

**BULLETIN**  
*of the*  
**COLLEGE OF MINES AND METALLURGY**

(A Branch of The University of Texas)

**EL PASO, TEXAS**

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Volume XXII

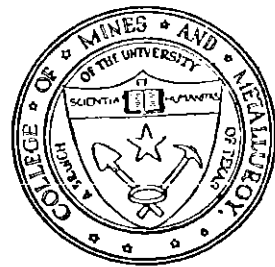
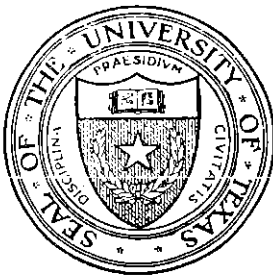
March 15, 1938

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**CATALOGUE**  
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*for*  
**1937-1938**

**With Announcements for**  
**1938-1939**



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***College of Mines and Metallurgy***

(A Branch of The University of Texas)

MEMBER

of

*Texas Association of Colleges*  
*Southern Association of Colleges*

***El Paso, Texas***

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.

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## BOARD OF REGENTS

### OFFICERS

EDWARD RANDALL, *Chairman*

J. R. PARTEN, *Vice-Chairman*

JOHN WILLIAM CALHOUN, *President ad interim of the University of Texas, Adviser to the Board*

LEO C. HAYNES, *Secretary*

### MEMBERS

Terms Expire January, 1939

K. H. AYNESWORTH.....Waco  
MRS. I. D. FAIRCHILD.....Lufkin  
H. J. LUTCHER STARK.....Orange

Terms Expire January, 1941

GEORGE D. MORGAN.....San Angelo  
J. R. PARTEN.....Houston  
EDWARD RANDALL.....Galveston

Terms Expire January, 1943

E. J. BLACKERT.....Victoria  
LESLIE WAGGENER.....Dallas  
H. H. WEINERT.....Seguin

### STANDING COMMITTEES

ATHLETICS: Weinert, Stark, Parten.  
AUDITING: Stark, Morgan, Waggener.  
BUILDING: Mrs. Fairchild, Blackert, Stark.  
COLLEGE OF MINES: Morgan, Mrs. Fairchild, Weinert.  
COMPLAINTS AND GRIEVANCES: Stark, Mrs. Fairchild, Waggener.  
EXECUTIVE: Randall, Stark, Parten.  
FINANCE: Waggener, Blackert, Weinert.  
LAND: Morgan, Weinert, Parten.  
LEGISLATIVE: Parten, Blackert, Weinert.  
LIBRARY: Aynesworth, Stark, Waggener.  
MEDICAL: Randall, Aynesworth, Parten.  
PUBLIC RELATIONS: Blackert, Aynesworth, Morgan.  
BOARD FOR LEASE OF UNIVERSITY LANDS: Aynesworth, Mrs. Fairchild.

**CALENDAR**  
of  
**THE COLLEGE OF MINES AND METALLURGY**

1938

- AUGUST 15, MONDAY.** Beginning of Summer Surveying Class.
- SEPTEMBER 8, THURSDAY.** Examinations for admission.
- SEPTEMBER 12, MONDAY.** Condition, advanced standing, and postponed examinations. Petitions must be in the office of the Registrar not later than September 5.
- SEPTEMBER 13, TUESDAY.** Freshman convocation at 9:00 a. m. Psychological examinations.
- SEPTEMBER 13, TUESDAY.** Faculty registration conference at 2:00 p. m.
- SEPTEMBER 14-15, WEDNESDAY-THURSDAY.** Registration.
- SEPTEMBER 16, FRIDAY.** Classes begin.
- SEPTEMBER 22, THURSDAY.** Deferred examinations.
- OCTOBER 1, SATURDAY.** Last day students may add or substitute courses.
- OCTOBER 1, SATURDAY.** Last day of registration for the first semester.
- NOVEMBER 11, FRIDAY.** Armistice Day, holiday.
- NOVEMBER 24-26, THURSDAY-SATURDAY.** Thanksgiving recess.
- DECEMBER 17, SATURDAY.** Christmas recess begins at the close of the last class which meets on Saturday.

1939

- JANUARY 2, MONDAY.** Classes are resumed.
- JANUARY 20-27, FRIDAY-FRIDAY.** Examinations for the first semester.
- JANUARY 23, MONDAY.** Examinations for admission.
- JANUARY 24, TUESDAY.** Freshman convocation at 9:00 a. m. Psychological examinations.
- JANUARY 25-27, WEDNESDAY-FRIDAY.** Registration of new students.
- JANUARY 28, SATURDAY.** Advanced standing examinations.
- JANUARY 30, MONDAY.** Registration of readmission students.
- JANUARY 31, TUESDAY.** Classes begin.
- FEBRUARY 10, FRIDAY.** Condition and postponed examinations.
- FEBRUARY 11, SATURDAY.** Last day students may add or substitute courses.

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*Calendar*

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FEBRUARY 11, SATURDAY. Last day for registration in the second semester.

APRIL 7-10, FRIDAY-MONDAY. Easter Holidays.

MAY 6, SATURDAY. Major examinations.

MAY 26-JUNE 2, FRIDAY-FRIDAY. Examinations for the second semester.

MAY 26-JUNE 2, FRIDAY-FRIDAY. Senior week.

JUNE 2, FRIDAY. Alumni and class day.

JUNE 2, FRIDAY. Commencement.



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## COLLEGE OF MINES AND METALLURGY

### ADMINISTRATIVE OFFICERS

- DOSSIE MARION WIGGINS, Ph.D., *President.*  
B.A., Simmons, 1919; M.A., Yale, 1925; Ph.D., 1930.
- CHARLES ALEXANDER PUCKETT, M.A., *Dean of Arts and Education.*
- JOHN WILLIAM KIDD, E.E., *Dean of Mining and Metallurgy; Superintendent of Buildings and Grounds.*
- FORREST JACK AGE, M.Ed., *Registrar and Director of Student Life.*
- \*NORMA EGG, M.A., *Dean of Women.*
- \*\*MRS. LENA ELDRIDGE, M.A., *Dean of Women.*
- BAXTER POLK, B.A., B.S. (Library Science), *Librarian.*
- BURT FRANKLIN JENNESS, M.D., *Health Officer.*
- MARSHALL LEE PENNINGTON, B.B.A., *Business Manager and Instructor.*  
B.B.A., Texas, 1935.
- MARY ELLA POOL, B.S., *Director of Dormitories.*  
B.S., Texas, 1930.
- \*\*HOWARD EDMUND QUINN, Ph.D., *Curator of Museum.*
- \*W. S. STRAIN, M.S., *Curator of Museum.*

### FACULTY

#### Professors

- FREDERICK WILLIAM BACHMANN, *Professor of Modern Languages.*  
B.A., Stanford, 1922; M.A., 1924; Ph.D., Chicago, 1931.
- ANTON HELMER BERKMAN, *Professor of Biological Sciences.*  
B.A., Texas, 1924; M.A., 1926; Ph.D., Chicago, 1935.
- †JOHN O. GRAGG, *Professor of Economics and Business Administration.*  
B.A., B.B.A., Texas, 1924; M.A., 1930; Ph.D., 1937.
- JOHN FRASER GRAHAM, *Professor of Mining and Metallurgy.*  
B.S., Michigan College of Mining and Technology, 1905; E.M., 1924.
- JOHN WILLIAM KIDD, *Professor of Engineering.*  
B.S., Oklahoma Agricultural and Mechanical College, 1904; E.E., Texas Agricultural and Mechanical College, 1909.
- EDWIN JOHN KNAPP, *Professor of Mathematics and Physics.*  
Ph.B., Wisconsin, 1921; Ph.D., 1931.
- ††THOMAS ERL MORRIS, *Professor of Economics and Business Administration.*  
B.B.A., Texas, 1931; M.B.A., 1932.
- CHARLES ALEXANDER PUCKETT, *Professor of Education.*  
B.A., Texas, 1911; M.A., Harvard, 1916.
- HOWARD EDMUND QUINN, *Professor of Geology.*  
E.M. (Geology), Minnesota, 1918; M.S., 1926; Ph.D., Harvard, 1932.
- JOSEPH MOSES ROTH, *Professor of Philosophy and Psychology.*  
B.A., New York University, 1919; M.A., 1920; Ph.D., 1923.
- FRANKLIN HUPP SEAMON, *Professor of Chemistry.*  
M.E., Missouri School of Mines, 1891.

\*Appointed September 6, 1937.

\*\*Resigned September 6, 1937.

†Appointed for 1937-1938 session only; substituting for Mr. Morris.

††Absent on leave for session of 1937-1938.

- CHARLES LELAND SONNICHSEN, *Professor of English*.  
B.A., Minnesota, 1924; M.A., Harvard, 1927; Ph.D., 1931.
- JOHN LEROY WALLER, *Professor of History*.  
B.S., Oklahoma, 1923; M.A., Colorado, 1925; Ph.D., Texas, 1929.

