

BULLETIN

TEXAS WESTERN

OF THE UNIVERSITY OF TEXAS

COLLEGE

at El Paso

★ **ARTS and
SCIENCES**

★ **MINES and
ENGINEERING**

★ **GRADUATE
STUDY**

1951-1952

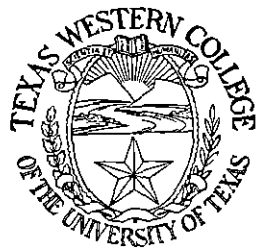
CATALOG

TEXAS WESTERN COLLEGE

1951-1952

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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

Texas Western College

OF THE UNIVERSITY OF TEXAS

Formerly the COLLEGE OF MINES AND METALLURGY

El Paso, Texas

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TEXAS ASSOCIATION OF COLLEGES

ARTS *and* SCIENCES

MINES *and* ENGINEERING

GRADUATE STUDY

Volume XXXVI

March, 1951

Number 5101

Published bimonthly by Texas Western College at El Paso

Entered as second-class matter, March 7, 1935, at the post office at
El Paso, Texas, under the Act of August 24, 1912

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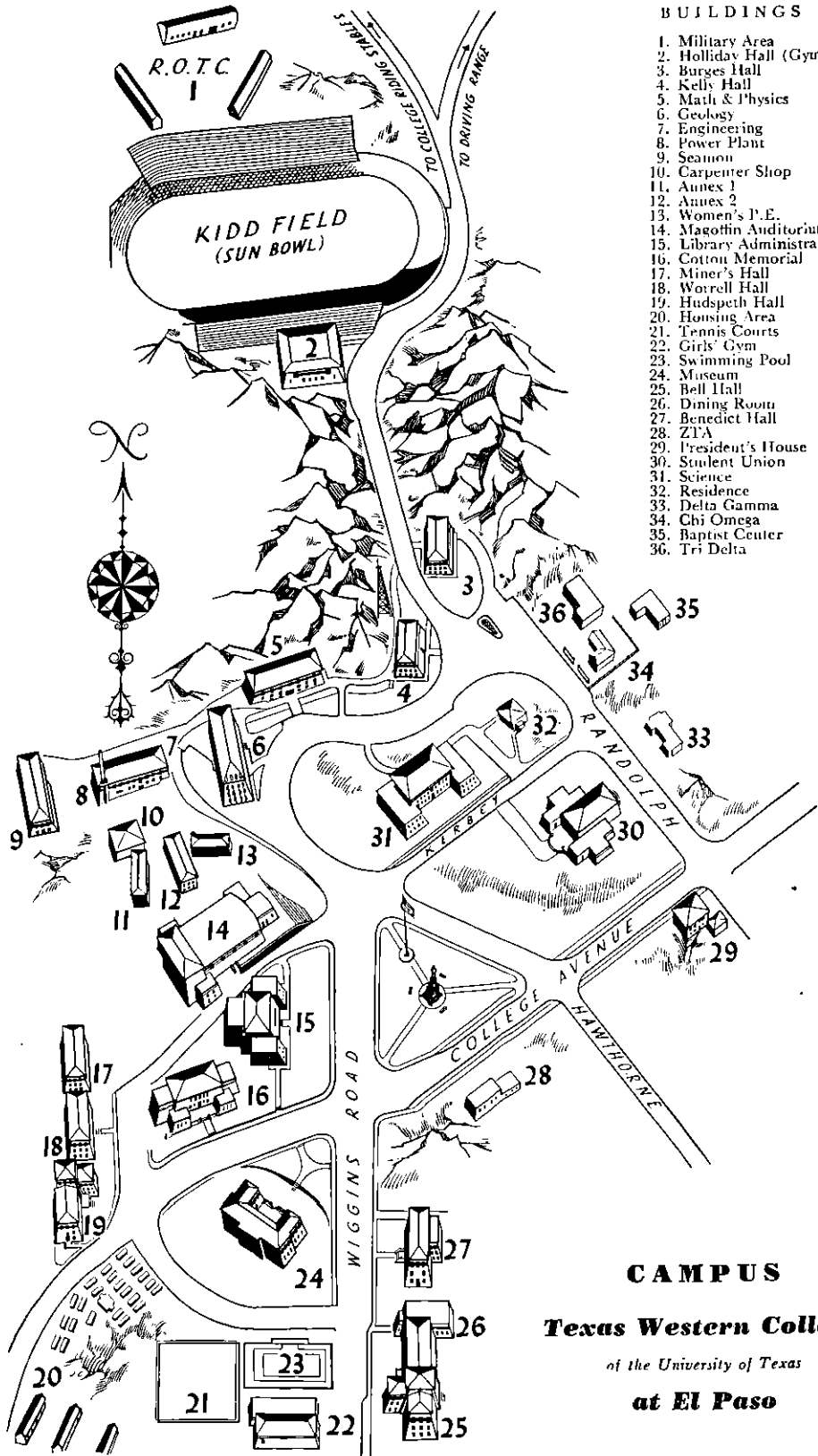
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*Leave of absence, 1950-1951



BUILDINGS

1. Military Area
2. Holliday Hall (Gym)
3. Burges Hall
4. Kelly Hall
5. Math & Physics
6. Geology
7. Engineering
8. Power Plant
9. Seamon
10. Carpenter Shop
11. Annex 1
12. Annex 2
13. Women's P. E.
14. Magoffin Auditorium
15. Library Administration
16. Cottou Memorial
17. Miner's Hall
18. Worrell Hall
19. Hudspeth Hall
20. Housing Area
21. Tennis Courts
22. Girls' Gym
23. Swimming Pool
24. Museum
25. Bell Hall
26. Dining Room
27. Benedict Hall
28. ZTA
29. President's House
30. Student Union
31. Science
32. Residence
33. Delta Gamma
34. Chi Omega
35. Baptist Center
36. Tri Delta

CAMPUS

Texas Western College
of the University of Texas
at El Paso

CALENDAR

1952

January

- 3—Thursday. Classes resumed.
- 9-16—Wednesday. Pre-registration conferences for second semester.
- 17-24—Thursday through Thursday. Final examinations for first semester.
- 25-26—Friday and Saturday. Freshman convocation and guidance tests, 8:30 a.m., Magoffin Auditorium.*
- 26—Saturday. Physical examinations for transfer students who have 30 or more semester hours. A physical examination is required of each student entering for the first time.
- 28-29—Monday and Tuesday. Physical examinations for all beginning students and for transfers having less than 30 semester hours. Benedict Hall for women and Holliday Hall for men.
- 28—Monday. 1:00 p.m. Registration of students who have 90 or more semester hours, including graduates.
- 29—Tuesday. Registration of students who have at least 30 but not more than 89 semester hours.
- 30—Wednesday. Registration of students having less than 30 semester hours and all others who have not registered.
- 31—Thursday. Classes begin.

February

- 1—Friday. Condition, postponed, and advanced standing examinations. Approved petition forms must be in the Office of the Registrar 4 days in advance.
- 2—Saturday. 8:00-11:30 a.m. Completion of registration for courses given at Technical Institute.

March 20—Thursday. Mid-semester reports.

April 11-14—Friday through Monday. Easter holidays.

May 3—Saturday. Major examinations.

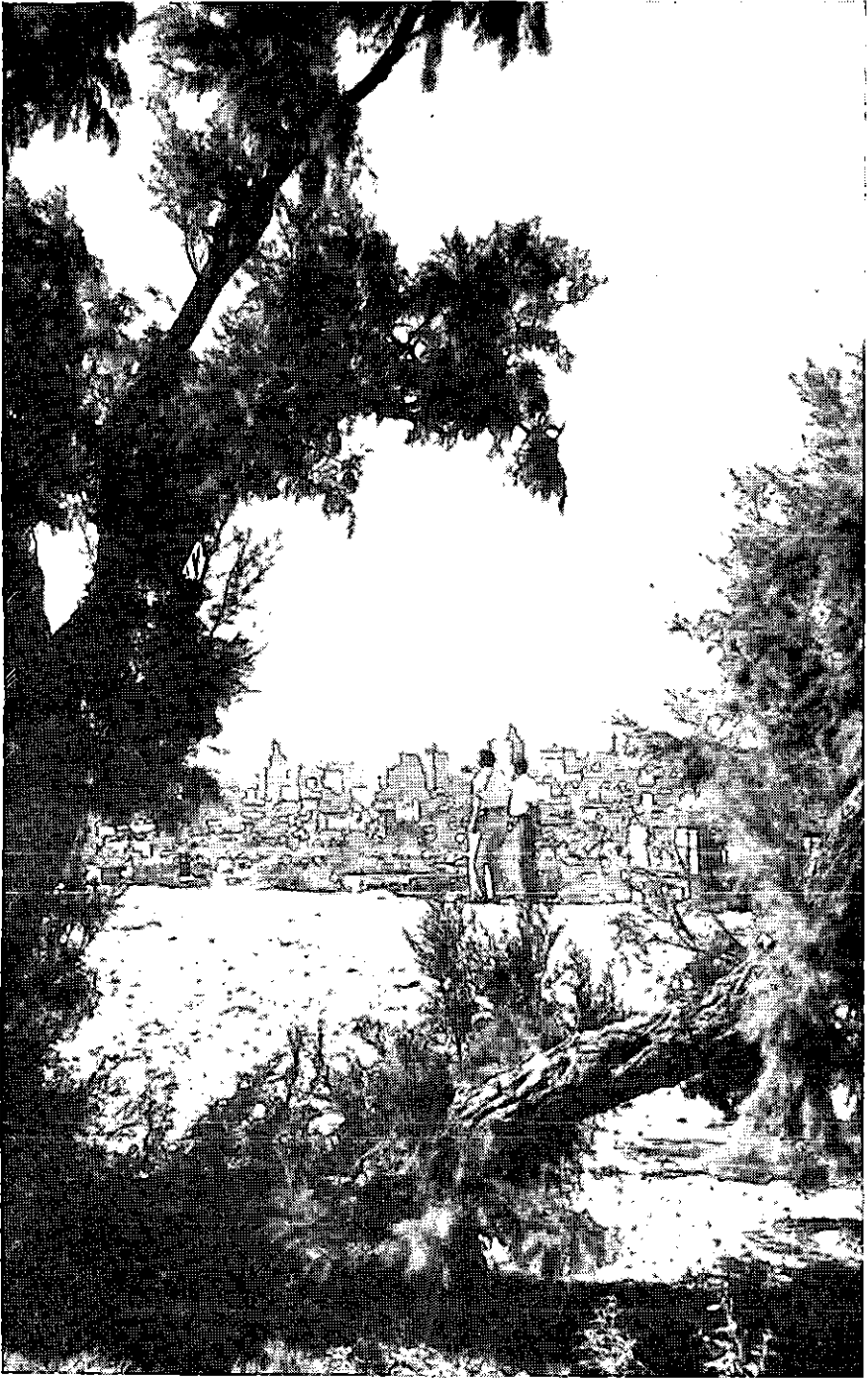
21—Wednesday. Final examinations for second semester begin.

June 1-2—Sunday, Baccalaureate; Monday, Commencement.

JANUARY							FEBRUARY							MARCH							APRIL						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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MAY							JUNE							JULY							AUGUST									
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Summer Session 1952— First Term: June 3-July 11. Second Term: July 14-Aug. 22.



ON THE RIM OVERLOOKING THE CITY OF EL PASO

Location and Climate

TEXAS WESTERN COLLEGE is located in El Paso, Texas, at the intersection of several of the oldest highways in the nation—where white men walked almost a century before the pilgrims landed 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 capacity of 20,000,000 pounds of copper in process. 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.

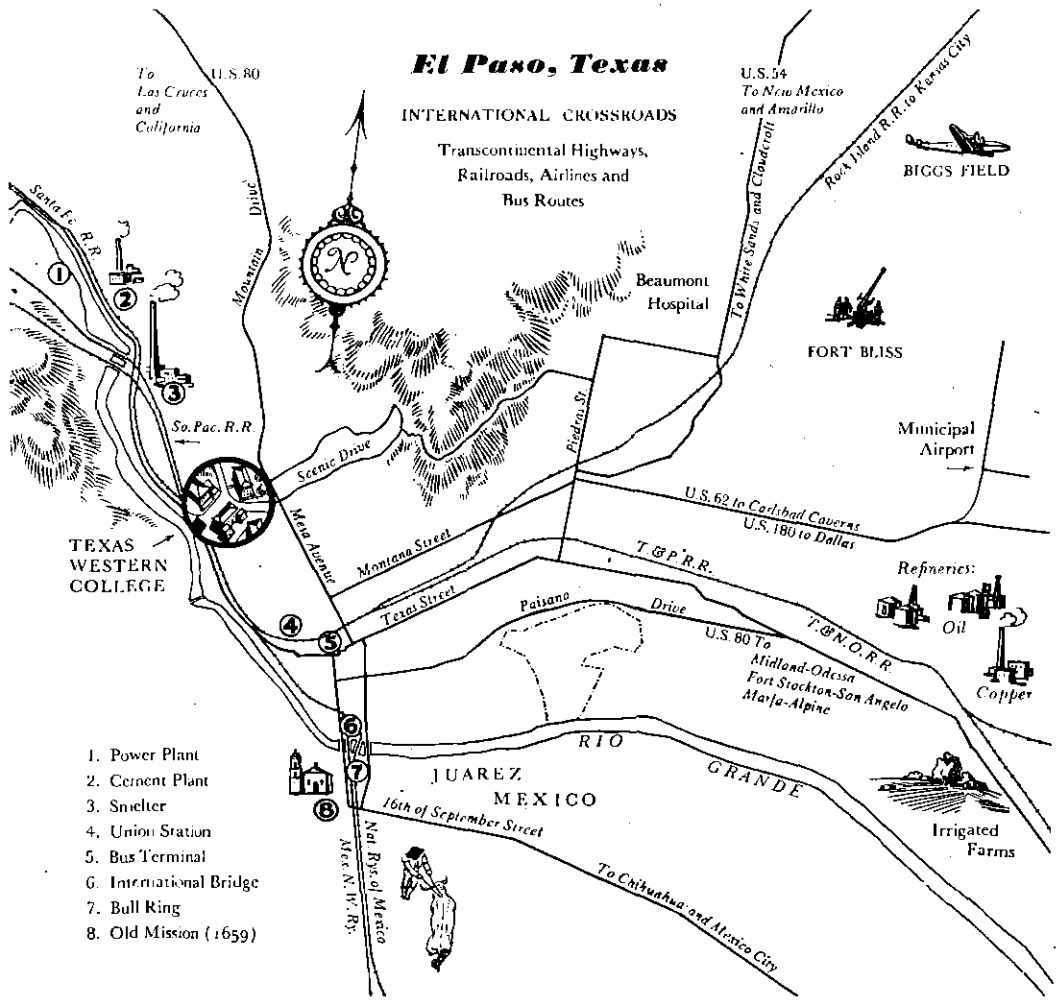
El Paso's unique location, at the far western corner of Texas, provides a picturesque mountainous setting, with the campus itself nestled in craggy Crazy Cat range. The city forms a great crescent around the base of Mount Franklin, the southern tip of the Rockies. Alongside is the fertile Rio Grande 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.

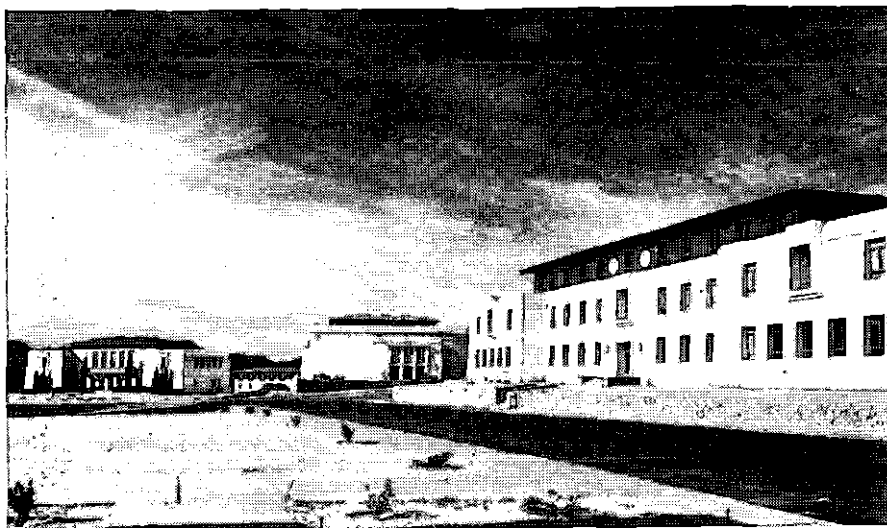
The Texas Western College stadium is the home of the annual New Years' Day football classic, the Sun Bowl Game. This event earned its name because of El Paso's location in America's 80% Sunshine Belt. The almost

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, horse shoes 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 across the International





SCIENCE BUILDING
New Magoffin Auditorium in center, Library at left

Bridge, offering the thrilling spectacle of bullfighting. 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, Guatamala.

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-Pacific 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.



STUDENT UNION BUILDING

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.

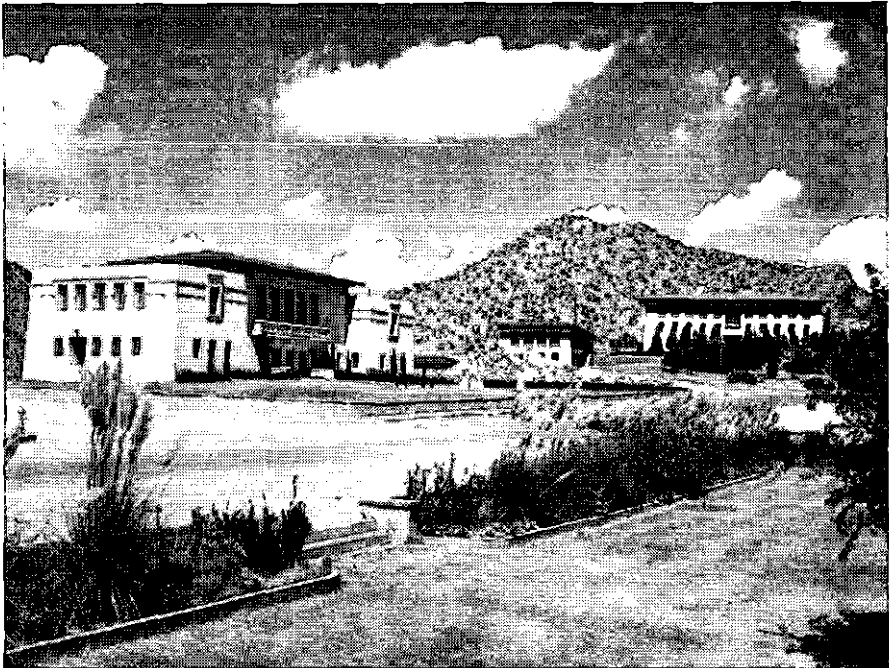
During the next several years the "College of Mines," as it became known, experienced a growth that justified expansion of its educational program. The liberal arts were included in the curriculum as early as 1927, and in 1931 the Board of Regents authorized the College to confer the degree of Bachelor 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. Under the present chancellorship system, effective since September, 1950, the College retains a semi-autonomous position with its president acting through a chancellor, who is the chief administrative officer of all branches of the University of Texas.

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 more than 2500 students, offers opportunity for study in a number of fields including: Mining, electrical and civil engineering, business administration, liberal arts and sciences, and fine and applied 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-ADMINISTRATION BUILDING
Geology and Physics Buildings in Background

Library

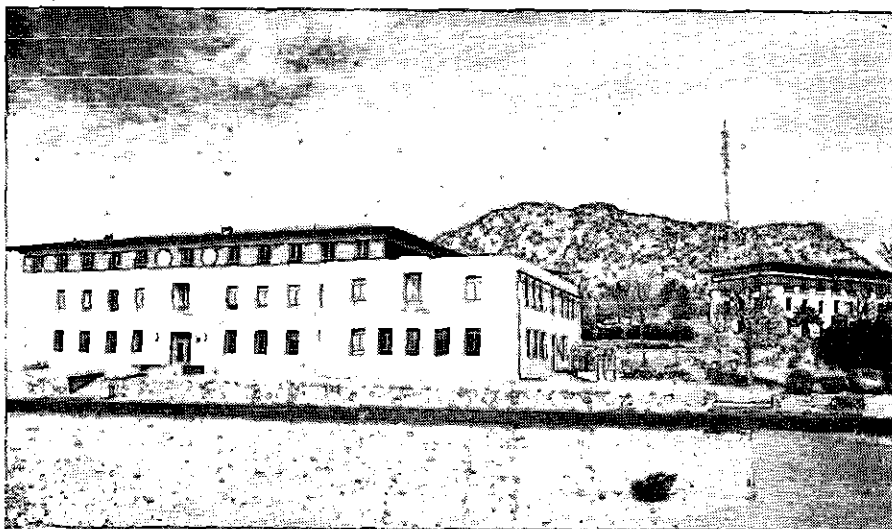
THE MAIN BOOK COLLECTION of the Texas Western College Library is composed of about 75,000 volumes. It is housed on the second floor and in the west annex of the Library-Administration Building. The nucleus of the book collection was the library of the late W. H. Seamon, a mining engineer and member of the faculty. Recently a cash gift fund was made available by R. E. McKee, of El Paso, for the purchase of scientific, engineering and technical books.

The selection of books and periodicals has been made with the College curriculum in mind. As the curriculum expanded, so has the range of subject material in the Library. The geological, mining, language, economic, literary and historical collections are especially strong. However, recreational reading has not been neglected and popular titles are available.

The Library receives a select group of government documents and has valuable files of United States Geological Survey and Bureau of Mines bulletins and reports. A constant effort is made to keep the book collection current so that students may have adequate up-to-date material for study.

The reference collection is particularly good. The Library regularly receives about 500 periodicals—technical, general, literary and popular—and numerous newspapers.

The facilities of the El Paso Public Library, the Teachers' Library of the El Paso Public Schools, and several private libraries are available to students who wish to do specialized research. Active inter-library loan relations are maintained with other university and state libraries. This service is available to all students.



SCIENCE BUILDING, KVOF RADIO TOWER, KELLY HALL

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.

Within the past two years there have been extensive additions to the College: A new science building, auditorium, Cotton Memorial Building, a student union, and three new dormitories including Miners' Hall, the recently-completed quarters for Texas Western athletes. Also the Baptist Student Center was built for the College by the Baptist Convention of Texas.

College buildings now include a Library and Administration Building and twelve other large buildings shown on the map on page 11.

In addition to these major facilities there are available for curricula and extra-curricula activities a women's physical education building donated by the Women's Auxiliary of Texas Western College, a swimming pool, riding stables, military science building, and a stadium. There are four sorority lodges adjacent to the campus, and the College has 72 housing units available for married veterans who are students. The construction of a new women's gymnasium is now in process.

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 Department.

Dormitories

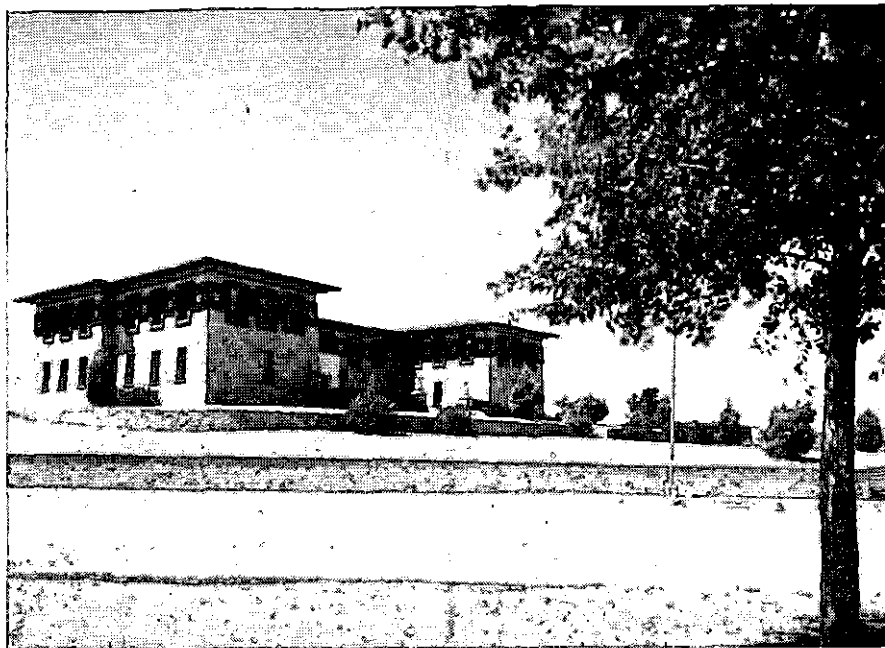
THERE ARE FIVE modern and conveniently located residence halls on the campus, three for men and two for women. These five dormitories have a capacity of 350 students. Meals are served in a dining hall located between the two women's dormitories. Three meals daily are served, with the exception of Sunday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

Museum

THE EL PASO CENTENNIAL MUSEUM was allocated by the 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. Associated with the minerals



THE CENTENNIAL MUSEUM

is an outstanding 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, the former with particular application to nearby localities.

Loan collections have been placed in the museum by organizations and individuals. Among these are a botanical collection, 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.

If such work fits into student schedules, both as to time and type of study being carried on, advanced students will help in the more detailed study of such problems. While reasonable expedition will be used in the examination of samples, specimens and other material sent to the College, reports may be delayed because of the requirements of regular instructional activities.

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, either chemical or file, 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.

How to Enter Texas Western College

Admission and Registration

Expenses

Financial Aid to Students

Scholarships - Loan Funds

Regulations Affecting Student Life

Scholastic Regulations



How to Enter Texas Western College

FIRST, if you do not have a personal copy of this catalogue 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 Acceptance Notice you are eligible to apply for your dormitory room. This should be attended to at once by sending \$5.50 room deposit directly to the Director of Dormitories, 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. In addition you will be offered competent, friendly advice in choosing your major department and selecting courses you should take.

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 in order to get off to your college career on the right foot. Further information about admission and registration procedures will be found on the following page and on page 35.

INFORMATION FOR VETERANS

Texas Western College is approved by the Veterans Administration for the training of Veterans under Public Laws 346, and 16. 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

At least thirty days before registration, apply at the nearest Veterans Administration Office for a Certificate of Eligibility or, if entitled to vocational rehabilitation, a letter approving training under Public Law 16. (In case of previous attendance at another school under the Veteran's Bill, or change of educational objective, a Supplementary Certificate is required.) The proper Certificate must be presented at registration in order to qualify for veterans' benefits.

