergeant First Class, U. S. Army
- SOLEDAD PEREZ,<sup>o</sup> *Instructor in English*, 1949  
B.A., Texas Western College; M.A., University of Texas
- WILLIAM BARTON PHILPOTT, *Instructor in Journalism*;  
*Director of News and Information*, 1954 B.B.A., Hardin-Simmons University
- PEARL OLIVE PONSFORD, *Assistant Professor of English*, 1936  
B.A., Wellesley College; M.A., Ph.D., University of Southern California
- 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
- HOWARD EDMUND QUINN, *Professor of Geology*, 1924  
E.M., M.S., University of Minnesota; Ph.D., Harvard University
- MRS. MARY KELLY QUINN, *Assistant Professor of Sociology*, 1925  
B.A., Wellesley College; M.A., Boston University
- WILLIAM WOOLSEY RAYMOND, *Associate 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. 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
- 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
- WILLIAM MAURICE RUSSELL, *Instructor in Modern Languages*, 1955  
B.A., Birmingham-Southern College; M.A., University of North Carolina
- JOHN ALLEN RYAN, *Assistant Prof. of Economics and Business Administration*, 1955  
B.S., University of Southern California; M.B.A., University of Texas
- BEVIE TRUETT SANDERS, *Associate Professor of Business Administration*, 1955  
B.B.A., North Texas State College; M.S., Texas Agricultural & Mechanical College
- ALLEN SAYLES, *Assistant Professor of Economics*, 1946  
A.B., University of Chicago
- SYLVAN SCHENDLER, *Instructor in English*, 1955  
M.A., University of Chicago
- <sup>o</sup>Leave of absence, 1955-56.

# FACULTY

- 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
- LE ROY GEORGE SEILS, *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, *Instructor in Mathematics*, 1952  
B.S., M.S., Oklahoma Agricultural and Mechanical College
- HOWARD JAY SHERMAN, *Assistant Professor of Philosophy*, 1955  
B.S., Northwestern University; M.A., University of New Mexico
- JAMES RICHARD SMART, *Instructor in Mathematics*, 1955  
B.A., Hendrix College; M.A., George Peabody College
- 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
- WILLIAM SAMUEL STRAIN,\* *Assistant 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
- 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
- MRS. ANN TERRELL THOMPSON, *Instructor in Mathematics*, 1954  
B.A., Hendrix College; M.A., George Peabody College
- WILLIAM HARRY THONSON, *Instructor in Art*, 1953  
B.S., Institute of Design of Illinois Institute of Technology
- ENGEBRET A. THORMODSGAARD, *Professor of Music*, 1949  
B.A., Concordia College; M.A., Ed.D., Columbia University
- MRS. EDYTHE LUCILLE THREADGILL, *Instructor in Mathematics*, 1946  
B.A., Texas Western College
- WILBERT HELD TIMMONS, *Associate Professor of History*, 1949  
B.A., Park College; M.A., University of Chicago; Ph.D., University of Texas
- HOWARD CLAY VANZANT, *Instructor in 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 CAROTHERS 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
- MRS. ROBERTA RUTH WALKER, *Instructor in Business Administration*, 1948  
B.A., M.A., Texas Western College
- JOHN LEROY WALLER, *Professor of History*, 1931  
B.S., University of Okla.; M.A., University of Colorado; Ph.D., University of Texas
- DALE BARNARD WATERS, *Associate Professor of Physical Education*, 1950  
B.A., University of Florida; M.A., Texas Western College
- WILLIAM FLETCHER WEBB, *Assistant Professor of Modern Languages*, 1945  
B.A., M.A., University of Texas
- JUDSON FINLON WILLIAMS, *Professor of Journalism and Radio*, 1940  
B.A., Hardin-Simmons Univ.; M.A., Uni. of Missouri; Ed.D., University of Texas
- VERA WISE, *Professor of Art*, 1939  
B.A., Willamette University; Chicago Academy of Fine Arts; Kansas City Art. Inst.

\*Leave of absence, 1955-56.

**Part-Time Instructors**

- ETHEL JEAN BERRY, *Department of Economics and Business Administration*  
B.B.A., M.Ed., Sul Ross State College
- BRUCE GRENFELL BIXLER, *Department of Economics and Business Administration*  
B.A., University of Chicago; B.B.A., University of Texas
- CHARLES EDWIN BLOUNT, *Department of Mathematics and Physics*  
B.S., Texas Western College
- JOCELYN JEAN BOWDEN, *Department of History*  
B.A., M.A., Texas Western College
- FRED MEZA BREWER, *Department of Modern Languages*  
B.A., University of New Mexico
- HANS ERIC BROCKMOLLER, *Dept. of Economics and Business Administration, 1947*  
B.A., Texas Western College; LL.B., University of Texas
- JOSEPH LEONARD BROWNLOW, JR., *Dept. of Economics and Business Administration*  
B.B.A., Texas Western College; M.A., Stanford University
- MRS. FLORENCE B. BUCKNER, *Dept. of Economics and Business Administration, 1947*  
B.A., Sul Ross State College; Certified Public Accountant
- REVA JUNE CASH, *Department of Physical Education*  
B.A., Texas Western College
- VIRGIL ROBERTS COWART, *Department of Economics and Business Administration*  
B.A., Columbia University
- ABRAHAM CHAVEZ, JR., *Department of Music*
- HOMER LEE DALE, JR., *Department of Economics and Business Administration*  
B.B.A., Texas Western College
- RAYMOND ALLEN DIBRELL, JR., *Department of Mathematics and Physics*  
B.A., Southwest Texas State College; M.A., University of Texas
- GEORGE BERNARD DICKINSON, *Dept. of Economics and Business Administration*  
B.B.A., Texas Western College
- FRANCIS LYLE FUGATE, *Department of English, 1949*  
B.A., B.J., University of Missouri
- CLARENCE GORDON HACKETT, *Department of Philosophy and Psychology*  
B.E., Milwaukee State Teachers College; M.A., State University of Iowa;  
Ph.D., Purdue University
- MRS. ROBERTA MAY HOFFMAN, *Department of English and Speech*  
B.A., Hunter College
- MRS. LORAIN EXTER MERRILL, *Department of Music*  
B.M., M.M., American Conservatory of Music
- SAMUEL DALE MYRES, JR., *Department of History and Government*  
Ph.D., University of Texas; LL.D., Trinity University
- EUGENE P. RISTER, *Department of Business Administration*  
B.A., Texas Western College; Certified Public Accountant
- JANET DIANE SMITH, *Department of Physical Education*  
B.A., Texas Western College
- JACK KENT SISTLER, *Department of Mathematics and Physics*  
B.S., M.S., Southern Illinois University
- PAUL H. TETZNER, *Department of Art*  
B.S., Institute of Design of Illinois Institute of Technology
- GEORGE FRANK WALKER, *Department of Business Administration*  
B.A., University of California at Los Angeles
- LOWDON WINGO, JR., *Department of Business Administration*  
B.A., M.A., University of Chicago

## STAFF

### Shelenger Foundation

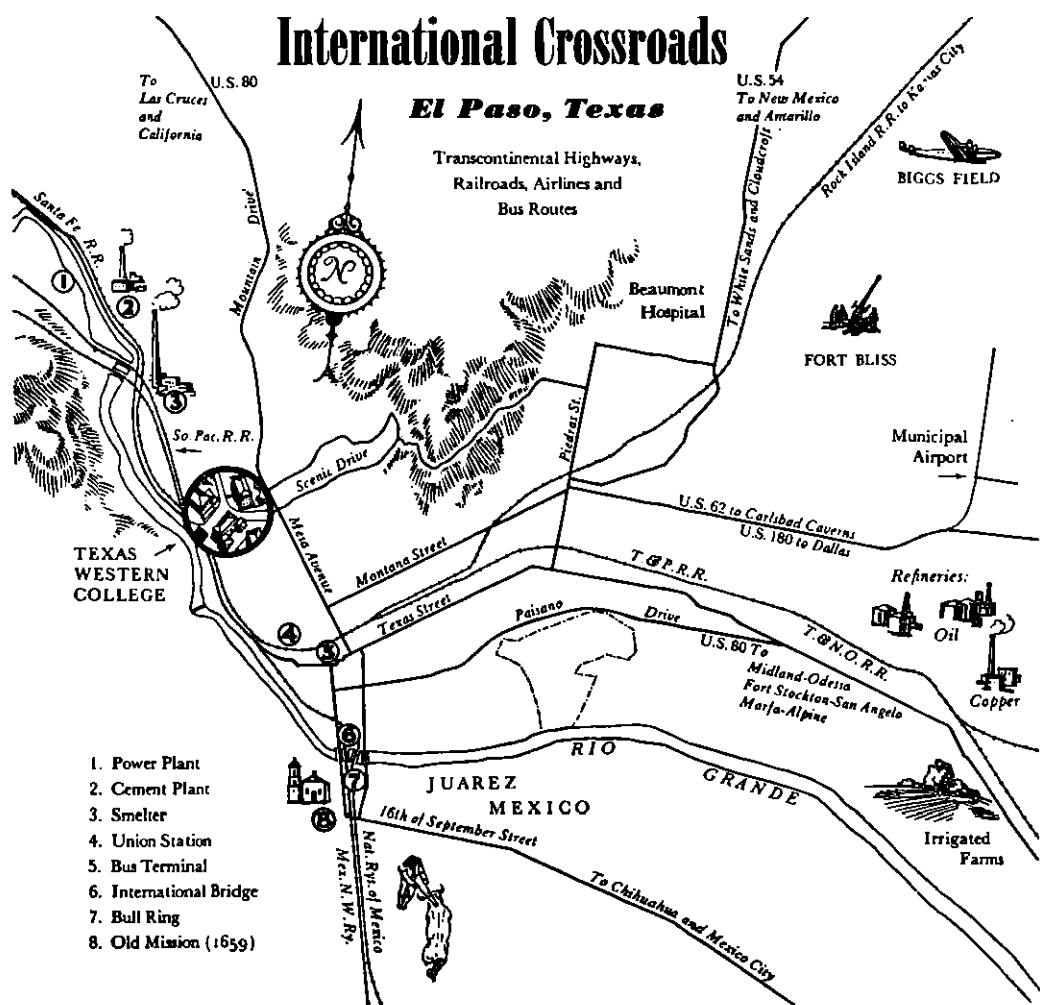
- J. A. ABILDSKOV, *Research Consultant in Electricity*  
B.A., M.D., University of Utah; Instructor in Medicine, Tulane University  
(on leave); Captain, U. S. Army Medical Corps, William Beaumont Hospital
- DAVID BROWN, *Research Consultant in Electricity*  
B.S., Iowa State College; On leave from Philco Corporation;  
U. S. Army Medical Corps, William Beaumont Hospital
- HERBERT N. F. CALHOUN, *Research Consultant in Electricity*  
B.S. in E.E., Southern Methodist University; Field Engineer, Western Electric Co.
- WILLIAM EDGAR INGERSON, *Research Consultant in Electricity*  
B.A., Hardin-Simmons University; E.E., Yale University;  
Technical Staff, Bell Telephone Laboratories
- NORMAN K. POOL, *Research Consultant in Electricity*  
B.A., University of Illinois; On leave from Bell Laboratories;  
U. S. Army, William Beaumont Hospital

### Administrative Assistants

- LU VENIA ARNOLD, *Assistant Registrar*, 1940. B.A., Texas Western College
- MRS. MATTIE CHAMBERS, *Secretary to Dean of Mines and Engineering*, 1932
- FRANCIS CLAYTON, *Assistant Librarian*, 1943  
B.A., Texas Western College; M.L.S., University of Texas
- MRS. ELOISE S. COOK, R.N., *Resident Nurse, Health Service*, 1949  
B.A., Texas Western College
- MRS. GLADYS CROWLEY, *Vocational Nurse, Health Service*, 1950
- JOE W. DALEY, *Superintendent of Buildings and Grounds*, 1954
- MRS. BARBARA FUGATE DEAN, *Secretary to Dean of Arts and Sciences*, 1951
- MRS. JOE ANN DUGGER, *Secretary to Dean of Graduate Division*, 1955
- MRS. YVONNE GREEAR, *Secretary and Assistant to Librarian*, 1950  
B.F.A., University of Texas
- MRS. KAREN HEALY, *Secretary to Dean of Women*, 1955
- JOE GUADALUPE HERRERA, *Department of Military Science and Tactics*, 1953
- MRS. LOLA HERRERA, *Secretary, Department of Military Science and Tactics*, 1953
- JAMES KENNETH MARSHALL, *Assistant to Business Manager*, 1954
- THEODORE R. MEIER, *Department of Military Science and Tactics*, 1953  
Master Sergeant, U. S. Army
- MRS. MARY LOU PETRELLO, *Supervisor, Post Office*, 1952. B.A., University of Texas
- HOLLIS REYNOLDS, *Manager, Student Union*. B.A., Texas Western College
- MRS. BETTY H. SANDERS, *Secretary to Dean of Student Life*, 1954
- ALLEN SAYLES, *Auditor*, 1946. A.B., University of Chicago
- MRS. NELL SKIPWITH, *Assistant in Museum*, 1947
- MRS. MILDRED SKOV, *Cataloger, Library*, 1955. B.A., Texas Western College
- MRS. FRANCES SMITH STEVENS, *Secretary and Administrative Assistant,*  
*Office of the President*, 1931
- MRS. NELL K. THOMPSON, *Loan Librarian*, 1938
- MRS. MILDRED D. TOROK, *Secretary to the Faculty*, 1954
- MRS. CARLENE C. WALTON, *Secretary, Placement Bureau*, 1955
- LUTHER HALL WILSON, *Department of Military Science and Tactics*, 1953  
Master Sergeant, U. S. Army

### Dormitory Staff

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



**T**EXAS WESTERN COLLEGE is located in El Paso at the intersection of several of the oldest highways in the nation—where white men walked almost a full century before the landing of the Pilgrims at Plymouth Rock.

Here on this historic ground at ancient *El Paso del Norte* (The Pass of the North) students find themselves virtually in the middle of many of their studies. El Paso is the largest city on the Mexican border, a bilingual city of Spanish and English, with colorful Juarez just across the Rio Grande in Old Mexico. Spanish phrases come as naturally as how-do-you-do.

Golfers find arrowheads on the Country Club course, and on a steak fry in the nearby desert one not infrequently discovers fragments of Indian pottery within light of the campfire. A few miles away at Old Mesilla one

can stand upon the spot where the Gadsden Treaty was consummated, and dine at a former stage stop on the Butterfield Trail, once patronized by Billy the Kid and many others whose names make up western history.

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. Local supply houses do a brisk business in prospecting equipment. 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 a rated capacity of 20,000,000 pounds of copper. 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.

El Paso's unique location, at the far western corner of Texas, provides a picturesque mountainous setting, with the campus itself nestled in craggy Crazy Cat range. The city forms a great crescent around the base of Mount Franklin, the southern tip of the Rockies. Alongside is the fertile Rio Grande Valley, with its rich farms and green trees. Beyond the green valleys in every direction stretch millions of acres of cattle range, studded with exotic desert growth. Within a short drive are a variety of lakes and rivers, and high mountains with dense pine forests.

The Texas Western College stadium is the home of the annual New Years' Day football classic, the Sun Bowl Game. This event earned its name because of El Paso's location in America's 80% Sunshine Belt. The almost perpetual sunshine, lack of humidity and medium latitude combine with a moderately high altitude (3,800 feet above sea level) to give El Paso a delightful and healthful climate all the year round and make the city a tourist Mecca.

Being the sixth largest city in Texas, El Paso 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.

Outdoor sports are enjoyable throughout the year. Horseback riding, golf, tennis, fishing, hunting, exploring and sightseeing are the most popular. Rodeos, horseshows and racing are frequent events, and then dress takes on an even stronger than usual western flavor. In the winter season skiing and other snow sports are available a few hours away at Cloudcroft. National Parks and National Monuments and Indian country can be seen any time. Old Mexico, friendly and always interesting, is just





PHYSICS BUILDING

SCIENCE BUILDING

STUDENT UNION

across the International Bridge, offering the thrilling spectacle of bull-fighting. Ciudad Juarez, El Paso's sister city on the border, is colorful, modern and progressive, but it is a foreign city in every sense of the word.

Local and adjacent industries include copper and potash mining, smelting and refining, oil and natural gas production and refining, 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.

### ***Accessibility***

LOCATED AT AN INTERNATIONAL CROSSROADS, El Paso and Texas Western College are easily accessible by railroad, bus, airline, or motor car. The city is served by six railroads, four airlines, and five bus lines. Numerous highways lead into the city from all directions, including the recently-opened Pan American highway between Juarez, Mexico, and El Ocotil, Guatemala.

The Santa Fe, Southern Pacific, Texas & New Orleans, and the Texas & Pacific, as well as the National Railways of Mexico and the Mexico Northwestern Railroad converge on El Paso's Union Station. American Airlines, Continental Air Lines and Trans-Texas Airways make regularly-scheduled stops at the Municipal Airport, with Lamsa Airlines, of Mexico, landing at Juarez. Motorists reach El Paso on U. S. Highways 80, 85, 54, 62 and 180.

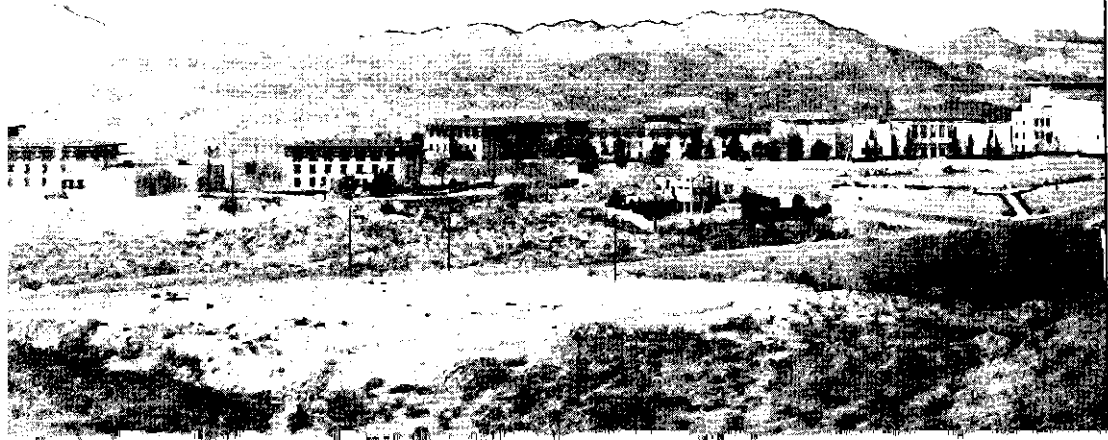
## ***History***

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.