## Associate Professors

- PEARL WHITFIELD DURKEE, *Associate Professor of Physics*.  
B.A., Acadia University, 1903; B.S. (Electrical Engineering), McGill University, 1906; M.S., Cornell, 1935.
- WILLIAM WALTER LAKE, *Associate Professor of Chemistry*.  
B.S., Ohio State, 1913; M.S., 1921.
- LOYD ALVINO NELSON, *Associate Professor of Geology*.  
E.M., Texas, 1916; M.S. (Geology), Colorado, 1929; Ph.D., 1937.
- ALVIN EDWARD NULL, *Associate Professor of History*.  
B.A., Indiana, 1910; M. A., Chicago, 1926.
- \*MACK SAXON, *Associate Professor of Physical Training*.
- MRS. ISABELLA CORBETT ZIMMERMAN, *Associate Professor of English*.  
B.A., Occidental, 1925; M.A., 1926; Ph.D., University of Southern California, 1934.

## Assistant Professors

- WILLIAM ROBERT AVRETT, *Assistant Professor of Modern Languages*.  
B.A., Texas, 1927; M.A., 1928.
- FLOYD ARCHIE DECKER, *Assistant Professor of Engineering*.  
B.S. (Electrical Engineering), Kansas State College, 1927; E.E., 1932.
- NORMA EGG, *Assistant Professor of English*.  
B.A., Texas, 1913; M.A., 1928.
- MRS. LENA ELDRIDGE, *Assistant Professor of Modern Languages*.  
B.A., New Mexico Normal University, 1919; M.A., Washington, 1927.
- GLADYS GREGORY, *Assistant Professor of Government*.  
B.A., Southwestern, 1915; M.A., Texas, 1926; Ph.D., 1937.
- \*\*LUCY CLAIRE HOARD, *Assistant Professor of Education*.  
B.A., State College, San Diego, California, 1929; M.A., Columbia, 1934.
- BURT FRANKLIN JENNESS, *Assistant Professor of Biological Sciences*.  
M.D., Dartmouth, 1899; Lt. Cmdr. M.C., U. S. Navy, Ret.
- LEON DENNY MOSES, *Assistant Professor of English*.  
B.A., Columbia, 1923; M.A., 1924.
- RICHARD HUBBELL OLMSTED, *Assistant Professor of Modern Languages*.  
B.A., Minnesota, 1922; M.A., 1932; Ph.D., 1934.
- MRS. MARY KELLY QUINN, *Assistant Professor of Sociology*.  
B.A., Wellesley, 1922; M.A., Boston University, 1930.
- MAC FRANCES SMITH, *Assistant Professor of Economics and Business Administration*.  
B.A., Texas, 1931; M.B.A., 1934.
- REX WALLACE STRICKLAND, *Assistant Professor of History*.  
B.A., Austin College, 1927; M.A., Southern Methodist University, 1929; Ph.D., Texas, 1937.
- EUGENE MCRAE THOMAS, *Assistant Professor of Mining and Metallurgy*.  
B.S. (Mining Engineering), Texas, 1926.
- HUGH L. TURRITTIN, *Assistant Professor of Engineering and Mathematics*.  
B.S., Minnesota, 1927; M.S., Wisconsin, 1932; Ph.D., 1933.

\*Appointed September 6, 1937; title changed from "Instructor in Physical Education" to "Associate Professor of Physical Education."

\*\*Appointed September 6, 1937, full time.

## Instructors

- FORREST JACK AGEE, *Instructor in Education.*  
B.A., Howard Payne, 1928; M.Ed., Texas, 1937.
- WILLIAM HENRY BALL, *Instructor in Chemistry.*  
B.S., Chicago, 1922; M.S., Iowa State College, 1925.
- MRS. ISABELLE KELLY FINEAU, *Instructor in Modern Languages.*  
B.A., Texas, 1905; M.A., 1931.
- \*GLEN R. JOHNSON, *Instructor, Director of Band and Glee Clubs.*  
B.A., Baylor University, 1936.
- FRANK JUNELL, *Instructor in Journalism.*  
B.A., Hardin-Simmons, 1934; M.A., Missouri, 1937.
- MRS. JULIA IDA KANE, *Instructor in Physical Education.*  
B.A., North Dakota, 1919; M.A., Arizona, 1930.
- JOSEPH S. LEECH, *Instructor in Mathematics and Engineering.*  
B.A., Oklahoma, 1927; M.S., 1928.
- BULAH A. LILES, *Instructor in Mathematics.*  
B.A., Texas, 1921; M.A., Chicago, 1927.
- HARRY B. PHILLIPS, *Instructor in Physical Education.*  
B.A., Texas College of Mines and Metallurgy, 1933.
- BAXTER POLK, *Instructor in Business Administration.*  
B.A., Hardin-Simmons, 1935; B.S., (Library Science), Oklahoma, 1936.
- \*\*PEARL PONSFORD, *Instructor in English.*  
B.A., Wellesley, 1919; M.A., University of Southern California, 1930; Ph.D., 1935.
- \*\*\*MRS. BERTHA REYNOLDS, *Instructor in Education.*  
B.A., Colorado, 1921; M.A., 1922.
- \*W. S. STRAIN, *Instructor in Geology.*  
B.S., West Texas State Teachers College, 1932; M.S., Oklahoma, 1937.

## Part-Time Instructor

- MYRTLE EVELYN BALL, *Part-time Instructor in Public Speaking.*  
B.A., New Mexico Normal University, 1926.

## Administrative Assistants

- †MARJORIE ERWIN, *Assistant Librarian.*  
B.A., Texas College of Mines and Metallurgy, 1934.
- FRANCES LUELLE JOB, *Information Clerk and Switchboard Operator.*  
B.A., Texas College of Mines and Metallurgy, 1935.
- \*ISABEL ABDOU JOSEPH, *Clerk in Business Office.*  
B.A., Texas College of Mines and Metallurgy, 1933.
- MARGARET NEELY, *Stenographer.*
- MAYNE PORTER, *Assistant Registrar.*
- MAURINE ELIZABETH SMITH, *Assistant Business Manager.*  
B.A., Texas College of Mines and Metallurgy, 1935.
- MRS. FRANCES SMITH STEVENS, *Secretary to the President.*

\*Appointed September 6, 1937.

\*\*Appointed September 6, 1937, full-time.

\*\*\*Absent on leave, 1937-38 session.

†Appointed September 1, 1937.

## GENERAL INFORMATION

### HISTORY

An announcement of a course in mining first appeared in The University of Texas catalogue in 1900-1901. From then until the session of 1910-1911, an arrangement of courses leading to the degree of Mining Engineer appeared annually. The catalogue of that year contained a statement that thereafter freshmen would not be enrolled in mining, and the arrangement of courses leading to a degree in that subject was subsequently omitted.

The Thirty-third Legislature, at its regular session in 1913, passed an act creating the State School of Mines and Metallurgy, to be located in El Paso. By the terms of the act, the School of Mines was placed under the control of the Board of Regents of The University of Texas. Early in 1919, by act of the Thirty-sixth Legislature, the school was made a branch of The University of Texas.

The location of the school at El Paso was conditioned upon the donation by the city of the former Military Institute buildings and grounds. The necessary funds for this donation were secured through the activity of the Chamber of Commerce, and the school was opened in September, 1914. On October 29, 1916, the Main Building burned. It was then decided to remove the institution to a more suitable site on the west side of Mount Franklin, donated for that purpose. The Thirty-fifth Legislature voted an emergency appropriation of \$100,000 to erect new buildings.

In 1927 the Legislature authorized further expansion along academic lines.

In 1931 the Board of Regents authorized the conferring of the Bachelor of Arts degree, vesting administrative powers in a President.

### LOCATION

Texas is the largest and most populous state which supports a separate college of mining and metallurgy. The location of the College of Mines and Metallurgy is advantageous in several ways. The City of El Paso stands at the crossing of several of the oldest highways established by white men on this continent. With a population of 100,000, more than 30% of which is engaged in technical industries, it is the most important city south of Denver, between San Antonio or Fort Worth and Los Angeles.

El Paso's primary resources include mining, agriculture, livestock, and timber. The United States Government has spent \$10,000,000 on a great irrigation project to provide a cheap and un failing water supply for the Rio Grande Valley above and below El Paso.

Its extreme dryness and medium latitude, combined with a moder-

ately high altitude (3800 feet), give El Paso a delightful and healthful climate all the year round.

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

El Paso is the industrial center of a large area, and is especially suitable for the location of a college instructing in mining, metallurgy, engineering, the sciences, and technology. The second largest custom smelter in the world is situated about a mile from the College of Mines and Metallurgy. It uses the most modern methods of smelting and treating ores containing copper, lead, gold, silver, and other metals. Within a few miles is also the most modern electrolytic copper refinery, which has a capacity of 20,000,000 pounds of copper in process. There are also nearby a large cement plant, two large brick plants, and three oil refineries. Various manufactories of lime, tile, and other non-metallics are located in the immediate neighborhood of the College. There are other varied industries, such as cotton spinning and weaving mills, cotton oil mills, wood-working mills, etc. There are also large power plants and sub-stations, foundries, machine shops, and other service enterprises of technical nature. Thus it will be seen that the environment is highly favorable for first-class instruction in engineering and technology, all of the industries cooperating fully with the College to this end.