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 Library-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 catalogue.) 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.

Character

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

Health

Each new student reports to the College Physician for physical examination during registration. An applicant must either be vaccinated by the College Physician or show by certificate that he has had smallpox or has been successfully vaccinated within the last three years.

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 days listed in the "Calendar." (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.

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. A student in extreme need of help in English may be placed in English 001 (a non-credit English course) the first semester to strengthen him before he begins the college-level course.

Methods of Admission

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

1. High school graduation
2. Individual approval
3. Entrance examinations
4. Approval for non-credit work
5. Approval to audit courses
6. Transfer from other colleges

1. 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

Quality Provisions

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

Honor Graduates—Any applicant ranking in the highest quarter of his gradu-

[ADMISSION AND REGISTRATION]

ating class may enter without conditions. (See Engineering exceptions, below.)

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 305, in Solid Geometry by Mathematics 208, and in Mechanical Drawing by Drawing 203. 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 may 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. Admission by Examinations

Upon request, with sufficient notice, an applicant may be admitted to the College by passing comprehensive examinations covering the required fifteen high school credit units. This is not advisable unless the applicant has made recent thorough study of the subjects involved.

4. Participating Non-Credit Students

By approval of the Registrar and Department chairmen concerned, mature

applicants may register for courses on a non-credit basis. Non-credit students will be responsible for attendance, assignments, etc., but will not take final examinations.

5. Admission as an Auditor

By approval of the Registrar and departmental chairmen concerned, mature applicants may register as auditors. This permits class attendance but does not authorize participation in class activities.

6. 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 Credit—College work completed in another accredited institution with an overall average grade of *C* may be transferred except in the Engineering Division where *D*'s will ordinarily not be accepted. Subject to the grade average requirement, 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 unlisted institution is located.

Junior college credit (freshman and sophomore levels) will be accepted up to a maximum of sixty-six semester hours.

Expenses

Average registration cost for **RESIDENT** liberal arts students runs from \$47.00 to \$54.00 per semester. This charge covers required fees only and does not include special fees for fine arts courses. Average registration cost for **RESIDENT** engineering students runs from \$47.00 to \$63.00 per semester. This charge covers required fees only. 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	22.92
10 semester hours	20.83
9 semester hours	18.75
8 semester hours	16.67
7 semester hours	14.58
6 semester hours	12.50
5 semester hours	10.42
4 semester hours	8.33
3 semester hours	7.50
Summer School, per term	\$17.50

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 summer term (of six weeks), \$50 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 \$12.50 per semester hour.

(B) For each semester of the Long Session, \$150 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 \$12.50 per semester hour.

Resident and Non-Resident Students

(The definition 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 classi-

fied 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. The wife or child of a member of the armed forces is classified as a **RESIDENT** student if, and only as long as, the husband or father is stationed on active military duty in the State of Texas. Proof of this assignment is required.

5. A student under 21 years of age is classified as **NON-RESIDENT** if his parents do not reside in the State of Texas or have not lived within the State during the full 12 months prior to his registration.

6. A student over 21 years of age who comes from out of the State of Texas is classified as a **NON-RESIDENT** student unless he has resided within the State for 12 full months, not enrolled in an educational institution, prior to the date of registration.

7. An alien is classified as a **NON-RESIDENT**, except as provided in paragraph 10 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

[EXPENSES]

custody is granted to some person other than a parent, the residence of that person shall control for so long as the minor actually makes his home with such person.

3. The residence of a wife is that of her husband.*

4. Individuals who have come from without the State of Texas and who are within the State primarily for educational purposes are classified **NON-RESIDENT**. Registration in an educational institution within 12 months after having arrived in the State is considered as evidence that the individual is in the State for educational purposes.

5. The fact that an individual or family has bought property, established a business, paid taxes, voted, has become the legal ward of or has been adopted by a Texas resident does not affect the 12 months residence requirement.

6. The fact that a student is self-supporting or is supported wholly or in part by a Texas resident does not affect his classification as **RESIDENT** or **NON-RESIDENT**.

7. Appointment as member of the teaching or research staff or the holding of a scholarship, or assistantship does not affect the residence status of a student.

8. If the parents of a **RESIDENT** student under 21 years of age move out of the State, that student is classified as **NON-RESIDENT** for all subsequent semesters.

9. In the case of an alien who has applied for naturalization in the United States, the 12 months period required to establish residence begins after his first citizenship papers are issued.

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

*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.

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 said 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.

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.

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 citizens of Texas and who served in the Armed Forces in World War I or World War II or in certain of the auxiliary services, and were honorably discharged therefrom (except those who were discharged because of being over the age of thirty-eight 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 course and laboratory 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 of World War II.

[EXPENSES]

Laboratory Fees *per semester*

Art 301, 302, 304, 305, 305K, 306, 307, 307K, 308, 308K, 309, 309K, 309L, 309N, 309Q, 310, 311, 312, 312K, 314K, 317L, 317K, 322, 323, 324, 325, 326, 327, 328, 328L, 329, 329K, 330, 331, 335, 335K . . .	\$ 2.00
Bacteriology 629	2.00
Biology 407	4.00
Biology 303, 310, 311, 330, 606	2.00
Rotary 301, 302, 310, 311	2.00
Business Adm. 610, 621, 302, 303, 332, 334 411, 414	2.00 4.00
Chemistry 601, 621, 306, 307, 311, 323, 362, 363, 368, 396, 296	2.00
413, 460, 461, 496, 596, 696, 801, 821, 424	4.00
Drawing 203, 301, 302, 310, 311, 312	2.00
Economics 329	2.00
Engineering 220, 243, 312, 316, 322, 344, 358, 370, 371	2.00
415, 431, 434, 454, 466, 510, 515, 614, 857, 868	4.00
Geography 303, 304	2.00
Geology 217, 301, 302, 316, 317, 361, 264 418, 419, 421, 427, 463, 665	2.00 4.00
Journalism 307, 308, 341	2.00
Metallurgy 264, 324, 326, 330, 362, 364, 365 423, 473	2.00 4.00
Mining 261, 262, 322, 224	2.00
Physics 601, 612, 303, 304	2.00
413, 434, 435, 438, 445, 611, 801	4.00
Psychology 362, 315, 353	2.00
361	4.00
Radio 314, 315, 320, 321, 330, 331	2.00
Zoology 614, 301, 302, 320, 321	2.00

Fees Including Transportation *semester*

Geology 074	\$50.00
Metallurgy 074	\$50.00
Mining 074	\$50.00

(Laboratory Fee \$12.50, Transportation Fee \$37.50)

Course Fees *per semester*

Music 208, 218, 228, 227, 311, 312, 313	\$ 2.00
392, 392K	50.00
Band—Choir—Orchestra 201, 211, 221, 231	2.00
Chorus 205, 215, 225, 235	2.00
Applied Music: Class Lessons 206, 206K, 216, 216K, 226, 226K	10.00
(\$5.00 per semester plus \$5.00 course fee)	
Music—Individual Instruction Primary Level 405, 405L, 405M	25.00
(\$20.00 per semester plus \$5.00 course fee)	
Primary Level 605, 605L, 605M, 605N	45.00
(\$40.00 per semester plus \$5.00 course fee)	
Secondary Level 09, 19 (Fresh and Soph)	45.00
(\$40.00 per semester plus \$5.00 course fee)	
Secondary Level 29, 39 (Junior and Senior)	50.00
(\$45.00 per semester plus \$5.00 course fee)	
Physical Education 201, 202, 203, 204	2.00
(Horseback riding, \$12.00 additional per month.)	

Miscellaneous Required Fees

Non-Credit Students (Participating non-credit students and auditors)—A student not registered for credit in a course or courses is required to pay the same fees and deposits as a regular student.

Special Examination—A fee of \$1.00 is required of persons who wish to take an advanced standing examination or to remove a *Px* or a condition by examination. Permission of the Dean must be secured in advance.

Graduation—A graduation fee of \$5.00 is required of candidates for graduation. This fee must be paid 15 days before graduation.

Student Activity Fee—A Student Activity Fee of \$15.00 for each semester of the long session is required of all regular students enrolled on the campus. A regular student is one who is taking two or more courses. During the Summer Session the Student Activity Fee is \$3.00 per term, regardless of the semester hour load.

The fee entitles the student to admission to all athletic events and to all social activities sponsored by the Student Association; hospitalization; *The Prospector*, college newspaper; *El Burro*, college magazine; *Student Handbook*; all intramural activities, dances, membership in the Co-Ed Association and Student Union Building privileges. Approximately fifty per cent of *The Flowsheet*, college yearbook, is included in the fee. In addition, valuable training is given with respect to literary activities, publications, dramatics, current events, and advanced and special application in science and engineering.

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	5.50

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

[EXPENSES]

deposit to the original amount by paying such charges immediately. Students having charges in excess of the deposit must pay the excess immediately; pending payment, no credit will be allowed on the work of that semester or term, and the student will be ineligible to re-enter the College. 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 \$5.50 to the office of the Director of Dormitories. 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 \$244.00 per semester. The entire amount may be paid on registration, or the student may pay \$61.00 during registration and the balance in three payments of \$61.00 each which shall be due on or before the first of each month, beginning with November. 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 . . .	\$244.00
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.

The detailed regulations governing student life in boarding houses, standards to be met by proprietors, etc., are published in separate form. Students and proprietors concerned are held individually responsible for and charged with the knowledge of these regulations. Copies can be obtained upon request from the Registrar or the Chairman of 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: 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 rate currently ranging from fifty cents to one dollar 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 Service

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.

American Association of University Women—The El Paso Branch of the American Association of University Women offers a scholarship of \$50 cash to a senior girl. The awarding of this scholarship is based on need and on scholastic record, and the money may be used in any manner to further the recipient's education.

American Furniture Company—This scholarship is available to a worthy student interested in advertising, art, and interior decorating each year.

B'Nai B'rith—The B'Nai B'rith Lodge of El Paso in 1940 established an annual scholarship of \$50 to a student of junior or senior grade who is majoring in social science and who in the opinion of the President of the College shows evidence of distinct ability in that field.

El Paso City Panhellenic Association—This organization provides one or two scholarships each year to a woman student majoring in music. 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 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

[SCHOLARSHIPS]

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.

Kiwanis 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.

Lucy Claire Hoard Memorial—Established by 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.

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

Radio Station KROD—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 KTSM — 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.

Rehabilitation Scholarships—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. Application 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, Director of Vocational Rehabilitation, 302 Walton Building, Austin, 11, Texas.

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.

Scholarships for Foreign Students—The Board of Regents has made available for the year 1950-51 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.

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 \$75 is awarded annually to some promising student who is majoring in music.

Texas Western Press—For students interested in printing design and advertising production. Scholarships up to \$50 per semester and employment in the printing department available to sophomores.

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

Union 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.

United Daughters of the Confederacy—The Robert E. Lee Chapter 1060 of the United Daughters of the Confederacy gives a scholarship each year to a boy or girl of high character and good scholastic background who is a direct descendant of a Confederate Veteran. The amount is determined by the needs of the applicant.

Veterans of Foreign Wars—The Lieutenant Robert N. Snyder Post No. 6380 offers an annual scholarship of \$150 to an El Paso student. Qualifications for the scholarship may be obtained from the Lieutenant Robert N. Snyder Post.

[LOAN FUNDS]

Women's Auxiliary—The Women's Auxiliary of Texas Western College offers scholarships each year to young women boarding students. The financial benefit amounts to \$100 for two semesters for one year.

Young Matron's Auxiliary—The Young Matron's Auxiliary to the Women's Club of El Paso, Texas, offers a \$100 scholarship to a worthy student, the selection of the recipient to be made by the Scholarship Committee of Texas Western College.

Loan Funds

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

Applications 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.

Academic Loan Fund—For academic students who have been in attendance for at least one semester and who have achieved an average grade of B in at least twelve semester hours of work. The fund is administered by a faculty committee.

Engineers' Loan Fund—Maintained by the Engineering Department for the ben-

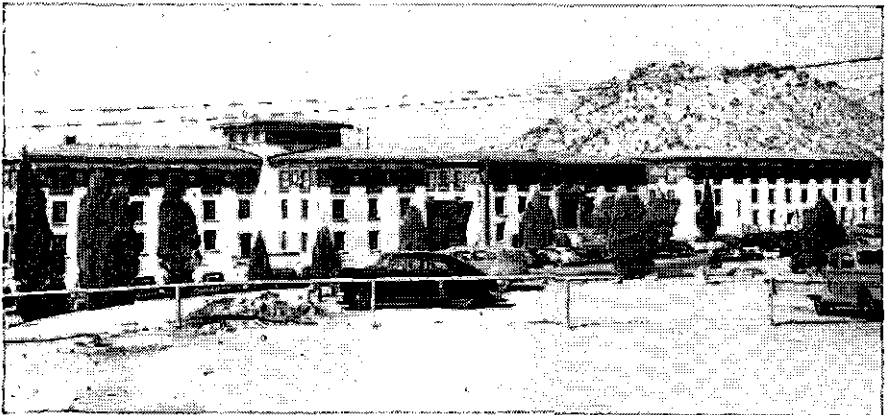
efit of engineering students who have been in attendance at least one year and who meet other special requirements. The fund is administered by Dr. Lloyd A. Nelson, and applications should be directed to him at the college.

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.

Leah Gordon Memorial—Established by Mrs. Bernice Gordon Schwartz, in memory of her mother. Loans from this fund are to be made to worthy junior and senior students who desire to make nursing a career and shall be limited to actual amount of required tuition and fees.



MEN'S DORMITORIES ON WEST SIDE OF CAMPUS
Hudspeth Hall — Worrell Hall — Miners Hall



Resident Students enjoy balanced healthful meals on a varied menu. Dining Hall seats 300, served by modern stainless steel cafeteria table.



Campus physician and registered nurses are on duty at the College Clinic-Infirmiry to protect the health of Texas Western students.

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 adviser to assist the student in the selection of courses in line with his interests, abilities, and future choice of careers.

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.

A student who must be absent from classes due to illness is required to report said case of illness to the Health Officer of the College immediately.

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 the 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 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

[STUDENT REGULATIONS]

when accused of misconduct that affects college life and work, if former or prospective students, will have the known circumstances inscribed in their record as a presumption against their moral character. They will not be later admitted to 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 in the opinion of the Faculty Committee on Discipline seems 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 above mentioned.

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 sus-

pension, 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 fraternity or sorority house, dormitory, or rooming house where other students are living. He may not be initiated into an honorary or social organization. A student under suspension may not receive credit at the 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, parents or guardians will be informed and asked to co-operate with the authorities.

Debts

The College is not responsible for debts contracted by individual students or by student organizations, but the College will use all possible influence to encourage the payment of debts justly and regularly contracted by such persons. The College expects all students and student organizations to conduct themselves honorably in all commercial transactions.

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.

Bad Checks

A student who gives the College a bad check, the fault not being that of the bank, and who does not make it good within five days will be dropped from the College. The College will not accept a check from a student who has once given a bad check.

Scholastic Regulations

Credit Measurement

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

Selecting Courses

Although every effort is made to advise students, the final selection of courses is the responsibility of the individual student. Students select the courses to make up their schedules each semester and enroll in those courses during the official registration period at the beginning of the semester. No student is permitted to attend meetings of any class without being officially enrolled in that course. Exception may be made in limited cases of temporary registration delays. In such cases the student must secure official permission to attend his classes until the difficulty is alleviated.

Course-Numbering System

Courses are designated by three-digit numbers, indicating credit value in semester hours and scholastic level. In some cases a distinction is made between different courses of the same number by the addition of capital letters or Roman numerals (English 612 and English 612Q).

The first digit of a course number tells the amount of credit which will be awarded for successful completion of the course, for example: Geology 217 is a two-semester-hour course; English 320, a three-hour course; Business Administration 414, a four-hour course, etc. The second two digits show scholastic level as follows:

301-309 freshman courses

310-319 sophomore courses

320-389 upper division courses

(advanced, junior-senior)

390-399 graduate courses

Two-Semester Courses

Courses requiring two semesters for completion are indicated in course descriptions by asterisks in parenthesis following the titles, for example:

CHEMISTRY

801. General Chemistry (*)

In such cases one-half the total credit value of the course is awarded for each semester's work. No credit will be given for a degree until both semesters have been completed. When any course requires two semesters for completion, the first semester is prerequisite for enrollment in the second semester. On official records the first semester of two-semester courses is indicated by the small letter *a* following the course number, and the second semester by the small letter *b*.

Course Fees

Laboratory fees and other special fees required for individual courses are indicated in course descriptions in per-semester cost following course titles, for example:

CHEMISTRY

801 General Chemistry (*) (\$4)

A complete condensed list will be found on page 29.

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

A section in a course may be changed to another section in the same course by (a) authorization by the head of the department concerned, (b) validation by the Business Office, and (c) filing 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

[SCHOLASTIC REGULATIONS]

the instructor will be *Dr* or *Dr F* 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 *Dr F*.

Late Registration

1. Each day missed will be counted as an absence unless work is made up before mid-semester.
2. The student's class schedule will be made up only from the sections which are open at the time of his registration.
3. Work missed because of late registration will be counted as zero unless the student definitely makes it up before mid-semester.
4. The student will be required to enroll for a reduced program of classes depending upon the lateness of registration.

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 the Dean; and, upon recommendation from the instructor, the Dean may drop the student from the course.

(d) Absences incurred by a student prior to 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—Freshmen may not register for more than eighteen semester hours for each semester. 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 (252 grade points during their preceding semester), and in no case whatever may they register for more than twenty-one semester hours.

Arts and Science Students—The normal load for beginning freshmen is sixteen semester hours. The maximum load for beginning freshmen is seventeen semester hours.

Other students, with permission of the Dean, may register for eighteen semester hours if the grade score has been 252 points for the preceding semester and for more than eighteen semester hours if the grade score has been 297 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

Credit Students—A student is classified as a credit student if he is registered for credit.

Participating Non-Credit Students—A student is classified as participating non-credit if he is registered for no credit under the same conditions as a non-credit audit student, except that he is responsible for all the course requirements other than the final examination and the semester grade.

Non-Credit Student (audit)—A student is classified as non-credit if he is registered for no credit under the following conditions: (a) permission of the head of the department, (b) no participation in the class for credit, (c) no grades, (d) no changing from non-credit to

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credit or from credit to non-credit after the close of the registration period, (e) no eligibility for advanced standing examinations, (f) payment of fees for the long session on the same basis as for credit courses.

Regular Students—Those who are registered for twelve or more credit hours.

Irregular Students—Those who are registered for less than twelve credit hours.

**First Year Students*—Those who have attended less than two semesters.

**Second Year Students*—Those who have attended two semesters but not more than four semesters.

**Upper Division Students*—Those who have attended more than four semesters.

Freshmen Students—Engineering students having less than thirty hours of credit; Arts and Sciences 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

*A term of the summer session is counted as one-half semester.

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 Examinations.)

Postponed Final Examinations

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

Subject to the following conditions:

1. For the removal of a grade of *E*.
2. Permission to be obtained from the Dean, validated by the Business Office for

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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.

Scholarship

To pass in 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 on degrees until both semesters of the course have been completed.

Grades

The standing of the student in his work is expressed by grades made up from class work and from examinations. There are six grades: *A* (excellent), *B* (good), *C* (fair), *D* (low pass), *E* (failure), but

with privileges of petitioning to continue the course and to take removal-of-condition examination), *F* (failure, and if a semester grade, without further current privileges in the course).

In the case of students who drop courses or who withdraws from school the following grades apply:

1. A student who is passing a course at the time he drops it receives a grade of *Dr* in the course. A student who is failing a course at the time he drops it, receives a grade of *Dr F* in the course.

2. A student who is passing a course at the time he withdraws from school receives a grade of *Wd* in the course. A student who is failing a course at the time of his withdrawal receives a grade of *Wd F* in the course.

Effect of a Semester Grade of E

A student who fails to pass in 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 601b), 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 done in a later semester, but no grade may be altered after the registration period of the next succeeding semester.

For this purpose Military Science 401-402 (Basic) will be considered as a continuous course; also Military Science 610-620 (Advanced).

Higher Work after Failure

If a student makes an *F* in a course, he may not take up a higher course in the same subject until the course is taken again. If a student makes an *E* in a course, he may take up a higher 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

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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 part of the Removal-of-*Px* grade.

3. At the end of a 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 a 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*, 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 any 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, his 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 2.2 without any grades of *Px*, *Inc*, *E*, *Dr F*, 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.)

A grade of *A* will be rated as three points per semester hour, a grade of *B* as two points per semester hour, a grade of *C* as one point per semester hour, and any grade below *C* as no points.

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 in his grade average.

In publishing the honor roll 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

Reports are sent out to parents and guardians at the end of each semester for all students. Self-supporting students over 21 years of age, if they request it of the Registrar in writing, may have their reports sent to them instead of to their parents.

Intra-Semester Reports

On November 9 and March 20 reports are due in the Registrar's Office for the following students:

1. All students on the freshman advisory lists.
2. All students on scholastic probation list.
3. All other students making less than a grade of *D* in a course.

Students may receive these grades from the Registrar if all grades for that mid-semester are *D* or better. If there are any failures among the student's grades for that mid-semester, these grades will be mailed to his parents or guardians.

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.) In no case will courses of one semester hour credit be considered.

Required Minimum

To remain in good standing, a student must meet the following standard of work

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at semester report periods:

1. A student taking less than six semester hours must make a *C* average in all work taken.
2. A student taking six or more semester hours must make a *C* average in at least six semester hours.

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 on that status for the succeeding long-session semester unless he attends an intervening summer session and makes a *C* average in at least nine semester hours.

Return to Good Standing

A student on Scholastic Probation can return to good standing in the following ways:

1. By attaining the minimum requirement at the end of a semester in the long session.
2. By attending a summer session at Texas Western College and making a *C* average in at least nine semester hours.

Failure

A student who is placed on Scholastic Probation and fails to attain the required minimum at the end of the next semester of the long session will be dropped from the rolls of the College.

A student not on probation who fails in all his courses at the end of any long-session semester will be dropped from the rolls of the College immediately, unless he be permitted to continue by his Dean.

Return After Failure

A student who has failed out may re-enter only under Scholastic Probation, and in one of the following ways:

1. By remaining out of College for a long-session semester.
2. By attending an intervening summer session. If he makes a *C* average in nine semester hours, he will be permitted to attend the next long session semester on Scholastic Probation.

Official Withdrawal

A student who wishes to withdraw from school may do so with the consent of his Dean. In any course in which the student is passing at the time of withdrawal, he will receive a grade of *Wd*. In any course which the student is failing at the time of withdrawal, he will receive a grade of *Wd F*.

(a) Effect on student in good standing and receiving grades of *Wd*.: loss of time.

(b) Effect on student in good standing and receiving all grades of *Wd F*: must satisfy the requirements of *Return After Failure*.

(c) Effect on student on Scholastic Probation: Student is continued on Scholastic Probation, unless receiving all grades of *Wd F*. In the latter case he must satisfy the requirements of *Return After Failure*.

Unofficial Withdrawal

Withdrawal from school without consent of the student's Dean constitutes an unofficial withdrawal. In such cases the student will receive a grade of *Wd F* in each of the courses for which he was registered during that semester.

A student who unofficially withdraws will receive the grade of *Wd F*, and must satisfy the requirements of *Return After Failure*.

DEGREES OFFERED
At Texas Western College

General Requirements

Division of Mines and Engineering

ENGINEER OF MINES

BACHELOR OF SCIENCE IN MINING ENGINEERING
(THREE OPTIONS)

BACHELOR OF SCIENCE IN ENGINEERING
(TWO OPTIONS)

Division of Arts and Sciences

BACHELOR OF ARTS

BACHELOR OF BUSINESS ADMINISTRATION

BACHELOR OF MUSIC

Extension Division

Graduate Division

MASTER OF ARTS

PREPARATORY WORK LEADING TO DEGREES IN
MEDICINE AND LAW

STATE TEACHERS CERTIFICATES

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.

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.

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 Course Required

Government 610 satisfies the legal requirement of the State of Texas for the study of the Constitutions of the United States and Texas. Students who complete two years of Military Science in the College are not required to take Government 610b or Physical Education.

Grade Average

The student must make an average of at least fifteen points per semester hour in courses taken at the College which are required and counted toward his degree. An *A* grade on a semester hour will count as 21 points; a *B* grade as 18 points; a *C* grade as 15 points; a *D* grade as 12 points; an *E*, *F*, *Px*, or *Inc* as zero.

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 in the 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.

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 will petition the President in writing at least one week in advance.

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

Work Preparatory to Other Engineering Degrees

Uniform Freshman Year—First semester: Mathematics 803a, Chemistry 801a, Drawing 301, English 601a, Physics 601a, Engineering 001, Physical Education or Military Science 401a. Second semester: Mathematics 803b, Chemistry 801b, Drawing 302, English 601b, Physics 601b, Physical Education or Military Science 401b. Additional courses are offered such as to enable a student to complete at least the sophomore year in aeronautical chemical, mechanical, and petroleum engineering.

Engineer of Mines

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

Special Requirements for Bachelors Degrees

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* on 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.