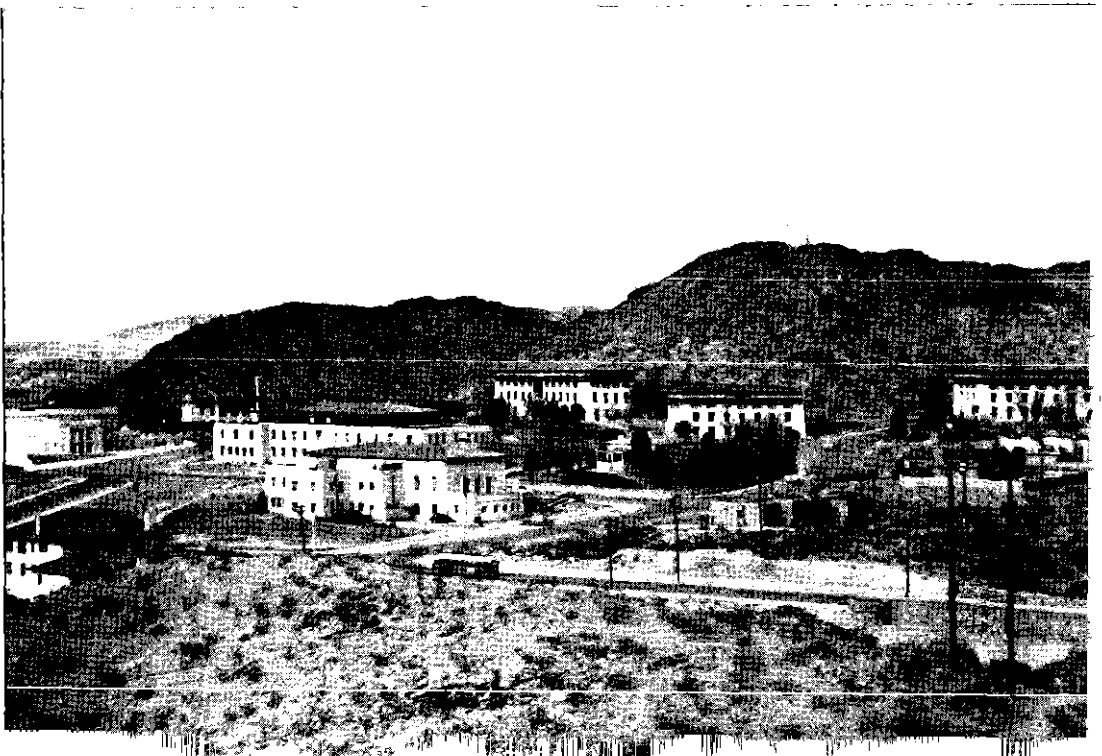
During early years the chief administrative official of the College was a dean who took his authority through the President of The University of Texas, at Austin. In 1931 the Board of Regents provided a presidency and

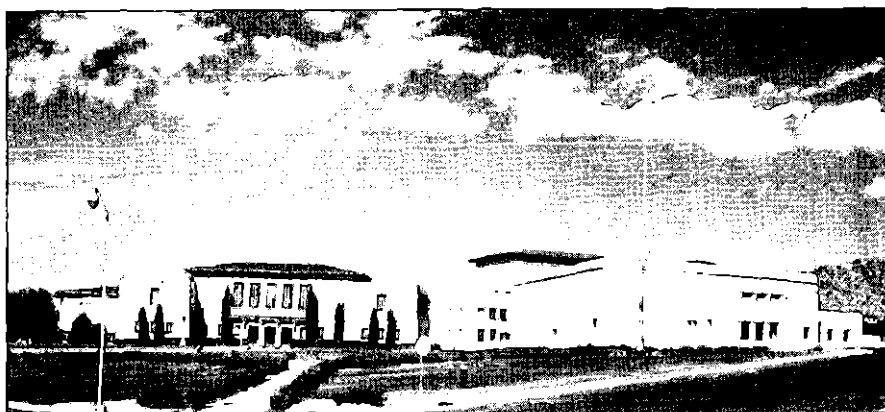


vested direct administrative authority in that office. From 1931 to 1950 the College operated directly under the Board of Regents. During the period September, 1950, to September, 1954, The University of Texas operated under a chancellorship system. In September, 1954, the office of Chancellor was abolished 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 almost 4,000 students, offers the following degrees: Bachelor of Science in Mining Engineering with options in Mining, Mining-Geology, and Metallurgy; Bachelor of Science in Engineering with Civil and Electrical options; Bachelor of Arts; Bachelor of Science in the Sciences; Bachelor of Business Administration; Bachelor of Music; and Master of Arts. 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

MACOFFIN AUDITORIUM

### ***The Library***

THE TEXAS WESTERN COLLEGE LIBRARY, an open-stack collection of over 80,000 volumes, is housed on the second floor and in the west annex of the Library-Administration Building. Originally planned to serve the professional mining engineer, the library has been expanded to include materials relating to the liberal arts on both undergraduate and graduate levels.

Especially notable are the geological, mining, language, literary and historical collections. Recent 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 for study.

The library regularly receives over 500 periodicals—technical, general, literary and popular—and about 10 newspapers. A microfilm file of the *El Paso Times* from May 1, 1884, to January 1, 1949, presented to the Library by Dorrance D. Roderick, owner of the newspaper, is available for research in local history. The Library also has a microfilm file of the *New York Times* from September, 1951, and Despatches from U. S. Consuls in Ciudad Juarez, April 10, 1850 to August 6, 1906. There is a very fine collection of phonograph records available for use in the building with turntables as well as outside circulation. The collection includes music and literary selections.

Recently departmental libraries have been set up to include three separate collections; namely, science, mining and museum. 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.

### ***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, and a stadium. There are eight sorority and fraternity lodges adjacent to the campus, and the College has 72 housing units available for married veterans who are students.

The recently-completed Magoffin Auditorium contains facilities for the study of television production. 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



### ***The Museum***

THE EL PASO CENTENNIAL MUSEUM was allocated by Commission of Control for the Texas Centennial Celebration. The museum building was located on the campus of Texas Western College by authority of the El Paso County Advisory Committee and was erected in 1936.

The building is of native stone and conforms with the Bhutanese architecture of other College buildings. It is readily accessible to both students and the public. The College is endeavoring to develop it as a great museum of the Southwest, and it also serves as an auxiliary instructional service.

Permanent collections include an excellent display of minerals and rocks, with special emphasis on Southwestern varieties. Located with the minerals is a noteworthy group of meteors. The archeological collections have likewise been assembled to show Southwestern cultures; the El Paso Polychrome and Chihuahua pottery exhibits are outstanding. Vertebrate and invertebrate paleontological materials present a good display of prehistoric life, with particular application to nearby localities.

Loan collections have been placed in the museum by organizations and individuals. Among these are birds, bills, and coins, widely varied cultural displays, hunting trophies, minerals, pottery, and weapons. The general public and students alike are welcomed at the museum.

### ***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.

## ***The Schellenger Foundation in Electricity***

THE RESEARCH LABORATORIES of the Schellenger Foundation in Electricity are located at Texas Western College in the new wing of the Engineering Building. Through the will of Emma H. Schellenger, the Schellenger Foundation in Electricity was established in honor of her husband Newton C. Schellenger. A trust fund from this will provides for the construction costs and purchase of equipment for the laboratories.

The El Paso National Bank serves as Trustee of the Foundation. The following committee from the faculty of Texas Western College has been appointed as directors of the Foundation:

Thomas G. Barnes, *Chairman*

Floyd A. Decker      Oscar H. McMahan      William W. Raymond

President Dysart E. Holcomb, *Ex-officio*

Alvin A. Smith, *Ex-officio*

The following policy has been adopted by the Foundation:

### **I. Object:**

To promote, encourage, and do research and development directly or indirectly in the field of electricity at the Schellenger Laboratories in keeping with the intent and spirit of the Schellenger Will.

### **II. General Plans:**

- 1) To acquaint research foundations, government agencies, and industry with the plans, purposes and possibilities of this foundation.
- 2) To interest the above groups in the possibilities for research by the Schellenger Foundation.
- 3) To seek grants from other research foundations and from government agencies. Seek problems from industry to be solved on a contract or fee basis.

### **III. Self-Supporting:**

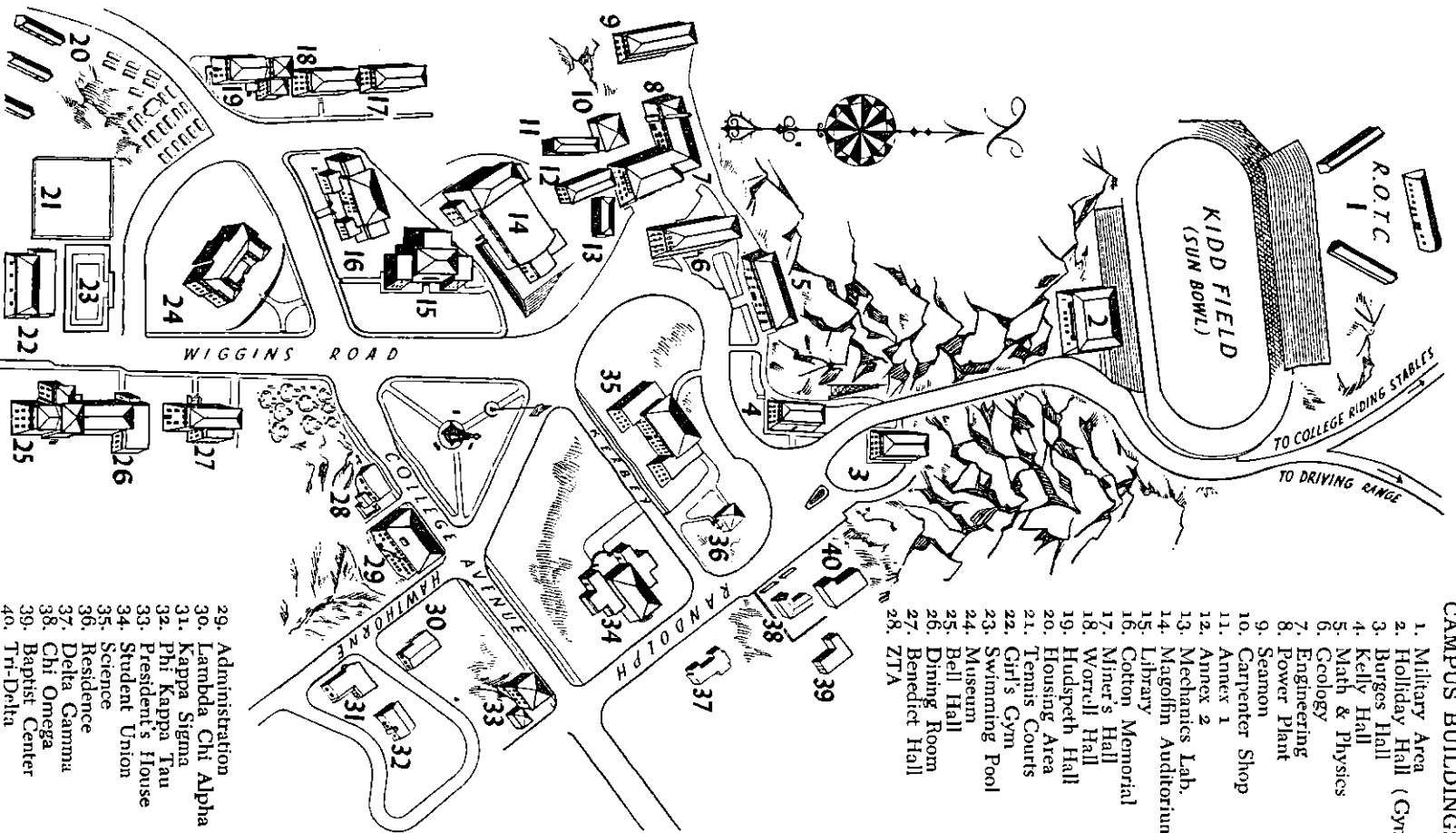
The foundation must be Self-Supporting, that is, no cost is to accrue to the College. Any contracts or grants must be sufficient to take care of costs not already provided for by the Foundation. All monies accrued above cost of research will be used for further research by the Schellenger Foundation.

### **IV. Research Staff of the Foundation:**

This staff is to be composed of regular faculty members of Texas Western College in so far as possible. Outside research men may be brought in if it is felt that the research can best be carried on by so doing.

### **V. Approval:**

- 1) All contracts, research projects, purchases, use of Foundation facilities must first be approved by the directors of the foundation.
- 2) It is understood that the conduct of this Foundation must meet with the regulations of the Board of Regents of The University of Texas.





## **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.

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. This should be attended to at once by sending a \$5.00 room deposit directly to the Business Manager, Texas Western College. For details about room rates see page 30.

### **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. It is necessary that you attend these events so that you will have the necessary information for a good beginning of your school work at the College. Further information about admission and registration procedures will be found on the following pages and on page 35.

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

Texas Western College is approved by the Veterans Administration for the training of both Korean and World War II 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.

### ***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.)

World War II veterans must furnish the proper certificate at registration to qualify for veterans' benefits.

The *Korean veteran* may, if necessary, apply for Certificate of Entitlement after entering college and still qualify for subsistence retroactive to the date application is received by the Veterans Administration.

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

### ***Information for Foreign Students***

Specialized counseling is provided for students from other countries through the office of the Dean of Student Life. 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.

# Admission and Registration

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.

## 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 as early as possible 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 that is required for the physical examination 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 United States.

## 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 in the Calendar. (See also page 38.)

**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 the freshman tests, as noted in the 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.

## Methods of Admission

There are three ways to qualify for admission to the College:

1. High school graduation
2. Individual approval
3. Transfer from other colleges

### I. High School Graduation

Upon graduation from an accredited high school, clear admission will be granted an applicant who presents fifteen acceptable units of credit, as outlined in the following patterns. Drill subjects (penmanship, physical education, military training, etc.) are not accepted. 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

#### Engineering Division

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

\*Effective with the beginning of the 1957 summer session, one unit of high school physics will become an entrance requirement for the Engineering Division.

## ADMISSIONS AND REGISTRATION

### Quality Provisions

**Conditional Admission**—A student may be permitted to enter with a condition in any subject of 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 and drawing 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 3110, and in Mechanical Drawing by Drawing 2100. 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.

### 2. Admission by Individual Approval

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. Application 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.

## **Expenses**

Average registration cost for **RESIDENT** liberal arts students runs from \$47.00 to \$54.00 per semester. Average registration cost for **RESIDENT** engineering students runs from \$47.00 to \$63.00 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**

#### **For Residents of Texas**

Each resident student is required to pay tuition at the following rate for each semester:

12 or more semester hours	\$25.00
11 semester hours . . . .	23.50
10 semester hours . . . .	21.50
9 semester hours . . . .	19.50
8 semester hours . . . .	17.50
7 semester hours . . . .	15.50
6 semester hours . . . .	13.50
5 semester hours . . . .	11.50
4 semester hours . . . .	9.50
3 semester hours . . . .	7.50

#### **Summer School, per term:**

More than 3 semester hours	\$17.50
3 semester hours . . . .	12.00
Less than 3 semester hours	10.00

#### **For Non-Residents of Texas**

Under the authority of House Bill No. 507, recently enacted into law by the Fiftieth Legislature, the Board of Regents of the College has fixed the following schedule of registration fees:

(A) For each semester of the Long Session, \$75 for a course load of twelve or more semester hours. A student who registers for less than twelve semester hours' work will be charged tuition at the rate of \$6.25 per semester hour.

(B) For each summer term (of six weeks), \$25 for a load of four or more semester hours. A student who registers for less than four semester hours per term will be charged tuition at the rate of \$6.25 per semester hour.

#### **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.

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.

## EXPENSES

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.

\*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.

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.

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 five (\$5.00) dollars for each such violation.

### REFUND of Tuition Fee

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 *No Refund*

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.

**Student Activity Fee** — There is a Student Activity Fee of \$15.00 each semester of the long session and \$3.00 each term of the summer session for students enrolled on the campus.

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

## EXPENSES

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. Loss and damage items charged against general property deposits shall be credited to the department or other unit in which the loss or damage occurred.

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.

**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.

## HOUSING

### 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.

Room reservations should be made in advance by sending a deposit of \$5.00 to

the Business Office of the College. This 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 first.

The charges for room and board per person will be \$255.00 per semester. The entire amount may be paid on registration, or the student may pay \$63.75 during registration and the balance in three payments of \$63.75 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 . . .	\$255.00
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**

There are many ways in which students can get financial assistance while attending Texas Western College: Employment by the College, placement in part-time jobs off the campus, scholarships and loan funds.

### **Employment by the College**

More than one hundred students are employed by the College in a wide assortment of jobs, ranging from semi-skilled labor to student readers and laboratory and teaching assistants. Payment is normally on an hourly basis, the amount per hour depending upon the knowledge and skill of the individual. Students work varying hours, in accordance with their academic loads and the requirements of their jobs.

### **Student Employment**

To a student who wishes to contribute to his income by working while attending college, El Paso offers many opportunities in a variety of fields. The Bureau of Placement Services at the College acts as a clearing house to co-ordinate the efforts of students seeking work and employers. The Director of Placement and his staff are in daily contact with businessmen of the El Paso area. The bureau makes every endeavor to assist students in securing employment, but, other than this, the College assumes no responsibility.

As an additional service, seniors and graduates of Texas Western College may file a complete record of their training and experience in order that the bureau can place their credentials before national concerns as well as local employers. Many graduates receive career jobs through the bureau.

Applications and correspondence should be addressed to the Director of Placement Services, Texas Western College El Paso, Texas.

### **Scholarships**

Except as noted in the individual scholarship descriptions below, applications for scholarships or requests for further information about scholarships should be addressed to the Dean of Student Life, Texas Western College.

**Accredited School Scholarship**—The College annually offers this scholarship to the valedictorian, boy or girl, graduating from

an accredited secondary school located in the State of Texas, who meets specific requirements as to grades. The financial benefit is exemption from the tuition fee of \$25 per semester in the College for the two consecutive semesters of the first long session after graduation from high school (total \$50). The honor student must be certified through the Texas State Department of Education. Particulars may be obtained from high-school principals.

**Alpha Delta Kappa Scholarship**—Established in 1955—This organization awards an annual \$25 scholarship to a student majoring in Education.

**Alpha Psi Omega Scholarship**—This organization provides four annual \$50 scholarships to incoming El Paso freshmen who plan to major in Speech or Drama.

**American Association of University Women**—The El Paso Branch of the American Association of University Women offers scholarships, ranging from \$50 to \$150 in value to women students. The award of these scholarships is based on need and on scholastic record, and the money may be used in any manner to further the recipient's education.

**American Smelting and Refining Company**—This company provides an annual \$500 scholarship to be awarded preferably to a senior majoring in Metallurgy. Selected by the Chairman of the Department and Dean of the Division.

**The American Society for Metals Foundation for Education and Research**—An annual \$400 scholarship is granted by this organization to a sophomore pursuing a Metallurgy course. He is selected by the Chairman of the Department and Dean of the Division.

**The Atlantic Refining Company Science and Engineering Scholarship**—Established in 1955—This company provides a \$500 scholarship to be awarded to an outstanding undergraduate student in the fields of physical science and engineering directly related to Petroleum Industry operations. The scholarship is administered by the Department of Geology.

## SCHOLARSHIPS

**B.P.O. Elks Lodge No. 187, El Paso**—This organization provides two \$150 and two \$100 annual scholarships to Texas Western College students. Recipients are selected by the Lodge.

**El Paso Chapter, Associated General Contractors of America**—Established in 1953, this annual scholarship of \$250 is awarded to a student majoring in Civil, Mechanical, or Electrical Engineering, and who is a resident of Texas, New Mexico, or Arizona.

**El Paso City Panhellenic Association**—This organization provides one or more scholarships each year to women students. The financial benefit covers tuition and required fees for both semesters of one long session (\$100 per student).

**El Paso District of the Zionist Organization of America**—An annual scholarship in the amount of \$50 has been established by this organization. Applications for this scholarship should be made to the Chairman of the Department of History and the recipient of the scholarship will receive \$25 per semester applicable on required tuition and fees.

**El Paso Herald Post**—This scholarship is available to a student majoring in journalism. The financial benefit covers tuition and required fees for both semesters of one long session.

**El Paso Press Club Scholarship**—In 1955, The El Paso Press Club established an annual \$50 scholarship to be awarded to a student majoring in Journalism, radio or television.