#### BUILDINGS AND GROUNDS

The campus consists of thirty-eight acres. There are twelve buildings, as follows: Main Building, Holliday Hall (the gymnasium), Burges Hall, Chemistry Building, Kelly Hall, Seamon Hall, Engineering Building, Museum Building, a dormitory for women, a dormitory for men, a mill, and a small dressing-room building for women, recently donated by the Women's Auxiliary of El Paso. A new Library and Administration Building is under construction. At present the Main Building contains the administrative offices, various lecture rooms, and laboratories for the departments of physics and geology. The Chemistry Building houses the laboratories for chemistry and assaying. In the Engineering Building are located the engineering laboratories and the heating plant. Burges Hall contains the biological laboratories, offices, and lecture rooms. At the present time the College Library occupies the entire third floor of Kelly Hall, while the first and second floors are used for lecture rooms and offices. The mill contains machinery for the testing of ores. Seamon Hall houses metallurgy equipment and laboratories. All the buildings except the mill are of stone and are fireproof. The

City of El Paso is holding a reservation of approximately twenty-five acres for the future use of the College.

#### LIBRARY

The book collection of 20,000 volumes will be housed in the beautiful new library building, situated between the two main building groups on the campus. The nucleus of the book collection was the library of the late W. H. Seamon, a mining engineer and member of the faculty. His legacy has been augmented by gift and by purchase from year to year. The geology, mining, language, and economics sections of the library are especially strong. The library is a depository for a select group of government publications and contains an invaluable collection of United States Geological Survey and Bureau of Mines bulletins, some volumes of which are no longer obtainable.

The library regularly receives 253 periodicals—literary, scientific, and technical. Files of these are being accumulated, bound, and preserved, forming a valuable reference collection. There is also a very up-to-date pamphlet collection on miscellaneous subjects to which the students are given full access.

Students are given full use of the excellent facilities of the El Paso Public Library, a collection of 59,000 volumes and 36,000 pamphlets. The Public Library contains an especially strong collection of literature pertaining to the Southwest. The Teachers' Library of El Paso Public Schools may also be used.

#### MUSEUM

The El Paso Centennial Museum, allocated by the Commission of Control for the Texas Centennial Celebrations, was erected by the State under the supervision of the State Board of Control at a cost of \$50,000. This thoroughly modern and spacious museum building was located on the campus of the College of Mines through the authority of the El Paso County Advisory Committee. It is beautifully situated and graces the entire college campus. The College is truly proud of it and will devote every effort toward the development of a great museum for the entire Southwest. The public is welcome to visit the Museum and students will find an excellent opportunity for studying the various phases in the evolution of the civilization of this part of the country.

The mineralogical collection is especially fine. It includes the Reckhart collection and the Ledwidge collection, a gift of the Women's Auxiliary of the College, in addition to many other beautiful and rare specimens of minerals and ores that have been supplied to the College by purchase and by gift from mining men and geologists of the Southwest.

The paleontological collections are excellent. The invertebrate

paleontological material comprises a splendid study group, containing specimens from most of the important geological horizons of the United States and particularly of Texas. There is also a fine group of specimens from European horizons. The vertebrate paleontological collections are composed principally of Pleistocene mammals, especially of *Elephas* remains.

The biological collection, composed of both zoological and botanical specimens, occupies space in both the El Paso Centennial Museum and on the third floor of Burges Hall. The zoological collection includes preserved specimens and skeleton material representing the classes and orders of the vertebrates, arranged for study of comparative anatomy, and preserved material representing the phyla and classes of marine and land invertebrates. Dried specimens of the local flora, ferns from the various regions of North America, and preserved fungi of the local region make up the botanical collection.

The archeological collections have been greatly augmented through the gifts of the Women's Auxiliary of the College, and the permanent loan of the El Paso Archeological Collection. These collections include some of the finest archeological specimens to be found in Texas, especially those of Chihuahua, Chupadero and El Paso Polychrome pottery. The Museum has recently acquired some excellent El Paso Polychrome pottery and is constantly adding to the archeological collections by field work.

The Museum is being developed as an auxiliary instructional device, particularly in the science fields. The collections are therefore arranged with special preference to educational use.

#### DORMITORIES

Two modern residence halls, one for women and one for men, made possible through the Public Works Administration, are operated for the convenience of boarding students. The hall for men accommodates sixty students and the hall for women provides ample facilities for forty students. The dining room for both men and women is located on the first floor of the residence hall for women. The student rooms are attractively furnished. Each room has ample closet space and full-length mirrors are provided in each room of the hall for women. Separate study tables with large size study lamps are provided for each student. The buildings are fireproof, steam heated, and are located at a most convenient place on the campus. They are under the supervision of a manager well trained in dormitory housing and management.



## GENERAL POLICIES OF THE COLLEGE

### GENERAL STATEMENT

The College offers the degree of Bachelor of Science in Mining Engineering and the degree of Bachelor of Arts with liberal choices of major subjects in both instances. Students are encouraged to determine as early as is possible their choice in pursuing the work leading to each of these degrees.

The College seeks to provide liberal education for its engineering students. In scientific and technical subjects the student's knowledge is reinforced by such practice and application as to prepare him for entrance into the industries, especially those related to the natural resources of Texas. Various of the many industries of the region cooperate with the College to promote the technical and general knowledge of the students. The Faculty is experienced and expert.

A study of the requirements leading to the degree of Bachelor of Arts which are shown in tabular form will indicate the high standard of work as outlined. Students may be certain of obtaining a fundamental, dependable, and general education applicable to further progress in professions, teaching, and general activities of life.

Both the academic and technical courses offered in the Engineering School are sufficient to enable students wishing to graduate in other lines of engineering to complete in this College at least two years of work leading to degrees in the various scientific, engineering, and technical branches, as offered by other institutions.

The College of Mines and Metallurgy gives undergraduate instruction to resident students only. No extension classes are provided off the campus, nor are correspondence courses given. However, an attempt is made through general correspondence to aid worthy citizens of the State, who are engaged in mining or prospecting, by giving them suitable advice on application.

Without entailing graduate study at the College, the degree of Engineer of Mines is granted, subject to regulations made by the Faculty and approved by the Regents, to those graduates of the College prior to 1931, who have demonstrated proficiency in responsible positions and who have made a written contribution of some importance regarding some phase of their work.

As an agency for furthering the best development of the State, the principal duty and major interest of the College lie in advancing and perfecting knowledge of mining and metallurgy as applied to the natural resources of the State by means of research and cooperation with existing agencies and industries. Such effort excepts petroleum and water, which are covered by other agencies. Future efforts and developments will probably be largely concerned with

salts and minerals of potash, soda, fluorine, and mercury, as well as with those of gold, silver, copper, lead, and zinc.

The College also acts as an examination center for other agencies and institutions, such as the College Entrance Examination Board, the American College of Life Underwriters, etc.

#### SPECIAL LECTURES

During the long session, prominent lecturers, educators and specialists address the student body and Faculty. These lectures, held at special convocations, extra class meetings, seminars, or gatherings of the several student organizations, are free.

The student has also ample opportunity of participating in and enjoying the civic, cultural, and artistic efforts of the local community.

#### DETERMINATIONS AND TESTS

**General Principles.**—The College of Mines and Metallurgy is charged with teaching and research in mining, metallurgy, and allied subjects in order to further the safe and economical development and exploitation of the natural resources of the State. In order to advance this object the College is glad to receive gifts of materials for determinations or tests, whether or not they originate within the State. Such work will be done free of charge, but it should be borne in mind that the College will not compete with regularly established consultants, but will rather direct, supplement, and advance their work along new or more advanced lines. Persons shipping materials to the College must prepay all freight charges, and, upon agreement, the charges which they have to incur with outside consultants, such as charges for assays, etc. All such materials shipped to the College must be regarded as gifts to it, and become its property upon receipt. The determinative and testing work will be done largely by advanced students under the personal direction of a suitable professor in charge, and will be carefully checked to insure that the results are as precise as the material and tests warrant. Beyond this the College can not assume responsibility. Since all work done by students becomes part of their regular schedules, the rapidity of determinative and testing work depends upon the number of advanced students and the condition of their schedules. The College is glad to assist in the solution of any problems allied to its objectives, and to incorporate them in its regular instructional and research work. Shipments should be made, and correspondence and inquiries addressed, to the President, College of Mines and Metallurgy, El Paso, Texas.

**Rocks, Minerals, Fossils, Ores, Geological Specimens.**—Rocks, minerals, fossils, ores, and other geological specimens will be received gladly for determination and incorporation in the Museum and work-

ing collections. Acknowledgment is always accorded to donors. Materials are generally studied first from a geological and mineralogical point of view before being referred to other departments as indicated below. Collectors and museums may find it advantageous to correspond with the College to arrange exchanges and sales of important material.

**Analyses and Assays.**—The College will not make analyses or assays in competition with professional consultants. Those who have special reasons for wishing work done should write to the President explaining the circumstances.

**Metallurgical Tests.**—Shippers of ores desiring tests for process of treatment should see to it that the material submitted is a representative or average sample of the part of the mineral deposit concerned; otherwise, the results of the testing will be commercially worthless.

## EXPENSES

### FEES AND DEPOSITS

Registration and laboratory fees are payable on a semester basis at the beginning of each semester.

**Tuition.**—*Resident Students:* 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

Refunding tuition and fees is permitted only when classes have not been attended by the student.