Prescribed Work

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)

Abbreviations Used in Degree Plans

Ch.	Chemistry	Go.	Government
Dr.	Drawing	Ma.	Mathematics
Ec.	Economics	Me.	Metallurgy
E.	English	Mi.	Mining
En.	Engineering	Ph.	Physics
Ge.	Geology	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 801, 311, 413	15
Drawing 301, 302	6
Economics 312	3
English 601, 324	9
Engineering 614, 515, 431, 434, 335, 350, 354	28
Geology 301, 302, 316, 217, 421, 322, 264	20
Government 610	6
Mathematics 803, 613, 325	17
Metallurgy 321, 423, 326, 324, 261	15
Mining 521, 322, 224, 231, 260, 261, 262, 267, 269	22
Physics 611, 413	10
Physical Education or Military Science	4
Engineering 001	0
Mining 074	0
Total	155

ARRANGEMENT OF COURSES

Freshman Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
Ch. 801a, General Chemistry	4	Ch. 801b, General Chemistry	4
Dr. 301, Engineering Drawing	3	Dr. 302, Descriptive Geometry	3
E. 601a, Rhetoric and Composition	3	E. 601b, Rhetoric and Composition	3
Ge. 301, Principles of Gen. Geology	3	Ge. 302, Principles of Gen. Geology	3
Ma. 803a, Elem. Math. Analysis	4	Ma. 803b, Elem. Math. Analysis	4
P. E. Service Course or		P. E. Service Course or	
M. S. 401a, Military Science	1	M. S. 401b, Military Science	1
		En. 001, The Engineering Profession	0
Total	18	Total	18

Sophomore Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
Ch. 311, Qualitative Analysis	3	Ch. 413, Quantitative Analysis	4
Ge. 316, Mineralogy	3	Ec. 312, Principles of Economics	3
Go. 610a, American Government	3	Ge. 217, Mineralogy	2
Ma. 613a, Calculus	3	Go. 610b, American Government	3
Pb. 611, Mechanics, Heat, Wave Motion, and Sound	6	Ma. 613b, Calculus	3
*P. E. Service Course	1	Ph. 413, Electricity, Magnetism, and Light	4
		*P. E. Service Course	1
Total	19	Total	20

Summer

En. 614, Plane Surveying . . . 6 Semester Hours

Junior Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
Ge. 421, Advanced General Geology	4	En. 515, Statics	5
Ma. 325, Calculus	3	E. 324, Technical Writing	3
Me. 423, Ore Dressing and Milling	4	Ge. 322, General Economic Geology	3
Me. 326, Engineering Metallurgy	3	Me. 321, General Metallurgy	3
Mi. 521, Mining Methods	5	Me. 324, Assaying	3
		Mi. 322, Mine Surveying	3
Total	19	Total	20

Summer

Mi. 224, Mine Surveying . . . 2 Semester Hours

*Not required if M.S. 401 has been completed

[DEGREE PLANS]

Senior Year			
FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
En. 431, Electrical Circuits and Machines	4	En. 335, Masonry and Reinforced Concrete	3
En. 434, Strength of Materials	4	En. 350, Heat Engineering	3
Ge. 264, Field Geology	2	En. 354, Fluid Mechanics	3
Me. 261, Metallurgy of Iron, Copper, and Lead	2	Mi. 231, Mine Hygiene	2
Mi. 260, Mine Plant	2	Mi. 261, Mine Plant	2
Mi. 267, Management	2	Mi. 262, Mine Plant Design	2
		Mi. 269, Management	2
		Mi. 074, Senior Trip	0
Total	16	Total	17

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

	Semester Hours
Chemistry 801, 311, 413, 323	18
Drawing 301, 302	6
Economics 312	3
English 601, 324	9
Engineering 614, 515, 434, 335, 350, 354	24
Geology 301, 302, 316, 217, 418, 421, 322, 427, 361, 463, 264	35
Government 610	6
Mathematics 803, 613, 325	17
Metallurgy 423, 324	7
Mining 521, 322, 224, 267, 269	14
Physics 611, 413	10
Physical Education or Military Science	4
Elective	2
Engineering 001	0
Geology 074	0
Total	155

ARRANGEMENT OF COURSES
 Freshman and Sophomore Years Same as for Plan 1

Junior Year			
FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
Ch. 323, Quantitative Analysis	3	En. 515, Statics	5
Ge. 421, Adv. Gen. Geology	4	E. 324, Technical Writing	3
Ma. 325, Calculus	3	Ge. 322, Gen. Econ. Geology	3
Me. 423, Ore Dressing and Milling	4	Ge. 427, Petrology and Petrography	4
Mi. 521, Mining Methods	5	Mi. 322, Mine Surveying	3
Total	19	Total	18

Summer
 Mi. 224, Mine Surveying 2 Semester Hours

Senior Year			
FIRST SEMESTER	Semester Hours	SECOND SEMESTER	Semester Hours
En. 434, Strength of Materials	4	En. 335, Masonry and Reinforced Concrete	3
Ge. 418, Invertebrate Paleontology	4	En. 350, Heat Engineering	3
Ge. 463, Geology of Petroleum, the Fuels, and Non-Metals	4	En. 354, Fluid Mechanics	3
Ge. 264, Field Geology	2	Ge. 361, Adv. Economic Geology	3
Mi. 267, Management	2	Me. 324, Assaying	3
Elective	2	Mi. 269, Management	2
Total	18	Ge. 074, Senior Trip	0
		Total	17

[DEGREE PLANS]

PLAN 3—Leading to the Degree of

Bachelor of Science in Mining Engineering
(Metallurgy Option)

	<i>Semester Hours</i>
Chemistry 801, 311, 413, 323, 460	22
Drawing 301, 302	6
Economics 312	3
English 601, 324	9
Engineering 614, 515, 431, 434, 335, 350	25
Geology 301, 302, 316, 217, 322	14
Government 610	6
Mathematics 803, 613, 325	17
Metallurgy 321, 423, 324, 361, 362, 263, 364, 365, 272, 473	30
Mining 521, 267, 269	9
Physics 611, 413	10
Physical Education or Military Science	4
Engineering 001	0
Metallurgy 074	0
Total	155

ARRANGEMENT OF COURSES

Freshman and Sophomore Years Same as for Plan 1

Junior Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
Ch. 323, Quantitative Analysis	3	En. 515, Statics	5
Ch. 460, Physical Chemistry	4	E. 324, Technical Writing	3
Ma. 325, Calculus	3	Ge. 322, Gen. Economic Geology	3
Me. 423, Ore Dressing and Milling	4	Me. 321, General Metallurgy	3
Mi. 521, Mining Methods	5	Me. 324, Assaying	3
Total	19	Me. 263, Adv. Ore Dressing	2
		Total	19

Senior Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
En. 434, Strength of Materials	4	En. 431, Electrical Circuits and Machines	4
Me. 361, Metallurgy of Iron, Copper and Lead	3	En. 335, Masonry and Reinforced Concrete	3
Me. 362, Metallurgy of Leaching Processes	3	En. 350, Heat Engineering	3
Me. 365, Ore Dressing Laboratory	3	Me. 364, Metallurgical Laboratory	3
Me. 272, Physical Metallurgy	2	Me. 473, Metallography	4
Mi. 267, Management	2	Mi. 269, Management	2
Total	17	Me. 074, Senior Trip	0
		Total	19

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

	<i>Semester Hours</i>
Chemistry 801	8
Drawing 301, 302	6
Economics 312	3
English 601, 324	9
Engineering 614, 515, 220, 322, 326, 431, 434, 335, 236, 340, 341, 342, 243, 344, 246, 248, 350, 454	57
Geology 301, 302	6
Government 610	6
Mathematics 803, 613, 325	17
Mining 237	2
Physics 611, 413	10
Physical Education or Military Science	4
Speech 301	3
*Approved Electives	13
Engineering 001	0
Total	144

*Electives are normally non-technical. They must meet approval of Department of Engineering.

ARRANGEMENT OF COURSES

Freshman Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
Ch. 801a, General Chemistry	4	Ch. 801b, General Chemistry	4
Dr. 301, Engineering Drawing	3	Dr. 302, Descriptive Geometry	3
E. 601a, Rhetoric and Composition	3	E. 601b, Rhetoric and Composition	3
Ge. 301, Principles of Gen. Geology	3	Ge. 302, Principles of Gen. Geology	3
Ma. 803a, Elem. Mathematical Analysis	4	Ma. 803b, Elem. Mathematical Analysis	4
P. E. Service Course or M. S. 401a, Military Science	1	P. E. Service Course or M. S. 401b, Military Science	1
Total	18	En. 001, The Engineering Profession	0
		Total	18

Sophomore Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
Ec. 312, Principles of Economics	3	En. 515, Statics	5
Go. 610a, American Government	3	Go. 610b, American Government	3
Ma. 613a, Calculus	3	Ma. 613b, Calculus	3
Ph. 611, Mechanics, Heat, Wave Motion, and Sound	6	Ph. 413, Electricity, Magnetism and Light	4
*P. E., Service Course	1	*P. E., Service Course	1
Approved Elective	3	Sp. 301, Basic Princ. of Speech	3
Total	19	Total	19

Summer En. 614, Plane Surveying 6 Semester Hours

Junior Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
En. 246, Contracts and Specifications	2	En. 340, Highway and Railway Engineering	3
En. 434, Strength of Materials	4	En. 451, Fluid Mechanics	4
En. 431, Electrical Circuits and Machines	4	En. 322, Route Surveying	3
En. 220, Topographic and Photogram. Surveys	2	En. 335, Masonry and Reinforced Concrete	3
Ma. 325, Calculus	3	E. 324, Technical Writing	3
Approved Elective	3	Total	16
Total	18		

Senior Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
En. 341, Public Water Supplies	3	En. 350, Heat Engineering	3
En. 248, Soil Mechanics and Foundations	2	En. 342, Sewerage and Sewage Disposal	3
En. 326, Engineering Economics	3	En. 236, Construction Methods	2
En. 243, Stresses in Framed Structures	2	En. 344, Structural Design and Theory	3
Approved Elective	4	Mi. 237, Tunneling and Blasting	2
Total	14	Approved Elective	3
		Total	16

*Not required if M. S. 401 has been completed.

[DEGREE PLANS]

PLAN 5—Leading to the Degree of

Bachelor of Science in Engineering

(Electrical Option)

	<i>Semester Hours</i>
Chemistry 801	8
Drawing 301, 302	6
Economics 312	3
English 601, 324	9
Engineering 510, 312, 415, 316, 326, 434, 338, 350, 454, 857, 358, 466, 868, 370	58
Government 610	6
Mathematics 803, 613, 325, 326	20
Metallurgy 326	3
Physics 601, 612, 438	16
Physical Education or Military Science	4
*Approved Electives	11
Engineering 001	0
Total	144

*Electives are normally non-technical. They must meet approval of Department of Engineering

ARRANGEMENT OF COURSES

Freshman Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
Ch. 801a, General Chemistry	4	Ch. 801b, General Chemistry	4
Dr. 301, Engineering Drawing	3	Dr. 302, Descriptive Geometry	3
E. 601a, Rhetoric and Composition	3	E. 601b, Rhetoric and Composition	3
Ma. 803a, Elem. Mathematical Analysis	4	Ma. 803b, Elem. Mathematical Analysis	4
Ph. 601a, General Physics	3	Ph. 601b, General Physics	3
P. E. Service Course, or M. S. 401a, Military Science	1	P. E. Service Course or M. S. 401b, Military Science	1
Total	18	En. 001, The Engineering Profession	0
		Total	18

Sophomore Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
Eco. 312, Principles of Economics	3	En. 415, Statics	4
En. 312, Elements of Mechanics	3	En. 510, Elements of Electrical Engineering	5
Go. 610a, American Government	3	Go. 610b, American Government	3
Ma. 613a, Calculus	3	Ma. 613b, Calculus	3
Ph. 612a, Light, Electricity, Magnetism	3	Ph. 612b, Mechanics, Heat and Sound	3
*P. E. Service Course	1	*P. E. Service Course	1
Total	19	Total	18

Junior Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
En. 857a, Alternating-Current Circuits	4	En. 857b, Alternating-Current Circuits	4
En. 330, Dynamics	3	En. 466, Direct-Current Machines	4
En. 316, Elem. Plane Surveying	3	E. 324, Technical Writing	3
Ma. 325, Calculus	3	Ma. 326, Differential Equations	3
Ph. 438, Theory and Applications of Electron Tubes	4	Approved Elective	3
Approved Elective	2	Total	17
Total	19		

Senior Year

FIRST SEMESTER	<i>Semester Hours</i>	SECOND SEMESTER	<i>Semester Hours</i>
En. 326, Engineering Economics	3	En. 454, Fluid Mechanics	4
En. 868a, Alternating-Current Machines	4	En. 358, Heat Engineering	3
En. 434, Strength of Materials	4	En. 370, Machine Design	3
En. 350, Heat Engineering	3	En. 868b, Alternating-Current Machines	4
Me. 326, Engineering Metallurgy	3	Approved Elective	3
Total	17	Total	17

*Not required if M. S. 401 has been completed.

Division of Arts and Sciences

GENERAL REQUIREMENTS FOR UNDERGRADUATE DEGREES

Degrees Offered

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

Extension and Correspondence Credit

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

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.

Bachelor of Arts

Major Subjects

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

Minor Subjects

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

Basic Requirements

1. Twenty-four semester hours in a major subject, twelve of which must be in advanced (upper division) courses.
2. Eighteen semester hours in a minor subject, six of which must be in advanced courses.
3. English 601, and 612 or 612Q.

*Philosophy 331 is strongly recommended for Bachelor of Arts students. Philosophy 330 for Bachelor of Science students.

4. Completion of Course 612 in one foreign language.

5. Twelve semester hours in laboratory sciences.

6. Six semester hours in mathematics.

7. Social studies: Government 610 (Government 610b not required of students who complete two years of Military Science), History 301 and 302, Economics 312, *Philosophy 330 or 331.

8. Four semester hours of Physical Education as prescribed in the freshman and sophomore years. (Not required of students who have completed two years of Military Science).

9. Enough other courses to make at least one hundred and twenty-four semester hours, including a total of thirty semester hours in advanced (upper division) courses. Not more than a total of sixty-six semester hours may be in the major and minor subjects.

10. Specified courses and exceptions to basic requirements are shown below.

Major Requirements

Art

Specified—Painting 301 and 302, Art Methods 320.

Business Administration

Specified—Business Administration 411, 414, 332, and 20.

Economics

Specified—Economics 312, 313, 329.

Education

PLAN I (GENERAL)

Specified—Sociology 310, Speech 301.

PLAN II (HIGH SCHOOL)

Specified—Education 301, 305, 316, 317, 327, 327T; Philosophy 331; Sociology 310; Speech 301.

Exceptions—Twenty-four semester hours in the teaching subject, twelve of which must be in advanced courses.

PLAN III (ELEMENTARY SCHOOL)

Specified—Education 301, 305, 314, 318T, 320, 330T, 331T, 355K, 328, 328T, Art (Painting) 301, Art Methods

[DEGREE REQUIREMENTS]

321; Elementary Music Methods 310, Music Literature 301K or 301L; Physical Education—six semester hours; Geography 310; Philosophy 331; Speech 301; Sociology 310.

Exceptions—No minor required.

English (basic requirements)

Government

Specified—Government 610

History

Specified—History 301 and 302; three semester hours of Sociology.

Inter-American Studies

Specified—Economics 312, 313, 348 and three additional hours of advanced courses in Economics; History 301, 302, 347, 348 or 349, and six semester hours of lower division courses in History; Spanish 801, 612, 357, and one of the following: 324, 360, 362N, 362S, 363, or 364; Psychology 310; Philosophy 330.

Exceptions—No major required. No minor required.

Journalism

Specified—Journalism 311 and 312.

Mathematics (basic requirements)

Modern Language

Specified—Courses 801 and 612; for Spanish majors—History 347 or 348 or 349; for French majors—History 351.

Exceptions—Courses 801 and 612 in a second foreign language.

Music

Specified—Six semester hours of Choir or Band, or Orchestra.

Exceptions—Six semester hours of a second language may be substituted for Mathematics.

Physical Education

Specified—Education 301, 316, 317, 327, 327T, and three additional semester hours of Education, or Education 301, 314, 318T, 328, 328T, and three additional semester hours of Education. Zoology 301 and 302; Biology 310 and 311.

Exceptions—No language required.

Psychology

Specified—Psychology 310, 311, 315, 342, 362; Chemistry 601; Zoology 301 and 302.

Radio

Specified—Radio 302, 314, 315, 330, 331.

Science

Specified—Minor must be a science un-

less otherwise recommended by the head of the major department and approved by the dean. Mathematics 803 required for majors in Chemistry and Physics and for minors in Physics.

Speech, Dramatics (basic requirements)

Bachelor of Science

Major Subjects

Biology, Chemistry, Geology, Physics.

Minor Subjects

Biology, Chemistry, Geology, Mathematics, Physics.

Basic Requirements

1. At least thirty semester hours in a major including fifteen semester hours of advanced courses.
2. At least eighteen semester hours in a minor including six semester hours of advanced courses.
3. Six semester hours of another science.
4. Social Studies: Government 610 (Government 610b not required of students who have completed two years of Military Science), History 301 and 302, Economics 312, Philosophy 330.
5. English 601, and 612 or 612Q.
6. Mathematics 803.
7. Four semester hours of Physical Education as prescribed in the freshman and sophomore years. (Not required of students who have completed two years of Military Science).
8. Other courses to make at least one hundred thirty-six hours, including a total of thirty-six semester hours in advanced (upper division) courses. Foreign language should be included if the student plans graduate work.
9. Specified courses and exceptions to basic requirements as shown below.

Major Requirements

Biology

Exceptions—Mathematics 304 and 309 may be substituted for Mathematics 803 in the Biology major—Geology minor.

Chemistry

Specified—German 801; Chemistry 424, 821, 460, 461, and six additional advanced hours in Chemistry.

Bachelor of Business Administration

Basic Requirements

1. Forty-two hours of Business Administration including 411, 414, 332, 620, 623, 337, and 354.
2. English 601, and 612 or 612Q.
3. Six semester hours in laboratory science.
4. Six semester hours in Mathematics.
5. Social Studies: Government 610 (Government 610b not required of students who complete two years of Military Science); Economics 312, 313, 332; History 301 and 302; Philosophy, three semester hours; Psychology, three semester hours.
6. Three semester hours of Speech.
7. Four semester hours of Physical Education as prescribed in the freshman and sophomore years (not required of students who have completed two years of Military Science).
8. Other courses to make at least one hundred twenty-four semester hours, including a total of thirty semester hours in advanced (upper division) courses. Not more than sixty-six semester hours may be offered in the major subject.

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, Piano; Applied Music, Voice.

Basic Requirements

1. Music Theory 601, 401, 611, and 248; Music Literature 301L, 304, 331, and 334; and additional courses in Music as specified below for the respective majors.
2. Participation in Choir, Band or Orchestra during each semester in residence (only eight semester hours may be offered).
3. English 601, and 612 or 612Q.
4. Social studies: Government 610 (Government 610b not required of students who have completed two years of Military Science); History 301 and 302.
5. Four semester hours of Physical Education as prescribed for the freshman and sophomore years (not required of stu-

dents who have completed two years of Military Science). Credit may be received in Physical Education for participation in Band during the fall semester.

6. Enough other courses to make one hundred and twenty-four semester hours including a total of thirty semester hours in advanced (upper division) courses.

Major Requirements

Music Theory and Composition

Specified—Music Theory 221, 221K, 249, 459, 460, 352, 357; Music Education 352K or 351, and six to eight semester hours of class instruction on Strings, Reeds, Brass and Percussion (206); Applied Music, eighteen semester hours on major instrument; eight semester hours of Class Piano (may be met by examination or by two years of individual instruction).

Music Education,

Instrumental Supervision

Specified—Music Theory 352; Applied Music, thirty semester hours including: twelve semester hours on the major instrument (secondary level); four semester hours of Class Piano (may be met by examination or one year of individual instruction); four semester hours of Class Voice; and ten semester hours of class instruction on Strings, Reeds, Brass and Percussion (206). Two semester hours of Choir and three semester hours of Speech. *For secondary supervision:* Education 301, 316, 317, 327K, 327L, (351 recommended), 352K, 377. *For elementary supervision:* Education 301, 314, 318T, 328K, 328L, (351 recommended), 352K, 376, 377.* Recitals.

Music Education, Vocal Supervision

Specified—Music Theory 357; Applied Music; thirty semester hours including: twelve semester hours of major (Voice or Piano—secondary level), and ten semester hours of class instruction on Strings, Reeds, Brass and Percussion (206). *Pianists:* eight semester hours of Class Voice. *Vocalists:* eight semester hours of Class Piano (may be met by examination or two years of individual instruction); Speech, three semester hours. *For secondary supervision:* Education 301, 316, 317, 376K, 351, 352K (or Music Literature

*Elementary Education 330T required of students planning to teach reading and the language arts. Elementary Education 331T required of students planning to teach social studies, arithmetic and science.

[DEGREE REQUIREMENTS]

346, 347), 327K, 327L. *For elementary supervision:* Education 301, 314, 318T, 376, 351, 352K (or Music Literature 346, 347), 328K, 328L. Recitals.

Applied Music,

Orchestral Instruments†

Specified—Music Theory 352; Applied Music, thirty-two semester hours of major instrument (809); four semester hours of Class Piano (may be met by examination or one year of individual instruction); two semester hours of Class Voice and two semester hours of Choir; Speech, three semester hours; Music Education 352K, 351; Chamber Music, four to six semester hours; joint and individual recitals.

†Students majoring in Applied Music may qualify for teaching by taking the Education courses listed under the Music Education degree plans.

Applied Music, Piano†

Specified—Music Theory 249, 221, and 357 or 459; two semester hours of Piano Sight Reading; Music Education 351 and 630; Applied Music, thirty-two semester hours of Piano (809); joint and individual recitals.

Applied Music, Voice†

Specified—Music Education 351 and Literature 346 and 347; Applied Music, twenty-four hours of Voice (secondary level); eight semester hours of Class Piano (may be met by examination or two years of individual instruction); Speech (314 recommended); foreign language (course 801); joint and individual recitals.

Extension Division

The purpose of the Extension Division is to extend the services of the College, so far as its resources and facilities permit, to people who are unable to attend day classes.

Texas Western College, like the majority of other colleges and universities, will accept one-fourth of the total hours required for a degree from work taken by extension. In addition with the approval of the Graduate Council six hours of extension may be used as graduate credit towards a Master of Arts Degree from Texas Western College.

Admission Requirements and Procedure

Requirements for admission to the Extension Division are the same as those for entrance to the College for residence work. (See "Admission and Registration" section.)

Transfer students who wish to take extension courses should have their transcripts sent to the Director of Extension at least three weeks prior to registration.

NOTE: *In no case may applicants be permitted to complete their registration before proper transcripts have been furnished the Director of Extension.*

Veterans

These extension courses, as a part of the general program of Texas Western College, meet the requirements of the Veterans Administration for training of veterans under Public Laws 16 and 346.

Veterans who plan to take work under the "G. I. Bill" must submit their Certificates of Eligibility and Entitlement at the time of registration. This certificate may be secured through the local Veteran's Administration Office. If the veteran has received previous training under the veteran's program, he must secure a Supplementary Certificate.

Fees

There is a registration fee of \$7.00 per semester hour (\$21 for the usual three hour course). For a limited number of laboratory courses, there is an additional fee of from \$2.00 to \$4.00. (See descriptions of courses.) These fees are not refundable. A library and general property deposit of \$7.00 is required of each student. This deposit is required only once and is refundable when the student no longer desires to take additional extension courses.

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 Chairman of the Council. Prerequisite for entering upon graduate work is twenty-four semester hours of undergraduate work in the major subject; where a graduate minor is offered the undergraduate requirement therein is twelve hours. 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 graduate course is one whose prerequisites are admission to the Graduate Division without deficiencies in major and minor, or consent of the head of the department.

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 Chairman of the Council.

(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.

Degree Plan I—With Thesis

This plan requires twenty-four semester hours of course work at advanced and graduate level. Twelve semester hours, including a thesis (course 698), with credit of six semester hours, must be in graduate courses. All the course work may be completed in a major department with approval of the department concerned. A minor of not 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.

Minors are offered in the following fields:

Art	Government
Biological Sciences	History
Bus. Administration	Mathematics
Chemistry	Music Education
Economics	Physical Education
Education	Physics
English	Psychology
French	Sociology
Geology	Spanish

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 Chairman of the Graduate Council 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 698a at some time during the preparation of the thesis and must register for course 698b during the semester or summer session at the end of which the degree is to be granted. 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.

[DEGREE REQUIREMENTS]

Plan 2—Without Thesis

This plan requires 36 semester hours at advanced and graduate level, 15 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.

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.

Examination

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

Preparatory Work for Other Degrees and Certificates

For the Degree of Medicine

Leading to Degree of Bachelor of Arts

Completion of the following courses leads to the degree of Bachelor of Arts at the end of the first year of work in a School of Medicine of the University of Texas. Thus both the B.A. and the M.D. degrees may be taken in seven years.

Freshman Year: English, 601; French 801, or German 801; six semester hours in Mathematics; Chemistry 801; Zoology 301, 302; Physical Education or Military Science.

Sophomore Year: English 612 or 612Q; French 612 or German 612; Chemistry 311, 413; Physics 801; Zoology 614; Physical Education or Military Science.

Junior Year: Chemistry 821; Government 610; Economics 312; Zoology 320 and 321; History 301 and 302; Philosophy 330.

- 312, Philosophy 330 and 331, and nine advanced semester hours) Not more than 12 semester hours of a freshman social science may be counted 36 hours
- 6. Electives, six of which must be advanced 15 hours
- 7. Physical Education 4 hours
(Not required of students who have completed two years of Military Science).
- Total 97 hours

State Teachers' Certificates

In view of the fact that accredited public school systems require degrees of beginning teachers, students are not encouraged to apply for certificates until after graduation. The minimum requirements for the six-year elementary teacher certificate are sixty semester hours, including English 601, Government 610, and twelve semester hours of Education, at least six of which must be in the secondary field.

The minimum requirements for the six-year high school certificate are ninety semester hours, including English 601, Government 610, and eighteen semester hours of Education, six hours of which must deal with high school teaching and one course which shall include at least thirty-six recitation hours of practice teaching.

A student who holds a B.A., B.B.A., or B.S. degree from Texas Western College is entitled to a permanent high school certificate, provided he has twenty-four semester hours in education, including Education 327 and 327T.

Information concerning other teachers' certificates may be obtained from the Registrar.

For the Degree of Law

Leading to Degree of Bachelor of Arts

The successful completion of the following courses plus twenty-eight semester hours of work in the School of Law at the University of Texas leads to the Bachelor of Arts degree:

- 1. English 12 hours
- 2. Mathematics 6 hours
- 3. The completion of a course numbered 612 in a foreign language . . . 12 hours
- 4. Natural sciences (including Chemistry 801 or 610 or Physics 801 or 601 and Botany 301 and 302, or Geology 301 and 302, or Zoology 301 and 302) 12 hours
- 5. Social sciences (including Government 610, History 301 and 302, Economics

Course Descriptions

Art	57	Radio	100
Bible	62	Mathematics	103
Biological Sciences	63	Physics	104
Business Administration	65	ROTC	107
Economics	69	Mining	109
Chemistry	72	Metallurgy	110
Education	74	French	112
Engineering	80	German	112
Drawing	83	Spanish	113
English	84	Russian	114
Speech	88	Music Theory	115
Geology	91	Music Education	116
Geography	92, 96	Applied Music	119
History	93	Philosophy	124
Government	96	Psychology	124
Sociology	97	Physical Education	126
Journalism	98	Health Education	128

Explanation of Course Numbering System

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 three-digit numbers, indicating credit value in semester hours and scholastic level. In some cases a distinction is made between different courses of the same number by the addition of capital letters or Roman numerals (English 612 and English 612Q).