**El Paso Symphony Association**—In September, 1948, the El Paso Symphony Association established three scholarships for worthy students majoring in music. One scholarship to be awarded to a student specializing in the French Horn, one the Bassoon, and the other the Oboe. The instruments selected for specialization may vary from year to year.

**El Paso Times**—This scholarship is available to a student majoring in journalism. The financial benefit covers tuition and required fees for both semesters of one long session.

**Five Points Lions Club**—This organization offers one scholarship each year to a worthy student. This scholarship pays \$100 on tuition and fees for the fall and spring semesters.

**Kennecott Copper Corporation Scholarship**—Established in 1955—This corporation provides a \$500 scholarship 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.

**Louis Horwitz Memorial Scholarship**—Established in 1953 as a memorial to Mr. Louis Horwitz, pioneer El Paso businessman, this scholarship of \$200 is awarded annually to some worthy student. Primary consideration will be given to pre-medical students but the award is not necessarily limited to that field of study.

**Lucy Claire Hoard Memorial**—Established by the Delta Kappa Gamma Society, this scholarship which pays tuition and required fees is available to young women students studying for the teaching profession.

**Pan-American Optimist Club**—One scholarship each year is given to an entering freshman after recommendation to the College by the Executive Committee of the Club.

**Phelps Dodge Refining Corporation**—This company has established a scholarship of \$500 to be awarded annually to a student who will begin his junior year as a major in Metallurgy. The Dean of Mines and Engineering and the Chairman of the Department of Mining and Metallurgy will select as the recipient of this award a student who is worthy and needs financial assistance.

**Popular Dry Goods Company**—Scholarships are available to worthy students interested in advertising, art and business.

**Radio Station K R O D**—A scholarship offered to a student interested in the field of Radio Education. The financial benefit covers tuition and required fees for both semesters of one long session.

**Radio Station K T S M**—In 1943 these scholarships were established to be awarded to students in the field of Radio Education. The financial benefit covers tuition and required fees for both semesters of one long session.

**Ramsey Steel Company, Inc. Scholarship**—Established in 1955, this scholarship provides \$500 in financial assistance to students in Civil Engineering.

**Rehabilitation Scholarship** — The State Board for Vocational Education, through the Vocational Rehabilitation Division offers payment of tuition and other services to civilian students who have certain physical handicaps, provided the vocational objective selected by the student has been approved by a representative of the Division. Applications for Vocational Rehabilitation should be made to the Rehabilitation Office, Room 19, El Paso Technical Institute, El Paso, Texas, mailing address Box 212, El Paso, or to Mr. J. J. Brown, 302 Walton Bldg., Austin 11, Texas.

**Roger Brown Company Scholarship**—Established in 1954—This scholarship provides from \$300 to \$500 in scholarship assistance to a student from Texas, New Mexico, Arizona or Old Mexico who participates in one of the major sports and has high scholastic standing.

**Rotary Club** — This organization offers scholarships each year to worthy students. These scholarships pay \$100 on tuition and fees for the fall and spring semesters.

**Salim N. Abdou, Sr., Memorial Scholarship**—In 1955, Mr. Sammy N. Abdou, Jr. established an annual \$300 scholarship fund as a memorial to his father, Mr. Salim N. Abdou, Sr. Two scholarships of \$150 each are awarded each year from this fund to male students. Primary consideration is given to students majoring in business administration.

**Sarah Feinburg Memorial Scholarships**—In 1955 the Feinburg Foundation of the El Paso Pipe and Supply Company established two annual \$450 scholarships as a memorial to Mrs. Sarah Feinburg. The scholarships are awarded to male students who are pre-medical majors, have demonstrable scholastic ability, have proven financial need, and are graduates of one of the El Paso City or County High Schools.

**Scholarships for Foreign Students** — The Board of Regents has made available for the year 1956-57 a limited number of scholarships for worthy foreign students. To be eligible for a scholarship, a foreign student must have demonstrated his ability to speak and write English satisfactorily; he must have a grade average of at least C on all course work taken at the school from which he transfers, or, if a former student of Texas Western, he must have a grade average of at least C on the course work taken at this College during his last two semesters in residence;

and he must be in need of this financial assistance in order to continue his education at the College. Applications are to be made to the Chairman of the Scholarship Committee.

**Standard Oil Company of Texas Scholarship** — This company provides an annual \$500 scholarship to be awarded preferably to senior students in Geology.

**State National Bank** — Annual scholarships totaling \$500 for men students in the field of business administration have been established by the State National Bank Scholarship Fund.

**Sternglanz Scholarship**—In 1944 Mr. and Mrs. Elias Sternglanz of El Paso, Texas, established a scholarship as a memorial to their son, Lt. Donald M. Sternglanz, who lost his life in a mission over St. Nazaire, France. This scholarship of \$100 is awarded annually to some promising student who is majoring in music.

**Texas-Arizona Motor Freight Lines, Inc. Scholarship** — This company provides an annual \$500 scholarship to a student from Texas, Arizona or California who participates in one of the major sports and has high scholastic standing.

**Tot's Toggery**—An annual scholarship of \$100 provided by Mr. Alfred A. Ratner to be awarded to a worthy student.

**Tri-State Music Company** — This annual scholarship is available to a student majoring in music and pays for tuition, required fees, and books.

**Union-Fashion Clothing Company** — This company offers one scholarship each year to a worthy student. This scholarship pays up to \$100 on tuition and fees for the fall and spring semesters.

**Urbici Soler Memorial Scholarship**—Established in memory of Urbici Soler, this scholarship provides \$100 to be awarded annually to a student in fine or applied arts.

**The Belles Scholarship**—This organization awards a \$25 scholarship each year to a member of their group.

**The Vowell Scholarship** — This annual scholarship provides \$200 financial assistance to a worthy student. Primary consideration will be given to engineering students whenever possible.

**Women's Auxiliary** — The Women's Auxiliary of Texas Western College offers

## FINANCIAL AID

scholarships each year to young women boarding students. The financial benefit amounts to \$100 for two semesters for one year.

*Rube Weinstein Lodge No. 509* — B'nai B'rith provides two annual scholarships of \$50 each as follows: B'nai B'rith Scholarship to a student in the Social Science field — The Dr. J. M. Roth Memorial Scholarship to a student majoring in Philosophy and Psychology.

### **Loan Funds**

Various funds are available to students who need financial assistance to be able to begin or continue thier 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.

*Spanish-American Loan Fund*—Establishment of and additions to this loan fund are made by residents of the region who are of Spanish descent. Loans are made to students of Spanish descent who are needy and of high scholastic standing. The fund is administered by a faculty committee.

*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.

# ***Regulations Affecting Student Life***

## **Student Guidance**

Beginning students are given the opportunity of taking a series of tests in an effort to help them plan an effective college program. Results of these tests are placed in the hands of faculty advisers at the time of enrollment thus enabling the advisers to assist the student in the selection of courses in line with his interests, abilities, and future choice of career.

## **Health Service**

An adequate health office is maintained on the campus for the benefit of all students. The health officer examines the students, compiles records, is available in an advisory capacity and issues regular health bulletins. Minor medical and surgical treatment of an emergency nature is given in the health office.

A registered nurse is in attendance at the health office. She resides in the women's dormitory, attends to the health of the resident students, and supervises special diets.

## **Intramural Athletics**

A strong program of intramural sports for men and women — sponsored by the Department of Physical and Health Education, the Student Association, and the Dean of Student Life — offers competition and recreation for all students. An Intramural Council for men and one for women composed of student representatives from various participating organizations assist in planning and conducting the program.

## **Intercollegiate Athletics**

Rules and regulations governing intercollegiate athletics at Texas Western College are those effective in the Border Intercollegiate Athletic Conference. These rules and additional rules governing freshman participation in athletics are published in a booklet issued by the Border Intercollegiate Athletic Conference. Copies of this booklet may be secured from any coach or from the Faculty Representative to the Border Intercollegiate Athletic Conference.

## **Official Non-Athletic Extracurricular Activities**

It is the intention of the College to provide for its student population a group

of non-athletic extracurricular organizations which will challenge the most diverse kinds of interest. Regardless of the field to which the student's specific interests run, he is likely to find an organization designed to stimulate those interests and in which his participation is invited. A list of all active organizations may be secured from the Dean of Student Life.

Rules and regulations governing the conduct of the affairs of student organizations are available in the office of the Dean of Student Life. Each student is charged with the knowledge and notice thereof.

## **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. Illegal conduct, such as the drinking of intoxicating liquors, gambling, and dishonesty renders the student subject to suspension.
5. Persons not registered in the College when accused 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

## STUDENT LIFE

the College unless they can prove moral desirability.

6. All students are expected to show respect for properly constituted authority and to observe correct standards of conduct. Conduct inconsistent with general good order or persistent neglect of work or failure to respond promptly to official notices may subject the student to discipline.

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 thereby drop his name 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 and Bad Checks

The College is not responsible for debts contracted by individual students or by student organizations, but the College will subject to disciplinary action by the Faculty Committee on Discipline such persons who do not pay debts justly and regularly contracted. The College requires all students and student organizations to conduct themselves honorably in all commercial transactions.

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.

# Scholastic Regulations

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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.

## 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)

### BIOLOGY

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

## 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 at which the student 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. Absences 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.

#### **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. Failure to pass a postponed examination gives a grade of *F* in the course.
7. Absence from a postponed examination, after a permit has been granted, gives a grade of *F* in the course.
8. The Registrar supervises the examination.

#### Removal-of-Condition Examinations

Examinations are given for the removal of conditions subject to the following provisions:

1. For the removal of a grade of *E*, see definition of grade of *E* on page 40.
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 time the condition was received.

4. Must be taken at a date fixed by the Calendar or at a regular final examination in the course.

5. A grade of *D* will be given in the course if the examination is passed.

6. Failure to pass the examination gives a grade of *F* in the course.

7. Absence from the examination, after a permit has been granted, gives a grade of *F* in the course.

8. The Registrar supervises the examination.

#### Advanced Standing 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 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.
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.

#### Scholarship

To pass a course, it is necessary to secure a grade of at least *D* both on class work and on semester examination, considered separately. 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* (fair), *D* (inferior but passing), *E* (failure, but with privileges of

## SCHOLASTIC REGULATIONS

petitioning to continue the course and to take removal-of-condition examination), *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*, *E*, *F*, *WF*, *Inc.*, and *Px*.

### Effect of a Semester Grade of E

A student who fails to pass a course but makes a grade of *E* is called "conditioned," and is allowed opportunity to remove the condition by a second examination at the next regular examination period in the subject, at the discretion of his Dean, but in any event he must take the condition examination not later than twelve months after the condition was received. A condition successfully removed becomes *D*.

In a subject continuing beyond one semester (for example, English 3101-02), the instructor may, by sending to the Registrar the proper credit notice, raise an *E* of an earlier semester to *D* because of a grade of *C* or better earned in a later semester, but no grade may be altered after the registration period of the next succeeding semester.

### 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. If a student makes an *E* in a course, he may take up a more advanced course in the same subject only with the written consent of the instructor concerned, approved by the student's Dean.

### Incomplete Work

Grades for work not completed may be obtained by three distinct and separate methods:

1. At any intra-semester grade period, if the student has not completed his work for any particular course, the instructor may give a grade of *Incomplete* in the course.
2. 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.
3. 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.

When a student is late or dilatory in handing in required work of any nature, his instructor may give him, depending on the circumstances, a lowered grade, or even zero, on the late performance in question.

A student who has not completed the required volume of work in a course at the end of a semester will receive a grade within the calculation of which will be included various uncompleted pieces of work rated as zero. When such final semester grade results in an E the instructor and respective Dean may require the student to complete the missing work as part of his removal-of-condition obligation.

### **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*, *E*, *WF*, or *F*. (If a *Px*, *Inc*, or *E* 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 Engineering 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*, *E*, and *F* will not be considered passing. (If *Px*, *Inc*, or *E* are removed within two weeks after the end of the semester, the student's status will be adjusted.)

### **Required Minimum Academic Performance**

To remain in good standing, a student must meet the following standard of performance at the end of the semester:

1. A student taking nine or more semester hours must pass at least nine hours and earn at least fifteen grade points.
2. A student taking less than nine semester hours must pass all work taken with a grade point average of not less than 1.5. Not more than three one-hour courses may be counted in determining this grade point average.

### **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 during a semester while on Scholastic Probation will be continued in that status for the succeeding long-session semester unless he attends an intervening summer session and makes a two-point average while registered for nine or more semester hours.

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 extracurricular student activities taking place off campus.
3. Be absent from classes, except under extenuating circumstance, without being dropped from the rolls of the college by the Registrar at the request of his Dean.

### **Removal of Scholastic Probation**

A student on scholastic probation may return to good standing by meeting the following minimum requirements at the end of a semester in the long session:

<i>If the Student is in his</i>	<i>He must pass in 9 hours and make a minimum of</i>
2nd semester . . . . .	15 grade points
3rd or 4th semester . . . .	18 grade points
5th or 6th semester . . . .	21 grade points
7th or 8th semester or succeeding semester . . .	24 grade points

## SCHOLASTIC REGULATIONS

For the purpose of calculating the number of semesters in college, a six-week summer term of the summer session is equivalent to one-third of a semester. 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 may remove scholastic probation during the summer session by earning a grade point average of at least two points while registered for nine or more semester hours. Students on scholastic probation may not register for more than twelve semester hours during a summer session.

### Enforced Academic Withdrawal

A student shall be dropped for a period of at least one semester if:

1. He fails to pass six semester hours of work in any semester or four semester hours in a twelve-week summer session. Any student registered for less than six semester hours during the long session semester, or four semester hours in an entire summer session, must pass all of his work.
2. He fails to remove scholastic probation during a given semester or complete summer session.
3. He has been on scholastic probation and has removed it and again makes a record which places him on probation.

### Readmission of Students Dropped for Scholastic Reasons

A student who has been dropped for reasons stated under Enforced Academic Withdrawal may apply to the proper Dean

for readmission after the following time intervals have elapsed:

- Dropped for the 1st time—1 semester
- Dropped for the 2nd time—2 semesters
- Dropped for the 3rd time—3 semesters

A student dropped for the third time can be readmitted only with approval of the President of the college.

Summer sessions may not be counted in computing the periods of enforced withdrawal. If a student is dropped during a semester, the fraction of the semester remaining shall not constitute a part of the period of enforced withdrawal.

Students petitioning for readmission may be required at their own expense to undergo such testing and counseling as deemed necessary by the Dean.

### Official Withdrawal

A student may withdraw from college with the consent of his Dean and clearance of all financial obligations with the Business Office. Students passing six hours or less at the time of withdrawal must comply with the regulations listed under Enforced Academic Withdrawal.

### Unofficial Withdrawal

Withdrawal from 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 Enforced Academic Withdrawal.

**DEGREES OFFERED**  
**At Texas Western College**

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**General Requirements**

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**Division of Mines and Engineering**

ENGINEER OF MINES

BACHELOR OF SCIENCE IN MINING ENGINEERING  
(THREE OPTIONS)

BACHELOR OF SCIENCE IN ENGINEERING  
(TWO OPTIONS)

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**Division of Arts and Sciences**

BACHELOR OF ARTS

BACHELOR OF SCIENCE

BACHELOR OF BUSINESS ADMINISTRATION

BACHELOR OF MUSIC

---

**Graduate Division**

MASTER OF ARTS

---

**Extension Division**

## **General Requirements for Undergraduate Degrees**

### **Degrees Offered**

*Division of Mines and Engineering:* Engineer of Mines, Bachelor of Science in Mining Engineering, and Bachelor of Science in Engineering.

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

No honorary degrees 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.

### **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.

### **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 Requirements**

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 successfully complete six hours of work in government, covering the Federal and Texas Constitutions, Government 3210-3211. Four semesters of ROTC may be substituted for Government 3211.

By action of the State Legislature all students graduating from the College after July 1, 1956, must successfully complete six hours of American 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 interdivisional or intradivisional transfer will be considered unless removed by repetition of the course.

### **Conditional Grades**

A conditional grade (*E*) made by a student in the last semester of his year of graduation may not be removed until the succeeding time for the removal of such conditional grades.

### **Second Degree**

No second bachelor's 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 his degree is to be conferred unless absent for good cause, in which case he must petition his dean in writing at least three weeks before the date of commencement.

# **Division of Mines and Engineering**

## **Degrees Offered**

### **ENGINEER OF MINES**

#### **BACHELOR OF SCIENCE IN MINING ENGINEERING**

*Options: 1. Mining 2. Mining-Geology 3. Metallurgy*

#### **BACHELOR OF SCIENCE IN ENGINEERING**

*Options: 1. Civil 2. Electrical*

### **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 Mining Engineering (Metallurgy Option)

**PLAN 4**, leading to the degree of Bachelor of Science in Engineering (Civil Option)

**PLAN 5**, leading to the degree of Bachelor of Science in Engineering (Electrical Option)

### **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 in aeronautical, chemical, mechanical, or petroleum engineering.