*Non-Resident Students:* Each non-resident student who registers for twelve or more semester hours of work per semester is required to pay tuition in the amount equivalent to the amount charged students from Texas by similar schools in the State of which the said non-resident student is a resident, said amount to be determined and fixed by the Board of Regents, but in no event will such amount be less than that charged to students resident in Texas.

Each non-resident student who registers for less than twelve semester hours of work per semester is required to pay a sum pro-

portionately less than that prescribed for non-resident students taking twelve or more semester hours per semester, but in no event will such amount be less than \$7.50.

A non-resident student is defined to be a student of less than twenty-one years of age, living away from his family and whose family resides in another state, or whose family has resided in Texas for a period of time less than twelve months prior to the date of registration, or a student of twenty-one years of age or over who resides out of Texas or who has resided in Texas for a period of less than twelve months prior to the date of registration.

Information concerning the tuition required of non-resident students can be secured from the Business Manager.

**Laboratory Fees.**—For each course of three semester hours or less which is accompanied by laboratory work, a fee of \$2.00 is charged, and for each such course of four hours or more, a laboratory fee of \$4.00 is charged. If a student is allowed to drop a laboratory course, the fee for the semester not begun will be refunded.

**Deposits.**—All students not taking any laboratory course shall be required to make a deposit of six dollars. For students taking one or more laboratory courses the deposit required shall be eight dollars. These deposits less charges for breakage, loss, or damage to library books will be returned to the student at the end of the session or upon his withdrawal from the College. Students will be required to renew their deposits when charges have been made equal to or in excess of the original deposit.

Deposits will be refunded in cash in the Business Manager's Office for two weeks after the close of the session. Checks will be made for those which have not been called for within that time and will be mailed to the home address which the student gave at the time of his registration.

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

**Exemption of Ex-Service Men.**—Men and women enlisted in the service during the World War, who are citizens of Texas, are exempted from all fees, but not from deposits. To secure this exemption, the service record or discharge must be presented to the Business Manager each time the student registers.

**Students' Association Fee.**—The students' association fee is \$10. Payment of this fee at the beginning of each session is necessary in order that students may receive valuable training in extra-curricular subjects. In addition to the usual athletic and social activities, important training is given with respect to literary activities, publications, dramatics, current events, debate, advanced and special

application in science and engineering, etc. At least 50% of the subscription price of the "Prospector," College newspaper, shall be taken from the regular student association fee.

#### HOUSING REGULATIONS FOR STUDENTS

The College of Mines considers it a distinct advantage for all boarding students to live in the dormitories on the college campus. Every attention will be given for the improvement of the social and educational life of those who live on the campus.

The Texas College of Mines and Metallurgy has two very modern and conveniently located residence halls, one for men and one for women. Each of these halls is fireproof in construction, and modernly furnished, and adequate equipment is provided for supplying meals. Facilities also include recreation rooms which provide for a pleasant social life for all resident students.

A room deposit of \$5 is paid in advance in order to make proper room reservation. This deposit is refundable at the close of the semester, provided the student does not withdraw from the dormitory before that period, and provided there is no deduction for breakage. The fee will be returned to those students who can not be accommodated in the college dormitories and to those applicants who cancel their reservations before September 10.

In event any student desires to change his place of residence at the end of the semester, it is requested that a notice of ten days be given in order that the room in occupancy may be rented.

Room will be furnished in each of the dormitories at a rate of \$45 per semester. Board is provided at the rate of \$112.50 per semester. Room and board may be paid in monthly installments at the rate of \$35 per month in advance on the 5th, 6th, or 7th of each month. Unless proper arrangements are made, delinquency in payment will incur a fine of 25c for the first day and 10c for each day thereafter.

In event students are ill and live in a local hospital for more than three days, all charges for board are remitted. Only room rent is charged.

The management furnishes each student with sheets and pillow-cases. The student is requested to furnish blankets, bedspreads, towels, and such other personal linens as may be desired. Since the climate is delightfully mild during the winter months, students will not need more than two or three blankets.

#### OPPORTUNITIES FOR SELF-HELP

To a student who is working his way, a city of the size of El Paso offers a large field of opportunity. A students' labor bureau is maintained by the College, and every effort will be made to assist the

student, but the College assumes no responsibility except to the extent of trying to help. *No student should come to El Paso without funds sufficient for at least the first semester.*

#### LOAN FUNDS

**Academic Loan Fund.**—This fund is maintained 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.**—This loan fund is maintained by the Engineering Department for the benefit of engineering students who have been in attendance at least one year and who meet other special requirements. The fund is administered by the Dean of Mining and Metallurgy.

**Ex-Students' Memorial Loan Fund.**—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 loan 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.

**Robert E. Lee Loan Fund.**—The Robert E. Lee Chapter, No. 1060, United Daughters of the Confederacy, offers an annual loan of \$150. Applicants must be mining engineering students, must have completed one full year of attendance at the College of Mines and Metallurgy, and must be direct descendants of Confederate soldiers or sailors.

The loan is paid the student as follows: \$50 at the time of the Fall registration and \$12 each month during the school year. The loan is repayable without interest to the Chapter one year after graduation. After the first year following graduation, the loan or the unpaid portion of it will draw three per cent interest.

**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 Emergency Loan Fund.**—This loan fund was established by The Women's Auxiliary for The College of Mines of El Paso. Loans are made to needy students of high scholastic standing. The fund is administered by a Faculty Committee.

**SCHOLARSHIPS**

**High School.**—The College offers on the following terms and conditions one scholarship annually to the valedictorian, boy or girl, graduating from an accredited secondary school, the honor graduate being certified through the State Department of Education: 1. The school must be located in Texas and must hold at least fifteen units accredited by the State Department of Education. 2. The successful applicant must make the highest record among all the students graduating that calendar year, including winter, spring and summer graduating classes, and must make an average of at least 90 per cent in the senior year. If no member of the class makes an average of 90 in the senior year, no award will be made. 3. Under no circumstances are these scholarships transferable. 4. The financial benefit is exemption from the registration fee of \$50 in the College. 5. The scholarship is valid during the first Long Session after the holder's graduation from high school, and no other, and in no Summer Session. 6. The scholarship must be presented before or at the time the holder registers in the College. Holders failing to do this will pay the registration fee and will not be reimbursed therefor. 7. The conduct of scholarship holders must be satisfactory to the Faculty.

## REGULATIONS AFFECTING STUDENT LIFE

### STUDENT GUIDANCE

Special attention is given to students entering college for the first time. A member of the Faculty is assigned to each student as an adviser, so that the student will have a mature friend to whom he may submit his troubles and problems. The adviser earnestly endeavors to *know* his advisee and to effect an expeditious adjustment of the student to his new environment. In many ways he acts as a representative of the advisee's parents. His aim is to put the student in the way of developing all phases of his personality. The advisory work of members of the Faculty is considered one of their most important functions.

### PHYSICAL WELFARE

B. F. JENNESS, M.D.....	<i>Health Officer</i>
MACK SAXON.....	<i>Associate Professor</i>
JULIA I. KANE.....	<i>Instructor</i>
H. B. PHILLIPS.....	<i>Instructor</i>

Throughout their residence at the College all students are encouraged to develop physically to their best advantage. They are stimulated to participate in systematic exercises and sports.

Under the direction of Dr. B. F. Jenness, Health Officer, an effort is made to guide the physical development and health of all students by examinations, compilation of records, advice, health bulletins, and lectures. The Health Officer also acts as adviser on campus sanitation, and minor medical and surgical treatment of an emergency nature is given in the health office. The Health Officer may examine students in verification of suitable vaccination prior to their admission and require acceptable certificates.

Special attention is given to all freshmen, who are subject to physical examination.

### PHYSICAL TRAINING

Physical training is required of each student with rank below that of Sophomore in the College of Mines and Metallurgy, unless the student has credit for at least one year of physical training. At the discretion of the student's Dean, the physical training requirement may be waived in the case of students over 23 years of age. The exercises prescribed in physical training may be correctional, developmental, or recreational, and, dependent on individual conditions, may vary from absolute rest to strenuous exercise and sports. A student failing to pass the work in any semester will be required to repeat that semester's work. Attendance at lectures in hygiene



is required. A fee of \$2.00 per semester is required for every student registering for physical training. The course numbers for women are Physical Training 02 and 012; for men, Physical Training 01.

Attendance in physical training exercises is subject to the provisions under heading **Class Attendance and Absences**, page 39, with the exception that a student who must be absent from an exercise or exercises due to illness is required to report said case of illness to the Health Officer of the College immediately. Work missed due to illness may be made up, make-up cards to be secured from the instructor. Such absences must be made up within two weeks of return to class by attending one additional class in Physical Training for each absence.