The first digit of a course number tells the amount of credit which will be awarded for successful completion of the course, for example: Journalism 204 is a two-semester-hour course; English 320, a three-hour course; Business Administration 414, a four-hour course, etc. The second two digits show scholastic level as follows:

- 301-309 freshman courses
- 310-319 sophomore courses
- 320-389 upper division courses
(advanced, junior-senior)
- 390-399 graduate courses

Two-Semester Courses

Courses requiring two semesters for completion are indicated in course descriptions by asterisks in parenthesis following the titles, for example:

CHEMISTRY

801. General Chemistry (*)

In such cases one-half the total credit value of the course is awarded for each semester's work. No credit will be given until both semesters have been completed. When any course requires two semesters for completion, the first semester is pre-requisite for enrollment in the second semester. On official records the first semester of two-semester courses is indicated by the small letter *a* following the course number, and the second semester by the small letter *b*.

Course Fees

Laboratory fees and other special fees required for individual courses are indicated in course descriptions; the per-semester cost follows course title in parenthesis, for example:

CHEMISTRY

801. General Chemistry (*) (\$4)

A complete condensed list of all Course Fees will be found on page 29.

Art

MISS VERA WISE, *Chairman*

ASSOCIATE PROFESSOR WISE; ASSISTANT PROFESSOR SOLER; INSTRUCTORS COOGLER, DE BRUYN, HARRISON; DIRECTOR OF PRESS HERTZOG

The Art program permits students to specialize in the following directions: Painting, commercial art, art education, the crafts, and the graphic arts. Students planning to major in painting or commercial art are advised to include life drawing in their programs, commercial art students are advised to take printing processes.

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

ART METHODS

304M Introduction to Fine Arts

Enjoyment 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 304 and Speech 304.

315K Interior Decoration

Study of the application of principles of Art to home decoration problems, including home planning, choice of furniture, and color theory in home decoration. *Prerequisite:* Sophomore standing.

315L Interior Decoration

Study of home furnishing problems, including furniture design, woods, upholstery, materials and weaves, color and background, taste in choice and arrangement of all that goes into a home designed for modern living. *Prerequisite:* Sophomore standing.

320 Art History and Appreciation

Art from early periods, Egyptian, Greek, Chinese, etc., through Byzantine and Renaissance. Art and its part in history and life through the ages. Lectures illustrated by pictures and color slides. *Prerequisite:* Junior standing. Additional work for graduate credit: Two projects based on phases of art studied in the course, with a term paper each, showing research in the field. Requisite for graduate credit: Completion in undergraduate school of Elementary Design 301 and 302, or the equivalent of these, plus six hours in advance of these courses; Total, twelve hours of art.

320K Art History and Appreciation

Art history from the Renaissance through French Impressionism to modern times; analyses of motives and techniques of artists from standpoint of understanding and appreciation. Lectures illustrated by pictures and color slides. Prerequisite: Junior standing. Additional work for graduate credit: Two projects based on phases of art studied in the course with a term paper each, showing research in the field. Requisite: for graduate credit: Completion in undergraduate school of Elementary Design 301 and 302, or the equivalent of these, plus six hours in advance of these courses: Total, twelve hours of art.

322 Elementary School Art (\$2)

A course in materials and methods for those preparing to teach art in the elementary schools. Actual work in materials: Crayon, opaque water color, linoleum blocks, clay, etc. Study of methods of developing creative ability of the

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child. *Prerequisite:* Junior standing and Design 301 in advance or concurrently. Additional work for graduate credit: Two projects, each consisting of plans for presentation of class room art work at a definite grade level, for a four to six week period. Purposes, demonstrations, illustrations, etc. to be included. Requisite for graduate credit: Completion in undergraduate school of Elementary Design 301 and either Design 302 or Drawing 314κ, or the equivalent of these, plus six hours in advance of these courses: Total, twelve hours of art.

323 High School Art (\$2)

A course in materials and methods for those preparing to teach art in high schools. Block printing, textile decoration, weaving, ceramics, puppets, etc. Term projects. *Prerequisite:* Junior standing and Elementary Drawing 301 in advance or concurrently. Additional work for graduate credit: Two term papers, showing personal art work, presentation projects, bibliographical research, etc. Requisite for graduate credit: Completion in undergraduate school of Elementary Design 301 and either Design 302 or Drawing 314κ, or the equivalent of these, plus six hours in advance of these courses; Total, twelve hours of art.

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Unless otherwise stated each course consists of six hours of workshop per week.

304 Ceramics (\$2)

Expressive form in clay. Hand modeling, wheel throwing, ceramic sculpture. Emphasis on surface enrichment by use of texture and glazes. *Prerequisite:* Elementary Design 301 and either Design 302 or Drawing 314κ, for craft majors or consent of the head of the department.

305 Jewelry (\$2)

Design and construction of jewelry in silver and base metals. Emphasis on basic techniques. *Prerequisite:* Elementary Design 301 and either Design 302 or Drawing 314κ for craft majors or consent of the head of the department.

305κ Jewelry (\$2)

Continuation of 305. *Prerequisite:* Jewelry 305 for craft majors.

307 Jewelry and Silversmithing (\$2)

Introduction to jewelry making and silversmithing. Basic techniques and fundamental processes. A course planned and directed as a hobby course and creative outlet for those not majoring in crafts.

307κ Jewelry and Silversmithing (\$2)

Continuation of Jewelry and Silversmithing 307.

308 Ceramics (\$2)

A general course for the ceramics hobbyist. Instruction in hand modeling, wheel throwing, casting.

308κ Ceramics (\$2)

Continuation of Ceramics 308 with more complicated work introduced.

309 Ceramics (\$2)

Following Ceramics 304, a continuation of expressive form in clay. Modeling, ceramic sculpture, slip casting, terra cotta, wheel throwing, glazing. *Prerequisite:* Ceramics 304.

- 324 **Jewelry and Silversmithing (\$2)**
The design and execution of jewelry. Introduction to silversmithing and fundamentals of cutting and polishing of semi-precious stones. Required of those majoring in the field. *Prerequisite:* Elementary Design 301, either Design 302 or Drawing 314κ, and Jewelry 305κ or 307 and 307κ.
- 325 **Jewelry and Silversmithing (\$2)**
Continuation of Jewelry and Silversmithing 324. Advanced techniques and emphasis on original design. *Prerequisite:* Jewelry and Silversmithing 324.
- 330 **Ceramics (\$2)**
Advanced study of clay form in modeling, wheel throwing and casting. Experimentation in clay bodies and glazes. Required of those majoring in the field. *Prerequisite:* Ceramics 309.
- 331 **Ceramics (\$2)**
Continuation of Ceramics 330. *Prerequisite:* Ceramics 330.
- 335 **Ceramics (\$2)**
Advanced study of clay forms involving all of the methods of construction. Production of work of professional standing the goal of this course. *Prerequisite:* Ceramics 331.
- 335κ **Ceramics (\$2)**
Continuation of Ceramics 335. Professional standards and exhibition work required. *Prerequisite:* Ceramics 335.

DRAWING

Unless otherwise stated, each course consists of six hours workshop per week.

- 309N **Life Drawing from the Costumed Model (\$2)**
Study of the human form, its balance, rhythm and plastic qualities. Special study of head, face and hands and of composition of the human figure in space.
- 309L **Life Drawing (\$2)**
Continuation of life drawing from the costumed model, studying the human form in various poses. *Prerequisite:* Life Drawing 309N for those majoring in painting or commercial art.
- 310 **Anatomy (\$2)**
Study of muscles, bone structure, construction of the human body. Use of costumed model and charts. Three lecture periods per week. *Prerequisite:* Life Drawing 309N in advance or concurrently.
- 311 **Figure Composition (\$2)**
The study of human forms in composition and in relationship to each other and space. *Prerequisite:* Life Drawing 309L in advance or concurrently.
- 314κ **Three Dimensional Design (\$2)**
The principles of design applied to construction in crafts. Working drawings, plans, and actual construction in various mediums. *Prerequisite:* Elementary Design 301 in advance or concurrently.
- 329 **Life Drawing (\$2)**
Drawing the human figure from the costumed model. Advanced study of construction of head, hands, feet and relationships within the body form. *Prerequisite:* Life Drawing 309L or consent of the head of the department.

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329K Life Drawing (\$2)

Continuation of life drawing with advanced work emphasized in form, composition and drawing technique. *Prerequisite:* Life Drawing 309L or consent of the head of the department.

GRAPHIC ARTS

Unless otherwise stated, each course consists of six hours workshop per week.

312 Advertising Layout and Lettering (\$2)

Presenting the fundamentals of advertising layout through application to newspaper, direct mail, magazine and point-of-sale advertising. Provides basic knowledge of hand lettering by study of traditional lettering forms and arrangement of lettering, type and art for reproduction. *Prerequisite:* Elementary Design 302 in advance or concurrently.

312K Advertising Layout and Lettering (\$2)

A continuation of study of advertising layout and lettering. *Prerequisite:* Advertising Layout and Lettering 312.

328 Advertising Design and Production (\$2)

Advanced problems in advertising layout; the use of color, the preparation of finished art suitable for reproduction. Adaptation of advertising design to brochures, packaging, direct mail, etc. Illustrational technique developed. *Prerequisite:* Advertising Layout and Lettering 312K or consent of the head of the department.

328L Advertising Design and Production (\$2)

A continuation of the study of advertising design with professional standards emphasized. *Prerequisite:* Advertising Design and Production 328.

349 Printing Processes and Reproduction

Explanation and demonstration of processes: letterpress, lithography, photo-engraving, photo-offset, paper analysis, type-setting, binding. Preparation of manuscript, photographs, and art work for the printer. Two lecture and two hour workshop per week. May not be counted for credit in addition to Journalism 349 or English 350. *Prerequisite:* Junior standing.

352 Typography

History of the alphabet; period design, character of type styles, proportion, arrangement, tone, practical application to advertising and publications. Two lecture and two laboratory hours per week. May not be counted for credit in addition to Journalism 352. *Prerequisite:* Art 349.

PAINTING

Unless otherwise stated, each course consists of six hours workshop per week.

301 Elementary Design (\$2)

A course stressing principles of art, color theory, value, composition and other design qualities. The organization of ideas into creative design. Tempera, water color, ink, etc. used.

302 Elementary Design (\$2)

Continued study of fundamental design principles and elements. Organization of material gained in sketching and research into design. Pencil, water color, tempera, ink, etc. used. *Prerequisite:* Elementary Design 301.

306 Sketching (\$2)

The principles of freehand drawing and sketching, including study of formal composition, light, shadow, reflections, color, value, etc. Pencil, water color, gouache, oil, etc. used.

317K Painting (\$2)

The development of visual structure in painting. Landscape, composition in black and white and in color. Still life drawing and painting. *Prerequisite:* Elementary Design 302 or consent of the head of the department.

317L Painting (\$2)

A continuation of Painting 317. Landscape and still life painting. Experimentation in various techniques and mediums. *Prerequisite:* Painting 317K or consent of the head of the department.

326 Painting (\$2)

Landscape, still life, and other types of painting particularly adapted to the individual. Organization of material from sketches. *Prerequisite:* Painting 317K and 317L. Additional work for graduate credit: The completion of three major projects in painting outside of class, subject to approval of instructor. *Requisite for graduate credit:* Completion in undergraduate school of Elementary Design 301 and 302, plus six hours in advance of these courses, making a total of twelve hours of art.

327 Painting (\$2)

A continuation of Painting 326. *Prerequisite:* Painting 317K and 317L. Additional work for graduate credit: The completion of three major projects in painting outside of class, subject to approval of instructor. *Requisite for graduate credit:* Completion in undergraduate school of Elementary Design 301 and 302, plus six hours in advance of these courses, making a total of twelve hours of art.

SCULPTURE

Unless otherwise stated, each course consists of six hours workshop per week.

309K Sculpture (\$2)

Cast sketching, sight training in plastic form, portrait modeling and plaster casting. Work from the costumed model. Different phases emphasized according to aptitudes of students.

309Q Sculpture (\$2)

A continuation of Sculpture 309Q with the objective of greater skill in the feeling for form and technique.

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.

301 Survey of the Old Testament

A comprehensive study of the entire Old Testament.

302 Survey of the New Testament

A comprehensive study of the entire New Testament.

303 The Life of Christ

An historical study of the life and teachings of Christ.

304 The Life of Paul

An historical study of the life and missionary endeavors of the Apostle Paul.

Biological Sciences

DR. A. H. BERKMAN, *Chairman*

PROFESSOR BERKMAN; ASSOCIATE PROFESSOR WILDE; INSTRUCTORS DUKE, WATERS

Biology 316 may not be used to satisfy the science requirement for the Bachelor of Arts Degree or the Bachelor of Science Degree.

BIOLOGY

- 303 Microbiology (\$2)
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. This course is open only to pre-clinical nurses and students in a school of nursing.
- 606 Anatomy and Physiology (*) (\$2) *(Formerly Biology 306)*
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.
- 407 Nutritional Requirements of the Human Body (\$4) *(Formerly Biology 207)*
Nutritional needs of the normal human body. Three lectures and three laboratory hours per week. *Prerequisite:* Biology 606a and Chemistry 306. This course is open only to pre-clinical nurses and students in a nursing school.
- 310 Biology of the Human Body (\$2)
Survey of the anatomy of the human body with emphasis on the skeletal and muscular systems. Three lectures and two laboratory hours per week. *Prerequisite:* Zoology 302. This course may not be counted for credit in addition to Zoology 614b.
- 311 Introduction to Human Physiology (\$2)
Body functions with emphasis on their relations to physical exercise. Three lectures and two laboratory hours per week. *Prerequisite:* Biology 310 or Zoology 614b.
- 316 Heredity
Principles of heredity in their application to animals, plants, and mankind. *Prerequisite:* Sophomore standing or six semester hours of a laboratory science.
- 330 Technique in Histology and Cytology (\$2)
Fixing, imbedding, sectioning, staining and mounting tissues and cells for critical microscopical examination. One lecture and six laboratory hours per week. *Prerequisite:* Chemistry 413, or 621, or 821, or Bacteriology 629, or 12 semester hours of zoology, or botany.

BACTERIOLOGY

- 629 General Bacteriology (*) (\$2) *(Formerly Bacteriology 29)*
Principles of bacteriology; study and isolation of nonpathogenic and pathogenic forms; investigation of water, milk, and sewage; bacterial antagonism; immunology. Two lectures and three laboratory hours per week. *Prerequisite:* Twelve semester hours in any one of the natural sciences or a combination of twelve semester hours in natural sciences and junior standing.

[BIOLOGICAL SCIENCES]

BOTANY

- 301 General Botany (\$2)
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.
- 302 General Botany (\$2)
Life cycles and survey of mosses, ferns, and seed plants. Two lectures and three laboratory hours per week. *Prerequisite*: Botany 301.
- 310 Introduction to Plant Anatomy (\$2)
A study of structure and development of tissues as well as the interrelation of structure and function in vascular plants. Two lectures and three laboratory hours per week. *Prerequisite*: Six semester hours of botany or of general biology.
- 311 Local Flora (\$2)
Survey of the flowering plants of the El Paso Region. Two lectures and three laboratory hours per week. *Prerequisite*: Six semester hours of a laboratory science.

ZOOLOGY

- 301 General Zoology (\$2)
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.
- 302 General Zoology (\$2)
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 301, or three semester hours of general biology.
- 614 Vertebrate Zoology and Comparative Anatomy (*) (\$2)
(Formerly Zoology 14)
Comparative study of the anatomy of the dogfish, an amphibian (*Necturus*), the turtle, pigeon, and a mammal, with emphasis on development and relationship of such evolution to the developmental anatomy of man. Two lectures and four laboratory hours per week. *Prerequisite*: Zoology 302 or six semester hours of general biology.
- 320 Animal Cytology and Histology (\$2)
Structure, differentiation, and functions of cells. Two lectures and three laboratory hours per week. *Prerequisite*: Zoology 614; for juniors and seniors, Zoology 302 completed with a grade not lower than C, and Zoology 614 concurrently.
- 321 Vertebrate Embryology (\$2)
Development of the chick and mammalian embryos. Two lectures and three laboratory hours per week. *Prerequisite*: Zoology 614; for juniors and seniors, Zoology 302 completed with a grade not lower than C, and Zoology 614 concurrently.

Business Administration and Economics

DR. WADE HARTRICK, *Chairman*

PROFESSOR HARTRICK; ASSOCIATE PROFESSOR SPENCER; ASSISTANT PROFESSORS BLACK, SAYLES, SMITH; INSTRUCTORS FREELAND, OLM, WALKER; LECTURERS BROCKMOLLER, BUCKNER, ETHERIDGE, HERTZOG, KAHN, RISTER

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.

Experience has shown that students interested in particular fields of work will benefit by including certain courses in their degree plans. (a) For students interested in general economics: Economics 322, 331, 332, 337, 343, 344, and 359; and Business Administration 411 and 414. (b) For students interested in general business training: Business Administration 302, 303, 623, 331, 337, 338, 342, 344, 357, and 359; and Economics 312 and 313. (c) For students interested in accounting: Business Administration 326, 327, 329, 330, 338κ, 338μ, 363, 364; and Economics 312 and 313. (d) For students interested in secretarial science: Business Administration 302, 303, 610, 620, 621, 334, 335, 359, 331, and 342; and Economics 312 and 313. (e) For students interested in foreign trade: Economics or Business Administration 337, 344, 348, 350, 351, and 359. (f) Students wishing to teach subjects in economics or business in high school should plan their courses with the aid of the chairman of the department.

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.

BUSINESS ADMINISTRATION

302 Elementary Typewriting (\$2)

Care and operation of a typewriter, copy work, letter writing, and forms for beginners. Three classroom and five laboratory hours per week. Students presenting one or more units of high school typewriting may not offer this course for credit.

303 Intermediate Typewriting (\$2)

A continuation of Business Administration 302 designed to increase speed and accuracy; planning and preparing advanced copy work. Three classroom and five laboratory hours per week. *Prerequisite:* Business Administration 302 or its equivalent.

306 Mathematics of Business

Fundamentals and application of principles of mathematics used in Accounting, Marketing, Finance, Insurance, and Production. *Prerequisite:* Three hours of college mathematics.

610 Elementary Shorthand (*) (\$2) (Formerly Business Administration 10)

Elementary principles of Gregg shorthand; reading, penmanship, and simple transcription. *Prerequisite:* Business Administration 303 or its equivalent, or sophomore standing.

411 Theory and Practice in Accounting (\$4)

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. *Prerequisite:* Sophomore standing.

[BUSINESS ADMINISTRATION]

- 414 Theory and Practice of Accounting (\$4)
Continuation of Business Administration 411. 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 411.
- 620 Business Letters and Report Writing (*)
(Formerly Business Administration 20)
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 612 or 612Q; junior standing; Business Administration 302 or its equivalent.
- 621 Advanced Stenography (*) (\$2) (Formerly Business Administration 21)
Training in advanced secretarial practice. Development of speed and accuracy in shorthand and typing; character study and practice dictation of technical phraseology; letter layouts; dictating machine practice. Three classroom and three laboratory hours per week for two semesters. *Prerequisite:* Business Administration 303 and 610 or their equivalent.
- 321k Fundamentals of Advertising
Relation to other business functions. Study of campaigns, appropriations, media, and practical advertising activities. *Prerequisite:* Junior standing. (May not be counted for credit in addition to Journalism 321K.)
- 623 Business Law (*) (Formerly Business Administration 23)
Textbook and case method. Law of contracts, agency, bailments, sales, mortgages, negotiable instruments; emphasis on Texas interpretation. *Prerequisite:* Economics 313 or Business Administration 414.
- 326 Intermediate Accounting, First Course
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 414.
- 326k Advertising, Copywriting and Special Layouts
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 321k or Journalism 321k. (May not be counted for credit in addition to Journalism 326k.)
- 327 Intermediate Accounting, Second Course
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 326.
- 328 Governmental and Municipal Accounting
A study of accounting principles as applied to governmental unit systems. Emphasis on budgetary and fund accounts. *Prerequisite:* Business Administration 414.
- 329 Cost Accounting
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 414.
- 330 Auditing
Auditing procedure, reports, and working papers used in financial investigations; balance sheet, detailed audits; verifications of assets, liabilities, nominal accounts. *Prerequisite:* Business Administration 326.

[BUSINESS ADMINISTRATION]

- 331 Business and Government
 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*: Business Administration 414. (May not be counted for credit in addition to Economics 331.)
- 332 Business Statistics (\$2)
 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. (May not be counted for credit in addition to Economics 329.)
- 334 Office Practice (\$2)
 Practice in use of dictating, bookkeeping, duplicating machines, and other types of office equipment; use and operation of telephone switchboard; filing, advanced dictation and transcription. Three classroom hours and three laboratory hours per week. *Prerequisite*: Business Administration 621 (may be taken concurrently) or the equivalent, and Business Administration 414.
- 335 Office Organization and Management
 Location, equipment, organization, and general routine practice of the modern office from the office manager's and the office employee's viewpoints. *Prerequisite*: Business Administration 414 or junior standing.
- 337 Marketing
 Considers functions, middlemen, institutions, law, policies, and practices in marketing. *Prerequisite*: Economics 313. (May not be counted for credit in addition to Economics 337.)
- 338K Federal Tax Accounting for Individuals
 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 414.
- 338M Federal Tax Accounting for Partnerships and Corporations
 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 338K.
- 339 Business Salesmanship
 Economic problems of personal selling, planning and execution of an interview product and market analysis, building good will, salesman and employer relationship. *Prerequisite*: Business Administration 414.
- 341 Advanced Banking Theory and Practice
 Bank promotion and incorporation: organization and powers, directors, stockholders, clearing and collecting systems, credit analysis, banking departments, Federal Reserve System. *Prerequisite*: Economics 322 or Business Administration 354. (May not be counted for credit in addition to Economics 341.)
- 342 Personnel Management and Production Problems
 Employment policies and managerial techniques, wage and salary payment, joint relations through labor unions and company representation plans, modern production principles, problems of small and large businesses. *Prerequisite*: Junior standing. (May not be counted for credit in addition to Economics 342.)
- 344 Modern Transportation and Communication
 Background of present system; modern era of promotion and regulation of transportation, telephone and radio communications; monopoly, service, safety,

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- rates, cost; regulatory policy development; private and governmental promotion. *Prerequisite:* Business Administration 414. (May not be counted for credit in addition to Economics 344.)
- 345 Business Cycles and Forecasting
History and theories; prediction of commodity prices, sales volume, industrial production, industrial growth and decay, security prices and business profits; professional forecasting services. *Prerequisites:* Economics 313; Economics 329 or Business Administration 332. (May not be counted for credit in addition to Economics 345.)
- 346 Storage and Warehousing
Development of facilities, services, and practices by public and private warehouses; financial, transportational, and other aspects of industry. *Prerequisite:* Economics 313.
- 347 Consumer Purchasing
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 313. (May not be counted for credit in addition to Economics 347.)
- 348 Latin-American Resources and Trade
Considers historical background, economic and human resources, production, domestic and international trade of Mexico, Central America, Caribbean Lands, and South America. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Economics 348.)
- 349 Labor Problems
History of United States labor movement, problems in employer-employee relationship, governmental agencies, legislation, current issues. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Economics 349.)
- 350 Introduction to Foreign Trade
History, principles, and practices of the international movement of goods and services. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Economics 350.)
- 351 Trade Promotion with Mexico
History, production, transportation, sales promotion, financing, and legal factors affecting trade between United States and Mexico. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Economics 351.)
- 354 Short-term Finance
Principles and important underlying theories of money and banking; history of precious metals, bimetallism, banking development, relation of money and credit to prices, foreign exchange principles. *Prerequisite:* Business Administration 414 and Economics 313. (May not be counted for credit in addition to Economics 322.)
- 357 Investments
Investment principles, investment banking, security analysis, security classification including rails, industrials, utilities, governments, and others. Principally considers investor's viewpoint. *Prerequisite:* Business Administration 414. (May not be counted for credit in addition to Economics 357.)
- 359 General Insurance
Nature and economic significance of risk; the insurance contract; fire, marine, property, life, burglary, robbery, and theft insurance; types of carriers; state supervision; social insurance. *Prerequisite:* Business Administration 414 or Economics 313. (May not be counted for credit in addition to Economics 359.)

- 360 **Life Insurance**
Underlying principles; business and personal uses; types of policies and carriers; organization, *administration and supervision* of risk carriers. *Prerequisite*: Business Administration 414 or Economics 313. (May not be counted for credit in addition to Economics 360.)
- 361 **Advanced Accounting, First Course**
Advanced phases of accounting for capital stock, surplus, surplus reserves, and corporate income. *Prerequisite*: Business Administration 327.
- 362 **Advanced Accounting, Second Course**
The advanced accounting aspects of corporate reorganizations, liquidations, receiverships, corporate trusteeships, bankruptcies, estates and trust, partnerships, syndicates, and joint ventures. *Prerequisite*: Business Administration 361.
- 363 **C.P.A. Problems**
Solution of problems in regular C.P.A. examinations and by the American Institute of Accountants. *Prerequisite*: Twelve semester hours of courses in accounting.
- 364 **C.P.A. Law Review**
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 623.
- 365 **Methods of Teaching Commercial Subjects**
Subject matter and methods for teaching secretarial courses, bookkeeping, arithmetic, and allied high school subjects. *Prerequisite*: Business Administration 621 (may take concurrently) and 414; Education 317. (May not be counted for credit in addition to Education 321k.)
- 369 **Principles of Retailing**
Survey of all phases of retailing, internal and external. *Prerequisite*: Business Administration 414 and 337.
- 679 **Special Studies in Business Administration (*)**
Special studies in areas for which a separate course is not organized. Credit will vary according to work performed, value being indicated by course number 279, 379, 479, 679. *Prerequisite*: Eighteen hours of Business Administration and/or Economics, six of which must be advanced; consent of instructor and chairman of department.