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

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

# DEGREE PLANS

## PLAN 1 — Leading to the Degree of

### **Bachelor of Science in Mining Engineering** (Mining Option)

	<i>Semester Hours</i>
Chemistry 4103-04, 2211, 4214 . . . . .	14
Drawing 2101, 2102 . . . . .	4
Economics 3101 . . . . .	3
English 3101-02, 3369 . . . . .	9
Engineering 1101, 2213, 3215, 4314, 4331, 4334, 3335, 2338, 3349, 3354 . . . . .	29
Geology 3101, 3102, 3216, 2217, 4321, 3322, 2464 . . . . .	20
Government 3210-11 . . . . .	6
History 3101, 3102 . . . . .	6
Mathematics 4115-16, 3213-14, 3325 . . . . .	17
Metallurgy 4302, 3305, 2403 . . . . .	9
Mining, 1102, 3201, 2301, 3302, 2304, 3402, 3403, 3404, 3405, 0421 . . . . .	23
Physics 4215, 4216, 4317 . . . . .	12
Physical Education or Military Science . . . . .	4
Total . . . . .	156

## ARRANGEMENT OF COURSES

### Freshman Year

<b>FIRST SEMESTER</b>	<i>Semester Hours</i>	<b>SECOND SEMESTER</b>	<i>Semester Hours</i>
Ch. 4103, General Chemistry . . . . .	4	Ch. 4104, General Chemistry . . . . .	4
Dr. 2101, Engineering Drawing . . . . .	2	Dr. 2102, Descriptive Geometry . . . . .	2
E. 3101, Rhetoric and Composition . . . . .	3	E. 3102, Rhetoric and Composition . . . . .	3
Ma. 4115, Engineering Mathematics . . . . .	4	En. 1101, Elementary Engineering Problems . . . . .	1
Mi. 1102, The Mineral Industry . . . . .	1	Ge. 3101, Physical Geology . . . . .	3
Hi. 3101, History of the United States . . . . .	3	Ma. 4116, Engineering Mathematics . . . . .	4
P. E. Service Course or M. S. Military Science . . . . .	1	P. E. Service Course or M. S. Military Science . . . . .	1
Total . . . . .	18	Total . . . . .	18

### Sophomore Year

<b>FIRST SEMESTER</b>	<i>Semester Hours</i>	<b>SECOND SEMESTER</b>	<i>Semester Hours</i>
Ch. 2211, Qualitative Analysis . . . . .	2	Ch. 4214, Quantitative Analysis . . . . .	4
Ge. 3102, Historical Geology . . . . .	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	Total . . . . .	17
Total . . . . .	19		

### Summer

<b>FIRST TERM</b>	<i>Semester Hours</i>	<b>SECOND TERM</b>	<i>Semester Hours</i>
En. 2213, Plane Surveying . . . . .	2	En. 4314, Field Surveying . . . . .	4
Go. 3210, American Government . . . . .	3	Go. 3211, American Government . . . . .	3
Total . . . . .	5	Total . . . . .	7

### Junior Year

<b>FIRST SEMESTER</b>	<i>Semester Hours</i>	<b>SECOND SEMESTER</b>	<i>Semester Hours</i>
En. 3215, Statics . . . . .	3	Ec. 3101, Principles of Economics . . . . .	3
Ge. 4321, Advanced General Geology . . . . .	4	En. 4331, Electrical Circuits and Machines . . . . .	4
Ma. 3325, Calculus . . . . .	3	En. 2338, Dynamics . . . . .	2
Me. 3305, Engineering Metallurgy . . . . .	3	Ge. 3322, General Economic Geology . . . . .	3
Mi. 2301, Mining Methods . . . . .	2	Me. 4302, Ore and Coal Dressing . . . . .	4
Ph. 4317, Light and Modern Physics . . . . .	4	Mi. 3302, Mine Surveying . . . . .	3
Total . . . . .	19	Total . . . . .	19

### Summer

Mi. 2304, Mine Surveying . . . . . 2 Semester Hours

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



# DEGREE PLANS

Senior Year			
FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
E. 3369, Technical Writing . . . . .	3	En. 3335, Reinforced Concrete . . . . .	3
En. 4334, Mechanics of Materials . . . . .	4	En. 3349, Heat Engineering . . . . .	3
Ge. 2464, Field Geology . . . . .	2	En. 3354, Fluid Mechanics . . . . .	3
Me. 2403, Non-Ferrous Metallurgy . . . . .	2	Mi. 3403, Management . . . . .	3
Mi. 3402, Mine Valuation and Report . . . . .	3	Mi. 3403, Mine Plant . . . . .	3
Mi. 3404, Mine Plant . . . . .	3	Mi. 0421, Senior Trip . . . . .	0
Total . . . . .	17	Total . . . . .	15

## PLAN 2 — Leading to the Degree of Bachelor of Science in Mining Engineering (Mining-Geology Option)

	Semester Hours
Chemistry 4103-04, 2211, 4214 . . . . .	14
Drawing 2101, 2102 . . . . .	4
Economics 3101 . . . . .	3
English 3101-02, 3369 . . . . .	9
Engineering 1101, 2213, 3215, 4314, 4334, 2338, 3349, 3354 . . . . .	22
Geology 3101, 3102, 3216, 2217, 4321, 3322, 4323, 4327, 0421, 3461, 4463, 2464 . . . . .	35
Government 3210-11 . . . . .	6
History 3101, 3102 . . . . .	6
Mathematics 4115-16, 3213-14, 3325 . . . . .	17
Metallurgy 4302, 2303 . . . . .	6
Mining 1102, 3201, 2301, 3302, 2304, 3402, 3403 . . . . .	17
Physics 4215, 4216, 4317 . . . . .	12
Physical Education or Military Science . . . . .	4
Total . . . . .	155

## ARRANGEMENT OF COURSES

*Freshman and Sophomore Years Same as for Plan 1*

Junior Year			
FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
Ec. 3101, Principles of Economics . . . . .	3	En. 2338, Dynamics . . . . .	2
En. 3215, Statics . . . . .	3	En. 3349, Heat Engineering . . . . .	3
Ge. 4321, Advanced General Geology . . . . .	4	Ge. 3322, General Economic Geology . . . . .	3
Ma. 3325, Calculus . . . . .	3	Ge. 4327, Petrology and Petrography . . . . .	4
Mi. 2301, Mining Methods . . . . .	2	Me. 4302, Ore and Coal Dressing . . . . .	4
Ph. 4317, Light and Modern Physics . . . . .	4	Mi. 3302, Mine Surveying . . . . .	3
Total . . . . .	19	Total . . . . .	19

## Summer

Mi. 2304, Mine Surveying . . . 2 Semester Hours

Senior Year			
FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
E. 3369, Technical Writing . . . . .	3	En. 3354, Fluid Mechanics . . . . .	3
En. 4334, Mechanics of Materials . . . . .	4	Ge. 3461, Advanced Economic Geology . . . . .	3
Ge. 4323, Structural Geology . . . . .	4	Ge. 4463, Geology of Petroleum and Natural Gas . . . . .	4
Ge. 2464, Field Geology . . . . .	2	Me. 2303, Fire Assaying . . . . .	2
Mi. 3402, Mine Valuation and Report . . . . .	3	Mi. 3403, Management . . . . .	3
Total . . . . .	16	Mi. 0421, Senior Trip . . . . .	0
		Total . . . . .	15

# DEGREE PLANS

## PLAN 3 — Leading to the Degree of Bachelor of Science in Mining Engineering (Metallurgy Option)

	Semester Hours
Chemistry 4103-04, 2211, 4214, 4460 . . . . .	18
Drawing 2101, 2102 . . . . .	4
Economics 3101 . . . . .	3
English 3101-02, 3369 . . . . .	9
Engineering 1101, 2213, 3215, 4314, 4331, 4334, 2338, 3349 . . . . .	23
Geology 3101, 3216, 2217 . . . . .	8
Government 3210-11 . . . . .	6
History 3101, 3102 . . . . .	6
Mathematics 4115-16, 3213-14, 3325 . . . . .	17
Metallurgy 3301, 4302, 2303, 3308, 3309, 3402, 3403, 3405, 4406, 4407, 4408, 0421 . . . . .	36
Mining 1102, 3201, 2301, 3403 . . . . .	9
Physics 4215, 4216, 4317 . . . . .	12
Physical Education or Military Science . . . . .	4
Total . . . . .	155

### ARRANGEMENT OF COURSES

*Freshman and Sophomore Years — Same as for Plan I, except  
substitute Economics 3201 for Geology 3102.*

#### Junior Year

FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
En. 3215, Statics . . . . .	3	En. 4331, Electrical Circuits and Machines . . . . .	4
Ch. 4460, Physical Chemistry . . . . .	4	En. 2338, Dynamics . . . . .	2
Ma. 3325, Calculus . . . . .	3	En. 3349, Heat Engineering . . . . .	3
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
Total . . . . .	19	Total . . . . .	19

#### Senior Year

FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
En. 4334, Mechanics of Materials . . . . .	4	E. 3369, Technical Writing . . . . .	3
Me. 3403, Non-Ferrous Metallurgy . . . . .	3	Me. 3402, Ferrous Metallurgy . . . . .	3
Me. 4407, Metallography . . . . .	4	Mi. 3403, Management . . . . .	3
Me. 4408, Advanced Ore & Coal Dressing . . . . .	4	Me. 3404, Hydrometallurgy . . . . .	3
Me. 3409, Corrosion . . . . .	3	Me. 3405, Metallurgical Laboratory . . . . .	3
Total . . . . .	18	Me. 0421, Senior Trip . . . . .	0
		Total . . . . .	15

**PLAN 4—Leading to the Degree of**  
**Bachelor of Science in Engineering**  
**(Civil Option)**

	<i>Semester Hours</i>		<i>Semester Hours</i>
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, 1451, 1452, 3460, 3461 . . . . .	67	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 3110 . . . . .	3
		Approved Electives . . . . .	3
		<b>Total . . . . .</b>	<b>150</b>

**ARRANGEMENT OF COURSES**

**Freshman Year**

<b>FIRST SEMESTER</b>	<i>Semester Hours</i>	<b>SECOND SEMESTER</b>	<i>Semester Hours</i>
Ch. 4103, General Chemistry . . . . .	4	Ch. 4104, General Chemistry . . . . .	4
Dr. 2101, Engineering Drawing . . . . .	2	Dr. 2102, Descriptive Geometry . . . . .	2
E. 3101, Rhetoric and Composition . . . . .	3	E. 3102, Rhetoric and Composition . . . . .	3
Hi. 3101, History of the U. S. . . . .	3	En. 1101, Elementary Engineering Problems . . . . .	1
Ma. 4115, Engineering Mathematics . . . . .	4	Hi. 3102, History of the U. S. . . . .	3
P. E. Service Course or M. S., Military Science . . . . .	1	Ma. 4116, Engineering Mathematics . . . . .	4
<b>Total . . . . .</b>	<b>17</b>	P. E. Service Course or M. S., Military Science . . . . .	1
		<b>Total . . . . .</b>	<b>18</b>

**Sophomore Year**

<b>FIRST SEMESTER</b>	<i>Semester Hours</i>	<b>SECOND SEMESTER</b>	<i>Semester Hours</i>
Ec. 3101, Principles of Economics . . . . .	3	En. 2212, Concrete Mixtures . . . . .	2
Ge. 3101, Physical Geology . . . . .	3	En. 2213, Plane Surveying . . . . .	2
Go. 3210, American Government . . . . .	3	En. 3215, Statics . . . . .	3
Ma. 3213, Calculus . . . . .	3	Go. 3211, American Government . . . . .	3
Ph. 4215, Mechanics and Heat . . . . .	4	Ma. 3214, Calculus . . . . .	3
*P. E. Service Course . . . . .	1	Ph. 4216, Electricity, Magnetism and Wave Motion . . . . .	4
<b>Total . . . . .</b>	<b>17</b>	*P. E. Service Course . . . . .	1
		<b>Total . . . . .</b>	<b>18</b>

**Summer**

<i>First Term</i>	<i>Hours</i>	<i>Second Term</i>	<i>Hours</i>
En. 4314, Field Surveying . . . . .	4	En. 3354, Fluid Mechanics . . . . .	3
En. 2338, Dynamics . . . . .	2	Sp. 3110, Basic Principles of Speech . . . . .	3
<b>Total . . . . .</b>	<b>6</b>	<b>Total . . . . .</b>	<b>6</b>

**Junior Year**

<b>FIRST SEMESTER</b>	<i>Semester Hours</i>	<b>SECOND SEMESTER</b>	<i>Semester Hours</i>
En. 4334, Mechanics of Materials . . . . .	4	E. 3369, Technical Writing . . . . .	3
En. 3349, Heat Engineering . . . . .	3	En. 3322, Route Surveying . . . . .	3
En. 1355, Hydraulics Laboratory . . . . .	1	En. 4331, Electrical Circuits and Machines . . . . .	4
Ma. 3325, Calculus . . . . .	3	En. 3335, Reinforced Concrete . . . . .	3
Me. 3305, Engineering Metallurgy . . . . .	3	En. 3343, Elementary Structural Analysis . . . . .	3
Ph. 4317, Light and Modern Physics . . . . .	4	En. 2356, Hydrology . . . . .	2
<b>Total . . . . .</b>	<b>18</b>	<b>Total . . . . .</b>	<b>18</b>

**Senior Year**

<b>FIRST SEMESTER</b>	<i>Semester Hours</i>	<b>SECOND SEMESTER</b>	<i>Semester Hours</i>
En. 3426, Engineering Economics . . . . .	3	En. 3440, Highway Engineering . . . . .	3
En. 1427, Reinforced Concrete Design . . . . .	1	En. 3442, Sewerage and Sewage Disposal . . . . .	3
En. 3441, Public Water Supplies . . . . .	3	En. 3446, Contracts and Specifications . . . . .	3
En. 3448, Soil Mechanics . . . . .	3	En. 1452, Sewage Analysis . . . . .	1
En. 1451, Water Analysis . . . . .	1	En. 3461, Structural Design and Theory . . . . .	3
En. 3460, Indeterminate Structures . . . . .	3	Approved Elective . . . . .	3
Mi. 2401, Tunneling and Blasting . . . . .	2	<b>Total . . . . .</b>	<b>16</b>
<b>Total . . . . .</b>	<b>16</b>		

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

# DEGREE PLANS

## PLAN 5 — Leading to the Degree of Bachelor of Science in Engineering (Electrical Option)

	Semester Hours
Chemistry 4103-04 . . . . .	8
Drawing 2101, 2102 . . . . .	4
Economics 3101 . . . . .	3
Engineering 1101, 3215, 2216, 3319, 3321, 2338, 4334, 4339, 4340, 3349, 3350, 3354, 3357, 4358, 4366, 3423, 3426, 3444, 3447, 3464, 4467, 4468, 3470 . . . . .	72
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 . . . . .	3
Total . . . . .	150

### ARRANGEMENT OF COURSES

*Freshman Year — Same as for Plan 4*

#### Sophomore Year

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

#### Summer

FIRST TERM	Semester Hours	SECOND TERM	Semester Hours
En. 3319, Elements of Electrical Engineering . . . . .	3	En. 3321, Elements of Electrical Engineering . . . . .	3
En. 3349, Heat Engineering . . . . .	3	En. 3350, Heat Engineering . . . . .	3
Total . . . . .	6	Total . . . . .	6

#### Junior Year

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

#### Senior Year

FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
E. 3369, Technical Writing . . . . .	3	En. 3426, Engineering Economics . . . . .	3
En. 3423, Kinematics and Dynamics of Machinery . . . . .	3	En. 3464, Servomechanisms . . . . .	3
En. 3444, Measurements and Instrumentation . . . . .	3	En. 3470, Machine Design . . . . .	3
En. 3447, Lines and Networks . . . . .	3	En. 4468, Alternating-Current Machines . . . . .	4
En. 4467, Alternating-Current Machines . . . . .	4	Approved Elective . . . . .	3
Total . . . . .	16	Total . . . . .	16

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

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

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

### **BACHELOR OF ARTS**

### **BACHELOR OF BUSINESS ADMINISTRATION**

### **BACHELOR OF SCIENCE IN THE SCIENCES**

### **BACHELOR OF MUSIC**

In the division 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	French	Physical Education
Biological Sciences	Geology	Physics
Business Administration	Government	Pre-Law
Chemistry	History	Pre-Medical
Economics	Inter-American Studies	Psychology
Education	Journalism	Radio
English	Mathematics	Spanish
		Speech and Drama

#### ***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.

## REQUIREMENTS for MAJORS

### Art

#### Semester Hours

- 29—ART including basic art courses 3110, 3101-02, 3103-04, 2105-06 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, 3361, 3320-21 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
- 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.

### Economics

#### Semester Hours

- 24—ECONOMICS 3101-02, 3203, 3325, 3363; Business Administration 3361; 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
- 15—GOVERNMENT 3210-11, 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.

### Education

#### PLAN I — ELEMENTARY SCHOOL

#### Semester Hours

- 35—EDUCATION 3101, 3102, 3201, 3203, 3301, 3302, 3303, 3304, 3309, 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. (Additional work will be required of the student showing a lack of proficiency in written English.)
- 6—SPEECH. (Additional work will be required of the student showing a lack of proficiency in oral English.)
- 8—ART METHODS 2191 and Music Education 3334 and 3335.
- 12—LABORATORY SCIENCES: Botany 3101, Zoology 3101, and six semester hours of Physical Science.
- 6—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, Philosophy 3301.
- 12—PHYSICAL EDUCATION 3204 and 3301, also Health Education 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.

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

### Education

#### PLAN II — SECONDARY SCHOOL

##### Semester Hours

- 28—EDUCATION 3101, 3102, 3202, 3204, 3311, 3308, 3305, 4401, 4402. (A grade average of not less than 2.5 is required in this area.)
- †24—30—In the teaching subject, twelve hours of which must be advanced. (A grade average of not less than 2.5 is required in this area.)
- †18—In the teaching subject, six hours of which must be advanced. (A grade average of not less than 2.5 is required in this area.)
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14. (Additional work will be required of the student showing a lack of proficiency in written English.)
- 6—SPEECH. (Additional work will be required of the student showing a lack of proficiency in oral English.)
- 12—LABORATORY SCIENCES: Six semester hours of Biological Science, and six semester hours of Physical Science.
- 6—MATHEMATICS 3101 and 3102. (Mathematics 3100 will also be required of the student showing a lack of proficiency in Arithmetic.)
- 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.
- †A teaching subject may be selected from one of the following: Biology, Business Administration, Chemistry, English, Foreign Language, History, Journalism, Mathematics, Physical Education, Physics, Radio, and Speech and Drama.

### Education

#### PLAN III — SECONDARY SCHOOL

The 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 the requirement of an academic major and minor.

A teaching field of concentration may be selected from one of the following: Art, Physical Education, and Music.

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

### 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.

### 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.

## REQUIREMENTS for MAJORS

### 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.

### 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, 3366, 3363, 3364, 3365†. 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.

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

† A comprehensive examination in Spanish is required.

### Journalism

#### Semester Hours

- 24—JOURNALISM including Journalism 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.

### Mathematics

#### Semester Hours

- 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.
- 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
- 18—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.

### Pre-Law †

**Semester Hours**

- 28—Law completed in the Law School of the University of Texas.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
- 6—MATHEMATICS
  - FOREIGN LANGUAGE: completion of 3201-02.
- 6—CHEMISTRY OR PHYSICS: laboratory
- 6—BOTANY OR GEOLOGY OR ZOOLOGY: laboratory.
- 36—SOCIAL SCIENCES including Government 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311, and 18 semester hours of other social sciences, 6 of which must be advanced. Not over 12 hours of a freshman social science may be counted.
- 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: six of which must be advanced, to make a total of at least 123 semester hours.

† This does not guarantee admission to a law school. Consult your pre-law advisor and the Registrar of the law school which you wish to enter.

### Physical Education

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

**Semester Hours**

#### PLAN I

- 30—PHYSICAL EDUCATION (Men) 3101, 3102, 3201, 3202, 3401, 3402, 3403, 3303, 3203 or 3204 or 3408 or 3305 or 3409 and 3304.
- PHYSICAL EDUCATION (Women) 3103, 3104, 3201, 3202, 3203 or 3204, 3301, 3302, 3303, 3304 and 3406†.
- 18—MINOR SUBJECT including six advanced hours.

#### PLAN II

- Plan II would include in addition to the above Physical Education courses, Health Education 3302 or 3303 and 3306 or 3307 and the minor subject would not be required.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
  - 27—EDUCATION 3101, 3102, 3202, 3204, 3311, 3308, 3305 3403 and 3404.
  - 12—ZOOLOGY 3101, 3102 and Biology 3202, 3203.
  - 6—MATHEMATICS
  - 18—GOVERNMENT 3210-11, History 3101

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

and 3102, Economics 3101, \*Philosophy 3301 or 3311.

- 6—SPEECH
- 3—SOCIOLOGY
- 3—PHYSICAL EDUCATION: Three semesters 1101, 1201 for men; 1102, 1202 for women.
- 3—HEALTH EDUCATION 3101 for men or 3102 for women.

Plan II requires a minimum of 126 hours for graduation. In Plan I the student minoring in English or Biological Sciences would need only 6 advanced hours additional for the minor or a minimum of 126 hours for graduation. In Plan I the student minoring in Mathematics, Speech, History or Government would need 12 additional hours for the minor or a minimum of 132 hours for graduation. Additional work will be required of a student showing a lack of proficiency in written or oral English and Arithmetic.

‡ 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.

## REQUIREMENTS for MAJORS

### Pre-Medical †

Successful completion of the first year of work in a School of Medicine of The University of Texas at the end of the first year of attendance.

#### Semester Hours

- 18—ZOOLOGY 3101-02, 3201-02, 3301, 3302.
- 27—CHEMISTRY 4103-04, 3211, 4213, 4321-22, 4324.
- 8—PHYSICS 4103-04.
- 6—MATHEMATICS: Mathematics 3106 should be included unless one semester of trigonometry from high school has been presented in the admission requirements.
- 12—ENGLISH 3101-02, 3211-12 or 3213-14, or 3215 and 3216.
- 14—FRENCH 4101-02 and 3201-02, or German 4101-02 and 3201-02.
- 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.

† This does not guarantee admission to a medical school. Consult your pre-medical advisor and the Registrar of the medical school which you wish to enter.

#### Semester Hours

### Psychology

- 24—PSYCHOLOGY including Psychology 3201 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 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.