#### **OFFICIAL NON-ATHLETIC EXTRA-CURRICULAR STUDENT ACTIVITIES**

**List of Organizations.**—Believing that students are greatly benefited by participation in extra-curricular activities, the College sponsors clubs and organizations of various types. Among those now active and officially recognized are the following:

##### **General Organizations**

- Academic Association
- Association for Childhood Education (student branch)
- Co-Ed Association
- College Band
- College Players (Dramatics)
- Economics Club
- Forensic Society (Debating)
- Glee Club
- Gold Diggers (Women's Pep Squad)
- International Relations Club
- Latin-American Club
- Pre-Law Club
- Pre-Medic Club
- Quill Club
- Rifle Club
- Scientific Club
- Students' Association (the organization of Student Government)
- Women's Athletic Association

##### **Publications**

- The Prospector (Weekly)
- The Flowsheet (Annual)

##### **Social Organizations**

- Alpha Chi (Honorary Society)
- Alpha Phi Omega Fraternity

Alpha Psi Omega (Dramatics)  
Delta Epsilon Beta Sorority  
College of Mines Exemplars  
Menorah Society  
Newman Club (Religious-Social)  
Omega Phi Delta Sorority  
Phi Beta Mex Fraternity  
Phi Sigma Psi Fraternity  
Pi Epsilon Pi Sorority  
Sigma Delta Pi Sorority  
S. P. Q. (Spanish Society)

**General Regulations.**—These extra-curricular activities of the non-athletic type are considered of such great importance that they are placed under the supervision of Faculty committees and Faculty sponsors and function under certain regulations for operation and the eligibility of participants. These special regulations are printed annually and are so easily available to all students that each student is charged with notice and knowledge thereof.

In addition to the foregoing, the officers of each organization are charged with the responsibility of acquainting all of their pledges and members with the rules of procedure for organizations and for social affairs as set up by the Faculty Committee on Student Activities and its sub-committees. These rules may be obtained from the chairman of the committee.

**Rules for Participation.**—1. The following are the activities to which the rules of participation are to be applied: (a) serving as editor, assistant editor, managing editor, business manager, or assistant manager on any official student publication; (b) membership in any listed organization for which funds are appropriated from Student Association fees, or participation in any local or out of town performance given by, or in the name of these organizations; (c) becoming a candidate for, or serving as president, vice-president, secretary, treasurer or manager in any listed organization for which funds are appropriated from Student Association fees; (d) serving as a member of student committees or councils; (e) being a member or serving in an official capacity in any listed organization which obtains no funds from Student Association fees. (Eligibility requirement *e* of paragraph 2 not applied in this classification.)

2. The consensus of the Faculty Committee on Student Activities is that participation by students in the various extra-curricular activities is a privilege that is to be earned by maintaining the standards of scholarship and conduct of the College.

On the basis of the foregoing paragraph the following students are eligible for such participation:

- a. Those who are not subject to any phase of disciplinary action.
  - b. Those who are taking twelve or more credit hours of regular college work.
  - c. Those who, during their last semester in attendance, passed a minimum of nine credit hours. Two consecutive terms of summer school may be counted as one semester.
  - d. Those who are not on Final Trial.
  - e. Those who have paid Student Association fees.
3. Eligibility requirements for holding office:  
 Only those who maintain a "C" average in any twelve credit hours may hold office in any extra-curricular activity. (See Rules for Participation, Sections a and c, for the definition of "office.")

Eligibility at the beginning of a semester holds good throughout the semester unless the student has become ineligible under the above provisions. A student ineligible at the beginning of a semester by reason of the foregoing regulations becomes eligible when the scholastic or disciplinary disability has been removed. First year students are eligible immediately upon entering, provided they are carrying the required twelve semester hours of credit work.

#### ATHLETICS

Rules and regulations governing intercollegiate athletics at the College of Mines and Metallurgy are those effective in the Border Intecollegiate 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 may be obtained from the office of the Registrar.

#### CONDUCT

It is assumed that students come to the College for a serious purpose, and that they will cheerfully conform to such regulations as may be, from time to time, made by the Faculty.

It is the aim of the Faculty so to administer the discipline of the school 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 a student in any dishonesty is held to be an equally serious offense.

On examinations or quizzes the student is expected: (a) to remain in the examination room until his examination is finished, (b) to

refrain from talking, (c) to refrain from bringing notes and books into the examination room.

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

*General Statement.*—1. Through matriculation at the College of Mines and Metallurgy, a student neither loses the rights nor escapes the responsibilities 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 discipline.

5. The College, in common with other institutions, has for its orderly and efficient conduct, special regulations additional to the laws of the land. These special regulations are so easily available to all students that each student is charged with notice and knowledge thereof.

6. Persons not registered in the College when accused of misconduct that affects college life and work, if former or prospective students, will have the known circumstances inscribed in their record as a presumption against their moral character. They will not be later admitted to the College unless they can prove moral desirability.

7. 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.

Students are trusted to conduct themselves properly. If, however, it becomes apparent that any student, by misconduct or by neglect of studies, is doing harm to himself, to others, or to the College, the Faculty will use appropriate means of discipline.

The following penalties may be imposed: admonition; probation; suspension of social rights and privileges; suspension of eligibility for official athletic and non-athletic extra-curricular 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 credit 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 suspension, excepting when summoned by an administrative official of the College, or when an appointment with an official has been previously arranged. A student while under suspension may not room or board in a 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 College of Mines and Metallurgy 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 its 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 cooperate 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 measures to force the payment of debts justly and regu-

larly 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.

## ADMISSION REQUIREMENTS

**Control Over Admission.**—Admission to the College is under the control of the Faculty and administered by the Registrar.

### GENERAL REQUIREMENTS

**Sex.**—Applicants of both sexes are admitted to all branches of the College on equal terms.

**Age.**—An applicant must be at least 16 years of age.

**Character.**—An applicant must furnish satisfactory evidence of good moral character.

**Vaccination.**—An applicant must present a certificate showing that he has had smallpox or has been successfully vaccinated or that attempts at vaccination have been made recently enough to satisfy the Health Officer.

**Hazing Pledge.**—The Legislature having forbidden hazing and rushing in State educational institutions under penalty of fine and imprisonment, each applicant is required to sign the following pledge:

“I pledge myself on my honor not to encourage or participate in hazing during my attendance at the College.”

### GENERAL SCHOLARSHIP REQUIREMENTS

**Units.**—Entrance requirements are stated in terms of units. A unit represents nine months of study in a subject in a secondary school, constituting approximately a quarter of a full year's work. A four-year secondary school curriculum should be regarded as representing not more than sixteen units of work.

**Unit Requirements.**—For admission fifteen units, with high-school graduation (see “Methods of Obtaining Admission Units”), are required as specified below. World history may not be counted if early or modern European history, either or both, is offered; and biology may not be presented by a student offering either botany or zoology. A student may enter with a condition in any one subject or group, except English, provided he has a total of at least fifteen acceptable units. In no case will more than four units be accepted from Section B.

*Admission Requirements*

	Units
1. English (required of every student).....	3
2. From the Mathematics Group in Section A below..	2
3. Two units from each of any two of the three other groups in Section A below ( <i>Foreign Lan- guage Group, Natural Science Group, Social Science Group</i> ), total.....	4
4. Additional from any group or groups in Section A.	2
5. Additional from Section A, or from Section B, or from Sections A and B together.....	4
Total.....	15

**Section A**

(The units column shows the number of units that may be offered in each subject.)

Subject	Units	Subject	Units
<b>English Group</b>		<b>Natural Science Group</b>	
English .....	3-4	Biology .....	1
<b>Foreign Language Group</b>		Botany .....	1
Czech .....	2-3	Chemistry .....	1
French .....	2-3	General Science .....	1
German .....	2-3	Physics .....	1
Greek .....	2-3	Physiography .....	½
Latin .....	2-3-4	Physiology and hygiene..	½-1
Spanish .....	2-3	Zoology .....	1
<b>Mathematics Group</b>		<b>Social Science Group</b>	
Algebra .....	1-1½-2	Early European history...	1
Plane Geometry.....	1	Modern European history..	1
Solid Geometry.....	½	World history.....	1
Trigonometry .....	½	English history .....	½-1
		American history .....	½-1
		Civics .....	½-1
		Economics .....	½

**Section B**

Subject	Units	Subject	Units
Agriculture .....	½-2	Public speaking .....	½-1
Arithmetic .....	½	Shorthand and typewriting..	1
Bookkeeping .....	1	Any other accredited subject	
Commercial geography .....	½	accepted by an accredited	
Commercial law.....	½	secondary school for its	
Drawing .....	½-1	diploma (except drill sub-	
Home economics .....	½-3	jects such as penmanship,	
Manual Training .....	½-1	physical education, military	
Music .....	1	training, etc.).....	½-1



**Quality Provisions.**—Quality, however, is more important than quantity. A course thoroughly mastered is worth more than one completed with low or even medium grades. Therefore any applicant ranking in the highest quarter of his graduating class in any fully accredited secondary school and also ranking in the highest quarter of the freshman class in the scholastic aptitude test given by the College in September may enter without admission conditions.

Furthermore, any conditional first-year freshman student (but not an "individual approval student") who makes, in the College, in his first long session or its equivalent, at least thirty semester hours with an average grade of *C* will thereby absolve his admission condition. Otherwise it must be removed as provided under "How to Absolve Admission Conditions."

**Advice as to Subjects in High School.**—The evidence is strongly in favor of the Group A subjects as giving the best preparation for college. High-school students expecting to go to college are therefore strongly advised to choose as nearly as possible all of their subjects from that group. Certainly those expecting to specialize in foreign languages in college should begin in high school, and those looking forward to college work in the sciences, mathematics, engineering, medicine, business administration, statistics, or law should take at least one and a half years of algebra and one year of plane geometry in high school.