ECONOMICS

- 312 **Principles of Economics**
Place of economic principles and institutions in society, survey of nature of economics, modern industrial development, present-day business unit, employer-employee relationships, value and price, functional distribution. *Prerequisite*: Sophomore standing.
- 313 **Principles of Economics**
Survey of principles, practices, and institutions utilized in money and banking, international trade, public finance, government and business relationships. *Prerequisite*: Economics 312.
- 321 **Public Finance and Taxation**
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 313.
- 322 **Money and Banking**
Principles and important underlying theories of money and banking; history of precious metals, bimetallism, banking development; relation of money and credit

[ECONOMICS]

- to prices, foreign exchange principles. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Business Administration 354.)
- 323 Economic History of the United States
Survey of American economic development from colonial time to present; analysis of factors which have shaped that development. *Prerequisite:* Economics 313.
- 329 Economic Statistics (\$2)
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:* Junior standing and six semester hours of mathematics. (May not be counted for credit in addition to Business Administration 332.)
- 331 Business and Government
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 313. (May not be counted for credit in addition to Business Administration 331.)
- 332 Corporation Finance
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 313.
- 337 Marketing
Considers functions, middlemen, institutions, law, policies, and practices in marketing. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Business Administration 337.)
- 340 History of Economic Thought
A study of the development of principal economic doctrines and schools of economic thought. *Prerequisite:* Economics 313.
- 341 Advanced Banking Theory and Practice
Bank promotion and incorporation, organization and powers, directors, stockholders, clearing and collecting systems, credit analysis, banking departments, Federal Reserve System. *Prerequisite:* Economics 322 or Business Administration 354. (May not be counted for credit in addition to Business Administration 341.)
- 342 Personnel Management and Production Problems
Employment policies and managerial techniques, wage and salary payment, joint relations through labor unions and company representation plans, modern production principles, problems of small and large businesses. *Prerequisite:* Junior standing. (May not be counted for credit in addition to Business Administration 342.)
- 343 Comparative Economic Systems
A consideration of economic foundations of the capitalistic and other systems; objective study of economic construction of Fascism, Nazism, Socialism, Communism, and Capitalism. *Prerequisite:* Economics 313.
- 344 Modern Transportation and Communication
Background of present system; modern era of promotion and regulation of transportation, telephone, and radio communication; monopoly, service, safety, rates, cost; regulatory policy development; private and governmental promotion. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Business Administration 344.)

- 345 **Business Cycles and Forecasting**
History and theories; prediction of commodity prices, sales volume, industrial production, industrial growth and decay, security prices, and business profits; professional forecasting services. *Prerequisite:* Economics 313; Economics 329 or Business Administration 332. (May not be counted for credit in addition to Business Administration 345.)
- 347 **Economics of Consumption**
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 313. (May not be counted for credit in addition to Business Administration 347.)
- 348 **Latin-American Resources and Trade**
Considers historical background, economic and human resources, production, domestic and international trade of Mexico, Central America, Caribbean Lands, and South America. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Business Administration 348.)
- 349 **Labor Problems**
History of United States labor movement, problems in employer-employee relationship, governmental agencies, legislation, current issues. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Business Administration 349.)
- 350 **Introduction to Foreign Trade**
History, principles, and practices of the international movement of goods and services. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Business Administration 350.)
- 351 **Trade Promotion with Mexico**
History, production, transportation, sales promotion, financing, and legal factors affecting trade between United States and Mexico. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Business Administration 351.)
- 357 **Investments**
Investment principles, investment banking, security analysis, security classification including rails, industrials, utilities, governments, and others. Principally considers investor's viewpoint. *Prerequisite:* Economics 313. (May not be counted for credit in addition to Business Administration 357.)
- 359 **General Insurance**
Nature and economic significance of risk; the insurance contract; fire, marine, property, life, burglary, robbery, and theft insurance; types of carriers; state supervision; social insurance. *Prerequisite:* Economics 313 or Business Administration 414. (May not be counted for credit in addition to Business Administration 359.)
- 360 **Life Insurance**
Underlying principles; business and personal uses; types of policies and carriers; organization, administration, and supervision of risk carriers. *Prerequisite:* Economics 313 or Business Administration 414. (May not be counted for credit in addition to Business Administration 360.)
- 679 **Special Studies in Economics (*)**
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 279, 379, 479, 679. *Prerequisite:* Eighteen hours of Business Administration and/or Economics, six of which must be advanced; consent of instructor and chairman of department.

Chemistry

DR. W. W. LAKE, *Chairman*

PROFESSOR LAKE; ASSOCIATE PROFESSOR HANCOCK; ASSISTANT PROFESSORS BALL, NORMAN; INSTRUCTORS DE HAAN, PEIRCE, SCRUGGS

The minimum course requirements in Chemistry for the Bachelor of Science Degree are Chemistry 801, 311, 413, 424, 821, 460, 461, and six additional advanced hours in chemistry.

- 601 General Chemistry (*) (\$2) *(Formerly Chemistry 1)*
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.
- 801 General Chemistry (*) (\$4)
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.
- 305 General Chemistry
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 801 and who plan to register for that course the next succeeding semester. Two lectures, one demonstration hour, and two laboratory hours per week. May not be used as a prerequisite for any chemistry course other than 801.
- 306 Chemistry for Nurses (\$2)
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.
- 307 Chemistry for Nurses (\$2)
A continuation of Chemistry 306. Three lectures and two laboratory hours per week. *Prerequisite:* Chemistry 306.
- 311 Qualitative Analysis (\$2)
Analytical reactions from the point of view of the laws of chemical equilibrium applied to solutions of electrolytes. Analysis of the common ions using the semimicro technique. One lecture and six laboratory hours per week. *Prerequisite:* Chemistry 801 with a grade of not less than C in each semester.
- 413 Quantitative Analysis (\$4)
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. *Prerequisite:* Chemistry 311.
- 621 Organic Chemistry (*) (\$2) *(Formerly Chemistry 21)*
A study of the fundamental types of carbon compounds. Two lectures and three laboratory hours per week. *Prerequisite:* Chemistry 801.
- 821 Organic Chemistry (*) (\$4)
A study of the fundamental types of carbon compounds. Three lectures and five laboratory hours per week. *Prerequisite:* Chemistry 413.

- 323 **Quantitative Analysis (\$2)**
The quantitative chemical analysis of ores and metallurgical products. One lecture and six laboratory hours per week. May not be counted in addition to Chemistry 424. *Prerequisite:* Chemistry 413.
- 424 **Quantitative Analysis (\$4)**
A continuation of Chemistry 413. Two lectures and six laboratory hours per week. May not be counted in addition to Chemistry 323. *Prerequisite:* Chemistry 413.
- 460 **Physical Chemistry (\$4)**
Properties of substances in the gaseous, liquid, and solid state; solutions; thermochemistry. Three lectures and three laboratory hours per week. *Prerequisite:* Chemistry 413, Mathematics 613, and Physics 601 or 812.
- 461 **Physical Chemistry (\$4)**
Homogeneous and heterogeneous equilibria; kinetics of reaction, electrochemistry, and chemical thermodynamics. Three lectures and three laboratory hours per week. *Prerequisite:* Chemistry 460.
- 362 **Biochemistry (\$2)**
Chemistry of food substances, digestion, vitamins, enzymes, absorption, and blood. Two lectures and three laboratory hours per week. *Prerequisite:* Chemistry 621 or 821.
- 363 **Biochemistry (\$2)**
Immunochemistry, chemistry of respiration, hormones, intermediary metabolism, etc., with emphasis on cell metabolism. Two lectures and three laboratory hours per week. *Prerequisite:* Chemistry 362.
- 368 **Principles of Colloid Chemistry (\$2)**
Chemical and physical conditions of the colloid state. Two lectures and three laboratory hours per week. *Prerequisite:* Chemistry 460.
- 296, 396, 496, 596, 696 **Introduction to Research (\$2 or \$4)**
Credit will be granted, up to six semester hours, for research satisfactorily 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, PUCKETT; ASSOCIATE PROFESSOR LARKIN; ASSISTANT PROFESSOR HEWITT; INSTRUCTORS REYNOLDS AND CONDON

The Education program is intended to provide opportunity for the prospective teacher to obtain (a) orientation in the general field of education, (b) an over-view of the fundamental principles in philosophy of the elementary or secondary schools, and (c) specific training in the technique of instruction in the field or subject which is selected. Students who plan to teach in secondary or elementary schools are advised to take the appropriate plan as indicated under the Education major.

Note to experienced teachers: Courses marked with a dagger (†) may be taken by permission of the chairman of the department.

- 301 Introduction to Educational Psychology
A study of the learning process and the conduct of children.
- 305 The American School System
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.
- 314 Psychology of the Elementary School Child (†)
The changes which take place in the life of the child as related to the processes of elementary education. *Prerequisite:* Education 301 and sophomore standing, or graduate standing. Not counted in addition to Psychology 314.
- 316 Psychology of the Secondary School Student (†)
The nature and development of the individual through the adolescent period as related to the processes of secondary education. *Prerequisite:* Education 301 and sophomore standing, or graduate standing. Not counted in addition to Psychology 318.
- 317 An Introduction to Teaching in the Secondary School (†)
Types of teaching in the secondary school. *Prerequisite:* Education 301 and sophomore standing, or graduate standing.
- 318T Introduction to Elementary School Curriculum (†)
An introduction to the curriculum in the elementary grades. *Prerequisite:* Education 301 and sophomore standing, or graduate standing.
- 320 Children's Literature in the Elementary School (†)
Children's literature and the administration of the recreational reading program in relation to the content subjects in the elementary school. Special reading may be done at the level in which the student is most interested. *Prerequisite:* Nine hours of Education, or graduate standing.
- 321K Methods of Teaching Commercial Subjects in the Secondary School
Subject matter and methods for teaching secretarial courses, bookkeeping, arithmetic, and allied subjects in high school. *Prerequisite:* Business Administration 621 and 314, and Education 317. Not counted in addition to Business Administration 380.
- 323K Teaching High-School Journalism, Supervision of School Publications
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:* Education 317 and junior standing. May not be counted for credit in addition to Journalism 323K.

[EDUCATION]

- 327 **Observation of Teaching in the High School** (Formerly 27a)
 The principles of teaching and the observation of class work. One hour daily five days a week. *Prerequisite:* Education 316 and 317 and senior standing.
- 327T **Student Teaching in the High School** (Formerly Ed. 27b)
 The construction of lesson plans and teaching under supervision. One hour daily for five days a week. *Prerequisite:* Education 327 (in advance or concurrently), and senior standing.
- 328 **Observation of Teaching in the Elementary School** (Formerly Ed. 28a)
 The principles of teaching and the observation of class work. A minimum of five hours weekly in the elementary classroom will be required during the semester, more time being assigned if necessary. Two lectures and five laboratory hours per week. *Prerequisite:* Education 314, 318T, 330T, 331T, and senior standing.
- 328T **Student-Teaching in the Elementary School** (Formerly Ed. 28b)
 The construction of lesson plans, and teaching under supervision. One hour daily for five days a week. *Prerequisite:* Education 328 (in advance or concurrently), and senior standing.
- 330T **Introduction to Teaching in the Elementary School** (†)
 Methods for the elementary school, with emphasis centered upon reading and language arts. *Prerequisite:* Education 314 and 318T, or graduate standing.
- 331T **Methods and Materials of Instruction in the Elementary School** (†)
 Methods for the elementary school, with emphasis upon social studies, arithmetic, and science. *Prerequisite:* Education 314, 318T, or graduate standing.
- 332 **Radio Listening as an Aid to Elementary Teaching**
 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:* Eighteen semester hours in Education. May not be counted for credit in addition to Radio 332.
- 332K **Radio Listening as an Aid to Secondary Teaching**
 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:* Eighteen semester hours in Education. May not be counted for credit in addition to Radio 332K.
- 333 **Preparation and Presentation of Radio Programs**
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 stations. Practical studio experience and instruction in operation of studio equipment in the Texas Western College radio studio facilities. *Prerequisite:* Eighteen semester hours in Education. May not be counted for credit in addition to Radio 333.
- 333K **Preparation and Presentation of Radio Programs**
High School Level. 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. *Prerequisite:* Eighteen semester hours of Education. May not be counted for credit in addition to Radio 333K.

[EDUCATION]

- 336T Current Curriculum Trends and Problems in the Secondary School (†)
Present theory and practice of curriculum revision in the secondary schools, and the function of the school in present society. *Prerequisite*: Nine hours of Education, or graduate standing.
- 339T The Education of Exceptional Children in the Elementary School
Consideration given to the philosophy of the education of exceptional children and to the psychology and educational treatment of atypical pupils in elementary schools. *Prerequisite*: Twelve semester hours of Education, or graduate standing.
- 341 Principles in Guidance in the Secondary School
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*: Nine hours of Education, or graduate standing.
- 349 Teaching of the Social Studies in the Elementary Grades (†)
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. *Prerequisite*: Twelve hours in Education, or graduate standing.
- 351 Choral Methods and Techniques
A study of choral organization with primary emphasis on literature, program-building and rehearsal problems. *Prerequisite*: Education 317 and six semester hours of Music. Not counted in addition to Music 351.
- 351T Choral Methods, Techniques and Conducting
Continuation of Music 351. Not counted in addition to Music 351T. *Prerequisite*: Education 351 and permission of department head.
- 355 Introduction to Mental and Educational Measurements in the Secondary School
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*: Nine hours of Education and junior standing, or graduate standing. Not counted in addition to Psychology 355.
- 355K Introduction to Educational Tests and Measurements in the Elementary School
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*: Nine hours of Education and junior standing, or graduate standing.
- 356 The Technique of Speech Correction in the Elementary School
The technique of speech correction, involving diagnosis of speech defects and disorders, phonetics, principles of speech correction, and clinical practices in speech correction. *Prerequisite*: Twelve semester hours of Education. May not be counted in addition to Speech 356.
- 357 Mental Hygiene and the Problems of Children in the Elementary School (†)
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. *Prerequisite*: Twelve semester hours of Education. May not be counted in addition to Psychology 357.

- 357κ **Clinic in Speech Correction in the Elementary School**
Practice in the diagnosis and treatment of speech defects. *Prerequisite:* Twelve semester hours in Education, including Education 356. Not counted in addition to Speech 357.
- 359 **Philosophy of Education**
Educational principles governing aims, curricula, methods, and organization, relation of individual to society, and the historical development of modern democratic concepts of education. *Prerequisite:* Nine hours in Education and junior standing, or graduate standing.
- 375 **Teaching of Music in the Elementary School** *(Formerly Music 310)*
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.) Not counted in addition to Music Methods 375. *Prerequisite:* Junior standing.
- 376 **Teaching of Music in the Elementary Schools**
Procedures in teaching Music in the first six grades. The child voice, its development and classification. Introduction of notation, all kinds of song materials, rhythm bands, appreciation methods and creative music for children. *Prerequisite:* Education 318τ and four hours of Music. Not counted in addition to Music Methods 376.
- 376κ **Teaching and Supervision of Music in the Junior and Senior High School**
Procedure in teaching 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. *Prerequisite:* Education 317 and six hours of Music. Not counted in addition to Music Methods 376κ.
- 377 **Methods of Instrumental Instruction and Supervision**
Band organization, teaching methods, promotion of program in community, instrumentation plans, equipping and housing of the band. *Prerequisite:* Education 317 and nine hours of Music. Not counted in addition to Music Methods 377.
- 388τ **Workshop in Instructional Problems**
This course is devoted to the 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. Prerequisite: Eighteen semester hours of Education.
- 388τ **Workshop in Instructional Problems**
An extension of Education 388T. *Prerequisite:* Eighteen semester hours of Education. Must be taken concurrently with Education 388T.
- 389 **Classroom Use of Audio-Visual Equipment and Materials in the Elementary School**
Consideration of various kinds of audio-visual equipment and materials in relation to classroom instruction in the elementary school. *Prerequisite:* Twelve semester hours in Education.

[EDUCATION]

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 concerned.)

- 698 Thesis Course for Master's Degree (*)
Prerequisite: Twelve semester hours of advanced courses in Education, and permission of chairman of the department.
- 390I Problems in Education—A Seminar
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.
- 390II Problems in Education—A Seminar
An extension of 390I. *Prerequisite:* Education 390I.
- 392 Remedial Reading in the Elementary School (Formerly 350K)
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.
- 393 Workshop in Instructional Problems
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.
- 393T Workshop in Instructional Problems
Extension of Education 393. Must be taken concurrently with Education 393.
- 394 Curriculum Construction and Organization of Subject Matter—A Seminar
The student permitted to devote his attention exclusively to a pertinent curriculum problem either in the elementary or secondary school field.
- 394T The Curriculum in the Elementary School (Formerly 349K)
Particular attention given to selection and organization of materials in reference to curriculum development of the elementary school.
- 395 Child Development in the Elementary School (Formerly 320K)
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.
- 395K Education of Handicapped Child in Elementary School (Formerly 340K)
Consideration of various types of handicapped children and the attendant emotional and social problems. Not counted for credit in addition to Psychology 340.

[EDUCATION]

- 395M Psychology of Speech Pathology (Formerly 360)
 Basic facts, principles and methods of understanding the personality and behavior of individuals who possess speech defects with particular reference to methods of reeducation, adjustment and testing techniques. Not counted for credit in addition to Speech or Psychology 360.
- 395T Psychology of Personality Development of the Secondary Student (Formerly 378)
 Factors helping and hindering normal development of the secondary student. Heritage and the role of life experience. Case history and practical applications. Not counted in addition to Psychology 378.
- 396 Counseling and Vocational Guidance in the Secondary School (Formerly 339K)
 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. May not be counted for credit in addition to Psychology 339.
- 396K Principles of Psychological Testing (Formerly 353)
 Construction and Administration. Primarily for students specializing in counseling and guidance. *Prerequisite:* An introductory course in tests and measurements. Not counted in addition to Psychology 353.
- 396T Workshop in Vocational Guidance (Formerly 341T)
 Planned for superintendents, principals, secondary school teachers as well as those specializing in counseling. Consideration of the relationship of vocational guidance to other forms of guidance. *Prerequisite:* A theory course in guidance.
- 397 Public School Supervision (Formerly 340T)
 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.
- 397K The Administration of Teaching Personnel (Formerly 375K)
 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."
- 397M Public School Administration and Organization (Formerly 321)
 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.
- 397T Child Accounting in Relation to the Work of the School Supervisor (Formerly 341M)
 A study of the philosophy of modern child accounting along with the modern practices of compiling data and using pupil records in the interest of educational supervision.

Engineering and Drawing

MR. F. A. DECKER, *Chairman*

PROFESSORS DECKER, THOMAS; ASSOCIATE PROFESSOR GULDEMANN; ASSISTANT PROFESSORS McDILL, COLEMAN; INSTRUCTORS BALLENTINE, HASSLER, RAYMOND, WALKER

ENGINEERING

001 The Engineering Profession

Series of lectures designed to acquaint the freshman engineering student with the profession of engineering and the various fields of endeavor within the profession; simple engineering problems are solved using elementary slide-rule techniques. Required of all entering freshman engineering students. Weekly lectures throughout the semester.

510 Elements of Electrical Engineering (\$4)

Direct-current electric circuit; analysis of electric networks; electric and magnetic fields; induced and generated electromotive forces; ferromagnetic circuits; inductance, capacitance, transients, non-linear circuit elements, and measuring instruments. Four lectures and three laboratory hours per week. *Prerequisite:* Physics 612a and registration in Mathematics 613b.

312 Elements of Mechanisms (\$2)

Motion of machine parts; velocities and accelerations; study of linkages, sliding and rolling contact, gears, trains, cams, belts, chains, and hoists. Two lectures and three laboratory hours per week. *Prerequisite:* Mathematics 803, Drawing 302, and Physics 601. (Given also during Summer Session, 1950.)

614 Plane Surveying (Summer Work) (\$4)

Care and adjustment of surveying instruments, land surveying, traverses, leveling, determination of meridian, topographic surveying, mapping, notekeeping, computations, and precision. Five hours of lecture and thirty-two hours of field work per week for six weeks. *Prerequisite:* Mathematics 803 and Drawing 302.

415 Statics (\$4)

Forces in space, friction, centroids, centers of gravity, moment of inertia, and radius of gyration. Three lectures and three laboratory hours per week. *Prerequisite:* Drawing 302, registration in Physics 612b or 413, and registration in Mathematics 613b.

515 Statics (\$4)

Covers topics outlined in Engineering 415 plus laboratory exercises in kinematics. Three lectures and six laboratory hours per week. *Prerequisite:* Drawing 302, registration in Physics 612b or 413, and registration in Mathematics 613b.

316 Elementary Plane Surveying (\$2)

Care and adjustment of surveying instruments, land surveying, traverses, leveling, notekeeping, computations, and precision. Two lectures and three laboratory hours per week. *Prerequisite:* Mathematics 803 and Drawing 302.

220 Topographic and Photogrammetric Surveys (\$2)

Use of level, transit, and plane table in mapping and in establishing ground control for aerial surveys and the interpretation and use of aerial photos in mapping and engineering studies. Six laboratory hours per week. *Prerequisite:* Engineering 316 or 614.

322 Route Surveying (\$2)

Theory and practical application of simple, reverse, and compound curves; rights-of-way; cross sections; and estimates. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 614.

- 326 **Engineering Economics**
Application of economics to engineering and industrial problems which require a knowledge of engineering for their solution. *Prerequisite:* Economics 312 and senior standing in any engineering course. (Given also during Summer Session, 1950.)
- 431 **Electrical Circuits and Machines (\$4)**
Direct- and alternating-current circuits and machinery; rectifiers; motor starting and controlling devices; distribution systems; protective devices; motor applications; hoisting systems; and power factor correction. For non-electrical engineering students. Three lectures and three laboratory hours per week. *Prerequisite:* Physics 612 or 413, and Mathematics 613.
- 434 **Strength of Materials (\$4)**
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 415, or 515. (Given also during Summer Session, 1950.)
- 335 **Masonry and Reinforced Concrete**
Study of stone, brick, mortars, and cements; reinforced concrete construction, including strength of concrete in compression; reinforcing steel in tension; design of columns, beams, and slabs; and eccentric loading. *Prerequisite:* Engineering 434. (Given also during Summer Session, 1950.)
- 236 **Construction Methods**
Study and discussion of construction processes, including planning, equipment, material handling, safety, worker's health, personnel relations, and public relations. *Prerequisite:* Senior standing.
- 338 **Dynamics**
Principles of dynamics and application to engineering problems; motion of a particle, translation, rotation, plane motion, work and energy, impulse, and momentum. *Prerequisite:* Engineering 312 and 415. (Given also during Summer Session, 1950.)
- 340 **Highway and Railway Engineering**
Location, design, construction, and maintenance of roads, highways, and railroads; wearing surfaces, costs, methods; economics of roads and highways; procedures, standards, and economics of railroad construction. *Prerequisite:* Engineering 614.
- 341 **Public Water Supplies**
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 systems. *Prerequisite:* Engineering 454 and Chemistry 801. (Given also during Summer Session, 1950.)
- 342 **Sewerage and Sewage Disposal**
Sewer systems, their planning, construction, design, and maintenance; and treatment and disposal of sewage. *Prerequisite:* Engineering 341. (Given also during Summer Session, 1950.)
- 243 **Stresses in Framed Structures (\$2)**
Stresses in simple framed structures. Laboratory work in the design of beams and columns, simple framed trusses, and steel mill-type buildings. Six laboratory hours per week. *Prerequisite:* Engineering 434. (To be offered in Long Session, 1950-51 as Engineering 343 with two lectures and three laboratory hours per week). Given also during Summer Session, 1950.

[ENGINEERING]

- 344 Structural Design and Theory (\$2)
Advanced structural design in concrete, steel and timber structure, including the complete analysis of structures. Nine laboratory hours per week. *Prerequisite:* Engineering 243 and 335. (Given also during Summer Session, 1950.) To be offered in Long Session, 1950-51 with two lectures and three laboratory hours per week.
- 246 Contracts and Specifications
Elements of contracts and specifications, including discussions of the legal problem of contractual relations. *Prerequisite:* Junior standing.
- 248 Soil Mechanics and Foundations
Soil stability, stress distribution, compressibility, lateral earth pressure, settlement of structures, and choice of foundation types. *Prerequisite:* Engineering 515 and senior standing.
- 350 Heat Engineering
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 613, and Physics 611 or 612. (Given also during Summer Session, 1950.)
- 354 Fluid Mechanics
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 611 or 612, Mathematics 613, and Engineering 415 or 515.
- 454 Fluid Mechanics (\$4)
Same as Engineering 354, but with additional work in the laboratory. Three lectures and three laboratory hours per week. *Prerequisite:* Physics 611 or 612, Mathematics 613, and Engineering 415 or 515.
- 857 Alternating-current Circuits (*) (\$4)
Single and polyphase circuits; instantaneous and effective current and voltage, power, vector algebra, wave analysis, coupled circuits, measurements, transmission line calculations, wave filters, symmetrical components, short-circuit calculations, and transients. Three lectures and three laboratory hours per week. *Prerequisite:* Engineering 510. (Given also during Summer Session, 1950.)
- 358 Heat Engineering (\$2)
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 350.
- 466 Direct-current Machines (\$4)
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 857a. (Given also during Summer Session, 1950.)
- 868 Alternating-current Machines (*) (\$4)
Theory, construction, testing, and application of alternating-current generators, transformers, induction motors, synchronous motors, converters, and rectifiers; starting, control, and regulating devices. Three lectures and three laboratory hours per week. *Prerequisite:* Engineering 857 and 466. (Given also during Summer Session, 1950.)
- 370 Machine Design (\$2)
Forces, stresses, and resultant design of various machine elements. Two lectures and three laboratory hours per week. *Prerequisite:* Engineering 338 and 434.

371 Advanced Engineering Problems (\$2)

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

301 Engineering Drawing (\$2)

Freehand lettering, orthographic projection, auxiliary and sectional views, dimensioning, cams, gears, assembly and detail drawings, and pictorial methods. Two lectures and seven hours of supervised drawing per week. *Prerequisite:* One year of high-school mechanical drawing or Drawing 203. (Given also during Summer Session, 1950.)

302 Descriptive Geometry (\$2)

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 seven hours of supervised drawing per week. *Prerequisite:* Drawing 301, and registration in Mathematics 208. (Given also during Summer Session, 1950.)

203 Mechanical Drawing (\$2)

Introductory course for freshman engineering students who do not present mechanical drawing for entrance. Intended to serve as preparation for Drawing 301. 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. (Given also during Summer Session, 1950.)

310 Shades and Shadows, and Perspective (\$2)

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 lectures and seven hours of supervised drawing per week. *Prerequisite:* Drawing 302.

311 Architectural Drawing (\$2)

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 302.

312 Architectural Drawing (\$2)

Continuation of architectural drawing 311 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 311. (To be offered in Long Session, 1950-51.)