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

### Radio

#### 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.

### 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

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

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.

### Bachelor of Science (Sciences)

*Major Subjects:* Biology, Chemistry, Geology, 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.
- 18—GOVERNMENT 3210-11, History 3101 and 3102, Economics 3101, \*Philosophy 3301 or 3311.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.

\* Philosophy 3301 is strongly recommended for the Bachelor of Science degree.

—MATHEMATICS 4115-16 (Exception: Mathematics 3101 and 3102 may be substituted for Mathematics 4115-16 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 Regular Plan

**Semester Hours**

- 42—BUSINESS ADMINISTRATION including 4111, 4112, 3361, 3320-21, 3325-26, 3251, and 3331.
- 12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.
- 6—LABORATORY SCIENCES
- 6—MATHEMATICS
- 27—SOCIAL STUDIES: Government 3210 11; Economics 3101-02, 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 Business Administration**

### **Pre-Law Plan**

*Completion of the required work at Texas Western College does not assure entrance to the Law School of the University of Texas. The student following this plan should consult with the faculty advisor for pre-law students on grade averages and any additional requirements for entrance to the Law School of the University of Texas.*

**Semester  
Hours**

28—LAW completed at the Law School of the University of Texas.

33—BUSINESS ADMINISTRATION 4111, 4112, 3211, 3361, 3320-21, 3251, 3331, and six additional semester hours.

12—ENGLISH 3101-02, and 3211-12 or 3213-14 or 3215 and 3216.

6—LABORATORY SCIENCES

6—MATHEMATICS

27—GOVERNMENT 3210-11; Economics 3101-02, 3375; History 3101 and

\* Philosophy 3301 is strongly recommended for the Bachelor of Science degree.

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 and minor subjects.

## **Bachelor of Music**

*Major Subjects:* Music Theory and Composition; Music Education: Elementary and High School Instrumental Supervision; Music Education: Elementary and High School Vocal Supervision; Applied Music: Orchestral Instruments; Applied Music: Organ, Piano; Applied Music: Voice.

*Note for majors in Music Education:* 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.

*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.

### **Music Theory and Composition**

1. (a) Music theory—38 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.
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 Elementary and Secondary teaching, instrumental or vocal emphasis. (For details, consult chairman of music department).

A grade average of not less than 2.5 in the teaching field is necessary for permission to do student teaching and for graduation.

1. Music theory—20 semester hours.
2. Applied music—30 semester hours.  
*Instrumental field:* 12 hours, secondary level, of a major instrument; 4 hours, or equivalent, of piano; 4 hours of voice and 10 hours of secondary instruments.  
*Choral field:* 12 hours, secondary level, of a major instrument (voice or piano). A minimum of 8 hours of both piano, or the equivalent, and voice is required; 10 hours of secondary instruments.
3. Pre-Professional courses: Ed. 3101-02.
4. Music education—12 semester hours.
- \*5. Professional Laboratory Experiences in Teaching:  
Elementary—Music Ed. 4401, 4402.  
Secondary—Music Ed. 4403, 4404.
6. Music Literature—9 semester hours in addition to band or choral literature taken each semester in residence. At least two semesters of choral literature must be included for instrumental majors.
7. Fine Arts—Music 3109.
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. Only 8 semester hours may be offered.
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—3 semester hours.
15. Enough 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 2, 6, and 9, and upon the quality of work done in applied music.

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

### Applied Music

#### ORCHESTRAL INSTRUMENTS

1. (a) Music theory—23 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.
2. English 3101-02 and 3211-12 or 3213-14, or 3215 and 3216.
3. Government 3210-11; History 3101 and 3102.
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 in applied music.

### Applied Music

#### PIANO — ORGAN

1. (a) Music theory—27 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.
2. English 3101-02 and 3211-12 or 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 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 in applied music.

### Applied Music

#### VOICE

1. (a) Music theory—23 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).
2. English 3101-02 and 3211-12, or 3213-14, or 3215 and 3216.
3. Government 3210-11; History 3101 and 3102.
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 upon the quality of work done in applied music.

# GRADUATE DIVISION

## Requirements for Master of Arts Degree

Texas Western College offers work leading to the degree of Master of Arts in the fields of Education, English, History, and Spanish. 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. Prerequisite for entering upon graduate work is twenty-four semester hours of undergraduate work in the major subject; twelve semester hours for the minor. Work of the individual student after admission to the Division 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 requirement must be in Graduate Courses. A graduate course is one whose prerequisite are admission to the Graduate Division without deficiencies in major and minor, or consent of the head of the department.

**Majors:** English, Education, History, 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 the College, or the equivalent. Removal of any undergraduate deficiencies will be subject to action of the Graduate Council 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 applicant for admission to the Graduate Division must submit an official transcript of all previous college work to the Registrar for evaluation and file an application obtainable from the Dean of the Graduate Division.

(3) Transfer of Credits: Acceptance of credits from another institution may not exceed six semester hours and is subject to approval by the Graduate Council.

(4) Extension Division of Texas Western College: Not more than six semester hours from the Extension Division of Texas Western College may be accepted.

### Graduate Credit for Work Taken as Undergraduate

An undergraduate student who has completed the freshman and sophomore requirements for a bachelor's degree and who lacks not more than twenty-seven semester hours of completing all requirements for the degree may secure graduate credit for additional advanced courses upon petition to the Graduate Council at the time of registration.

### Aptitude Tests

To meet the approval of the Texas Education Agency, an aptitude test is required of all candidates for the M. A. Degree. After September 1, 1955, everyone, including graduates of Texas Western College, who seeks admission to the graduate Division with the M. A. 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. An examination fee of \$3.00 is required of each examinee who takes the Aptitude Test. A check for this amount, payable to the College, should accompany the request

## GRADUATE DIVISION

that the test be ordered for a particular date. The Graduate Record Examinations will be given three times each year — in October, March and July.\* To be admitted unconditionally to candidacy a student must make a score in the Aptitude Test above that of the lowest quartile. Scores in both parts (quantitative and verbal factors) will be considered. Education majors will be required to take both the Aptitude Test and the Area Test. Other majors, at the discretion of the department concerned, may also be required to take both tests.

### Graduate Load for Teachers

In order to meet the requirements of the Texas Education Agency, 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.

### Candidacy

After completing one semester or one full summer session, an applicant for the Master's Degree must file a petition of candidacy, which will be acted upon by the department involved. If the petition is denied, a new application may be made at a later date.

### Examination

A comprehensive examination, oral and/or written, at the discretion of the major department may be given.

### Scholastic Regulations

General regulations pertaining to undergraduates, such as those concerning class attendance, changing or dropping courses, withdrawing, examinations, apply in 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 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.

\*1956: March 31, July 14, October 20;  
1957: March 30, July 13.

### Residence

The minimum requirement for the master's degree is one long session or three summer sessions or one semester of the long session and two summer sessions. The master's degree will not be conferred in less than one academic year after the Graduate Council approves the student's application to do work on the graduate level. In the case of students doing part-time graduate work at the College during the long session, residence will be computed in terms of semester hours completed, three semester hours being equivalent to one-fourth of a semester.

### Degree Plan I — With Thesis

This plan requires 30 semester hours at advanced and graduate levels. The major must be a minimum of 18 semester hours, including a thesis (course 3598-99, six semester hours) and nine semester hours of courses at the graduate level. A minor of not less than six nor more than twelve semester hours may be chosen in another field, or two minors of not less than six semester hours in each of two fields.

The thesis must be approved by the head of the department in which the work is done. Two completed copies of the thesis, neatly typed on required-quality bond paper in uniform large type double-spaced, must be presented to the Dean of the Graduate Division not less than ten days before commencement day in the long session and not less than five days in the summer session. In order to obtain the six semester hours credit for the thesis the student must register for course 3598 during the preparation of the thesis and must register for course 3599 during the semester or summer session in which all requirements for the degree are completed. If at the end of two years after the thesis subject has been approved and recorded a student has not completed his thesis work the supervisor may require him to choose another subject. Credit in the thesis course will not be granted until the thesis is completed and approved.

### Plan 2 — Without Thesis

This plan requires 36 semester hours at advanced and graduate level, 18 hours in graduate courses. A major of not less than 21 hours nor more than 27 hours is required. If the major contains 21 hours there may be one minor of 15 hours, or two minors, nine hours in one and six in the other. If the major contains more than 24 hours, the student may have only one minor of not less than nine hours.



## ***Course Descriptions***

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Art	65	Journalism	115
Bible	68	Mathematics	121
Biological Sciences	69	Metallurgy	128
Business Administration	71	Mining	127
Chemistry	79	Music Education	136
Economics	77	Music Theory	134
Education	81	Philosophy	142
Engineering	88	Physical Education	104
English	93	Physics	123
French	130	Psychology	143
Geography	102, 111	Radio	117
Geology	100	ROTC	125
German	131	Russian	133
Government	111	Sociology	113
Health Education	103	Spanish	131
History	108	Speech and Drama	97

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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)

## Art

Miss VERA WISE, *Chairman*

*Professor WISE; Associate Professor HARRISON; Assistant Professor COOGLER*

*Instructors MASSEY, THONSON; Assistant Instructor TETZNER*

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 a period of one year.

*For Undergraduates*

### **Basic Courses**

*Former  
Number*

- 3101-02 Art History and Appreciation [ 320-320K  
Art from Man's earliest period of aesthetic expression through the Renaissance. Second semester covers development from the Renaissance to contemporary art. Aesthetic understanding furthered by analyses by students of both two and three dimensional art. Lectures, slides, and films.
- 2103-04 Basic Design (\$2 - \$2) [ 301-302  
A course stressing principles of art, color theory, dimensionality, and other design qualities. The organization of ideas into creative design.
- 2105-06 Basic Drawing (\$2 - \$2) [ 306  
Instruction in drawing of forms, actions, etc., with emphasis upon learning skill in draftsmanship and perspective.
- 3110 Introduction to the Fine Arts [ 304  
Enjoyments of the Arts through understanding of their interrelationship and the expressive elements common to Music, Art, and Drama. Differences in media of expression and the tools of each Art. Required of Art majors. Not counted in addition to Music Literature or Drama by the same number.

### **Specific Areas**

*For Undergraduates*

#### **Painting**

- 2111-12 Painting (\$2 - \$2) [ NEW  
Learning processes and experimentation in use of painting media. Concurrently, or following 2103.
- 2211-12 Painting (\$2 - \$2) [ 317-317K  
The development of painting experience and creative visual forms. *Prerequisite:* 2112.
- 2311-12 Painting (\$2 - \$2) [ 326-327  
Organization of composition from sketches, experiment and imagination with emphasis on color theory, form, and technique. *Prerequisite:* 2212.

*For Undergraduates and Graduates*

- 2411-12 Painting (\$2 - \$2) [ 340-340K  
Exploration of ways of handling paint, oil, tempera, watercolor, casein, mixed media, etc. *Prerequisite:* 2312.
- 2413-14 Painting (\$2 - \$2) [ NEW  
Exploration of mural techniques and media. *Prerequisite:* 2312.

#### **Life Drawing**

*For Undergraduates*

- 2121-22 Life Drawing (\$2 - \$2) [ 309N-309L  
Basic study of the human form.
- 2221-22 Life Drawing (\$2 - \$2) [ 329-329K  
Study of the human form; special attention given to head, hands, and feet. *Prerequisite:* 2122.

# ART

Former  
Number

2321-22 Life Drawing (\$2 - \$2) [ 333

Emphasis on aesthetic factors in interpreting human form. *Prerequisite:* 2222.

2421-22 Life Drawing (\$2 - \$2) [ NEW

Emphasis on composition of group studies utilizing human forms. *Prerequisite:* 2322.

## Graphics

2131-32 Graphics (\$2 - \$2) [ NEW

Wood and linoleum block printing for basic graphic processes.

2231-32 Etching (\$2 - \$2) [ 316-316K

Experimentation with line etching for various approaches—line or value.

2233-34 Lithography (\$2 - \$2) [ 316M-316N

Beginning study of lithographic process on stone.

*For Undergraduates and Graduates*

2331-32 Etching (\$2 - \$2) [ NEW

Advanced work in all etching or intaglio media, including aquatint, lift, and soft ground.

2333-34 Lithography (\$2 - \$2) [ NEW

Advanced work in lithographic media. Color problems developed.

## Metals *For Undergraduates*

2141-42 Metals (\$2 - \$2) [ 305-305K

Basic techniques in jewelry construction.

2241-42 Metals (\$2 - \$2) [ 324-325

Advanced techniques in jewelry construction. *Prerequisite:* 2142.

2341-42 Metals (\$2 - \$2) [ 334-334K

Basic techniques in metal smithing. *Prerequisite:* 2242.

*For Undergraduates and Graduates*

2441-42 Metals (\$2 - \$2) [ NEW

Advanced techniques in metal smithing. *Prerequisite:* 2342.

## Enameling *For Undergraduates*

2151-52 Enameling (\$2 - \$2) [ 308L-308M

Basic techniques in enameling, emphasis on jewelry forms.

2251-52 Enameling (\$2 - \$2) [ NEW

Basic techniques in enameling, emphasis on enameling of holloware forms. *Prerequisite:* 2152.

2351-52 Enameling (\$2 - \$2) [ NEW

Advanced problems in enameling. *Prerequisite:* 2252.

## Design

2161-62 Advertising Design (\$2 - \$2) [ 312-312K

Application of design principles to advertising art and study of type faces and letterforms. Concurrently or following 2105.

2261-62 Advertising Design and Production (\$2 - \$2) [ 328-328L

Advanced study of advertising art and production on a professional level. *Prerequisite:* 2162.

2361-62 Three Dimensional Design (\$2 - \$2) [ NEW

Workshop experimentation with materials and forms in various media, with emphasis on excellence of craftsmanship and design. *Prerequisite:* four hours of crafts plus basic courses.

# ART

## Former Number

2263-64 Interior Design (\$2 - \$2) [ 315-315K

Application of principles of art to home decoration problems: house planning, choice of furniture, color theory, etc., design for modern living. *Prerequisite:* Sophomore standing.

## Photography

2171-72 Photography (\$2 - \$2) [ NEW

Theory and technique of the photographic process: laboratory, studio, and field practice. Use of light as a creative and aesthetic medium. Concurrently or following 2105.

## Clays

2181-82 Clay (\$2 - \$2) [ 310K-310L

The beginning course in pottery. Methods of construction by hand, pinch pot, coil, slab, throwing and modeling. Glaze techniques.

2281-82 Clay (\$2 - \$2) [ 330-331

Advanced techniques in modeling, sculpturing, throwing, and casting. Study of clay bodies and glazes. *Prerequisite:* 2182.

2381-82 Clay (\$2 - \$2) [ 335-335K

Advanced study of clay involving all methods of construction with emphasis on glaze techniques. Production of work of professional standing goal of this course. *Prerequisite:* 2282.

## For Undergraduates and Graduates

2481-82 Clay (\$2 - \$2) [ NEW

Advanced work in ceramics. A study of clays, glazes, and technical aspects of ceramic production involving ceramic equipment; the use of audio-visual aids in the teaching of ceramics. Individual exhibitions required of each student's work. *Prerequisite:* 2382.

## Art Education

2191-92 Elementary Art Education (\$2 - \$2) [ 303

A course designed for elementary school teachers, to instruct them in methods of the integrated art program. Required for certification of elementary teachers.

2291-92 Art Teaching Methods (\$2 - \$2) [ NEW

Organization of art projects and teaching plans for all levels: for art education majors.

## For Undergraduates and Graduates

2391-92 Elementary School Art (\$2 - \$2) [ 322-322K

A course in materials used in the classroom. Exploration of all types of materials that can be used creatively, and instruction in their use. *Prerequisite:* 2292.

2392-94 High School Art (\$2 - \$2) [ 323-323K

Art principles and elements and the use of various media as adapted to the high school student's needs. *Prerequisite:* 2292.

2491-92 Visual Aids (\$2 - \$2) [ NEW

Instruction in the use of visual equipment, motion pictures, projectors, slides, etc., development of programs with their use; television adapted to art education. *Prerequisite:* 2392 or 2394.

## Research

1401 to 6401 Introduction to Research in Art Fields [ NEW

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>For Undergraduate Credit Only</i>		<i>Former Number</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:</i> Bible 3107	[ 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:</i> Sophomore standing.	[ 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:</i> Junior Standing.	[ 321

## **Biological Sciences**

DR. A. H. BERKMAN, *Chairman*

*Professor BERKMAN; Assistant Professors MEYER, DUKE, REEVES; Instructor CLAAH*

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<br/>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. Two lectures and three laboratory hours per week. This course is open only to pre-clinical nurses and to students in a school of nursing.                                |                           |                          |
| 4103 Nutritional Requirements of the Human Body (\$4)   |                           | [ 407                    |
| Nutritional needs of the normal human body. Three lectures and three laboratory hours per week. <i>Prerequisite:</i> Biology 3101 and Chemistry 3101-02. This course is open only to pre-clinical nurses and to students in a school of nursing.  |                           |                          |
| 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. Two lectures and three 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. Two lectures and three 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.   |                           |                          |

*For Undergraduates and Graduates*

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| 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 4321-11 or Bacteriology 3302, or 12 semester hours of zoology, or botany, and permission by the chairman of the department. |  |       |

### **Bacteriology**

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| 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. <i>Prerequisite:</i> Twelve semester hours in any one of the natural sciences or a combination of twelve semester hours in natural sciences and junior standing. |  |        |

BIOLOGICAL SCIENCES

Former  
Number

- 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. *Prerequisite:* Bacteriology 3301.

**Botany** *For Undergraduates*

- 3101 General Botany (\$2) [ 310  
Survey of the plant cell and plant body; survey of the algae and fungi coupled with an exposition of their functional relationship to man. Two lectures and three laboratory hours per week.
- 3102 General Botany (\$2) [ 302  
Life cycles and survey of mosses, ferns, and seed plants. Two lectures and three 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. Two lectures and three 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. Two lectures and three 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, an amphibian (*Necturus*), the turtle, the pigeon, and a mammal, with emphasis on development and relationship of such evolution to developmental anatomy of man. Two lectures and three 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**

DR. WADE HARTRICK, *Chairman*

*Professor HARTRICK; Associate Professors BREWSTER, SANDERS; Assistant Professors BLACK, BUCKNER, CRAMER, DELORME, FREELAND, MIDDAGH, RYAN, SAYLES, SMITH; Instructors BARRES, HEUSER, R. WALKER; Lecturers BERRY, BIXLER, BROCKMOLLER, BROWNLOW, COWART, DALE, DICKINSON, HEWITT, RISTER, C. WALKER, WINGO*

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, Insurance, Labor and Industrial Management, Marketing, Office Management, Real Estate, Secretarial Science, Statistics, and Transportation. 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. Students interested in the study of law should follow the Pre-law Plan leading toward the Bachelor of Business Administration degree.

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 the department chairman.

The following courses may be counted for credit on the major or minor in Economics: Business Administration 3228, 3232, 3251, 3270, 3345, 3346, 4361, 3362, 3370, 3371, 3376, 3378, 3470, 3595.

The following courses may be counted for credit on the major or minor in Business Administration: Economics 3250, 3265, 3340, 3342, 3363, 3366, 3375, 3425; Education 3307.

### **BUSINESS ADMINISTRATION**

*For Undergraduates*

*Former  
Number*

- 3121 Introduction to Business [ 601  
A general survey of the various fields of opportunity in the business world with special emphasis on the aptitudes and the skills required; the methods and practices of businessmen; the contributions of business to our society.