#### METHODS OF OBTAINING ADMISSION UNITS

The admission units specified are usually obtained by graduation from an accredited school, or by examination, or by a combination of the two. Limited opportunity is also offered by the University's Extension Teaching Bureau at Austin for units to be made by correspondence study. In addition, a teacher's certificate known as a high-school certificate of the second class yields the holder a few units, depending upon the number of acceptable subjects taken for the certificate.

(1) **Graduation from an Accredited School.**—No credit may be obtained without graduation. Within the limits of the above list, graduates of schools on the approved list issued by the State Department of Education are credited with the subjects they have completed in which the schools are accredited. In order to determine these units, they are required to present statements of their work made out by the superintendent or principal on the official blank of the College, to be had of the Registrar. It is of the highest importance that the applicant send this blank, properly filled out, to the Registrar not later than September 10. Valuable time will be lost if he does

not do so, and more if he has to send for it after he arrives. Without it he cannot be admitted at all.

The College has no accredited schools outside Texas, but it will usually accept, for work done in a school in another state, credits granted by the state university of that state; or, in the absence of such an institution, by another institution of recognized standing acquainted with the work of the school in question.

(2) Examination.—Any or all scholarship requirements may be met by passing the admission examinations. To obtain credit in any subject, the applicant must make a grade not lower than *D*. In grading papers in all subjects, account will be taken of the applicant's use of English. Excellence in one subject will not make up for deficiency in another.

Every natural science examination paper must be accompanied by a laboratory notebook.

Admission examinations are held three times a year, in September, January and April.

The April series is given under the direction of the State Department of Education at accredited schools and at other approved places. Application to take these examinations should be made to the State Superintendent of Public Instruction, Austin.

The fall and winter series are held only at the College and begin on September 8 and January 23, respectively. Requests for full information in regard to these series should be addressed to the Registrar of the College.

It is strongly urged that applicants desiring to enter the College in September attempt the April examinations. It is permitted to divide the subjects between the spring and fall examination periods, but credits obtained at the spring examinations lapse unless the applicant passes the deferred examinations the following fall; and credits obtained at the fall examinations, if less than the total number required, are not valid later.

*Junior-Senior High-School Graduates.*—Applicants who have passed through and graduated from a junior-senior high-school organization in which the usual type of college entrance subjects were not given in the junior school may be admitted on twelve acceptable units completed in the senior high school (the last three grades), including the unit requirements listed under "Unit Requirements," plus three unspecified units from the junior high school.

#### ADMISSION BY INDIVIDUAL APPROVAL

At the discretion of the Registrar, an applicant over 21 years old may be admitted without examination. Such admission does not confer special privileges but, on the contrary, puts the applicant under special obligations. Each applicant proceeds as follows:

1. He must make application on the official blank (to be had of the Registrar), giving the information there desired.

2. He must furnish evidence that he has substantially covered the ground of the units required of other candidates, and 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.

3. He must show, by the writing of a composition, that he has an adequate command of English.

Applicants are advised to send their applications and credentials in advance of their coming to El Paso.

Admission by individual approval contemplates applicants who have not recently attended school and therefore could not pass the admission examinations.

Students so admitted may register for courses other than freshman courses only with the approval of the chairman of the department concerned and the Registrar, given because of evidence of special fitness. This approval can rarely be granted, however, because most individual approval students have less preparation than any other students in the College.

Students admitted by individual approval cannot become candidates for degrees until they have satisfied the admission requirements. As to how to remove admission conditions, see the following section.

#### HOW TO ABSOLVE ADMISSION CONDITIONS

**General.**—Admission conditions may be removed (1) by taking, with the approval of the Registrar, the regular admission examination in subjects not studied by the student in the College; (2) by correspondence work (a few courses for this purpose are offered in the University Bureau of Extension Teaching); (3) by counting work done in the College. If the second or third plan is used, the prescribed admission units must be satisfied by work in the corresponding subjects in the College; the elective admission units may be absolved by any College work. For the purpose of satisfying admission conditions, a course of six semester hours counts as the equivalent of one and one-half units. Courses used to absolve admission requirements will not count also toward a degree. If a student does not satisfy his admission condition within two years after admission to the College, he must present one additional unit (elective) for each year that his condition remains unsatisfied. Conditions may not be removed by taking admission examinations after the student has completed sixty semester hours of college work. They may then be removed only by work done in the College.

**Individual Approval Students.**—Students admitted by individual approval to English 1 will, on completing that course, be given credit also for three admission units in English. Similarly, students admitted to freshman mathematics will, on completing that course,

receive credit also for two admission units in algebra and one in plane geometry. Further, students admitted, without any entrance credit, to the College by individual approval and making during their first long session, or its equivalent, at least thirty semester hours with an average grade of *C* will in addition absolve the admission condition in the six elective units. If this average is not made, the six elective units (see "Scholarship Requirements") must be made up by one or more of the methods given in the preceding paragraph. The remaining prescribed units must be made up in one or more of the ways explained in the preceding paragraph. The penalties and restrictions of that paragraph also apply to individual approval students.

#### STUDENTS FROM OTHER COLLEGES

A student seeking admission from another college must present: (1) a letter of honorable dismissal; (2) a vaccination certificate; (3) an official transcript of his entire college record, including his admission units. Much trouble and time will be saved by sending this official record to the Registrar not later than September 10. Students are not allowed to register until the proper certificates are presented.

Students in other institutions who desire a degree from the College should not wait until their senior year to transfer. If they do, they may not be able to complete all remaining requirements in one year.

A student who has failed in his work at another institution and is not entitled to continue there will not be admitted to the College. Others who have failed may be refused admission, or may be admitted on "special observation" or "final trial" or on any other condition that may seem desirable.

In as much as students taking all their work in the College must have a *C* average for a degree, only such work completed in another institution as altogether averages the equivalent of our grade of *C* will be accepted here.

An applicant who has attended another collegiate institution is not at liberty to disregard his collegiate record and apply for admission to the College on the basis of his high-school record, but is subject without exception to the regulations given above.

All credits given students from other colleges are conditional. If their work here is of low grade, the amount of credit given to individual students may be reduced.

## MINING AND METALLURGY

The unit requirements for admission to Engineering are as follows:

Subject	Units
1. English .....	3
2. Mathematics:	
Algebra .....	1½
Plane Geometry .....	1
Solid Geometry.....	½
	}..... 3
3. Two units from each of any two of the three other groups in Section A (Foreign Language Group, Natural Science Group, Social Science Group), total.....	4
4. Additional from any group or groups in Section A.....	1
5. Additional from Section A, or from Section B, or from Sections A and B together.....	4
	—
Total.....	15

Under 5 above, as many as two units each may be offered in drawing and manual training.

All other provisions with reference to admission to the College apply also to admission to Mining and Metallurgy, except that neither the English nor the mathematics requirement may be absolved under "Quality Provisions."

## SCHOLASTIC REGULATIONS

### REGISTRATION

For the Long Session of 1938-1939 the registration days are as follows:

First semester: September 14-15, Wednesday-Thursday.

Second semester: January 25-27, Wednesday-Friday, registration of new students.

January 30, Monday, registration of readmission students.

**Late Registration.**—Students are urged to register during the first days set aside for registration. Late registration necessarily handicaps the student because of his missing classes. The difficulty in scheduling classes due to closed sections may give the student an undesirable schedule which might have been avoided if early registration had been made. Several days have been set aside for late registration, chiefly to benefit those students who, for some reason, cannot register at the beginning. It is a distinct advantage to register as early as possible.

**Non-Credit Students.**—Permission to attend a course or courses without credit is sometimes granted. A student not registered for credit in the College is required to pay the same fees and deposits as a regular student.

Attendance by a registered undergraduate as a visitor in a course is allowed only with the approval of his Dean and under special restrictions. The payment of regular fees and deposits is required.

### EXPLANATION OF COURSES

**Definitions.**—The unit of measure for credit purposes is the semester hour, which means one hour of recitation (or the equivalent in shop or laboratory work) per week for one semester of eighteen weeks, unless otherwise specified. For each classroom hour two hours of preparation are expected. Three hours of shop or laboratory work are counted equivalent to one classroom hour and the preparation for it.

Most courses meet three hours a week, having a credit value of three hours for one semester, or six hours for both semesters.

**Notation.**—Courses are designated by numbers which indicate both rank and credit value in semester hours, and by letters which indicate the part of a course referred to or the semester or term in which it is given.

**Rank and Credit Value.**—A number between 200 and 299 indicates a value of two semester hours, one between 300 and 399 a value of three semester hours, etc., except that when the value is six

semester hours the numbers between 0 and 99 are used, instead of the numbers between 600 and 699. The two digits on the right indicate the rank of the course; if between 0 and 9 the course is of freshman rank; if between 10 and 19, of sophomore rank; if between 20 and 59, of junior rank; if between 60 and 79, of senior rank.

A student may not receive credit in one department for two courses whose numbers have the same right-hand digits—for example, Physics 12 and Physics 812.

No courses will be given which carry only one semester hour of credit.

Certain beginning or freshman courses are not numbered, but are marked *A* and have a value of six semester hours.

Courses of junior or senior rank are referred to as **advanced courses**.