English and Speech

DR. C. L. SONNICHSEN, *Chairman*

PROFESSOR SONNICHSEN; ASSOCIATE PROFESSORS BRADY, LEACH; ASSISTANT PROFESSORS EGG, JAMES, MOSES, PONSFORD; INSTRUCTORS BALL, COLLINGWOOD, DE ROO, EHMANN, FRANCIS, FUGATE, JONES, LEECH, PEREZ

ENGLISH

For the degree of Bachelor of Arts twelve semester hours in English are required—English 601 and English 612 or 612Q. English 601 and English 324 are required for the degree of Bachelor of Science in Mining Engineering; English 601 and English 612 or 612Q for the degree of Bachelor of Science in the Sciences. English majors are advised to take English 612, but may elect English 612Q instead of English 612. Either English 612 or English 612Q may be presented as prerequisites to any advanced course in English.

- 001 Pre-Freshman English
For beginning freshmen whose English is below the standard required for admission to English 601.
- 601 Freshman English (*) *(Formerly English 1)*
Practice in organizing information, clarifying thought, improving written expression. Required of all freshmen.
- 612 Outline History of English Literature (*) *(Formerly English 12)*
Survey of English literature from the beginning to the present time with emphasis on major works and authors. *Prerequisite:* English 601.
- 612Q English and American Literature of Today (*) *(Formerly English 12Q)*
A course designed to replace English 612 for students not expecting to specialize in English. The reading includes novels, short stories, plays, poetry, and various types of non-fiction. *Prerequisite:* English 601.
- 312Q English and American Literature of Today
The first semester of English 612Q offered for engineering students and others in need of three hours independent credit in literature. *Prerequisite:* English 601.
- 320 Shakespeare: The Earlier Plays
Detailed study of some of the plays composed before 1601, with a rapid reading of others belonging to the same period. *Prerequisite:* English 612 or 612Q.
- 321 Shakespeare: The Later Plays
Detailed study of some of the great tragedies, followed by a rapid reading of other plays written after 1600. *Prerequisite:* English 612 or 612Q.
- 322 Victorian Poetry
Consideration of the poetry of Browning primarily, and study of such minor poets as Arnold, Clough, James Thompson, and others. *Prerequisite:* English 612 or 612Q.
- 323 Victorian Poetry
Consideration of the poetry of Tennyson primarily, and study of such minor poets as Swinburne, Morris, D. Rossetti, Christina Rossetti, and others. *Prerequisite:* English 612 or 612Q.

- 324 **Technical Writing**
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 students' own ideas. *Prerequisite*: English 601 and junior standing.
- 325 **Writing**
A course for students seriously interested in developing their power of written expression. *Prerequisite*: English 612 or 612Q and consent of the instructor.
- 326 **Non-Fiction Writing**
Study and practice in the techniques of writing contemporary non-fiction. *Prerequisite*: English 612 or 612Q and consent of the instructor.
- 327 **An Outline History of the English Novel**
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 612 or 612Q.
- 328 **An Outline History of the English Novel**
A continuation of English 327, with study of typical works of Dickens, Thackeray, the Brontes, George Eliot, Hardy, and Meredith. *Prerequisite*: English 612 or 612Q.
- 329 **English Romantic Poetry, the Earlier Phase**
Rapid survey of Romanticism in the eighteenth century, followed by a more detailed consideration of the works of Burns, Scott, Coleridge, and Wordsworth. *Prerequisite*: English 612 or 612Q.
- 330 **English Romantic Poetry, the Later Phase**
Consideration of the works of Byron, Shelley, Keats, and some of their contemporaries. *Prerequisite*: English 612 or 612Q.
- 331 **The Drama in England since 1660**
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, Danc, etc. *Prerequisite*: English 612 or 612Q.
- 332 **The Development of the American Drama**
Drama from the Colonial and Revolutionary Periods to modern times. Attention will be given to such modern playwrights as the Mackayes, Thomas, Sheldon, Kaufman and Connelly, Crothers, Hughes, Davis, Anderson, Rice, Hellman, Howard, Behrman, and O'Neill. *Prerequisite*: English 612 or 612Q.
- 334 **Contemporary Poetry**
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 612 or 612Q.
- 336 **American Literature**
A study of the chief American poets and prose writers between the Revolution and the Civil War. *Prerequisite*: English 612 or 612Q.
- 337 **American Literature**
A study of the most important poets and prose writers in America from the Civil War to the present. *Prerequisite*: English 612 or 612Q.

[ENGLISH]

- 339 **Early Eighteenth-Century Prose and Poetry**
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 612 or 612Q.
- 340 **Later Eighteenth-Century Prose and Poetry**
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 612 or 612Q.
- 341 **The Short Story**
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 612 or 612Q.
- 342 **Life and Literature of the Southwest**
A study of the social background of the Southwest and its reflection in literature. *Prerequisite:* English 612 or 612Q.
- 343 **Early Nineteenth-Century Prose**
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 612 or 612Q.
- 344 **Later Nineteenth-Century Prose**
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 612 or 612Q.
- 345 **English Poetry and Prose, 1600-1660**
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 612 or 612Q.
- 346 **English Poetry and Prose, 1660-1700**
The literature of the Restoration, exclusive of the drama, with emphasis on the work of Pepys, Dryden, Bunyan, Hobbes, Milton, and others. *Prerequisite:* English 612 or 612Q.
- 350 **Book Design and Production**
Background history, character of type, paper and binding, period design, collecting, rare book catalogs and dealers, bibliographies. Two lectures and two workshop hours per week. *Prerequisite:* Junior standing. May not be counted in addition to Art/Journalism 349.
- 353 **Fictional Techniques**
Study and practice in the techniques of contemporary fiction. *Prerequisite:* English 325 and consent of the instructor.
- 354 **Short Story Writing**
Study and practice in the techniques of the contemporary short story with particular attention to plotting. *Prerequisite:* English 353 and consent of the instructor.
- 355 **The American Novel**
A study of the representative American novels and novelists from 1850 to the present. *Prerequisite:* English 612 or 612Q.

- 356 Elizabethan and Jacobean Drama
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 612 or 612Q.
- 357 The English Novel since 1900
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 612 or 612Q.
- 358 The English Language
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 612 or 612Q.
- 359 The English Language
A continuation of English 358. 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 612 or 612Q.
- 360 Problems in Writing
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.
- 365 Introduction to Folklore
Survey of the types and characteristics of folk literature with particular emphasis on the folklore of the Southwest and Mexico. *Prerequisite:* English 612 or 612Q.
- 370 Milton
An introduction to the work and times of John Milton. *Prerequisite:* English 612 or 612Q.
- 375 Literary Criticism
The development of literary criticism as seen in the works of leading critics from Plato to the present. *Prerequisite:* English 612 or 612Q.
- 380 Chaucer: The Canterbury Tales
An introduction to the work and times of Geoffrey Chaucer. *Prerequisite:* Six hours of advanced English.

GRADUATE COURSES

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

- 390 Methods of Research and Bibliography
- 391 Graduate Reading Course
Reading of a selected list of English and American masterpieces. Books to be included will be announced at the beginning of each session. Each student will work independently and no regular classes will be held, but discussion groups

[S P E E C H]

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.

- 392 Studies in Poe
- 393 Studies in Whitman
- 394 Studies in the Life and Literature of the Southwest
- 395 Studies in Chaucer
- 396 Studies in American Thought
- 698 Thesis Course for the Master's Degree (*) (Formerly English 98)
Confer with the departmental head immediately after registration.

S P E E C H

- 301 Basic Principles of Speech
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.
- 302 Beginning Oral Interpretation
Practice in the oral interpretation of literature and study of the technique involved.
- 303 Voice and Diction
A course intended to develop clear articulation and enunciation, correct pronunciation, proper vowel placement, and control of the speaking voice. Required of all Speech majors and strongly recommended for Radio majors. May not be counted for credit in addition to Radio 303.
- 304 Introduction to Fine Arts
The enjoyment of the Arts through an understanding of their interrelationship and the expressive elements common to Music, Art, and the Drama. Differences in media of expression and in the tools of each art. Not counted in addition to Art Methods 304M and Music Literature 304.
- 305 Basic Principles of Speech
A continuation of Speech 301. Composition and delivery of original speeches with emphasis on finding subjects and materials, organization, outlining, composition, and practice in public presentation. *Prerequisite:* Speech 301, 302, 303, or 307.
- 307 Speech for Foreign-Language Students
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 Radio 303 or Speech 303.
- 310 Argumentation and Debate
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. *Prerequisite:* Sophomore standing.
- 311 Argumentation and Debate
A continuation of Speech 310. *Prerequisite:* Speech 310.

- 312 **Play Production**
 Survey of the various fields in the theater: Directing, Technical Production, and Designing. Training and experience in directing plays and in constructing scenery. Preparation for producing plays in schools and communities. Three class, and three laboratory hours per week. *Prerequisite*: Sophomore standing or six semester hours of Speech.
- 313 **Play Production**
 A continuation of Speech 312 with emphasis on directing, designing, and make-up. Experience in designing costumes and scenery and in planning stage arrangement. Student production of a one-act play. Three class and three laboratory hours per week. *Prerequisite*: Speech 312.
- 314 **Acting**
 A laboratory course in which a student may develop his ability to analyze a character and create a role. Scenes from classic drama, one-act plays, radio plays, and pantomime will be used in the development of acting technique. *Prerequisite*: Sophomore standing or six semester hours of Speech.
- 319 **Business and Professional Speaking**
 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 technique of after-dinner speeches, sales talks, introductions, public discussions, political speeches, etc. *Prerequisite*: Six hours of Speech.
- 320 **Oral Interpretation**
 A course for development of an adequate mental and emotional response to the meaning of literature with emphasis on improvement in voice, pronunciation, and enunciation, and on greater general effectiveness in speech. *Prerequisite*: Six hours of Speech or junior standing.
- 322 **Radio Drama**
 The technique of acting before the microphone and of directing radio drama. Finished productions are broadcast over campus station KVOF-FM as well as over El Paso stations. May not be counted in addition to Radio 322. *Prerequisite*: Six hours of Speech and junior standing.
- 323 **Techniques of Public Discussion**
 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.
- 327 **The Development of the Early Theatre**
 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*: Junior standing.
- 328 **The Development of the Modern Theatre**
 A survey of the development of theatre art from the Restoration to Broadway. Goethe, Ibsen, Maeterlinck, Pirandello, Chekhov, Synge, Shaw, O'Neill, Anderson, Odets, and others are studied as well as the actors, costumes, and technical devices in each period. *Prerequisite*: Junior standing.
- 330 **Advanced Acting**
 Further experience and practice in creating and sustaining roles in plays of different types, styles and periods. *Prerequisite*: Junior standing and Speech 313 or 314.

[S P E E C H]

- 331 **Advanced Directing**
Further study of techniques in direction, emphasizing style, type of play, and mood values. Additional study of dramatic values and effects. Each student is required to direct a short play and prepare a complete production script of his project. Three class and three laboratory hours per week. *Prerequisite:* Junior standing and Speech 312.
- 336 **Technical Production**
Detailed study of the technical problems of theatre production; methods of construction and handling scenery, lighting, backstage organization, designer's drawings, properties, and sound effects. Three class and three laboratory hours per week. *Prerequisite:* Six hours of Speech and junior standing.
- 340 **A History of Costume**
A study of costumes from the earliest times to the present and their use on the stage. Practical application in designing and execution of costumes for actual production. *Prerequisite:* Junior standing.
- 356 **Disorders of Speech**
The cause, diagnosis, and therapy of the most common disorders of speech, including delayed and spastic speech, aphasia, and stuttering. Also consideration of articulatory disorders such as sound substitutions, lisping, and cleft-palate speech. *Prerequisite:* Junior standing.
- 357 **Clinic in Speech Correction**
Practice in the diagnosis and treatment of speech defects. Will not be counted in addition to Education 357K. *Prerequisite:* Speech 356 or the equivalent, and permission of the instructor.
- 358 **Therapy and Clinical Practice**
Continuation of Speech 357. Actual practice, under supervision, in the diagnosis and remedial treatment of the more complicated disorders. Case presentations; study of theoretical and clinical literature. *Prerequisite:* Speech 357.

COLLEGE PLAYERS

The campus acting and producing organization. It presents one or more major productions each term. Members are required either to act or to do technical work in connection with the major production, and in addition must appear in one student directed play.

- 202 College Players (*)
- 216 College Players (second year) (*)
- 226 College Players (third year) (*)
- 232 College Players (fourth year) (*)

Geology and Geography

DR. H. E. QUINN, *Chairman*

PROFESSORS QUINN, NELSON; ASSISTANT PROFESSOR STRAIN; INSTRUCTOR BUTLER

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.

- 301 **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.)
- 302 **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.) *Prerequisite:* Geology 301.
- 316 **Mineralogy (\$2)**
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. *Prerequisites:* Chemistry 601. (Chemistry 801 for engineering students and science majors).
- 217 **Mineralogy (\$2)**
Determinative mineralogy. Largely devoted to the identification of minerals by physical characteristics. Six laboratory hours per week. *Prerequisite:* Geology 316.
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- 317 **Mineralogy (\$2)**
Determinative mineralogy. Same as Geology 217 with an additional hour of lecture per week. *Prerequisite:* Geology 316.
- 418 **Invertebrate Paleontology (\$4)**
A study of the structure and classification of invertebrates and their development and geologic significance. Two lectures and six laboratory hours. *Prerequisite:* Geology 302.
- 419 **Paleontological Stratigraphy (\$4)**
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 418.
- 421 **Advanced General Geology (\$4)**
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 217 or 317, and Geology 302.
- 322 **General Economic Geology**
A study of the occurrence of mineral deposits and ore deposits. *Prerequisite:* Geology 217 or 317.

[GEOLOGY]

- 325 Structural Geology
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. *Prerequisite:* Geology 421 and Drawing 302; or permission of the chairman of the department.
- 225 Sedimentary Rocks
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. One lecture and one afternoon in the field or laboratory per week. *Prerequisite:* 12 hours of geology.
- 427 Petrology and Petrography (\$4)
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 421 in advance or concurrently.
- 361 Advanced Economic Geology (\$2)
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 322.
- 262 Geology of the Southwest
A detailed study of the regional, stratigraphic, structural, and economic geology of Texas, New Mexico, Arizona and Northern Mexico. One lecture and four laboratory hours per week. *Prerequisite:* Senior standing.
- 463 Geology of Petroleum and Natural Gas (\$4)
A study of the origin, migration and accumulation of petroleum and natural gas. Three lectures and three laboratory hours per week. *Prerequisite:* Geology 419, 421 and 323; or permission of the chairman of the department.
- 264 Field Geology (\$2)
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.
- 665 Field Geology (summer) (\$4)
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.
- 074 Geology Field Trip (Fee: \$12.50; transportation: \$37.50)
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 96 for Historical Geography)

- 303 Elements of Geography (\$2)
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.
- 304 Elements of Geography (\$2)
A continuation of Geography 303. Three lecture hours and two laboratory hours per week. *Prerequisite:* Geography 303.

History, Government and Sociology

DR. J. L. WALLER, *Chairman*

PROFESSORS WALLER, STRICKLAND; ASSOCIATE PROFESSORS GREGORY, PORTER;
ASSISTANT PROFESSORS QUINN, TIMMONS; INSTRUCTORS MCNEFLY, BRICE, CONNOR,
GUNN

HISTORY

- 301 **History of the United States**
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.
- 302 **History of the United States**
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.
- 304 **History of England**
Survey of the social, economic, political and intellectual development of Britain and the British Empire to 1660.
- 305 **History of England**
Survey of the social, economic, political and intellectual development of Britain and the British Empire, 1660 to the present.
- 308 **History of Europe, 1500-1815**
Brief survey of conditions at the end of the Middle Ages, rise of nationalities and absolutism, colonial expansion, social and economic progress, the Old Regime and the intellectual awakening, the French Revolution and the Napoleonic Era.
- 309 **History of Europe, 1815 to the Present**
Brief survey of conditions at the time of Napoleon's downfall, restoration and reaction, industrial revolution, growth of nationalism and democracy, unification of Germany and Italy, the Balkan States and the Near Eastern problems, economic imperialism, Political Socialism and State Socialism, The System of Alliances, World War I, Europe between the wars, World War II.
- 312 **The Ancient World**
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.
- 313 **Medieval Europe**
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.
- 317 **A General Survey of the History of Texas**
Prerequisite: Sophomore standing or six semester hours of History.

[HISTORY]

- 323 Europe, 1870-1920
A survey of the different countries of Europe and their internal developments to 1920. *Prerequisite:* Twelve semester hours of History, or six hours of History and six hours of other social science.
- 324 Europe after 1920
Prerequisite: Twelve semester hours of History, or six hours of History and six hours of other social science.
- 325 History of the United States, 1607-1787
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.
- 326 History of the United States, 1787-1829
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.
- 330 History of the Far East
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.
- 331 Russian History
Prerequisite: Twelve semester hours of History, or six hours of History and six hours of other social science.
- 335 History of the United States, 1829-1850
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.
- 336 History of the United States, 1850-1865
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.
- 347 Latin America: The Colonial Period
A survey of the history and institutional development of Spanish and Portuguese America in the Colonial period. *Prerequisite:* Twelve semester hours in History, or six semester hours of History and junior standing.
- 348 Latin America: The National Period
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 junior standing.

- 349 **Latin America: The National Period**
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 junior standing.
- 350 **Diplomatic History of the United States, 1776-1949**
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 of sophomore standing.
- 351 **The French Revolution and Napoleon**
Prerequisite: Twelve semester hours of History, or six semester hours of History and junior standing.
- 353 **A Survey of Political and Social Britain from 1815-1895**
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.
- 354 **Britain and the Empire from 1895 to the Present**
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.
- 355 **History of the United States since the Civil War**
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.
- 356 **Contemporary History of the United States**
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.
- 359 **Trans-Mississippi West**
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.

GRADUATE COURSES

Prerequisites 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.

- 390 **Studies in Regional History**
- 391 **Historical Method and Historiography**
- 392 **Studies in Modern European History**
- 393 **Studies in Latin-America History**
- 394 **International Aspect of Texas History, 1803-1850**
- 395 **Studies in the Middle Period of American History: Selected Topics**
- 698 **Thesis Course for the Master's Degree (*)** (Formerly History 98)

[GOVERNMENT]

GEOGRAPHY (See Page 92 for Physical Geography)

310 World Geography

Man and his environment; migration and emigration; adaptation to new habitats; human and natural resources; geography and politics; human cultures; world geography and human geography reflected in struggle; nationality and geography. *Prerequisite:* six semester hours of History, or Sophomore standing. Not counted as laboratory science.

GOVERNMENT

610 American Government (*) (Formerly Government 10)

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.

323 The Governments of Great Britain and the Empire

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 610.

324 The Governments of Continental Europe

The governments and politics of France, Italy, Switzerland, Germany, and Russia, with some attention given to lesser European countries. *Prerequisite:* Government 610.

330 International Politics

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 610.

331 International Organization and Administration

The development of the machinery and procedure of international government for the peaceful settlement of international disputes. *Prerequisite:* Government 610.

334 American National Government and Administration

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 610.

335 American National Government and Administration

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 610.

343 Foreign Policies of the United States

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 610.

344 The Conduct of American Foreign Affairs

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 610.

SOCIOLOGY

- 310 **Introduction to Sociology**
Study of the individual in group action in which the student has a part. Includes broad consideration of heredity and environment factors, and a study of the major social institutions and processes. Different schools of sociological thought from early times to the present are reviewed, with emphasis on current interpretations and problems. *Prerequisite:* Sophomore standing.
- 311 **Social Problems**
Physical and mental defectiveness considered from the sociological viewpoint; defects in social organization; poverty and dependency. Social controls applied to social problems. *Prerequisite:* Sophomore standing.
- 320 **Fields of Social Work**
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 bases; and an examination of the methods used in the various fields considered. *Prerequisite:* Sociology 310 and 311.
- 333 **Juvenile Delinquency**
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:* Sociology 310 and 311.
- 336 **Comparative Cultures**
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:* Sociology 310 and 311.
- 345 **The Community**
Methods of studying the community; social anatomy; a comparative study of communities; analysis of the underlying forces and social successes which make for natural groups and institutions to meet industrial, religious, educational, governmental, and leisure time needs; disorganization and reorganization of modern communities. *Prerequisite:* Sociology 310 and 311.
- 347 **Population Problems and Immigration**
Population movements and their social control; problems of population, distribution, and assimilation, consideration of Americanization programs and immigration laws. *Prerequisite:* Sociology 310 and 311.
- 348 **Criminology**
Causes, characteristics, and relief of crime, with consideration of mental, physical, economic and social factors in crime. Attention to the juvenile offender and the social agencies for his adjustment. A sociological analysis and evaluation of penal methods. *Prerequisite:* Sociology 310 and 311.
- 349 **The Family**
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:* Sociology 310 and 311.
- 350 **Child Welfare Problems**
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:* Sociology 310 and 311.

Journalism and Radio

DEAN J. F. WILLIAMS, *Chairman*

PROFESSOR WILLIAMS; ASSISTANT PROFESSORS HICKS, MIDDAGH; INSTRUCTOR SNELSON; ASSISTANT ISLES; RADIO CONSULTANT KARL O. WYLER; DIRECTOR OF PRESS, HERTZOG.

Realizing the need for professionally trained young men and women in the fields of journalism and radio, Texas Western College offers a complete major in each field with full four year programs. The Department of Journalism and Radio is organized on a professional basis. Its program aims 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.

JOURNALISM

- 301 Introduction to Fields of Journalism and Radio
Orientation course, giving an introduction in newspaper and radio broadcasting practice and the essentials in the fields to acquaint the student who may be planning to major in either field with the problems ahead.
- 302 Introduction to News Writing
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.
- 307 Elementary Photography (\$2)
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.
- 308 Fields of Photography (\$2)
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 307 or permission of the chairman of the department.
- 311 News Gathering and Reporting
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 601.
- 312 News and Copy Reading
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 601.
- 314 Sports Writing for Men and Women
Survey of the field of sports writing for newspapers and magazines. Essentials of sports with which sports writer must be familiar are considered. Practice in covering sports events. May not be counted for credit in addition to Physical Education 314. *Prerequisite:* Sophomore standing.

316K Current Events

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.

317 The American Newspaper

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.

321K Fundamentals of Advertising

Relation of advertising to other business functions; study of campaigns, appropriations, and media; survey of activities of those engaged in advertising work. May not be counted for credit in addition to Business Administration 321K. *Prerequisite:* Junior standing.

322 The Special Article

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 311 or 312, or English 612.

323K Teaching High-School Journalism, Supervision of School Publications

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. Attention will be given to defining the problem of school public relations and the function and scope of the various types of school publications. May not be counted for credit in addition to Education 323K. *Prerequisite:* Junior standing.

324 News Editing

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. Two lectures and four practice hours per week. *Prerequisite:* Journalism 311 or 312.

325 The Small Daily and Weekly Newspaper

Study of news methods, make-up, advertising problems, and business management of the small-town newspaper. *Prerequisite:* Junior standing.

326K Advertising, Copywriting and Special Layouts

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. May not be counted for credit in addition to Business Administration 326K. *Prerequisite:* Business Administration 321K or Journalism 321K.

340 Editorial Writing and Page Direction

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. *Prerequisite:* Junior standing.

341 Pictorial Journalism (\$2)

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. Two lectures and four laboratory hours per week. *Prerequisite:* Junior standing.

[JOURNALISM]

349 Printing Processes and Reproduction

Explanation and demonstration of processes: Letterpress, lithography, intaglio, photo-engraving, photo-offset, paper analysis, typesetting, binding. Preparation of manuscripts, photographs, and art work for the printer. Two lectures and two hour workshop per week. May not be counted for credit in addition to Art 349 or English 350. *Prerequisite:* Junior standing.

352 Principles of Typography

Study of type, layout technique and methods, and history of printing, with emphasis on practical problems in typography that confront the newspaper editor, book designer, and advertising manager. Two lectures and two workshop hours per week. May not be counted for credit in addition to Art 352. *Prerequisite:* Journalism 349.

COLLEGE PUBLICATIONS

204 Publications (*)

Laboratory 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 311 or 312. *Prerequisite:* Consent of the chairman of the department.

214 Publications (second year) (*)

Further laboratory work on the college publications with increased responsibility. Three hours per week for two semesters. *Prerequisite:* Journalism 204 and consent of the instructor.

RADIO

Radio courses offered are designed to accomplish a two-fold purpose: To give the student general knowledge and background in every phase of non-technical 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, maintaining a broadcast schedule of fifty hours a week. The station is staffed entirely by students who work in four large studios, each with its own control room, using standard commercial equipment. The department also maintains a campus carrier-current station to provide further training and experience. Broadcast lines are maintained to El Paso's four commercial stations for the purpose of relaying college programs. Provision for the production of television shows has been included in the new Texas Western auditorium. The department has its own newsroom where an Associated Press teletype machine operates on a twenty-four hour daily basis. This service is made possible through the co-operation of radio station KROD and the El Paso Times. Texas Western is a charter member of the University Association for Professional Radio Education.

302 Introduction to Broadcasting

An introductory course to acquaint the beginning student with basic studio and control room equipment. *Prerequisite:* Journalism 301 or Radio 301 or permission of the chairman of the department.

303 Voice and Diction

A course intended to develop clear articulation and enunciation, correct pronunciation, proper vowel placement, and control of the speaking voice. May not be counted for credit in addition to Speech 303.