### **Secretarial Science**

*For Undergraduate Credit Only*

- 2101 Elementary Typewriting (\$2) [ 302  
For the beginner on the typewriter; keyboard, techniques, copy work and page placement. Three classroom and three laboratory hours per week.
- 2102 Intermediate Typewriting (\$2) [ 303  
A continuance of Business Administration 2101 with emphasis on speed and accuracy; business letters and business forms. Three classroom and three laboratory hours per week. *Prerequisite:* Business Administration 2101 or permission of chairman of the department.
- 2103 Advanced Typewriting (\$2) [ NEW  
A continuance of Business Administration 2102 with further emphasis on speed and accuracy; all office typing jobs and legal papers; manuscript writing. Three classroom and three laboratory hours per week. *Prerequisite:* Business Administration 2102 or permission of chairman of the department.
- 4104-05 Elementary Shorthand [ 604  
Fundamental principles of Gregg shorthand; reading, writing and elementary transcription. Three classroom and two workshop hours per week for two semesters. *Prerequisite:* Business Administration 2102 (may be taken concurrently) or permission of chairman of the department.

*For Graduates and Undergraduates*

## 3301-02 Advanced Stenography (\$2-\$2) [ 621

Development of speed and accuracy in shorthand and typewriting; technical vocabulary; office procedures; dictating machine transcription. Three classroom and three laboratory hours per week for two semesters. *Prerequisite:* Business Administration 4105 or permission of chairman of the department.

## 3303 Office Practice (\$2) [ 334

Practice of all office procedures; duplicating and dictating machines, and other types of office equipment; PBX; filing; advanced dictation and transcription; secretarial responsibilities. Three classroom and three laboratory hours per week. *Prerequisite:* Business Administration 3301-02 (may be taken concurrently) or permission of chairman of department.

**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, forms and contents of financial statements; theory involved in corporation accounting, actuarial accounting, consignment and installment sales, evaluation of investments, analysis of working capital. *Prerequisite:* Business Administration 4112.

## 3212 Intermediate Accounting, Second Course [ 317

Theory involved in partnership accounting, venture accounts, accounting for receiverships, parent and subsidiary accounting, consolidated balance sheets, foreign exchange accounting, estates and trusts, budgets, public accounts, bank accounting. *Prerequisite:* Business Administration 3211.

*For Graduates and Undergraduates*

## 3310 Governmental and Municipal Accounting [ 328

A study of accounting principles as applied to governmental unit systems. Emphasis on budgetary and fund accounts. *Prerequisite:* Business Adm. 3211.

## 3311 Cost Accounting [ 329

Accounting for materials, labor, and manufacturing expense under specific cost system and continuous process cost system. Study of standard costs, variances production orders, standing orders. *Prerequisite:* Business Administration 4112.

## 3313 Auditing [ 330

Auditing procedure, reports, and working papers used in financial investigations; balance sheet, detailed audits; verifications of assets, liabilities, nominal accounts. *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.

*Former Number*

- 3411 Advanced Accounting, First Course [ 361  
Advanced phases of accounting for capital stock, surplus, surplus reserves, and corporate income. *Prerequisite:* Business Administration 3212.
- 3412 Advanced Accounting, Second Course [ 362  
The advanced accounting aspects of corporate reorganizations, liquidations, receiverships, corporate trusteeships, bankruptcies, estates and trust, partnerships, syndicates, and joint ventures. *Prerequisite:* Business Administration 3411.
- 3413 C. P. A. Problems [ 363  
Solution of problems in regular C.P.A. examinations and by the American Institute of Accountants. *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.

**Machines, Letters, and Office Management***For Undergraduate Credit Only*

- 3120 Business Machines (\$2) [ 307  
A course designed to teach speed and accuracy in the operation of business machines, particularly adding machines and calculators. Includes practical problems covering the four fundamental processes as applied to good business usage.

*For Graduates and Undergraduates*

- 3320-21 Business Letters and Report Writing [ 620  
Preparation for writing clear, concise and forceful business letters. Letter types include sales, credit, adjustment, claim, order, rejection, collection, and application letters; theory and practice of report writing. *Prerequisite:* English 3211-12 or 3213-14 or 3215 and 3216; junior standing; Business Administration 2102 or by passing departmental examination.
- 3322 Office Organization and Management [ 335  
Location, equipment, organization, and general routine practice of the modern office from the office manager's and the office employee's viewpoints. *Prerequisite:* Junior standing.

**Business Law and Insurance***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 3102 or Business Administration 4112; junior standing.
- 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 3102.

*For Graduates and Undergraduates*

- 3328 Life Insurance [ 360  
Types of policies, personal applications and uses, rate making, estate programs; economic, legal and taxation phases of settlement plans and insurance trusts; modern developments and combinations of life underwriting services. *Prerequisite:* Business Administration 3228.

- 3329 Property and Casualty Insurance [ 360k  
Policy contracts and uses of all fire insurance, inland and ocean marine, liability, automobile, casualty and surety coverage. *Prerequisite:* Business Administration 3228 or permission of department chairman.

**Real Estate** *For Undergraduate Credit Only*

- 3332 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:* Six hours of advanced Business Administration or permission of the department chairman.

*For Graduates and Undergraduates*

- 3332 Real Estate Brokerage [ 378k  
Operation of the real estate business. Qualifications and training of salesmen and brokers; licensing requirements; government regulations and zoning; real estate instruments and legal principles; title transfers and closings; relations with employers, other salesmen, and brokers; code of ethics and objectives of the National Association of Real Estate Boards. *Prerequisite:* Six hours of advanced Business Administration or permission of the department chairman.

- 3333 Real Property Management and Investment [ NEW  
Management of real estate; investment in real estate; maintenance; personnel problems; costs, yields; elements of appraisal and income; depreciation; records and accounting. *Prerequisite:* Business Administration 3232 or permission of the department chairman.

- 3334 Real Estate Finance [ NEW  
Methods of financing real estate; financial institutions; instruments of finance; mortgages; government, business, and private financing techniques; legal and tax aspects of real estate financing. *Prerequisite:* Business Administration 3232 or permission of the department chairman.

- 3432 Real Estate Appraisal [ 378M  
Practical methods and basic principles of real property valuation. The appraisal process; neighborhood trends; site valuation, building material; architectural styles and functional utility; building cost estimates; depreciation; technique of the cost, market, and income, capitalization approaches; correlation of data and final estimate; the appraisal report, testifying, and professional standards. *Prerequisite:* Business Administration 3232 or permission of the department chairman.

- 3433 Real Estate Law [ NEW  
The law of real property with special application to Texas. Business and personal legal interests and rights in real estate; classification of estates; community and separate property; license law of Texas; titles; conveyances and legal documents; liens; contracts; deeds; closing transactions; federal taxes and their effect on real estate ownership. *Prerequisite:* Business Administration 3232 or permission of the department chairman.

**Labor and Industrial Management***For Graduates and Undergraduates*

- 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 and organization of production, and human relations. *Prerequisite:* Economics 3101 and junior standing.

**Marketing and Statistics***For Undergraduate Credit Only*

- 3251 Marketing [ 337  
 Considers functions, middlemen, institutions, law, policies, and practices in marketing. *Prerequisite:* Economics 3102.

*For Graduates and Undergraduates*

- 3350 Fundamentals of Advertising [ 321K  
 Relation to other business functions. Study of campaigns, appropriations, media, and practical advertising activities. *Prerequisite:* 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:* Junior standing.
- 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 or approval of the Chairman of the Department.
- 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 3102 and junior standing.
- 3379 Credits and Collections [ 335  
 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 or Economics 3102 and junior standing; or consent of the Department Chairman.
- 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 3361 and Business Administration 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 or permission of the department chairman.

- 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 or approval of the department chairman.

**Transportation** *For Undergraduate Credit Only*

- 3270 Fundamentals of Transportation and Traffic Management [ 344  
Development of American transportation system; state and federal legislation; classification and rate territories; freight classification; rate principles; shipping documents, services and freight claims. *Prerequisite*: Economics 3102 and junior standing or permission of department chairman.

*For Graduates and Undergraduates*

- 3370 Fundamentals of Transportation and Traffic Management (*Cont'd.*) [ 344K  
Construction, filing, and circularization of tariffs; demurrage, embargoes, warehousing, materials handling, and packaging; weighing, routing, transit privileges, and payment of transportation charges. *Prerequisite*: Business Administration 3270 or permission of the department chairman.
- 3371 Advanced Transportation and Traffic Management [ 344L  
Technical tariff and rate interpretation; through routes and rates, overcharges and undercharges, loss and damage; imports and exports traffic; classification and rate committee procedure. *Prerequisite*: Business Administration 3370 or permission of the department chairman.
- 3470 Advanced Transportation and Traffic Management (*Cont'd.*) [ 344M  
Development, construction, interpretation and application of the Interstate Commerce Act; creation and organization of Interstate Commerce Commission; procedure and practice before I.C.C. *Prerequisite*: Business Administration 3470 or permission of the department chairman.

**Finance** *For Undergraduate Credit Only*

- 3175 Mathematics of Business [ 306  
Fundamentals and application of principles of mathematics used in Accounting, Marketing, Finance, Insurance, and Production.

*For Graduates and Undergraduates*

- 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 3102 and junior standing.
- 3376 Banking Theory and Practice [ 341  
Bank promotion and incorporation; organization and powers, directors, stockholders, clearing and collecting systems, credit analysis, banking departments, Federal Reserve System. *Prerequisite*: Economics 3375.

- 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.

**Special Studies** For Graduates and Undergraduates

- 2495 to 6495 Special Studies in Business Administration [ 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 Graduates Only

- 3595 The Development of Major American Industries [ 390  
A study of the beginnings, development, and current status of major American industries. Considers techniques, processes, management, personalities and companies involved. *Prerequisite:* Admission to Graduate Division without deficiencies in major or minor, or consent of the department chairman.

**ECONOMICS**

For Undergraduate Credit Only

- 3101 Principles of Economics [ 302  
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.
- 3102 Principles of Economics [ 303  
A continuation of Economics 3101. *Prerequisite:* Economics 3101.
- 3203 Intermediate Economic Theory [ 310  
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 3102.
- 3210 Economic History of the United States [ 323  
Survey of American economic development from colonial time to present; analyses of factors which have shaped that development. *Prerequisite:* Economics 3102.
- 3250 Economics of Consumption [ 347  
Present-day position of consumer, factors influencing consumer choice, costs and standards of living, household budgeting, installment buying, consumer protective organizations, positive and restrictive governmental consumer aid. *Prerequisite:* Economics 3102.
- 3265 Introduction to Foreign Trade [ 350  
History, principles, and practices of the international movement of goods and services. *Prerequisite:* Economics 3102.

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 3102 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, nazism, socialism, communism, capitalism. *Prerequisite:* Economics 3102 and junior standing.

- 3330 Public Finance and Taxation [ 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 3102 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 3101 and junior standing.
- 3342 Labor Law [ NEW  
Labor Law and its development to current usage; actions and decisions of the executive, legislative, and judicial branches of the government and significant cases. *Prerequisite:* Economics 3340.
- 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 3102 or Business Administration 4361.
- 3366 Latin-American Resources and Trade [ 348  
Considers historical background, economic and human resources, production, domestic and international trade of Mexico, Central America, Caribbean Lands, and South America. *Prerequisite:* Economics 3102 and junior standing.
- 3375 Money and Banking [ 322  
Principles and important underlying theories of money and banking; history of precious metals, bimetalism, banking development; relation of money and credit to prices, foreign exchange principles. *Prerequisite:* Economics 3102 and junior standing.
- 3425 Business and Government [ 331  
Government in regulatory and cooperative capacity; theories of constitutional protection, anti-trust laws, unfair trade practice control, security and railway regulation, credit granting, settlement of labor disputes, social security. *Prerequisite:* Economics 3102 and junior standing.
- 2495 to 6495 Special Studies in 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.



## Chemistry

DR. W. W. LAKE, *Chairman*

*Professors LAKE, HANCOCK; Associate Professor DEHAAN; Assistant Professors  
ALEXANDER, BALL, SCRUGGS; Instructors O'NEAL, PYTCHER*

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.

### For Undergraduates

*Former  
Number*

- |         |  |          |
|---------|--|----------|
| 3101-02 | General Chemistry (\$2-\$2)  | [ 601a-b |
|         | For those students whose formal education in chemistry terminates with one year's work in the subject or whose degree plans stipulate six hours of general chemistry as the total requirement in that science. 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 semicro 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. Offered in the Spring of 1957.   |          |
| 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.   |          |
| 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. <i>Prerequisite:</i> Chemistry 3211 or 2211. Not counted in addition to Chemistry 4213. Offered in the Spring of 1957.  |          |

- 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.
- 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.
- 3323 Quantitative Analysis (\$2) [ 323  
The quantitative analysis of ores and metallurgical products. One lecture and six laboratory hours per week. May not be counted in addition to Chemistry 4324. *Prerequisite*: Chemistry 4213. Not offered after the Fall of 1956.
- 4324 Quantitative Analysis (\$4) [ 424  
A continuation of Chemistry 4213. Two lectures and six laboratory hours per week. May not be counted in addition to Chemistry 3323. *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.
- 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;*

*Assistant Professors DAY, MEADOWS, 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. A prerequisite to all courses in Education.                |       |
| 3102 | Introduction to Educational Psychology   | [ 301 |
|      | A study of the learning process and the conduct of children. <i>Prerequisite:</i> Education 3101.  |       |
| 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> Education 3101 and 3102.   |        |
| 3203 | Introduction to Elementary School Curriculum*  | [ 318r |
|      | An introduction to the curriculum in the elementary grades. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> Twelve hours of Education. |        |
| 3302 | Introduction to Teaching in the Elementary School  | [ 330r |
|      | Methods for the elementary school, with emphasis centered upon reading and language arts. <i>Prerequisite:</i> Education 3201 and 3203.  |        |

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

- 3303 Methods and Materials of Instruction in the Elementary School [ 331T  
Methods for the elementary school, with emphasis upon social studies, arithmetic, and science. *Prerequisite:* Education 3201 and 3203.
- 3304 Teaching of Science in the Elementary School [ NEW  
Materials and methods of teaching science in the elementary school. *Prerequisite:* Education 3201 and 3203.
- 3309 Introduction to Educational Tests, Measurements, and Evaluation in the Elementary School [ 355K  
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.
- 4401 Professional Laboratory Experience in the Elementary School [ 328  
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.
- 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. *Prerequisite:* Education 4401 (in advance or concurrently by permission).

**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.
- 3308 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.
- 3311 Principles in Guidance in the Secondary School [ 341  
Consideration of general meaning, importance, and function of guidance together with a survey of techniques and the evaluation of outcomes in the secondary school. *Prerequisite:* Twelve hours of Education, including Education 3202.
- 3305 Principles of Teaching in the Secondary School [ 371T  
Types of teaching in the secondary school. *Prerequisite:* Education 3202 and 3204.

EDUCATION  
Former Number

- 3306 Teaching High-School Journalism,  
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 Methods of Teaching Commercial Subjects  
in the Secondary School [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 [ 327  
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.

- 4404 Professional Laboratory Experience in the  
Secondary School [ 327  
A minimum of ten hours a week for one semester of laboratory teaching experience in a secondary school classroom. *Prerequisite:* Education 4403 (in advance or concurrently by permission), and permission by the department chairman.

*For Undergraduates and Graduates*

Prerequisites for courses listed below: Twelve semester hours of Education

**Elementary Education**

- 3405 Teaching of Arithmetic in the Elementary School [ 348K  
Consideration given to recent research studies in the teaching of arithmetic as well as to recommended techniques.
- 3406 Teaching of the Social Studies in the Elementary Grades [ 349  
The course will consider programs of instruction and procedures, as well as more detailed techniques in the teaching of specific units in the social studies.
- 3407 Classroom Management in the Elementary School [ 329K  
The use of records and group techniques to improve human relations in the classroom.
- 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.
- 3409 The Education of Exceptional Children  
in the Elementary School [ 339T  
Consideration given to the philosophy of the education of exceptional children and to the psychology and educational treatment of atypical pupils in elementary schools.

- 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:* Twelve semester hours of Education, including 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.
- 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.
- For Graduate Credit Only*
- Prerequisite for courses listed below: Admission to Graduate Division without deficiencies in the major or minor in Education.
- 3502 Problems in Education — A Seminar [ 390I  
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 [ 390II  
*Prerequisite:* Education 3502.
- 3504 Educational Statistics — Beginning Course [ 39I  
May not be counted for credit by students who have credit for another course in statistics.
- 3505 The Construction and Use of Achievement  
Examinations — A Seminar [ 39IT  
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 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<sup>2</sup> 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  
A study of emotional and mental motivation patterns with emphasis on diagnosis and prediction during adolescence.
- 3517 Psychology of Personality Development of  
Secondary School Student [ 395T  
Factors helping and hindering normal development of the secondary school student. Heritage and the role of life experience. Case history and practical applications.
- 3518 Counseling and Vocational Guidance in the  
Secondary School [ 396  
Principles and methods used in counseling and vocational guidance in the secondary school. The counseling techniques used in school, home, personal life and social situations. The use of tests, interviews, and other techniques in vocational selection and training.
- 3519 Principles of Psychological Testing in the  
Secondary School [ 396K  
Construction and Administration. Primarily for students specializing in counseling and guidance. *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.



EDUCATION

*Former Number*

- 3522 Supervised Practice in Counseling [ NEW  
A minimum of one hour daily for five days a week during one semester will be spent in a local high school under the immediate direction of a counselor and also under the supervision of an instructor in the Department of Education of Texas Western College.
- 3523 Educational Trends [ 396R  
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, teacher's 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.
- 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, BARNES; *Associate Professors* BALLENTINE, RAYMOND; *Assistant Professors* HASSLER, BILLINGS, CERVENKA, McDILL  
*Instructor* VANZANT

### **ENGINEERING**

- |  | <i>Former<br/>Number</i> |
|--|--------------------------|
| 1101 Elementary Engineering Problems   | [ 101                    |
| 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.   |                          |
| 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> Mathematics 4115-16 and Drawing 2102. (Formerly included in Engineering 614.)   |                          |
| 3215 Statics   | [ 315                    |
| 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.  |                          |
| 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> Engineering 2213 and junior standing. (Formerly included in Engineering 614.)  |                          |
| 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. <i>Prerequisite:</i> Physics 4216 and Mathematics 3213-14.  |                          |
| 3321 Elements of Electrical Engineering  | [ 321                    |
| The electric field, capacitance; the magnetic field, inductance; electromagnetic forces and dynamics; transients. <i>Prerequisite:</i> Engineering 3319.   |                          |
| 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. <i>Prerequisite:</i> Engineering 2213 and 4314.   |                          |
| 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. <i>Prerequisite:</i> Physics 4215-16, and Mathematics 3213-14. |                          |

- 4334 Mechanics of Materials (\$4) [ 434  
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. *Prerequisite:* Engineering 3215.
- 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.
- 2338 Dynamics [ 238  
Principles of dynamics and application to engineering problems; motion of a particle, translation, rotation, plane motion, work and energy, impulse, and momentum. *Prerequisite:* Engineering 3215.
- 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.)
- 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.
- 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.
- 3354 Fluid Mechanics [ 354  
Physical properties of fluids, hydrostatics, energy and momentum equations, metering instruments, flow of liquids through pipes, orifices, and over weirs, and flow in open channels. *Prerequisite:* Physics 4215, Mathematics 3213-14, and Engineering 3215.
- 1355 Hydraulics Laboratory (\$2) [ 155  
Flow of water 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.