**Use of Letters.**—The lower-case letters *f* (first semester), *s* (second semester), following a course number show the semester of the long session in which the course is given. The notation *fs* indicates that the course is given in the first semester and repeated in the second semester. A course not so designated runs throughout the long session and in such a case the lower-case letter *a* means the first half of such a course, the letter *b* the second half. For example, Chemistry 422 is a course running through the entire long session and carrying four semester hours of credit and English 1as is the first half of English 1 (freshman English) given in the second semester and carrying three semester hours of credit, which, however, can not be counted for graduation until English 1b, the second half of English 1, has been completed.

#### 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.

**Other Students.**—The normal load for beginning freshmen is fifteen hours. Unusual circumstances sometimes make it necessary for a student's program to include sixteen or seventeen hours. A maximum of eighteen hours may be taken only with the consent of the Dean.

After the first semester or summer session at the College, students may not register for more than fifteen hours per week unless during the preceding semester they have made a score of 252 grade points, or 202 points during the preceding summer session. Students may

not register for more than eighteen hours per week unless the score has been 297 points for the preceding semester, or 234 points in the preceding summer session.

In no case may a student register for more than twenty-one semester hours per week.

#### ADDING AND DROPPING COURSES

After his registration for the session a student may add a course only with the approval of his Dean. No course may be added, however, after the dates specified in the Calendar.

For weighty cause, a student may drop a course with the consent of his Dean.

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 or for lack of preparation.

A student in attendance during the long session shall not be permitted to drop a course within 30 days of the beginning of the final examinations for that semester.

#### CLASS ATTENDANCE AND ABSENCES

**Absence from Class.**—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.

When the number of absences exceeds one-eighth of the total number of exercises in any subject during a semester, the student concerned will be reported to his Dean who may exclude him from further participation in all classes, or who may give him special permission to continue. Such permission may be contingent upon: (1) a demonstration of completion of all work in a subject, including that missed because of absence; and (2) a demonstration of competence in any subject concerned, which may include a special examination, the scope and time of which will be determined by the Dean.

A student excluded from classes for excessive absences in any subject will immediately lose all absence privileges in all subjects for the remainder of the semester, and will thereafter be subject to immediate and final dropping from the rolls of the College for further absences. Students on Special Observation or Final Trial will be given no absence privileges.

Absences incurred by a student while acting as an authorized representative of the College will receive special consideration from the Administration.

In the interest of the public health, every student is required to report promptly to his Dean all absences due to illness of any kind.

A student is held responsible for absences incurred because of late registration.



**Absence from Quiz.**—A student absent from an intra-semester examination or quiz is graded zero on that quiz, unless for urgent reason he is given by the instructor the privilege of taking a postponed examination at a time to be set by the latter.

**Tardiness.**—Serious or repeated tardiness will be considered as equivalent to absence, and reported as such.

#### OFFICIAL BULLETIN BOARDS

Official bulletin boards are maintained in the several buildings and departments. These are used principally for posting official notices of changes of regulations, class meetings, special official meetings, etc., as found necessary by the Regents and Faculty. Such notices have the full official force and effect. Students are held responsible for knowledge of and compliance with such notices.

#### EXAMINATIONS

**Semester Examinations.**—Wishing to encourage the student to secure a general view of the whole subject and readiness in the use of it, the Faculty has ruled that exemptions from examinations may not be given. To encourage preparation for examination, 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.

**Absence from Semester Examinations.**—A student who is compelled to be absent from a semester examination on account of sickness or other imperative cause should petition his Dean, beforehand if possible, for permission to postpone the examination. In cases of illness the petition must have the approval of the Health Officer. Following permission for postponement from his Dean, the student should also secure from him permission to take the postponed examination either at the next regular examination in the subject, or in any event, not later than twelve months after the examination was postponed, and should file notice thereof with the Registrar not later than seven days before the beginning of the examination period concerned.

A student absent from a semester examination without his Dean's excuse is graded *F* and required to take the semester's work over again if he desires credit for it.

**Postponed and Removal-of-Condition Examinations.**—Postponed and removal-of-condition examinations are held at regular dates fixed by the Calendar. A student may take one at another time only at a regular examination in a course and then only with the permission of his Dean. In any event, he must file an application for examination with the Registrar on or before the seventh day preceding the first day of the examination period.

A student who takes and fails to pass a removal-of-condition examination will be given a grade of *F* in the course. Absence from one of these examinations, after permission has been granted, will have the same effect as a failure, unless the student presents a satisfactory excuse to his Dean within a week after the date of the examination.

**Advanced Standing Examinations.**—Applications for advanced standing examinations must be approved by the chairman of the department, by the student's Dean, and filed with the Registrar at least seven days before the examination period as fixed by the Calendar. Credit has rarely been given for courses by examination, and will be given still more rarely in the future. In fact, advanced standing examinations for other than courses corresponding to admission credits will be allowed only in very exceptional cases, and it may be expected that they will be searching in character, that in length they will extend to four hours for each semester covered, and that the papers will be graded with great strictness.

In order to pass an advanced standing examination a grade of at least *B* must be secured.

### GRADES OF SCHOLARSHIP

**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* (bad failure, and, if a semester grade, without further current privileges in the course).

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 until both semesters of the course have been completed.

**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 that 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, 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.

**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 his Dean.

**Uncompleted Work.**—The Grade of Incomplete: The grade of *Incomplete* may be obtained by three distinct and separate methods:

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

2. At the end of any semester a student may be given a grade of *Incomplete* if he unavoidably is absent from the semester 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-incomplete 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, it must be removed before grades are recorded for the fall semester following.

When the student is given the grade of *Incomplete*, grade points for the course will be considered as if the grade were "*F*" in calculating the standing of the student.

A student on Special Observation whose score cannot be determined because of grades of *Incomplete* will be placed on Final Trial; and a student on Final Trial whose score cannot be determined because of grades of *Incomplete* will be dropped from the rolls of the College.

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 at 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.

### REPORTS

**Intra-Semester Reports.**—On November 14, and March 27 reports are due on all students making a grade of *D* or below from instructors to the Registrar, who will then issue notices to parents or guardians of students doing work below the passing grade (*D*). Grades reported at intra-semester periods represent the average grade to date in the given course.

**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.

### HONORS

At the end of each semester, beginning the second semester of 1934-1935, the Registrar will publish an honor roll. To be eligible for this honor roll, a student must be registered for not less than 15 semester credit hours, pass all work taken, and attain an average of 18 grade points per semester hour in all work taken for credit during the semester. The grade point system shall be used in determining the average number of points per semester hour attained by the student.

Furthermore, if a student graduates from the College of Mines and Metallurgy and has six times, or more, attained the semester honor rolls after May 1, 1935, his or her name shall appear in the catalogue as part of a permanent honor roll.

### CLASSIFICATION OF STUDENTS

Students are classified as regular and irregular. Under *Regular Students* are grouped those taking twelve or more semester hours of work prescribed for a degree. Under *Irregular Students* are grouped those taking less than twelve semester hours.

They are further classified as first-year, second-year, and upper division students, dependent on their time of residence at a college or university. A first-year student is one who has resided not more than two semesters; a second-year student is one who has resided two semesters and not more than four semesters; upper division students are those who have resided more than four semesters. A term of the summer session is equal to one-half semester.

Students are divided into freshmen, sophomores, juniors, and seniors as a matter of convenience and prerequisites.

**Engineering Students.**—Until the completion of thirty semester hours of prescribed work in addition to the full admission requirements, engineering students are freshmen; then, until sixty-six semester hours are completed, sophomores; then, until one hundred and four semester hours are completed, juniors; then, seniors until graduation.

**Other Students.**—Until the completion of thirty semester hours in addition to the full admission requirements, a student is classified as a freshman; then, until sixty semester hours are completed, a sophomore; then, until ninety semester hours are completed, a junior; then, a senior until graduation.

#### STANDARD OF WORK REQUIRED

**Definitions.**—The grades given are defined under "Grades of Scholarship."

A course with one classroom hour for two semesters when passed implies a credit of two semester hours; a course with three classroom hours for one semester carries a credit of three semester hours, and so on. But in the preceding cases it is also expected that the student will spend two hours of preparation for each classroom hour. In general, when the sum of the clock hours spent in lecture, recitation, laboratory and preparation is divided by three the result will be approximately the semester hours of credit for the course.

In scoring, grades will count as follows: A, 21 points per semester hour; B, 18 points; C, 15 points; D, 12 points; E, 6 points; F, 0; Inc., 0. Zero (0) courses are not counted in scoring.

**Required Minimum.**—To avoid Special Observation, Final Trial, or being dropped from the rolls of the College for scholastic undesirability, the student must meet the following standard of work at the intra-semester and semester report periods.

Students taking less than twelve semester hours must pass in all the work taken and must make a grade point average per semester hour not less than that required of other students of the same length of attendance at a college.

First-year students taking twelve or more semester hours must make a score of either 108 points in twelve semester hours, or 126 points in nine semester hours.

Second-year students taking twelve or more semester hours must make a score of 126 points in twelve semester hours.

Upper division students taking twelve or more semester hours must make a score of 144 points in twelve semester hours.

In interpreting this section, a student taking twelve or more credit hours with an included course of four or more credit hours shall not be placed on Special Observation or Final Trial, or be dropped from

the rolls for scholastic reasons if he makes, in the courses taken, not less than the following grade point count: 117 points for first-year students, 135 points for second-year students, or 162 points for upper division students, provided he does not have a grade of *F* in more than one course.