- 305 **Radio News Processing**
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. *Prerequisite:* Journalism 301 or Radio 301, or by consent of the chairman of the department.
- 314 **Basic Studio Practices (\$2)**
Principles of announcing, basic microphone techniques. Practice announcing with special attention to diction and interpretation. The development of an effective, friendly radio personality. Control board operation. Introduction to radio selling, promotion and publicity. Three lectures and three laboratory hours per week. *Prerequisite:* Radio 302 or consent of the chairman of the department.
- 315 **Radio Continuity Writing—Audience Measurement (\$2)**
Survey of radio writing. Writing of effective spot and program continuity. Introduction to program planning and building. Survey of audience measurement methods. Introduction to newsroom practices. Three lectures and one three-hour laboratory per week. *Prerequisite:* Radio 314 or consent of the chairman of the department.
- 320 **Radio Production-Direction; Introduction to Television (\$2)**
A practical course in script analysis, listener psychology, production procedures, sound effects, music, studio arrangements and casting. Advanced control board operation. Laboratory practice in producing and directing under actual broadcast conditions. Introduction to the terms, equipment, and personnel essential to television broadcasting. Survey of job opportunities and training requirements in the TV field. Two lectures and one four-hour laboratory per week. *Prerequisite:* Six hours of radio courses and junior standing.
- 321 **Advanced Production—Fields of Television (\$2)**
Continuation of Radio 320 with emphasis on Program Department supervision. Studio set-ups from a single piano to complete symphony. Production of sports and special events, women's and children's programs. Special problems of interviews, forums, and audience participation shows. Survey of the fields of television with special attention to the techniques and facilities for the small market TV station. TV script writing and simple TV production problems. Two lectures and one four-hour laboratory per week. *Prerequisite:* Six hours of radio courses and junior standing.
- 322 **Radio Drama**
A course in the technique of acting before the microphone and of directing radio drama. Classes are conducted in two large radio studios of the College, and finished productions are broadcast over station KVOF-FM as well as other El Paso stations. May not be counted for credit in addition to Speech 322. *Prerequisite:* Six hours of radio courses and junior standing.
- 330 **Radio Station Management (\$2)**
Complete survey of management problems. Acquiring a new station, network affiliation, assembling the staff, public service policies, system of records, legal requirements, etc. Survey of FM and Television, radio teaching opportunities, and industries associated with radio broadcasting. Industry contacts with a view toward job placement. Required of all students majoring in Radio. Two lectures and one four-hour laboratory per week. *Prerequisite:* Six hours of radio courses and Junior standing.
- 331 **Senior Research Project (\$2)**
Each student spends the major portion of the final semester on a research project in the field of broadcasting for which he is best suited and in which he is the most interested. The thesis resulting from this activity is distributed within the area and preserved for library reference. Opportunity is provided for in-

[R A D I O]

ternship at KVOF-FM and other El Paso stations. Required of all students majoring in Radio. Two lectures and one four-hour laboratory per week. *Prerequisite*: Radio 330 and six additional hours of radio courses.

332 Radio Listening as an Aid to Elementary Teaching

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. (May not be counted for credit in addition to Education 332.)

332K Radio Listening as an Aid to Secondary Teaching

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. (May not be counted for credit in addition to Education 332K.)

333 Preparation, Presentation of Radio Programs, 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. (May not be counted in addition to Education 333.)

333K Preparation and Presentation of Radio Programs, 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. (May not be counted for credit in addition to Education 333K.)

RADIO STATION KVOF-FM

204 Radio Station KVOF-FM (*)

Laboratory work on the staff of Radio Station KVOF-FM. Three hours per week for two semesters. *Prerequisite*: Consent of the chairman of the department.

214 Radio Station KVOF-FM (second year) (*)

Laboratory work on Radio Station KVOF-FM with increased responsibility. Three hours per week for two semesters. *Prerequisite*: Radio 204 and consent of the instructor.

Mathematics and Physics

DR. E. J. KNAPP, *Chairman*

PROFESSORS KNAPP, BARNES; ASSISTANT PROFESSORS McMAHAN, RESLEY,
CALDWELL; INSTRUCTORS SCHUMAKER, THREADGILL, PATTERSON,
BRUCE, GLADMAN, BISHOP, CATES, BALLARD.

MATHEMATICS

Six semester hours of Mathematics are required for the degree of Bachelor of Arts. Mathematics 304 and either 307 or 309 may be used to satisfy this requirement. Students wishing a more complete course in Mathematics and students who plan to major or minor in Mathematics or Physics should take Mathematics 803 in place of the courses mentioned above.

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 208 in the second semester of the freshman year unless solid geometry is offered for entrance.

803 Engineering Mathematics (*)

Algebra, trigonometry, and analytical geometry combined to give the student a foundation for the study of calculus, the natural sciences, and engineering. The first two weeks 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 305. *Prerequisite:* One year of high school geometry and one and one-half years of high school algebra.

304 Mathematical Analysis

Introductory course for academic students unifying basic ideas of algebra, trigonometry, and analytical geometry by means of the function concept. Not counted for credit in addition to Mathematics 305.

305 Algebra

Review of secondary school and intermediate algebra for engineering students whose background in this subject is deficient.

307 Mathematics of Investment

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. *Prerequisite:* Mathematics 304 or 305.

208 Solid Geometry

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. *Prerequisite:* One year of high school geometry.

309 Mathematical Analysis

Continuation of Mathematics 304 for students who do not plan to take other courses in mathematics. *Prerequisite:* Mathematics 304 or 305.

613 Calculus (*)

(Formerly Mathematics 13)

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

[MATHEMATICS]

and physics; in evaluating areas and volumes, in finding centers of gravity, and in the derivation and application of the fundamental formulas by hydrostatics. The last two hours counted as advanced. *Prerequisite:* Mathematics 208 unless solid geometry is presented for entrance, and Mathematics 803.

325 Calculus

The topics of Mathematics 613 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: Movements of inertia, series, approximations of definite integrals, partial differentiation, and multiple integrals. *Prerequisite:* Mathematics 613.

326 Differential Equations

Study of the common types of ordinary differential equations of geometry, mathematics, mechanics, and electricity. *Prerequisite:* Mathematics 613.

333 Theory of Equations

Theory of polynomials, cubic and quartic equations, approximate methods, determinants, symmetric functions, and other topics. *Prerequisite:* Mathematics 613.

335 Higher Mathematics for Engineers and Physicists

Designed to help the student in senior and graduate work in engineering, physics, mathematics, and certain fields of chemistry. Infinite series, Fourier series, solution of equations, determinants, matrices, additional study of partial derivatives, cylindrical and spherical co-ordinates, Jacobians, Green's theorem. *Prerequisite:* Mathematics 325 and credit or registration in 326.

336 Higher Mathematics for Engineers and Physicists

Continuation of Mathematics 335. *Prerequisite:* Mathematics 335.

337 Modern College Geometry

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 613.

341 Analytical Mechanics

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 613 and twelve credit hours in Physics. Not counted in addition to Physics 341.

342 Analytical Mechanics

Continuation of Mathematics 341. May be counted as three advanced hours in Physics. *Prerequisite:* Mathematics 341. Not counted in addition to Physics 342.

PHYSICS

601 General Physics (*) (\$2)

(Formerly Physics 1)

Three lectures and two laboratory hours per week.

801 General Physics (*) (\$4)

Designed primarily for pre-medical students. Mechanics, heat, electricity, magnetism, sound, and light. Physics 801 and 601 may not be counted for credit by the same student. Four lectures and two laboratory hours per week.

303 Introduction to Radio (\$2)

Theory and laboratory practice in those fundamentals of electricity needed as a foundation for the study of radio circuits and electron tube applications. Two lectures and one three-hour laboratory period per week.

- 304 Fundamentals of Radio (\$2)
Elementary study of electron tube applications and radio circuits. Two lectures and one three-hour laboratory period per week. *Prerequisite:* Physics 303 or 601.
- 611 Physics (\$4) (Formerly Physics 612)
Mechanics, heat, wave motion, and sound. For students in civil and mining engineering. (Formerly included in Physics 812.) Five lectures and three laboratory hours per week. *Prerequisite:* Mathematics 613 concurrently.
- 612 Second-Year Physics (*) (\$2) (Formerly Physics 12)
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 611 and Physics 413 from a more rigorous viewpoint. May be offered in place of 611 and 413 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 613 concurrently and Physics 601.
- 413 Physics (\$4)
Electricity, magnetism, and light. For students in civil and mining engineering. Three lectures and three laboratory hours per week. Neither Physics 611 nor Physics 413 may be counted for credit by a student who earns credit for Physics 612. *Prerequisite:* Physics 611 and credit for or registration in Mathematics 613.
- 434 Electricity and Magnetism (\$4) (Formerly Physics 834a)
Three lectures and three laboratory hours per week. Not counted in addition to Physics 834. *Prerequisite:* Physics 612 or 413 and Mathematics 613.
- 435 Electricity and Magnetism (\$4) (Formerly Physics 834b)
Continuation of Physics 434. Three lectures and three laboratory hours per week. May not be counted in addition to Physics 834. *Prerequisite:* Physics 434.
- 438 Theory and Applications of Electron Tubes (\$4)
Principles of electronics and their application to vacuum tubes, covering the more important aspects of thermionic and gaseous conduction; includes photo-sensitive cells, rectifiers, thyratrons, cathode-ray oscillographs, and corresponding circuit elements. Three hours of lecture and three hours of laboratory per week. *Prerequisite:* Mathematics 613 and Physics 612.
- 339 Heat
Advanced topics. *Prerequisite:* Mathematics 613 and six semester hours of physics.
- 340 Light
Advanced topics. *Prerequisite:* Mathematics 613 and six semester hours of physics.
- 341 Analytical Mechanics
Equilibrium and motion of a particle and of a rigid body in two and three dimensions. May be counted as three advanced hours in Mathematics. (Not counted in addition to Mathematics 341.) *Prerequisite:* Mathematics 613 and twelve credit hours in Physics.
- 342 Analytical Mechanics (3)
Continuation of Physics 341. May be counted as three advanced hours in mathematics. Not counted in addition to Mathematics 342. *Prerequisite:* Physics 341.

[PHYSICS]

445 Electron Tube Circuits (\$4)

Continuation of Physics 438. Three hours of lecture and three hours of laboratory per week. Not counted in addition to Physics 38. (Formerly Ph. 38b.)
Prerequisite: Physics 438.

351 The Particles of Modern Physics

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 613 and Physics 612.

352 The Particles of Modern Physics

Continuation of Physics 351. Further study of positrons, neutrons, cosmic rays, mesons, artificial radioactivity, and atomic fission. A short introduction to wave mechanics is given. *Prerequisite:* Mathematics 613 and Physics 612.

Military Science and Tactics

COL. A. J. LEPPING, *Commandant*

PROFESSOR, COLONEL LEPPING; ASSISTANT PROFESSORS, MAJOR OUTLAND, MAJOR CHAPMAN; INSTRUCTORS, M/SGT HIXSON, M/SGT FLANNIGAN, SGT ICL McGRATH, SGT ICL DUNN

Courses offered by this department are the Senior Division ROTC courses prescribed by the Department of the Army for civilian colleges. The principal aim of these courses is to produce junior officers in the United States Army Reserve who will be available to the country in time of a national emergency.

Upon successful completion of the four-year program, the student is tendered a commission in the United States Army Reserve, Antiaircraft Artillery Branch, and may request a tour of active duty and compete for a commission in the Regular Army. Students who show outstanding traits of character and leadership are designated "Distinguished Military Students," and upon their application may be offered commissions in the Regular Army upon graduation.

The secondary aims of the program are to develop leadership qualities in the student, to give him an appreciation of his responsibilities in a national emergency, and to prepare him to shoulder the obligations of citizenship in his community. In accomplishing these aims, the student is taught a wide variety of fundamental subjects that will be of assistance to him in any field of endeavor.

The first two years (Military Science #01 and 402) form the *Basic Course*. The second two years (Military Science 610 and 620) 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: All regularly enrolled male students at Texas Western College are eligible to take the Basic Course provided they are physically qualified, are citizens of the United States between the ages of 14 and 22 years (24 years for veterans) and have at least two full academic years of college work remaining to obtain a baccalaureate degree.

The Advanced Course is selective and elective. A regularly enrolled male student in the College, who has attained sophomore standing, may enroll in the Advanced Course if he is physically qualified, is a citizen of the United States between the age of 14 and 26 years and has at least two full academic years remaining to obtain a baccalaureate degree. However, all students registering in this course must be selected by the Professor of Military Science and Tactics and approved by the president of the College. 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.

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 or approximately \$27.00 per month for 570 days and \$75.00 per month for the six weeks summer camp attended between the first and second years of the Advanced Course. These payments constitute the Government's part of the agreement entered into with the student. Other veteran payments are not affected by the payment of the subsistence allowances for Advanced Military Science.

One hour of Military Science per semester may be used to satisfy Physical Education requirements. Three hours may be used to satisfy the State of Texas' requirement for the final semester of Government 610. 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. Such students must furnish their own uniforms, receive no monetary allowance and are not eligible to receive a commission. Military Science is offered only during the long session.

BASIC COURSE

401 Military Science I (*)

National Defense Act and the ROTC; Military Map Reading; Military Organization; Evolution of Warfare; Military Problems of the United States; Military Hygiene and First Aid; Weapons and Marksmanship; and Leadership, Drill, and Exercise of Command. Three classroom hours and one practical or drill hour per week.

402 Military Science II (*)

Introduction to Antiaircraft Guns; Characteristics of Antiaircraft Guns; Service of Antiaircraft Guns; Introduction to AA Automatic Weapons; Characteristics of AA Automatic Weapons; Service of the Piece Automatic Weapons; and Leadership, Drill, and Exercise of Command. Three classroom hours and one practical or drill hour per week. *Prerequisite:* Military Science 401 or equivalent military training.

ADVANCED COURSE

610 Military Science III (*)

(Formerly Military Science 10)

Communications; Antiaircraft Artillery Organization; Individual Weapons; Troop Movements; Basic Antiaircraft Artillery Gunnery; Military Leadership; Psychology and Personnel Management; Motor Transportation; Antiaircraft Artillery Tactics; Basic Gunnery AA Automatic Weapons; and Leadership, Drill, and Exercise of Command. Four classroom hours and two practical or drill hours per week. *Prerequisites:* Sophomore standing, basic course or equivalent service or training, selection by the Professor of Military Science and Tactics.

620 Military Science IV (*)

(Formerly Military Science 20)

Antiaircraft Artillery Materiel; Combat Intelligence; Supply and Evacuation; AA Gunnery; Anti-Aircraft Artillery Advanced Tactics; Field Artillery Capabilities and Employment; New Developments; Command and Staff; Military Law and Boards; Psychological Warfare; Military Teaching Methods; Military Team; Military Administration and Leadership, Drill, and Exercise of Command; Geographical Foundations of National Power. Four classroom hours and two practical or drill hours per week. *Prerequisite:* Military Science 610 and completion of summer camp training.

Mining and Metallurgy

MR. J. F. GRAHAM, *Chairman*

PROFESSORS GRAHAM, THOMAS; ASSOCIATE PROFESSORS INGERSOLL, RINTELEN;
ASSISTANT PROFESSOR JENNESS

MINING

- 521 **Mining Methods**
A comprehensive study of mining methods, including prospecting, development, exploitation, earth and rock excavation, explosives, tunneling, shaft sinking, timbering, boring, underground transport, and hoisting. *Prerequisite:* Geology 316 and Physics 611.
- 322 **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. *Prerequisite:* Mining 521 and Engineering 614.
- 223 **Coal Mining**
The extraction, cleaning, and marketing of coal, and the manufacture of coke and collection of all the by-products are considered. *Prerequisite:* Mining 521.
- 224 **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. *Prerequisite:* Mining 322. Eight hours daily for two weeks, immediately following the close of the spring semester.
- 231 **Mining Hygiene**
Prevention of communicable diseases, personal hygiene, public health, food, air, water, soil, ventilation and heating, sewage disposal, disinfection, camp sanitation, mine sanitation, prevention of industrial diseases. *Prerequisite:* Junior standing.
- 237 **Tunneling and Blasting**
Methods of excavation and material handling in tunneling and hard-rock foundation. Handling of explosives, placement of charges, safety precautions, ventilation. *Prerequisite:* Junior standing.
- 260 **Mine Plant**
A detailed study of underground transport, hoisting plant, skips and cages, compressed air plant, rock drills, mechanical ventilation, and drainage. *Prerequisite:* Mining 521.
- 261 **Mine Plant (\$2)**
A continuation of the work given in Mining 260. The laboratory is devoted to a practical study of rock drills and drilling methods and ventilation. One lecture and three laboratory hours per week. *Prerequisite:* Mining 260.
- 262 **Mine Plant Design (\$2)**
The student is required, from a sampled mine or drilling exploration, to determine the value of the property, select a mining system, choose suitable equipment, and write a detailed report. Six laboratory hours per week. *Prerequisite:* Mining 260 and Mining 267.
- 267 **Management**
Mine examination, sampling, reporting, welfare, organization, financing, and other interesting management problems are considered. *Prerequisite:* Completion of requirements for the Bachelor of Science degree by the end of the following fall semester.

[METALLURGY]

- 269 Management
A continuation of the work given in Mining 267. *Prerequisite:* Mining 267.
- 270 History of Mining
Highlights of mining eras and mining districts. *Prerequisite:* Permission from the head of the Mining department. Credit Value: Two semester hours. Two lectures per week for one semester. Given in 1949-1950 as Mining 170.
- 074 Mining Trip (Laboratory fee: \$12.50; transportation fee: \$37.50)
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. In 1950 the class visited properties in New Mexico, Colorado and Arizona, but the route selected will be governed by conditions existing at the time of the trip. Required for graduation. *Prerequisite:* Completion of the requirements for the Bachelor of Science degree by the end of the following fall semester.

METALLURGY

- 321 General Metallurgy
Introductory course covering a description of the various processes for treating all the ordinary metals. *Prerequisite:* Chemistry 413, Physics 611, Geology 316.
- 423 Ore Dressing and Milling (\$4)
The principles governing the processes employed in the liberation and separation of the minerals. In the laboratory the student becomes familiar with milling machinery and methods of separation. Three lectures and three laboratory hours per week. *Prerequisite:* Geology 217 and Physics 611.
- 324 Assaying (\$2)
The determination by fire methods of gold, silver, and lead in minerals, ores, and products of mills and smelters. One lecture and six laboratory hours per week. *Prerequisite:* Chemistry 311.
- 325 Non-metallics
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:* Metallurgy 423 must have been completed, or if not, must be taken concurrently.
- 326 Engineering Metallurgy (\$2) (Formerly Metallurgy 270)
A course in the metallurgy of iron, steel, and related alloys. The steel industry is studied relative to smelting and fabrication. Two lectures and three laboratory hours per week. *Prerequisite:* Junior standing.
- 230 Introduction to Ceramics
Study of the ceramic raw materials with their beneficiation, and the fuels, combustion, and silicate chemistry as related to industry. *Prerequisite:* Junior standing.
- 330 Introduction to Ceramics (\$2)
This course is the same as Metallurgy 230, except that it includes a three-hour laboratory. Two lectures and three laboratory hours per week. *Prerequisite:* Junior standing.
- 252 Principles of Copper Smelting
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.

- 353 **Electric Furnaces**
A foundation course in electric smelting and the commercial applications of the electric furnace. *Prerequisite:* A physics course in electricity.
- 361 **Iron, Copper, and Lead**
The metallurgy of the three common metals. *One-third of the course* will be devoted to calculations pertaining to the above subjects. *Prerequisite:* Metallurgy 321.
- 261 **Iron, Copper, and Lead**
Intended for those students who select the mining option and is the same as Metallurgy 361 except that the calculations are omitted. *Prerequisite:* Metallurgy 321.
- 362 **Metallurgy and Leaching Processes (\$2)**
The cyanide process, and leaching methods employed in the metallurgy of copper, lead, and zinc. Two lectures and three laboratory hours per week. *Prerequisite:* Metallurgy 321.
- 263 **Advanced Ore Dressing**
Engineering features of ore dressing, including computations and design of bins, milling machinery, and mill circuits. *Prerequisite:* Metallurgy 423.
- 364 **Metallurgical Laboratory (\$2)**
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 361 and Metallurgy 362.
- 264 **Metallurgical Laboratory (\$2)**
This course handles part of the work covered by Metallurgy 364 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 361.
- 365 **Ore Dressing and Milling (\$2)**
Ore testing and mill design. Nine laboratory hours per week. *Prerequisite:* Metallurgy 263.
- 272 **Physical Metallurgy**
A theoretical study of the metallic state concerned with the physical and mechanical characteristics of metals and alloys. *Prerequisite:* Chemistry 460.
- 473 **Metallography (\$4)**
The metallography and heat treatment of various metals and alloys. Three lectures and three laboratory hours per week. *Prerequisite:* Metallurgy 261, and Metallurgy 272.
- 074 **Metallurgical Trip (Laboratory fee \$12.50; transportation fee \$37.50)**
At the present time this trip will be taken with Mining 074. When it is to the best interests of the metallurgical students to deviate from the route of the Mining 074 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.
- 375 **Corrosion**
A study of corrosion, passivity, and protection of metals and alloys. *Prerequisite:* Physics 612a or 413.

Modern Languages

DR. EDGAR T. RUFF, *Chairman*

PROFESSORS RUFF, BACHMANN; ASSOCIATE PROFESSOR SHARP; ASSISTANT PROFESSORS BEVANS, WEBB; INSTRUCTOR GABRIEL; ASSISTANT GIBBE.

A student with no high school language will register for Course 801a; with two units he may continue by entering Course 801b in the same language; with one, three, or four units students will consult the department for placement.

Courses 801 and 612 should be taken without interruption and supplemented with Courses 308 and 310 if greater fluency is needed.

FRENCH

- 801 Fundamentals of Reading, Writing and Speaking (*)
Oral drill, dictation, grammar, reading of elementary and intermediate texts, conversation, written exercises. Three recitation and two workshop hours per week.
- 612 Intermediate Readings in the Modern Period (*) (*Formerly French 12*)
Readings from the nineteenth and twentieth centuries. Oral and written summaries, some grammar review. *Prerequisite:* French 801.
- 308 Conversational French
Intended to broaden the vocabulary of French 801a for conversational use. A supplementary course for students who do not already speak French. Extensive use of audio-visual aids. Conducted in elementary French. *Prerequisite:* With or after French 801a.
- 310 Civilisation française
Illustrated lectures in intermediate French. Extensive use of travelogs, slides and films of everyday life to teach conversational French. Intended as a supplement to required courses for students who do not already speak French. *Prerequisite:* French 801a.
- 335 Modern Novel: Early Period
Eighteenth century novelists Lesage, l'Abbé Prévost, Bernardin de Saint-Pierre and nineteenth century novelists up to 1850. *Prerequisite:* French 612.
- 336 Modern Drama: Early Period
The French drama of the nineteenth century, the Romantics and the post-Romantics: de Vigny, Hugo, Dumas, Musset, etc. *Prerequisite:* French 612.
- 337 Modern Novel: Later Period
A study of the French novel from Flaubert to Proust. *Prerequisite:* French 612.
- 340 Modern Drama: Later Period
The French drama of the nineteenth century, the Naturalists and Symbolists: Becque, Cœuret, Brieux, Rostand, Maeterlinck, etc. *Prerequisite:* French 612.

GERMAN

- 801 Fundamentals of Reading, Writing and Speaking (*)
Oral drill, dictation, grammar, reading of elementary and intermediate texts, conversation, written exercises. Three recitation and two workshop hours per week.

- 612 Intermediate Readings in the Modern Period (*) (*Formerly German 12*)
Readings from the nineteenth and twentieth centuries. Oral and written summaries, some grammar review. *Prerequisite:* German 801.

SPANISH

- 801 Fundamentals of Reading, Writing and Speaking (*)
Oral drill, dictation, grammar, reading of elementary and intermediate texts, conversation, written exercises. Three recitation and two workshop hours per week.
- 612 Intermediate Readings in the Modern Period (*) (*Formerly Spanish 12*)
Readings from the nineteenth and twentieth centuries. Oral and written summaries, some grammar review. *Prerequisite:* Spanish 801.
- 308 Conversational Spanish
Intended to broaden the vocabulary of Spanish 801a for everyday use. A supplementary course for students who do not already speak Spanish. Extensive use of audio-visual aids. *Prerequisite:* With or after Spanish 801a.
- 310 Cultura hispánica
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 already speak Spanish. *Prerequisite:* Spanish 801a.
- 321 The Literary History of Spain
A survey of Spanish culture and literature, stressing the parallel development of Spanish institutions, thought and art forms. Conducted in Spanish. *Prerequisite:* Spanish 612.
- 324 The Literary History of Mexico
Principal movements and writers in Mexican literature. Emphasis on the novel of the Revolution. *Prerequisite:* Spanish 612.
- 328 Golden Age Drama
A study of the leading dramatists: Lope de Vega, Tirso de Molina, Calderón de la Barca, Ruiz de Alarcón, Moreto and others. *Prerequisite:* Spanish 612.
- 332 Classical Epoch Prose
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 612.
- 336 Modern Drama: Early Period
The Spanish drama from the end of the eighteenth to the middle of the nineteenth centuries: Moratin, Martínez de la Rosa, Bretón de los Herreros, López de Ayala, Tamayo y Baus, etc. *Prerequisite:* Spanish 612.
- 340 Modern Drama: Later Period
The Spanish drama of the last half of the nineteenth century: Echegaray, Pérez Caldós, Benavente, Jos Quinteros. *Prerequisite:* Spanish 612.
- 357 Advanced Composition and Grammar Review
Examination of the best modern Spanish business, epistolary, journalistic and polemic styles. Original composition on topics of current interest. *Prerequisite:* Spanish 612.

[MODERN LANGUAGES]

- 360 The Regional and Historical Novel in South America
A study of the famous regional and historical novels of South America, exclusive of Brazil. At least one representative author of each country or important region is read. Special attention to major regional language differences. Outside reports. *Prerequisite:* Spanish 612.
- 361 Don Quixote
The literary value and influence of the *Quijote*. Traditional and modern interpretations. The life and times of Cervantes. Collateral readings and reports. *Prerequisite:* Spanish 612.
- 362N The New World in Spanish Literature (Northern Hemisphere)
A literary study of early diaries, accounts and biographies of the Spanish in the New World: Columbus' *Diario de Navegación*, Cortes' *Cartas de Relación*, Cabeza de Vaca's *Naufragios*, etc. Special attention to explorers of the American Southwest. May be taken in addition to Spanish 362S. *Prerequisite:* Spanish 612.

GRADUATE COURSES

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

- 390 Seminar
Spanish and Spanish American literary or linguistic problems to be announced by the instructor at the beginning of each semester.
- 392 History of the Spanish Language (Phonology)
- 393 History of the Spanish Language (Morphology)
- 394 Cervantine Studies
- 395 Seminar on the Latin American Novel
- 698 Thesis Course for the Master's Degree (*)
Confer with the head of the department immediately upon registration.

R U S S I A N

- 401 Written and Spoken Russian
An intensive course designed to enable the more mature student to master the fundamentals of written and spoken Russian. *Prerequisite:* Completion of Course 801, 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.

Music

DR. E. A. THORMODSGAARD, *Chairman*

PROFESSOR THORMODSGAARD; ASSISTANT PROFESSOR BRIGGS; INSTRUCTORS:
SHEPHERD, H. GODDARD, EIDBO; PART-TIME: G. GODDARD

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 intended 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 the requirements of the State Board of Education for full-time teaching in the Public Schools of Texas, either elementary or secondary, in the fields of instrumental or choral direction. The following courses of instruction may be adjusted to the particular needs of the individual through the permission of the Head of the Music Department.