- 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.
- 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.
- 3423 Kinematics and Dynamics of Machinery (\$2) [ 323  
Motion of machine parts; velocities and accelerations; study of linkages, gears, cams, belts, and chains; forces acting upon machine parts taking into account their masses and inertia. Two lecture and three laboratory hours per week. *Prerequisite:* Engineering 2338.
- 3426 Engineering Economics [ 326  
Application of economics to engineering and industrial problems which require a knowledge of engineering for their solution. *Prerequisite:* Economics 3101 and at least 24 semester hours of engineering courses.
- 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 and 4314.
- 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. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 3354 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. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 3441.
- 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.
- 3446 Contracts and Specifications [ 346  
Elements of contracts and specifications, including discussions of the legal problem of contractual relations. *Prerequisite:* Senior standing.

- 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.
- 3448 Soil Mechanics (\$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.
- 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.
- 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.
- 3464 Servomechanisms [ NEW  
Theory and application of servomechanisms to control problems. *Prerequisite:* Engineering 4358 and 3423, Physics 4327, 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.
- 3470 Machine Design (\$2) [ 370  
Forces, stresses, and resultant design of various machine elements. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 2338 and 4334, and Metallurgy 3305.
- 3471 Advanced Engineering Problems (\$2) [ 371  
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. *Prerequisite:* Senior standing and consent of the chairman of the department.

**DRAWING**

- 2100 Mechanical Drawing (\$2) [ 203  
Introductory course for freshman engineering students who do not present mechanical drawing to reentrance. 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*

*Professors* SONNICHSEN, BRADY, LEACH; *Associate Professor* MOSES; *Assistant*

*Professors* BALL, BURLINGAME, JAMES, JONES, LEECH, PAST, PONSFORD;

*Instructors* COLLINGWOOD, DOUGLAS, EHMANN,\* FRANCIS, FUGATE,

GREGOR, HARDY, NORRIS, PEREZ, SCHENDLER, SMITH, WADDELL

### **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.

#### *For Undergraduates*

*Former  
Number*

- |         |   |        |
|---------|---|--------|
| 3100    | Pre-Freshman English  | [ 001  |
|         | For beginning freshmen whose English is below the standard required for admission to English 3101.  |        |
| 3101-02 | Freshman English  | [ 601  |
|         | Practice in organizing information, clarifying thought, improving written expression. Required of all freshmen.   |        |
| 3211-12 | Outline History of English Literature   | [ 612  |
|         | Survey of English literature from the beginning to the present time with emphasis on major works and authors. <i>Prerequisite:</i> English 3201-02.   |        |
| 3213-14 | English and American Literature of Today  | [ 612Q |
|         | 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 3201-02. |        |
| 3213    | English and American Literature of Today  | [ 312Q |
|         | The first semester of English 3213-14 offered for engineering students and others in need of three hours independent credit in literature. <i>Prerequisite:</i> English 3101-02.                          |        |
| 3215    | World Literature in Ancient and Medieval Times  | [ 315  |
|         | <i>Prerequisite:</i> English 3101-02.   |        |
| 3216    | World Literature from the Renaissance to the Present  | [ 316  |
|         | <i>Prerequisite:</i> English 3101-02.   |        |

#### *For Graduates and Undergraduates*

- |      |  |       |
|------|--|-------|
| 3311 | American Literature  | [ 336 |
|      | A study of the chief American poets and prose writers between the Revolution and the Civil War. <i>Prerequisite:</i> English 3211-12, 3213-14, or 3215-16.     |       |
| 3312 | American Literature  | [ 337 |
|      | A study of the most important poets and prose writers in America from the Civil War to the Present. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> English 3211-12, 3213-14, or 3215-16.               |       |

\*Leave of Absence.

- 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 Brontës, George Eliot, Hardy, and Meredith. *Prerequisite*: English 3211-12, 3213-14, or 3215-16.
- 3350 The English Novel since 1900 [ 357  
A survey of the English novel since 1900, concentrating on such figures as H. G. Wells, Arnold Bennett, John Galsworthy, Somerset Maugham, Aldous Huxley, J. B. Priestley, D. H. Lawrence, James Joyce, and Virginia Woolf. *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.
- 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.

*For Graduate Students Only*

*Prerequisite:* Admission to the Graduate Division with no deficiencies in the major or minor; or consent of the department head.

- 3511 Methods of Research and Bibliography [ 390
- 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.

# ENGLISH, SPEECH AND DRAMA

## Former Number

3520 Studies in Poe	[ 392
3525 Studies in Whitman	[ 393
3530 Studies in the Life and Literature of the Southwest	[ 394
3535 Studies in American Thought	[ 396
3598-99 Thesis Course	[ 698

Confer with the department head immediately after registration.

## 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. <i>Prerequisite:</i> Speech 3101, 3102, 3105, 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.  |       |
| 3215 Argumentation and Debate  | [ 310 |
| The principles and techniques of public discussion and debate. Training in phrasing and analyzing current questions; outlining and briefing cases for debate; selecting and using evidence; organizing refutation and rebuttal; together with a study of proof, applied logic and the common fallacies. Practice in formal public debate. <i>Prerequisite:</i> Sophomore standing. |       |
| 3216 Argumentation and Debate  | [ 311 |
| A continuation of Speech 3215. <i>Prerequisite:</i> Speech 3215.   |       |
| 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. <i>Prerequisite:</i> 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.
- 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.
- 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.

ENGLISH, SPEECH AND DRAMA

Former Number

- 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.
- 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,\* EVENSEN;*

*Instructor VOWELL; Part-time Instructor BURBRIDGE*

### GEOLOGY

Students intending to major in geology should consult with the department before committing themselves to a particular program of study. 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) 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.)	[ 301
3102	Historical Geology (\$2) 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.)	[ 302
3210	Principles of Geomorphology (\$2) 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.	[ 310
3211	Introduction to Geophysics 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 4104.	[ NEW
3216	Mineralogy 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).	[ 316
2217	Mineralogy (\$2) Determinative mineralogy. Largely devoted to the identification of minerals by physical characteristics. Six laboratory hours per week. <i>Prerequisite:</i> Geology 3216.	[ 217
3217	Mineralogy (\$2) Determinative mineralogy. Same as Geology 2217 with an additional hour of lecture per week. <i>Prerequisite:</i> Geology 3216.	[ 317

\*On leave, 1955-1956.

GEOLOGY AND GEOGRAPHY

Former Number

- 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 (\$4) [ 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.
- 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 (\$4) [ 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.
- 2464 Field Geology (\$2) [ 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.

GEOLOGY AND GEOGRAPHY

Former  
Number

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 ??? 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. C. SEILS, *Chairman*

MR. MIKE BRUMBELOW, *Coordinator of P.E., Intramurals and Athletics*  
*Professors SEILS, BRUMBELOW; Associate Professors WATERS, McCARTY, OLSEN;*  
*Assistant Professors COLLINS, CRAIGO; Instructors GLARDON, MOORE*

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. If student elects horseback riding, \$12.00 additional per month; golf, \$25.00 additional per semester. May be repeated for credit.
- 1101 Service Course for Freshmen Men (\$2) [ 201  
Three hours per week. If student elects horseback riding, \$12.00 additional per month; golf, \$25.00 additional per semester. May be repeated for credit.
- 1201 Service Course for Sophomore Men (\$2) [ 203  
Three hours per week. If student elects horseback riding, \$12.00 additional per month; golf, \$25.00 additional per semester. May be repeated for credit.
- 1202 Service Course for Sophomore Women (\$2) [ 204  
Three hours per week. If student elects horseback riding, \$12.00 additional per month; golf, \$25.00 additional 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.

- 3201 Organization and Administration of Physical Education [ 318K  
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.
- For Undergraduates and Graduates*
- 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.
- 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.
- 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.
- 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.
- 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.
- 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

[ 353K

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.

## 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 Practices 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.

## 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.

## 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.

## 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.

## 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.

**Graduate Courses**

(Prerequisite for courses listed below: Admission to Graduate Division without deficiencies in the major and minor, or consent of the chairman of the department.)

**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. J. L. WALLER, *Chairman*

*Professors* WALLER, STRICKLAND, GREGORY, PORTER; *Associate Professor* TIMMONS;

*Assistant Professors* QUINN, MCNEELEY, MILLER, MYRES, FULLER;

*Instructors* CONNOR, BROADDUS, VOWELL

### **HISTORY**

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

*For Undergraduates Only*

*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.

HISTORY, GOVERNMENT AND SOCIOLOGY

Former Number

- 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, 1776 to the Present [ 350  
 The diplomatic relations of the United States emphasizing developments of the past fifty years and basic foreign policies of the nation. *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.



## HISTORY, GOVERNMENT AND SOCIOLOGY

*Former Number*

- 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.

### **Graduate Courses**

*For Graduate Students Only*

*Prerequisite for Graduate courses in History: Admission to the Graduate Division without deficiencies in the major and minor, or consent of the head of the department.*

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

### **GEOGRAPHY**

*(See Page ??? 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 Only*

- 3210-11 American Government [ 610  
 The government of the United States--national, state, and local with special emphasis upon the Constitutions of the United States and of Texas. Fulfills the legislative requirement of the State of Texas for a course on the Constitutions of the United States and of Texas. *Prerequisite:* Sophomore standing.
- 2210 Constitutions of the United States and Texas [ 210  
 This course is designed to meet teacher certification requirements for out-of-state graduate students. It will not satisfy any part of the Government requirements for the Bachelor's degree at Texas Western College. *Prerequisite:* Graduate standing, or consent of the chairman of the department.

*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 and the Caribbean Area [ 332  
The constitutional development, governmental organization, and contemporary political problems of representative states, with special attention to Mexico. *Prerequisite:* Government 3210-11.
- 3333 The Government and Politics of South America [ 333  
The governmental structure and politics of the principal South American countries. *Prerequisite:* Government 3210-11.

## HISTORY, GOVERNMENT AND SOCIOLOGY

### *Former Number*

- 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 Only*

- 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.

### *For Graduates and Undergraduates*

- 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.

- 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**

DEAN J. F. WILLIAMS, *Chairman*

*Professor WILLIAMS; Assistant Professors HICKS, MIDDAGH; Instructors HERTZOG, PHILPOTT; 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.

### **JOURNALISM**

*For Undergraduates*

*Former  
Number*

- 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. Survey study of the principles and practices of public relations.
- 3107 Elementary Photography (\$2) [307  
Learning of the normal order of the photographic process. Discussion of lenses and cameras along with the actual photographic process: exposure, development, fixing and contact printing. Two lectures and four laboratory hours per week.
- 3108 Fields of Photography (\$2) [308  
A continuation of Elementary Photography with special emphasis on press photography. A survey of the various fields of photography including a practical working knowledge of high-speed cameras and their most effective uses. Two lectures and four laboratory hours per week. *Prerequisite:* 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. *Prerequisite:* 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. *Prerequisite:* Sophomore standing including English 3101-02.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 3313 **Pictorial Journalism (\$2)** [ 341  
The development of modern day methods of photography, and its uses in the newspaper and magazine fields today. A study of picture editing, news cameras, covering picture assignments, photo-engraving, elements of picture layouts. *Prerequisite:* Junior standing.
- 3314 **Printing Processes and Reproduction** [ 349  
Explanation and demonstration of processes: Letterpress, lithography, intaglio, photo-engraving, photo-offset, paper analysis, typesetting, binding. Two lectures and two hours workshop per week. *Prerequisite:* Junior standing.
- 3315 **Principles of Typography** [ 352  
Study of type and layout technique, with emphasis on practical problems that confront the newspaper editor and advertising manager. Two lectures and two workshop hours per week. *Prerequisite:* Journalism 3314, or print shop experience.
- 3350 **Fundamentals of Advertising** [ 321K  
Relation of advertising to other business functions; study of campaigns, appropriations, and media; survey of activities of those engaged in advertising work. *Prerequisite:* Junior standing.

- 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; employes; customers; suppliers; social and religious institutions. *Prerequisite:* Junior standing.
- 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.
- 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.

**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 telecasting and broadcasting; 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

# JOURNALISM, RADIO AND TELEVISION

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. Television studios and control rooms are situated in TELEVISION CENTER in Magoffin Auditorium. 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, and telecast by remote facilities over El Paso television stations. 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.

	Former Number
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. <i>Prerequisite:</i> 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 and three laboratory hours per week.) <i>Prerequisite:</i> 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 and three laboratory hours per week. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> Completion of English 3101-02 and sophomore standing.	
3320 Television Production I (\$2)	[ 320
A practical approach to the presentation of spot announcements, 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 four laboratory hours per week. <i>Prerequisite:</i> 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 four 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. Two lectures and four laboratory hours per week. *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. Syllabus of things to come; television as an aid to teaching. *Prerequisite*: Junior standing.

3415 Preparation, Presentation of Radio Programs, [ 333  
Elementary Grades

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, [ 333K  
High School

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

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. *Prerequisite:* Senior standing and eighteen hours of Education.

**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**

DR. E. J. KNAPP, *Chairman*

*Professors* KNAPP, BARNES; *Associate Professors* McMAHAN, BENTZ; *Assistant Professors* RESLEY, GLADMAN, SCHUMAKER; *Instructors* THREADGILL, PATTERSON, SHEPHERD, KIRBY, MICULKA, SMART, ITURRALDE

### **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.

	<i>Former Number</i>
	<i>For Undergraduates</i>
3100 Advanced Arithmetic	[ NEW ]
For students who are required by their major departments to take supplementary training in arithmetic. Credit may not be used to satisfy the mathematics requirement for a degree, except by majors in elementary education, or to serve as a prerequisite for any course in mathematics.	
3101 Introductory Mathematics	[ 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.	
3102 Introductory Mathematics	[ 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.	
3104 Mathematics of Investment	[ 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.	
3106 Trigonometry	[ 306 ]
<i>Prerequisite:</i> Three semester hours of mathematics.	
2110 Solid Geometry	[ 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.	
3113 Algebra	[ 305 ]
Review of secondary school and intermediate algebra for engineering students whose background in this subject is deficient. Not counted in addition to Mathematics 3101	

- 4115 Algebra [ 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 five 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 3113. *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 duality. *Prerequisite:* Mathematics 3214.
- 3435 Higher Mathematics for Engineers and Physicists [ 335  
Designed to help the student in senior and graduate work in engineering, physics, mathematics, and certain fields of chemistry. Infinite series, Fourier series, solutions of equations, determinants, matrices, additional study of partial derivatives, cylindrical and spherical coordinates, Jacobians, Green's theorem. *Prerequisite:* Mathematics 3325.
- 3436 Higher Mathematics for Engineers and Physicists [ 336  
Continuation of Mathematics 3435. *Prerequisite:* Mathematics 3435, or Mathematics 3325 and 3326.
- 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 Physics and Mathematics 3436. Omitted 1956-57.
- 3452 Analytical Mechanics [ 342  
Continuation of Mathematics 3451. May be counted as three advanced hours in Physics. *Prerequisite:* Mathematics 3451. Omitted 1956-57.

# PHYSICS

Mathematics 3451 and 3452 may be counted as Physics credit.

*For Undergraduates and Graduates*

- 3100 Introduction to Physics [ NEW  
A lecture course for engineering students who do not present one unit of high school physics for entrance.
- 3101-02 General Physics (\$2) [ 601  
Three lectures and two laboratory hours per week.
- 4103-04 General Physics (4) [ 801  
*Designed primarily for pre-medical students. Mechanics, heat, electricity, magnetism, sound, and light. Physics 4103-04 and 3101-02 may not be counted for credit by the same student. Four lectures and two laboratory hours per week.*
- 3106 Physics of Musical Sound [ NEW  
A lecture course primarily for music majors.
- 6211 Physics (\$4) [ 611  
Mechanics, heat, wave motion, and sound. For students in civil and mining engineering. Five lectures and three laboratory hours per week. *Prerequisite:* Mathematics 3213 concurrently.
- 4212 Physics (\$4) [ 413  
Electricity, magnetism, and light. For students in civil and mining engineering. Three lectures and three laboratory hours per week. Neither Physics 6211 nor Physics 4212 may be counted for credit by a student who earns credit for Physics 3213 or 3214. *Prerequisite:* Physics 6211 and credit for or registration in Mathematics 3213 or 3214.
- 3213-14 Second-Year Physics (\$2) [ 612  
First semester: Light, electricity, and magnetism. Second semester: Mechanics, heat, and sound. For students majoring in physics or in engineering courses other than civil or mining engineering. Covers the content of Physics 6211 and Physics 4212 from a more rigorous viewpoint. May be offered in place of 6211 and 4212 by students who decide to major in civil or mining engineering. Calculus is used throughout the course. Three lectures and three laboratory hours per week. *Prerequisite:* Mathematics 3213 concurrently and Physics 3102.
- 4215 Mechanics and Heat [ 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.
- 4216 Electricity, Magnetism, and Wave Motion [ NEW  
Three lectures and three laboratory hours per week. *Prerequisite:* Mathematics 3213 or 3214 concurrently and Physics 4215.

*For Undergraduates and Graduates*

- 4317 Light, Sound, and Modern Physics [ 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.
- 3323 Light [ 340  
Advanced topics. *Prerequisite:* Mathematics 3214 and six semester hours of physics.

MATHEMATICS AND PHYSICS

Number

Former

- 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. Omitted 1956-57.
- 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. Omitted 1956-57.
- 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. *Prerequisite:* Physics 3214 or Physics 4212.
- 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.
- 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 3214 or 4212 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 3214 or 4212.
- 2344 Advanced Laboratory Practice in Electricity (\$2) [ 233  
A continuation of Physics 2343. *Prerequisite:* Physics 3214 or 4212.
- 4445 Electron Tube Circuits (\$4) [ 445  
Continuation of Physics 4340. Three hours of lecture and three hours of laboratory per week. *Prerequisite:* Physics 4340.