THEORY

- 601 Theory (*) *(Formerly Music I)*
Properties of sound; the keyboard; voices, their qualities and range; time and rhythm; triad study; key feeling and tonality; sight singing; non-harmonic devices; simple modulation; harmonic and melodic dictation; beginning part writing; keyboard practice. Open to all students. Three lectures and one workshop hour per week.
- 401 Theory: Sight Singing and Dictation (*)
Rhythmic, melodic and harmonic dictation; one through four-part sight singing. Theory 601 taken concurrently. Two lectures and one workshop hour per week.
- 611 Theory (*) *(Formerly Music 11)*
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 601.
- 221 Theory: Counterpoint
Continuation of melodic and harmonic dictation; mixed chords; foreign modulation. Survey of sixteenth and eighteenth century contrapuntal techniques as exemplified in Palestrina and Bach. Two lectures per week. *Prerequisite:* Music 611.
- 221K Theory: Counterpoint
Continuation of Music 221. *Prerequisite:* Music 221.
- 248 Form and Analysis
Detailed study of form and analysis of representative works beginning with Gregorian Chant and continuing through contemporary music. *Prerequisite:* Music 611, or concurrent registration.
- 249 Form and Analysis
Continuation of Music 248. *Prerequisite:* Music 248.
- 352 Instrumentation and Orchestration
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 611 and four semester hours of class instruments.

[MUSIC]

357 Choral Arranging

A study of basic principles of writing, arranging, and editing choral music from two to eight parts. Emphasis upon music suitable for public school choral groups. *Prerequisite:* Music 611.

459 Composition (*)

Modern styles of composition, including techniques from the Schillinger System, are integrated with traditional theory and composition in a practical course covering the smaller forms in vocal and instrumental music. *Prerequisite:* Theory 611 or equivalent.

460 Advanced Composition (*)

A continuation of Music 459 with emphasis upon modern music and larger forms. *Prerequisite:* Music 459.

LITERATURE

208, 218, 228 Chamber Music (*) (\$2)

Experience in ensemble performance and the reading of selected chamber music works. *Prerequisite:* permission of instructor. Two classes per week for two semesters.

301K Introduction to Musical Literature

A non-technical course for all students which, through directed listening, aims to increase the enjoyment and appreciation of potential music lovers.

301L Trends in Musical Literature

A survey, through directed listening, of the trends found in the great musical literature of the world; study of forms, styles and periods. Not limited to music majors.

304 Introduction to Fine Arts

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 304M and Speech 304.

346 Opera Workshop

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.

347 Opera Workshop

Music 346 continued. *Prerequisite:* Junior standing and permission of instructor.

331 Music History

(Formerly Music 31a)

Chronological survey of the composers and their works through directed listening beginning with Gregorian Chant and continuing through the early Romantic Period. *Prerequisite:* Six hours of music and junior standing.

334 Music History

(Formerly Music 31b)

Chronological survey of the composers and their works through directed listening beginning with the late Romantic Period and continuing through contemporary music. *Prerequisite:* Six hours of music and junior standing.

MUSIC EDUCATION

630 Piano Methods and Materials (*)

An intensive study of the materials and methods of teaching piano, primarily designed for students planning teaching careers. Practice teaching emphasized in the second semester. *Prerequisite:* Junior standing including six semester hours of piano.

- 311 Brass and Percussion Instruments (\$2) *(Formerly Music 325)*
The care of the instrument, position at the instrument, tone production, physical development, scales, exercises, studies and repertoire selected from standardized methods and literature of music to develop the student according to the degree of his advancement. Nine hours practice per week. *Prerequisite:* Twelve semester hours of music.
- 312 Reed and Woodwind Instruments (\$2) *(Formerly Music 326)*
The care of the instrument, position at the instrument, tone production, physical development, scales, exercises, studies, and repertoire selected from standardized methods and literature of music to develop the student according to the degree of his advancement. Nine hours practice per week. *Prerequisite:* Twelve semester hours of music.
- 313 Stringed Instruments (\$2)
The care and playing positions of the stringed instruments, tuning and tone production, scales, studies, and ensemble playing. Survey of available string methods for group instruction. Nine hours practice per week. *Prerequisite:* Six semester hours of music.
- 327K Observation of Music Teaching in the High School
Principles of teaching and observation of class work in music. Five hours per week. (Not counted in addition to Education 327.) *Prerequisite:* Education 316 and 317 and senior standing.
- 327L Student Teaching of Music in High School
Constructing flexible lesson plans and teaching music under supervision. Five hours per week. (Not counted in addition to Education 327T.) *Prerequisite:* Music 327K (or concurrently) and senior standing.
- 328K Observation of Music Teaching in the Elementary Schools
Principles of teaching and observation of class work in music. Two lectures and minimum of five hours per week in the classroom. (Not counted in addition to Education 328.) *Prerequisite:* Education 318T and senior standing.
- 328L Student Teaching of Music in the Elementary Schools
Constructing flexible lesson plans and teaching music under supervision. Five hours per week. (Not counted in addition to Education 328T.) *Prerequisite:* Music 328K (or concurrently) and senior standing.
- 351 Choral Methods, Techniques and Conducting
A study of choral organization and conducting, with primary emphasis on literature, program-building and rehearsal problems. (Not counted in addition to Education 351.) *Prerequisite:* Junior standing and six semester hours of music.
- 351T Choral Methods, Techniques and Conducting
Continuation of Music 351. Not counted in addition to Education 351T. *Prerequisite:* Music 351 and permission of department head.
- 352K Conducting
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.
- 375 Teaching of Music in the Elementary Schools *(Formerly Music 310)*
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. (Not counted in addition to Education 375.) *Prerequisite:* Junior standing.

[MUSIC]

375κ Teaching of Music in the Elementary Schools

Continuation of Music Education 375. For Elementary Education Majors. *Prerequisite:* Music Education 375.

376 Teaching of Music in the Elementary Schools

The study of procedures in the teaching of music in the first six grades. The child voice, its development and classification. Introduction of notation, all kinds of song materials, rhythm bands, appreciation methods and creative music for children. For Elementary School Music Majors. (Not counted in addition to Education 376.) *Prerequisite:* Education 318T and four hours of music.

376κ Teaching of Music in the Junior and Senior High Schools

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. (Not counted in addition to Education 376K.) *Prerequisite:* Education 317 and six hours of music.

377 Methods of Instrumental Instruction and Supervision

The techniques of group instrumental instruction, organization and administration of school bands and orchestras, program building, instructional aids, planning and executing marching formations. (Not counted in addition to Education 377.) *Prerequisite:* Education 317 and nine hours of music.

389 Classroom Use of Audio-Visual Equipment and Materials in the Elementary Schools

(Not counted in addition to Education 389.) *Prerequisite:* Twelve semester hours in Music or Education and permission of the department head.

GRADUATE COURSES

390 Seminar: Problems in Music Education

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:* Graduate standing in Music or Education and twelve hours of advanced music courses.

391 Advanced Conducting and Interpretation

Practical advanced training in choral and instrumental problems in conducting for students who have had considerable training or experience. *Prerequisite:* Graduate standing and one of the following: Music 351, 351T, 352K, or conducting experience.

392 Graduate Courses in Applied Music (\$5 & \$45)

Two thirty-minute lessons and twelve practice hours per week. *Prerequisite:* Music 639 in major instrument, twelve hours of advanced music courses, bachelor's degree in Music.

392κ Graduate Courses in Applied Music (\$5 & \$45)

Two thirty-minute lessons and twelve practice hours per week. *Prerequisite:* Music 392.

393 Workshop in Problems in Music Education

Discussion of rehearsal and teaching problems and practical experience in working with instrumental groups of the secondary and elementary levels. Two lectures and three laboratory hours per week. *Prerequisite:* Graduate standing in Music or Education, Education 377 or equivalent, permission of department head.

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 must be maintained in the major instrument. Deficiencies resulting from lower grades, or in the case of transfer students, may be made up through advanced standing examinations. For full description of the course of study for any Applied Music course consult the chairman of the department.

Group Instruction

Class Voice, Piano, High Strings, Low Strings, Single Reeds, Double Reeds, Brass and 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 206, Piano 206, etc.

206 (\$5 + \$5)

Two classes and six practice hours per week.

206κ (\$5 + \$5)

Continuation of Music 206. Two classes and six practice hours per week. *Prerequisite:* Music 206 or placement.

216 (\$5 + \$5)

Continuation of Music 206κ. Two classes and six practice hours per week. *Prerequisite:* Music 206κ or placement.

216κ (\$5 + \$5)

Continuation of Music 216. Two classes and six practice hours per week. *Prerequisite:* Music 216 or placement.

226 (\$5 + \$5)

Continuation of Music 216κ. Two classes and six practice hours per week. *Prerequisite:* Music 216κ or placement.

226κ (\$5 + \$5)

Continuation of Music 226. Two classes and six practice hours per week. *Prerequisite:* Music 226 or placement.

227 Piano Sight Reading Class (*) (\$2)

Emphasis on actual playing experience and sight reading at the piano. Two classes per week. *Prerequisite:* Junior standing and permission of instructor.

Organizations—Band, Choir, Orchestra, Chorus

A fully equipped symphony orchestra, a concert and marching band, 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.

NOTE: During the fall semester only, a student with permission of the band instructor or the instructor for the Gold Diggers may attend Band 201 or Gold Diggers instead of a regular section of required Physical Education. In this case the student will be registered for Physical Education (courses indicated by a dagger (†) following the course number), will receive credit in Physical Education (but not in Band or Gold Diggers) and will pay the course fee of \$2.00 per semester for Physical Education.

201† Beginning Course (*) (\$2)

Five hours per week. *Prerequisite:* Consent of instructor.

211† Intermediate Course (*) (\$2)

Five hours per week. *Prerequisite:* Music 201.

[MUSIC]

- 221† Advanced Course (*) (\$2)
Five hours per week. *Prerequisite:* Music 211.
- 231† Advanced Course (*) (\$2)
Five hours per week. *Prerequisite:* Music 221.
- 205 Chorus (*) (\$2)
This mixed singing organization is open to all students interested in any kind of choral work. An audition is not required. Oratorios and operas will be presented with orchestral accompaniment, occasionally in combination with the Texas Western Choral. Five hours per week.

Individual Instruction

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. Those who desire to continue their study with instructors not on the College staff are required to pass satisfactory auditions before the music faculty in order to obtain credit. These arrangements must be made with the chairman of the department at the time of registration.

At the completion of the second year, candidates for the major in Applied Music must satisfactorily pass an audition before being admitted to upper division courses.

Transfer students and others lacking in semester hours in their major instrument may make arrangements for an advanced standing examination in order to meet requirements.

Piano, Organ

These courses will be designated as Piano 405, Piano 405L, etc.; Organ 405, Organ 405L, etc.

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

- 405 (*) (\$5 + \$20)
One thirty-minute lesson and six practice hours per week.
- 405L (*) (\$5 + \$20)
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Music 405 or placement.
- 405M (*) (\$5 + \$20)
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Music 405L or placement.
- 605 (*) (\$5 + \$40)
Two thirty-minute lessons and nine practice hours per week.
- 605L (*) (\$5 + \$40)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* course 605 or placement.
- 605M (*) (\$5 + \$45)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* course 605L or placement.
- 605N (*) (\$5 + \$45)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* course 605M or placement.

SECONDARY: For music majors and all interested students.

- 609 (*) (\$5 + \$40)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Placement.

- 619 (*) (\$5 + \$40)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Music 609.
- 629 (*) (\$5 + \$45)
Two thirty-minute lessons and nine practice hours per week. Recital participation. *Prerequisite:* Music 619.
- 639 (*) (\$5 + \$45)
Two thirty-minute lessons and nine practice hours per week. Senior recital. *Prerequisite:* Music 629.
- 809 (*) (\$5 + \$40)
Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* placement.
- 819 (*) (\$5 + \$40)
Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* Music 809.
- 829 (*) (\$5 + \$45)
Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* Music 819.
- 839 (*) (\$5 + \$45)
Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* Music 829.

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)

These courses will be designated as Flute 405, Flute 405L, etc.; Oboe 405, Oboe 405L, etc.

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

- 405 (*) (\$5 + \$20)
One thirty-minute lesson and six practice hours per week.
- 405L (*) (\$5 + \$20)
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Music 405 or placement.
- 405M (*) (\$5 + \$20)
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Music 405L or placement.
- 605 (*) (\$5 + \$40)
Two thirty-minute lessons and nine practice hours per week.
- 605L (*) (\$5 + \$40)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* course 605 or placement.
- 605M (*) (\$5 + \$45)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* course 605L or placement.
- 605N (*) (\$5 + \$45)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* course 605M or placement.

[MUSIC]

SECONDARY: For music majors and all interested students.

- 609 (*) (\$5 + \$40)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Placement.
- 619 (*) (\$5 + \$40)
Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Music 609.
- 629 (*) (\$5 + \$45)
Two thirty-minute lessons and nine practice hours per week. Recital participation. *Prerequisite:* Music 619.
- 639 (*) (\$5 + \$45)
Two thirty-minute lessons and nine practice hours per week. Senior recital. *Prerequisite:* Music 629.
- 809 (*) (\$5 + \$40)
Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* placement.
- 819 (*) (\$5 + \$40)
Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* Music 809.
- 829 (*) (\$5 + \$45)
Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* Music 819.
- 839 (*) (\$5 + \$45)
Two thirty-minute lessons and fifteen practice hours per week. *Prerequisite:* Music 829.

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.

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 "monotonics," are urged to take these courses. All students studying primary or secondary voice are expected to participate in one of the two college choirs.

- 405 (*) (\$5 + \$20)
One thirty-minute lesson and six practice hours per week.
- 405L (*) (\$5 + \$20)
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Music 405 or placement.
- 405M (*) (\$5 + \$20)
One thirty-minute lesson and six practice hours per week. *Prerequisite:* Music 405L or placement.
- 605 (*) (\$5 + \$40)
Two thirty-minute lessons and nine practice hours per week.

[MUSIC]

605L (*) (\$5 + \$40)

Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* course 605 or placement.

605M (*) (\$5 + \$45)

Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* course 605L or placement.

605N (*) (\$5 + \$45)

Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* course 605M or placement.

SECONDARY: For music majors and all interested students.

609 (*) (\$5 + \$40)

Considerable emphasis on voice development with some coaching on songs in the English language. Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Placement.

619 (*) (\$5 + \$40)

Continued emphasis on voice building with coaching on one or more of the less exacting arias of oratorio, opera, and standard songs. Two thirty-minute lessons and nine practice hours per week. *Prerequisite:* Music 609.

629 (*) (\$5 + \$45)

Increased emphasis on coaching of standard song literature in two or more languages. Two thirty-minute lessons and nine practice hours per week. Recital participation. *Prerequisite:* Music 619.

639 (*) (\$5 + \$45)

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. Two thirty-minute lessons and nine practice hours per week. Senior recital. *Prerequisite:* Music 629.

Philosophy and Psychology

DR. J. M. ROTH, *Chairman*

PROFESSOR ROTH; ASSISTANT PROFESSORS FARRIS, BOSWORTH

PHILOSOPHY

- 312 **Logic**
Introduction to essentials of correct thinking; deductive and inductive reasoning, fallacies and argumentation, scientific methodology. *Prerequisite:* Sophomore standing.
- 314 **Problems of Philosophy**
An introduction to the main general problems of Philosophy such as those of matter, mind, life, truth and value. *Prerequisite:* Sophomore standing.
- 316 **Philosophies of Life**
Study of the various classical philosophies of life and their moral, religious, and esthetic values. *Prerequisite:* Sophomore standing.
- 317 **The Philosophy of Civilization**
A comprehensive study of the development of civilization and culture, man's place in the world today and his potential destiny. *Prerequisite:* Sophomore standing.
- 330 **Ethics of Human Relationships**
An attempt to find functional bases for the practical solution of realistic problems involved in human relationships; the implications of man's biological interrelatedness, psychological motivations, social and economic interdependence will be stressed. *Prerequisite:* Junior standing.
- 331 **Integration of the Fields of Knowledge**
An attempt to show the interrelationship of the several branches of human knowledge; the close bond existing among the physical, biological, and social sciences; our quest to synthesize such knowledge so as to evolve therefrom a clearer perspective as to the purpose of God and the universe, man's place in the world and his ultimate destiny. *Prerequisite:* Junior standing.

PSYCHOLOGY

- 310 **Elementary Psychology**
A survey of elementary principles and concepts in general psychology. *Prerequisite:* Sophomore standing.
- 311 **Fields of Psychology**
A survey of the chief fields of psychology; includes clinical, abnormal, social, business and industrial, and experimental psychology; tests and measurements. *Prerequisite:* Psychology 310.
- 314 **Child Psychology**
Same as Education 314
- 315 **Psychological Statistics (\$2)**
A survey of basic statistical concepts, techniques, and methods used in Psychology and Education. *Prerequisite:* Psychology 310. NOTE: This course should not be held as a prerequisite for advanced departmental work for students having successfully completed nine hours of Psychology prior to September, 1950.
- 316 **Business and Industrial Psychology**
A study of the psychological factors and principles involved in modern business and industry. *Prerequisite:* Psychology 310; or Junior standing in Business Administration.

- 320 **Psychology of Personality**
A study of the psychodynamics of personality and behavior disorders. *Prerequisite:* Psychology 310, 311 and 315 (Not counted in addition to Education 378).
- 329 **Genetic Psychology**
The evolution of human behavior processes (nervous system, perception, learning, emotion and personality) and their development. *Prerequisite:* Psychology 310, 311, and 315.
- 339 **Vocational Guidance and Counseling**
Same as Education 339K.
- 340 **Personnel Psychology**
A survey of psychological principles and methods in personnel administration. *Prerequisite:* Psychology 310, 311, 316; or senior standing in Business Administration.
- 342 **History and Viewpoints of Psychology**
Development of psychological theory from the Greeks to the present; consideration of various modern points of view. *Prerequisite:* Psychology 310, 311, 315, and three additional hours in Psychology or Philosophy or both.
- 343 **Lectures in Clinical Psychology**
A study of clinical problems, case study methods and discussion of psychological tests used in common clinical situations. *Prerequisite:* Psychology 310, 315, and six additional hours in Psychology or Philosophy or both.
- 344 **Mental Hygiene**
The fundamentals of a preventive approach to mental illness. Emphasis on the normal personality. *Prerequisite:* Psychology 310, 315, and three additional hours in Psychology. (Not counted in addition to Physical Education 344.)
- 351 **Social Psychology**
A study of social phenomena from the psychological point of view; motivation, attitudes, propaganda, group behavior and control. *Prerequisite:* Psychology 310, 315, and three additional hours in Psychology.
- 352 **Abnormal Psychology**
Study of the gifted, mentally defective, neurotic, delinquent, criminal and psychotic with particular attention to factors in development and distinctive manifestations of these deviations from the normal. *Prerequisite:* Psychology 310, 311, 315, and six additional hours in Psychology or Philosophy or both.
- 353 **Psychological Testing (\$2)**
Practicum training in administration, scoring and interpretation of psychological measures of intelligence. *Prerequisite:* Psychology 310, 311, 315, and senior standing. (Open to juniors by permission only.)
- 355 **Mental and Educational Measurement**
Same as Education 355.
- 361 **Physiological Psychology (\$4)**
Basic psychological processes in relation to structure and function. *Prerequisite:* Psychology 310, 315, and six additional hours in Psychology.
- 362 **Experimental Psychology (\$2)**
Basic principles and methods of psychological experiment. Lecture, demonstrations and laboratory experiments. *Prerequisite:* Psychology 310, 311, 315, and three additional hours in Psychology.
- 390 **Theory of Personality**
Major dynamic approaches to personality development and function, with a review of pertinent clinical and experimental evidence. *Prerequisite:* Eighteen hours in Psychology and permission of the chairman of the department.

Physical Education, Health, and Recreation

DR. L. G. SEILS, *Chairman*

ASSOCIATE PROFESSOR SEILS; ASSOCIATE PROFESSOR WATERS; INSTRUCTORS CRAIGO, KANE, MESEROW, MOORE, NABORS, COLLINS

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.

Four semesters of service courses in Physical Education are required of each student for graduation. One semester hour of credit is allowed for each semester of service courses.

PHYSICAL EDUCATION

Majors in Physical Education are strongly urged to have one minor in Health Education and a second minor in another teaching field.

Those who wish to qualify as physical education teachers or as coaches must meet the following requirements established by the Texas State Department of Education.

1. Full-time teachers must have 24 semester hours in Physical and Health Education. (A person who coaches athletics and teaches one or more classes in Physical Education is considered a part-time teacher.)

2. Part-time teachers must have 12 hours in Physical and Health Education. (Any person who teaches as many as two classes in Physical Education per day in combination with other subjects or who coaches athletics and teaches some subject other than Physical Education is considered a part-time teacher.)

3. All beginning classroom teachers who direct or teach any part of the Physical or Health Education program must have at least six semester hours of college credit in professional teacher-training courses in that field.

NOTE: During the fall semester only, a student with permission of the band instructor or the instructor for the Gold Diggers may attend Band 201 or Gold Diggers instead of a regular section of required Physical Education. In this case the student will be registered for Physical Education (courses indicated by a dagger (†) following the course number), will receive credit in Physical Education (but not in Band or Gold Diggers) and will pay the course fee of \$2.00 per semester for Physical Education.

201† Service Course for Freshman Men (*) (\$2)

Three hours per week. If student elects horseback riding, \$12.00 additional per month.

[PHYSICAL EDUCATION]

- 202† Service Course for Freshman Women (*) (\$2)
Three hours per week. If student elects horseback riding, \$12.00 additional per month.
- 203† Service Course for Sophomore Men (*) (\$2)
Three hours per week. If student elects horseback riding, \$12.00 additional per month.
- 204† Service Course for Sophomore Women (*) (\$2)
Three hours per week. If student elects horseback riding, \$12.00 additional per month.
- 305 Fundamentals of Major and Minor Sports
Rules, playing regulations, teaching procedure of the following sports: Football, basketball, handball, tennis, baseball, speedball, and soccer. Open to men only.
- 306 Methods in Physical Education (Formerly Physical Education 312)
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.
- 307 Fundamentals of Minor Sports for Women
Rules, playing regulations, teaching procedure for the following: Tennis, badminton, archery, ping pong, swimming, and horseshoes. Open to women only.
- 308 Fundamentals of Major Sports for Women
Rules, playing regulations, teaching procedure for the following: Basketball, volleyball, softball, speedball, soccer and field hockey. Open to women only.
- 314 Sports Writing for Men and Women
Survey of the field of sports writing for newspapers and magazines. Essentials of sports with which sports writer must be familiar are considered. Practice in covering sports events. Study of scope and style of sports writing. May not be counted for credit in addition to Journalism 314. *Prerequisite:* Sophomore standing.
- 313 Techniques, Methods and Materials of Instruction in Rhythms
Country, folk, tap and modern dance for the elementary grades. *Prerequisite:* Physical Education 304.
- 315 Techniques, Methods and Material of Instruction in Rhythms for High School Grades
A class in rhythmical materials in social, country, folk, tap and modern dance. *Prerequisite:* Physical Education 304.
- 316 Coaching Football
Coaching methods in football. Conditioning, practice schedules, and fundamentals are to be stressed. *Prerequisite:* Physical Education 305.
- 317 Coaching Basketball and Track (Formerly Physical Education 16b)
Coaching methods in basketball and track. Conditioning, practice schedules, and fundamentals are stressed. *Prerequisite:* Physical Education 305.
- 321k Organization and Administration of Physical Education
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:* A minimum of nine hours of Physical Education.

[PHYSICAL EDUCATION]

321 Curriculum Construction

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:* A minimum of nine hours of Physical Education, or for teachers, permission of the chairman of the department.

324 Kinesiology

The mechanical 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:* Biology 310 and 311.

350 Organization of Community Recreation

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:* A minimum of twelve hours of Physical Education, or for teachers, permission of the chairman of the department.

351 Recreational Leadership

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:* A minimum of twelve hours Physical Education, or for teachers, permission of the chairman of the department.

355 Corrective Physical Education

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:* Physical Education 324.

356 Tests and Measurements in Health and Physical Education

A study of tests will be made, both in Health and Physical Education as to their purpose and use, scoring and interpretation. *Prerequisite:* A minimum of twelve credit hours in Physical Education, or for teachers, permission of the chairman of the department. (Not counted in addition to Education 355κ.)

364 Administration of Athletics in Schools and Colleges

A study will be made of current controversies and problems in the conduct of athletics, organization of athletic departments, selection of staff, sports program, purchases and care of athletic equipment, management of varsity and intramural athletics, maintenance of facilities and equipment. *Prerequisite:* Physical Education 321 or 321κ. Minimum of 12 hours in field, or for teachers, permission of the chairman of the department.

HEALTH EDUCATION

310 Individual Hygiene

Study of 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. *Prerequisite:* Sophomore standing.

320 Community Hygiene

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. *Prerequisite:* Health Education 310.

[PHYSICAL EDUCATION]

330 School Health Problems

Major problems of the organization and administration of school health programs will be analyzed. Three hours of lecture and special field trips. *Prerequisite*: Health Education 310 or 320, or for teachers, permission of the chairman of the department.

341 Principles of Health Education

Individual and community health problems will be discussed. Hygienic effects to be realized from an organized health program. Discussion and prevention of communicable diseases will be treated in schools, communities, and cities. Five class periods per week. *Prerequisite*: Health Education 310.

344 Mental Hygiene (Psychology)

Not counted in addition to Psychology 344 and Education 357. *Prerequisite*: Six semester hours in psychology or in philosophy or both. (Educational psychology may not be counted as one of the prerequisites.)

360 Methods and Materials in Health Education

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*: Health Education 320, or for teachers, permission of the chairman of the department.

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Statistical Summaries

STUDENTS

	Long Session, 1949-50		
	Men	Women	Total
Engineering			
Postgraduates	3	—	3
Seniors	66	—	66
Juniors	76	—	76
Sophomores	122	—	122
Freshmen	179	—	179
Non-credits	—	—	—
Special	—	—	—
Total	446	—	446
Arts and Sciences			
Postgraduates	124	326	450
Seniors	228	91	319
Juniors	251	103	354
Sophomores	232	128	360
Freshmen	406	275	681
Non-credits	4	14	18
Special	3	28	31
Total	1248	965	2213
Total Individual Students	1694	965	2659

	Summer Session, 1950		
	Men	Women	Total
Students registered in the first term	776	544	1320
Students registered in the second term	702	382	1084
Total	1478	926	2404
Total Individual Students in Summer Session	882	646	1528

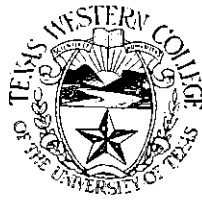
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