## **Military Science and Tactics**

COL. JOHN ALFREY, *Commandant*

*Professor ALFREY; Assistant Professors LT. COL. FORD, MAJ. HODGE.*

*CAPT. BERG; Instructors M/SGT MAGGIO, M/SGT MORGAN*

*SFC HERRERA, SFC BREWTON*

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. Credit for as much as one year 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 between the ages of 14 and 22 years (24 years for veterans), 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 program a student is tendered a commission in the United States Army Reserve, and, if he has had no prior active military service, 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 Officers' Training Corps (ROTC), Individual Weapons and Marksmanship, American Military History, School of the Soldier and Exercise of 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, Crew Served Weapons and Gunnery, School of the Soldier and Exercise of 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 Arms and Services, Small Unit Tactics and Communications, School of the Soldier and Exercise of 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, Military Administration and Personnel Management, Service Orientation, School of the Soldier and Exercise of Command. Four classroom hours 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, NICHOLSON,  
 GRAHAM (*Professor Emeritus*)

<b>MINING</b>	<i>Former Number</i>
3201 Elements of Mining A study of prospecting, development, earth and rock excavation, explosives, tunneling, shaft sinking, timbering, boring, underground transport, and hoisting. <i>Prerequisite:</i> Geology 3216 and Physics 4215.	[ 310
2101 History of Mining Highlights of mining eras and mining districts. <i>Prerequisite:</i> Permission from the head of the Mining department.	[ 211
1102 The Mineral Industry An introductory course covering the mining industry. A study of production and uses of the most important metals and non-metallic industrial minerals. Open to all students.	[ 112
2301 Mining Methods A comprehensive study of mining methods. <i>Prerequisite:</i> Mining 3201.	[ 221
3302 Mine Surveying (\$2) 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. <i>Prerequisite:</i> Mining 2301, and Engineering 4314.	[ 322
3303 Non-Metallic Mining The mining and preparation of coal, potash, oil shale and other non-metallic minerals. The collection of by-products is considered. <i>Prerequisite:</i> Mining 2301.	[ 323
2304 Mine Surveying; Summer Field Work (\$2) 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. <i>Prerequisite:</i> Mining 3302. Eight hours daily for two weeks, starting Monday two weeks prior to registration.	[ 224
2401 Tunneling and Blasting Methods of excavation and material handling in tunneling and hard-rock foundation. Handling of explosives, placement of charges, safety precautions, ventilation. <i>Prerequisite:</i> Junior standing.	[ 237
3402 Mine Valuation and Report (\$2) 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. <i>Prerequisite:</i> Completion of the requirements for the Bachelor of Science Degree by the end of the following fall semester. One hour lecture and six laboratory hours per week.	[ 363
3403 Management Many of the applications of economics to mining are considered. <i>Prerequisite:</i> Completion of the requirements for the Bachelor of Science Degree by the end of the following fall semester.	[ 364
3404 Mine Plant A study of underground haulage, hoisting plant, compressed air plant, rock drills and pumping. <i>Prerequisite:</i> Senior standing	[ 366

- 3405 Mine Plant (\$2) [ 368  
A study of mine ventilation and mining law. *Prerequisite*: Senior standing. 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 General Metallurgy [ 321  
Introductory course covering a description of the various processes for treating all the ordinary metals. *Prerequisite*: Chemistry 4103-04, and Physics 4215 or Physics 3101-02.
- 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 Physics 4215.
- 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.
- 3304 Non-metallics [ 325  
A survey course of the non-metallic and ceramic industries, not including coal, oil or sulphur. Emphasis is placed upon the present economic utilization of, and possible future demands for those minerals which are classed as non-metallic. *Prerequisite*: Chemistry 4103-04, and Physics 4215 or 3101-02.
- 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 Physics 4215 or 3101-02.
- 2306 Introduction to Ceramics [ 230  
Study of the ceramic raw materials with their beneficiation, and the fuels, combustion, and silicate chemistry as related to industry. *Prerequisite*: Chemistry 4103-04, and Physics 4215 or 3101-02.
- 3306 Introduction to Ceramics (\$2) [ 330  
This course is the same as Metallurgy 2306, except that it includes a three-hour laboratory. Two lectures and three laboratory hours per week. *Prerequisite*: Chemistry 4103-04, and Physics 4215 or 3101-02.
- 3307 Electric Furnaces [ 353  
A foundation course in electric smelting and the commercial applications of the electric furnace. *Prerequisite*: A physics course in electricity.
- 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.

- 2401 Principles of Copper Smelting [ 252  
Roasting, smelting, and refining in the pyrometallurgical reduction of a copper ore is given the primary attention, coupled with the calculation of furnace charges and slags. Offered subject to demand. *Prerequisite:* Metallurgy 3403.
- 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, Physics 4215 or 3101-02.
- 2402 Ferrous Metallurgy [ 260  
Same as Metallurgy 3402 except that the calculations are omitted. *Prerequisite:* Chemistry 4103-04, Physics 4215 or 3101-02.
- 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, Physics 4215 or 3101-02.
- 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, Physics 4215 or 3101-02.
- 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 and 3403.
- 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 3403.
- 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:* Permission of the Chairman of the Mining and Metallurgy Department.
- 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*

A student with no high school language will register for Course 4101; with two units he may continue by entering Course 4102 in the same language; with one, three, or four units students will consult the 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> French 4102.   |       |
| 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. <i>Prerequisite:</i> French 3202.  |       |
| 3332    | The French Classical Period  | [ 332 |
|         | A study of the representative works of Corneille, Racine, Molière, La Fontaine, etc. Outside readings. <i>Prerequisite:</i> French 3202.   |       |
| 3333    | Masterpieces of French Literature*   | [ 333 |
| 3335    | Modern Novel: Early Period   | [ 335 |
|         | Reading of such eighteenth century novelists as Lesage, l'Abbé Prévost and Bernardin de Saint-Pierre and of the nineteenth century novelists up to 1850. <i>Prerequisite:</i> French 3202.   |       |
| 3336    | Modern Drama: Early Period   | [ 336 |
|         | The French drama of the nineteenth century, the Romantics and post-romantics: de Vigny, Hugo, Dumas, Musset, etc. <i>Prerequisite:</i> French 3202.  |       |

MODERN LANGUAGES

Former Number

3337	Modern Novel: Later Period*	[ 337
3339	The Short Story*	[ 339
3340	Modern Drama: Later Period*	[ 340
3357	Advanced Composition and Grammar Review*	[ 357
3358	Contemporary French Literature*	[ 358
3377	The History of French Poetry: A Survey	[ 377

*Prerequisite:* French 3202.

**Graduate Courses**

*Prerequisite:* Admission to the Graduate Division with no deficiencies in the major or minor, or consent of the head of the department.

3590	Seminar	[ 390
3591	Graduate Reading Course	[ 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. <i>Prerequisite:</i> With or after German 4101.		
3110	German Civilization	[ 310
Use of slides and films of everyday life to teach spoken German. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> 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. <i>Prerequisite:</i> Spanish 4101.		

- 3114 Mexico 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.
- 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 de 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
- 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 latter part of the nineteenth century; Palacio Valdés, Blasco Ibáñez, 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
- 3362 The New World in Spanish Literature: [ 362N  
(Northern Hemisphere)  
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 Cibola*, etc. Special attention to the American Southwest. *Prerequisite:* Spanish 3202.

MODERN LANGUAGES

Former Number

- 3363 The Literary History of Argentina [ 363  
A survey of the principal movements and writers in Argentine literature. 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.

**Graduate Courses**

*Prerequisite*: Admission to the Graduate Division with no deficiencies in the major or minor, or consent of the head of the department.

- 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 [ 391
- 3592 History of the Spanish Language (Phonology) [ 392
- 3592 History of the Spanish Language (Morphology) [ 393
- 3594 Cervantine Studies [ 394
- 3595 Seminar on the Latin American Novel [ 395
- 3596 Old Spanish Literature [ 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*

*Associate Professor* BRIGGS; *Assistant Professors* CARRICO, EIDBO, GODDARD;

*Instructor* HENDERSON; *Special Instructors* CHAVEZ, MERRILL, SIMPSON

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 teaching in Texas Public Schools, either elementary or secondary, 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.

### **THEORY**

*Former  
Number*

#### **2111-12 Sight Singing and Dictation**

[ 402

Rhythmic, melodic and harmonic dictation; one through four-part sight singing. Theory 3113-14 taken concurrently. Two lectures and one workshop hour per week.

#### **3113-14 Essentials of Acoustics and Music Theory**

[ 601

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.

#### **2211-12 Sight Singing and Dictation**

[ 611

A continuation of Music Theory 2112. Two lectures and one workshop hour per week. *Prerequisite:* Music Theory 2112, or equal.

#### **3213-14 Harmony**

[ 611

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. *Prerequisite:* Music 3113-14.

*For Undergraduates and Graduates*

#### **2311 Counterpoint**

[ 221C

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. *Prerequisite:* Music 3213-14.

#### **2312 Counterpoint**

[ 211K

Continuation of Music 2311. *Prerequisite:* Music 2311.

#### **2313-14 Composition**

[ 459

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. *Prerequisite:* Theory 3213-14 or equivalent.

#### **2315 Form and Analysis**

[ 418a

Detailed study of the logic of musical structure as exemplified in representative works beginning with song forms and including the larger forms. *Prerequisite:* Music 3213-14.



# MUSIC

## Former Number

2316 Form and Analysis [ 418b

Continuation of Music 2315. *Prerequisite:* Music 2315.

3411 Choral Arranging [ 357

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. *Prerequisite:* Music 3213-14.

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 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

1141-42, 1241-42, 1341-42, 1441-42 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.

1151-52, 1251-52, 1351-52, 1451-52 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.

1165-66, 1265-66 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

The enjoyment of the arts through an understanding of 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.

# MUSIC

Former  
Number

## 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*: Six hours of Music and junior standing.
- 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*: Six hours of music and junior standing.
- 3323 Opera Workshop [ 346a  
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.
- 3324 Opera Workshop [ 346b  
Continuation of Music Literature 3323. *Prerequisite*: Previous course.
- 3423 Opera Workshop [ 347a  
Continuation of Music Literature 3324. *Prerequisite*: Previous course.
- 3424 Opera Workshop [ 347b  
Continuation of Music Literature 3423. *Prerequisite*: Previous course.

# MUSIC EDUCATION

## For Undergraduates and Graduates

- 3331 Choral Methods, Techniques and Conducting [ 351  
A study of choral organization and conducting, with primary emphasis on literature, program-building and rehearsal problems. *Prerequisite*: Junior standing and six semester hours of music.
- 3332 Choral Methods, Techniques and Conducting [ 351T  
Continuation of Music 3331. *Prerequisite*: Music 3331 and permission of department head.
- 3333 Conducting Methods and Materials [ 352K  
Designed for the student who has had no previous conducting experience. Posture, technique of the baton; fundamental principles in obtaining tone balance, color, shading, interpretation, score reading, etc. Program building and practical application of the conducting of smaller concert numbers. *Prerequisite*: Junior standing and four hours of music.
- 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. Discussion and presentation of curricular plans and materials. Required for Elementary Education Majors. *Prerequisite*: Junior standing. (Approved by Texas Education Agency toward legal requirements for teaching in elementary schools.)
- 3335 Teaching of Music in the Elementary Schools [ 375K  
Continuation of Music Education 3334, with emphasis on activities suitable for both the classroom and the special music teacher. For Elementary Education and Music Education Majors. *Prerequisite*: Music Education 3334, or equivalent musical training.

MUSIC  
Number

- 3336 Teaching of Music in the Elementary Schools [ 376  
The study of procedures in the teaching of music in the first six grades, with the emphasis on activities 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.
- 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:* Junior standing in music education.
- 3433 Teaching of Music in the Junior and Senior High Schools [ 376K  
The study of procedures in the teaching of music in the upper level grades and in high school. General treatment of choral and instrumental music, music appreciation, theory and integration. Public school music as it is related to the life and needs of a community is fully studied. *Prerequisite:* Junior standing in music education.
- 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 materials. *Prerequisite:* Junior standing in music education.
- 3435 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:* Junior standing and permission of the chairman of the department.
- 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 classroom. *Prerequisite:* Senior standing in Music Education and permission of department chairman.
- 4402 Professional Laboratory Experience in the Elementary Grades [ 328L  
A minimum of 10 hours per week for one semester of laboratory teaching experience in the elementary school classroom. *Prerequisite:* Senior standing in Music Education and permission of department chairman.
- 4403 Professional Laboratory Experience in the High School [ 327K  
A minimum of 10 hours per week for one semester of laboratory observation and teaching experience in the secondary schools. *Prerequisite:* Senior standing in Music Education and permission of department chairman.
- 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 schools. *Prerequisite:* Senior standing in Music Education and permission of department chairman.
- Graduate Credit Only*
- 3531 Seminar: Problems in Music Education [ 390  
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:* Admission to the Graduate Division without deficiencies in major or minor, or consent of department head.

## MUSIC

Former  
Number

- 3532 Seminar: Problems in Music Education [ 390k  
Extension of 3531. *Prerequisite*: Music 3531.
- 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*: Admission to Graduate Division without deficiencies in major or minor, or consent of the department head.
- 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*: Admission to Graduate Division without deficiencies in major or minor, or consent of department head.
- 3535 Field Work in Music Education [ 395  
The student works individually on a selected topic with an assigned specialist in that area under supervision of department head. *Prerequisite*: Admission to Graduate Division without deficiencies in major or minor, or consent of department head.
- 3536 Field Work in Music Education [ 395k  
Continuation of Music Education 3535. *Prerequisite*: Music Education 3535.

## APPLIED MUSIC

Music Theory majors are required to minor in Applied Music. Students must satisfactorily pass a placement test to determine the level of study. A grade of "B" is required on the major instrument. For full description of the course of study for any Applied Music course consult the chairman of the department.

### 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.

A large R.O.T.C. Band is available to students enrolled in Military Science. Band, Choir, or Chorus require concurrent registration with Band or Choral Literature.

- 1143-44, 1243-44, 1343-44, 1443-44 (\$2) [ 201, 211, 221, 231  
Three hours per week. *Prerequisite*: Preceding course or placement.
- 1155-56, 1255-56, 1355-56, 1455-56 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*: Preceding course or placement.

### 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.

MUSIC  
Former Number

2171, 2172, 2271, 2272, 2371, 2372 (\$5 & \$5)

[ 206, 206K, 216, 216K, 226, 226K

Two classes and six practice hours per week. *Prerequisite:* Preceding course or placement. (Exception: only \$2.00 for Class Voice.)

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.

**Individual Instruction**

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

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.

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.

**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:* Junior standing and permission of department head.

3492 Selected Problems in Applied Music (\$5 & \$45)

[ 369K

Two thirty-minute lessons and twelve practice hours per week. *Prerequisite:* Music 3491.

**Piano, Organ**

These courses will be designated as Piano 2181-82, Piano 2281-82, etc., Organ 2181-82, etc.

PRIMARY: For non-majors and students needing preparatory study.

2181-82, 2281-82, 2381-82 (\$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.

## MUSIC

Former  
Number

### **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.

2181-82, 2281-82, 2381-82 (\$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. *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.

MUSIC

Former Number

**PRIMARY:** For non-majors and for students needing preparatory study.

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 (\$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.

## **Philosophy and Psychology**

DR. C. C. CRAWFORD, *Chairman*

*Professor CRAWFORD; Assistant Professors KELSEY, BOSWORTH, DAY, SHERMAN;*

*Instructor HACKETT*

### **PHILOSOPHY**

*Former  
Number*

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



**PSYCHOLOGY**

- 3201 Introduction to Psychology [ 310  
A survey of basic principles in general psychology. *Prerequisite:* Sophomore standing.
- 3202 Applied and Business Psychology [ 312  
The application of psychological principles to modern business and industry, personal adjustment, and the professions. *Prerequisite:* Psychology 3201 or Junior standing in Business Administration or Engineering.
- 3206 Child Psychology [ 314  
Principles of growth and development from infancy to adolescence. *Prerequisite:* Psychology 3201.
- 3301 Advanced General Psychology [ 341  
Extension of basic principles in general psychology as to their origin and application. Special emphasis on contemporary problems in psychology. *Prerequisite:* Six semester hours of psychology including Psychology 3201.
- 3302 Psychology of Personality [ 378  
Personality development of the individual from adolescence to maturity. *Prerequisite:* Six hours of psychology including Psychology 3201.
- 3306 Personnel and Vocational Psychology [ 340  
A survey of principles and methods used for selection and placement in personnel management and vocational counseling. *Prerequisite:* Six semester hours of psychology including Psychology 3201 or senior standing in Business Administration or Engineering.
- 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 and Test Construction (\$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 hours in psychology including Psychology 3201.
- 3401 Psychological Testing (\$) [ 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. It is strongly recommended that this course be preceded by Psychology 3317.
- 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.

- 3411 Physiological Psychology (\$2) [ 361  
Basic psychological processes in relation to structure and function. Two lectures and two laboratory hours per week. *Prerequisite*: Nine 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 Comparative and Experimental Psychology (\$2) [ 362  
A survey of theories and techniques of experimentation on infrahuman and human behavior. Experiments will be performed to illustrate theories and techniques. *Prerequisite*: Nine semester hours of psychology including Psychology 3201 and 3317 or its equivalent.
- 3422 Practicum in Statistical Methods (\$2) [ NEW  
Practice in test construction and use of modern calculating devices, (e.g. calculators and test-scoring machines). Two lecture and two laboratory hours per week. *Prerequisite*: Psychology 3317.
- 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*: Twelve semester hours in psychology including Psychology 3201.
- 3452 Independent Research [ 371I  
Independent student work under the supervision of the staff. *Prerequisite*: Fifteen 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.

## Statistical Summaries

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### STUDENTS

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		LONG SESSION, 1954-55		
		Men	Women	Total
Engineering				
Postgraduates	29	—	29	
Seniors	57	—	57	
Juniors	65	—	65	
Sophomores	160	—	160	
Freshmen	487	—	487	
Non-credit	6	—	6	
Total	804	—	804	
Arts and Sciences				
Postgraduates	433	312	745	
Seniors	203	121	324	
Juniors	283	156	439	
Sophomores	359	184	543	
Freshmen	971	609	1580	
Non-credit	37	26	63	
Total	2286	1408	3694	
Total Individual Students	3090	1408	4498	

	SUMMER SESSION, 1954		
	Men	Women	Total
Students registered in the first term.....	931	650	1581
Students registered in the second term.....	808	458	1266
Total.....	1739	1108	2847
Total Individual Students in Summer Session.....	1112	772	1884

# DEGREES CONFERRED

1916-1955

Year	Engineer of Mines	B.S. Mining Engineering	B.S. Engineering Civil      Electrical	B. A.	B.S. in Science	B. B. A.	B. Music	M. A.	Total
1916	3								3
1917	7								7
1918	1								1
1919	1								1
1920	5								5
1921	8								8
1922	9								9
1923	9								9
1924		15							15
1925		9							9
1926		4							4
1927		7							7
1928		7							7
1929		11							11
1930		10							10
1931		9							9
1932		13		12					25
1933		14		47					61
1934	1	7		45					53
1935		6		55					61
1936		11		50					61
1937	1	10		71					82
1938		13		80					93
1939		14		97					111
1940	1	22		100					123
1941		2		105					107
1942		19		116				3	138
1943		14		87	12			2	115
1944		4		57	8			1	70
1945	1	1		55	3			2	62

Year	Engineer of Mines	B.S. Mining Engineering	B.S. Engineering Civil	B.S. Engineering Electrical	B. A.	B.S. in Science	B. B. A.	B. Music	M. A.	Total
1946		6			70	10			5	91
1947		14			95	26	8		2	145
1948	1	10			117	43	29		15	215
1949		18	7	18	158	45	57		25	328
1950		23	19	23	182	49	79	3	66	444
1951		9	23	14	171	50	62	4	92	425
1952		11	13	9	162	23	38	8	96	360
1953		8	13	14	143	30	34	6	75	323
1954	1	14	15	17	156	18	43	16	71	351
1955		9	5	9	153	20	53	16	60	325
<b>TOTAL</b>	<b>49</b>	<b>344</b>	<b>95</b>	<b>104</b>	<b>2384</b>	<b>337</b>	<b>403</b>	<b>53</b>	<b>515</b>	<b>4284</b>

### Summary 1955

	CONFERRED IN 1955			TOTALS	
	Men	Women	Both	1916-55	
Engineering:					
Engineer of Mines.....				49	
Bachelor of Science in Mining Engineering.....	9		9	344	
Bachelor of Science in Engineering.....					
Civil.....	5		5	95	
Electrical.....	9		9	104	592
	23		23		
Arts and Sciences:					
Bachelor of Arts.....	62	91	153	2384	
Bachelor of Science in the Sciences.....	19	1	20	337	
Bachelor of Business Administration.....	50	3	53	403	
Bachelor of Music.....	8	8	16	53	3177
	139	103	242		
Graduate:					
Master of Arts.....	25	35	60	515	515
Total Degrees Conferred.....					4284



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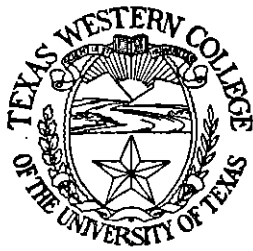
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¶ *The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government.*

*Sam Houston*

¶ *Cultivated mind is the guardian genius of Democracy, and while guided and controlled by virtue, the noblest attribute of man. It is the only dictator that freemen acknowledge, and the only security which freemen desire.*

*Mirabeau B. Lamar*

¶ *The cover design was obtained by making prints from an adobe — the native “bricks” of the Southwest for more than four centuries. Mud, straw, pebbles create the textural design.*