**Conferences.**—The Deans of the Divisions of Arts and Education, and Mining and Metallurgy will confer with all students in the College who are doing unsatisfactory work, both at the intra-semester dates and at the end of the semester. The object of these conferences will be to advise the student for his improvement, to offer him opportunity for renewed effort with such assistance as parents and instructors may be able to furnish, and to encourage or to warn him as the case may demand. First-year students also have the opportunity of conferring with Faculty Advisers.

**Failures.**—The College has prescribed a certain minimum of work which a student must pass at the intra-semester dates and at the end of the semester or be dropped from the College. (See "Required Minimum of Work" rule.) Before a student is dropped from the College for failure in work he will be given two trials or chances, called respectively "Special Observation" and "Final Trial." This will not apply to a student who fails in all his courses. In such case, if the failure occurs at the end of a semester, the student must withdraw until he satisfies the requirements of "Return After Failure."

**Special Observation.**—The first failure of a student to pass in the required minimum of work will place such a student under Special Observation, which is a first warning to both student and parent or guardian of unsatisfactory work.

Failure to pass in the required minimum of work at any time after the first day of Special Observation puts the student on Final Trial. Sometimes the first failure is so serious that the parents are advised to withdraw the student at once from the College. Immediate withdrawal after serious failure often enables him to make other arrangements for his education without loss of time. A student on Special Observation whose score cannot be determined because of postponed (Inc.) grades is put on Final Trial.

**Final Trial.**—A student on Special Observation who withdraws from the College before the end of the semester and who re-enters within four semesters is put on Final Trial. A student on Special Observation whose score cannot be determined because of postponed or incomplete grades will be put on Final Trial. A student on Special Observation who fails to pass in the required minimum of work is put on Final Trial. This is a last and final warning to student and parent. Final Trial will last for a consecutive period of enrollment equivalent to two semesters, after which the student

will be restored to good scholastic standing. A student on Final Trial who fails in the required minimum of work will be dropped from the College. A student on Final Trial who withdraws from the College may not register again before the beginning of the corresponding semester in the next long session unless he shall remove his deficiencies in an intervening summer session as prescribed hereafter.

A student on Final Trial whose score can not be determined because of postponed (Inc.) grades will be dropped from the rolls of the College.

**Restoration to Good Standing.**—A student who has been placed on Special Observation or Final Trial will be restored to good standing at the end of any semester in the long session in which he makes a *C* average in at least twelve semester hours. If he be registered for less than twelve but for nine or more semester hours, he must pass all work taken with a grade of *C* or better and in addition must make at least 171 grade points.

**Class Attendance.**—The College expects, and has a right to expect, that a student on Special Observation or Final Trial will attend classes with unflinching regularity, will be very punctual in reports and other written work, and will make every effort to show marked improvement in his courses. A failing student unwilling to put forth every effort to keep up with his classes should be withdrawn from the College.

In case of illness or any other imperative reason for absence, such a student should file a written explanation of each absence with the Registrar to be entered upon his record card.

**Return after Failure.**—A student who has withdrawn while on Special Observation or Final Trial, or who has been dropped, may register subsequently in good scholastic standing only if he has remained continuously out of school as long as four semesters of the long session.

A student on Final Trial who withdraws during the first semester or who is dropped by reason of failure during or at the end of the first semester may register again not earlier than the next summer session. If he attends the summer session he may register as on Special Observation at the beginning of the next long session provided he makes for the summer session scores of 144 points in twelve semester hours if a first-year student, or 162 points in twelve semester hours if a second-year student, and of 180 points in twelve semester hours in other cases. If he does not attend the summer session, or if he attends the summer session and makes less than the foregoing scores, he may register as on Final Trial at the beginning of the long session.

A student on Final Trial who withdraws during the second semester

or who is dropped by reason of failure during or at the end of the second semester may not register earlier than the second semester of the next long session unless he attends the intervening summer session and makes scores of 144 points in twelve semester hours if a first-year student, of 162 points in twelve semester hours if a second-year student, and of 180 points in twelve semester hours in other cases. Should he make such a record he may register as on Final Trial at the beginning of the next long session. Should his record exceed the foregoing by 12 respective points he may register on Special Observation. Otherwise he may register not earlier than the beginning of the succeeding second semester and then only on Final Trial.

A student who is on Final Trial at the end of a second semester may register as on Special Observation at the beginning of the next long session if he attends the intervening summer session and makes, in the work of the second semester and the summer session combined, a score of 195 points in fifteen semester hours if a first-year student, of 210 points in fifteen semester hours if a second-year student, and of 225 points in fifteen semester hours in other cases.

A student who is on Special Observation at the end of a second semester may register in good scholastic standing at the beginning of the next long session if he attends the intervening summer session and makes, in the work of the second semester and the summer session combined, a score of 144 points in fifteen semester hours if a first-year student, of 162 points in fifteen semester hours if a second-year student, and 180 points in fifteen semester hours in other cases.

A student shall not receive credit for work done at another institution during a time when he was ineligible to attend the College of Mines and Metallurgy, nor will the College admit a student from another institution who is ineligible to continue there.

The foregoing requirements and the rules governing Special Observation and Final Trial apply to all students, and the Deans are without discretion except in the case of mature students over 25 years of age.



## **REQUIREMENTS FOR DEGREES AND CERTIFICATES**

### **STUDY OF CONSTITUTIONS OF UNITED STATES AND TEXAS REQUIRED**

The Forty-fifth Legislature enacted a law requiring all students entering tax supported educational institutions after September 1, 1937, to secure six semester hours of credit in Federal and Texas Constitutions before being awarded degrees or teachers' certificates. The completion of Government 10 satisfies the requirements of this law.

The Forty-first Legislature required three semester hours of credit in Government for students entering tax supported institutions before September 1, 1937. The completion of Government 310 satisfies the requirements of this law.

### **ENGINEER OF MINES**

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

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

The completion of one of the following four-year curricula and the satisfaction of other general requirements lead to the degree of Bachelor of Science in Mining Engineering. If a student makes an average grade of less than twelve grade points when first taking the courses set forth in the first three semesters of any one of these curricula he will be considered as lacking in aptitude for the degree, and he and his parents or guardians will be advised that he cannot be allowed to continue. He may be permitted to register for other majors of study.

Each student anticipating a degree of Bachelor of Science in Mining Engineering in either the Mining, the Metallurgy, or the Mining Geology option must spend at least one summer in practical work related to the degree desired and must furnish satisfactory evidence to the proper authorities of a summer so spent.

*Requirements for Degrees and Certificates* 49

**First Year**

First Semester	Sem. Hrs. Credit	Second Semester	Sem. Hrs. Credit
Chemistry 801a.....	4	Chemistry 801b.....	4
Drawing 301.....	3	Drawing 302.....	3
English 1a.....	3	English 1b.....	3
Geology 1a.....	3	Geology 1b.....	3
Mathematics 803a.....	4	Mathematics 803b.....	4
Physical Training.....	..	Physical Training.....	..
	— 17		— 17

**Second Year**

First Semester	Sem. Hrs. Credit	Second Semester	Sem. Hrs. Credit
Chemistry 311.....	3	Chemistry 413.....	4
Engineering 312.....	3	Engineering 313.....	3
English 310.....	3	Mining 310.....	3
Geology 316.....	3	Geology 217.....	2
Mathematics 13a.....	3	Mathematics 13b.....	3
Physics 812a.....	4	Physics 812b.....	4
	— 19		— 19

SUMMER WORK: Engineering 414: Eight hours a day  
for four weeks..... 4

**Third Year**

Mining Option

First Semester	Sem. Hrs. Credit	Second Semester	Sem. Hrs. Credit
Chemistry 323.....	3	Chemistry 324.....	3
Engineering 832a.....	4	Engineering 832b.....	4
Geology 321.....	3	Geology 322.....	3
Mathematics 325.....	3	Physics 221.....	2
Metallurgy 321.....	3	Metallurgy 423.....	4
Mining 321.....	3	Mining 322.....	3
	— 19		— 19

SUMMER WORK: Mining 224: Eight hours a day for  
two weeks..... 2

## Metallurgy Option

First Semester	Sem. Hrs. Credit	Second Semester	Sem. Hrs. Credit
Chemistry 323.....	3	Chemistry 324.....	3
Chemistry 325.....	3	Chemistry 326.....	3
Engineering 832a.....	4	Engineering 832b.....	4
Mathematics 325.....	3	Physics 221.....	2
Metallurgy 321.....	3	Metallurgy 423.....	4
Mining 321.....	3	Geology 322.....	3
	19		19

## Mining Geology Option

First Semester	Sem. Hrs. Credit	Second Semester	Sem. Hrs. Credit
Chemistry 323 .....	3	Chemistry 324.....	3
Engineering 832a.....	4	Engineering 832b.....	4
Geology 321.....	3	Geology 322.....	3
Mathematics 325 .....	3	Geology 427 or 423.....	4
Metallurgy 321.....	3	Physics 221.....	2
Mining 321.....	3	Mining 322.....	3
	19		19

SUMMER WORK: Mining 224: Eight hours a day for  
two weeks ..... 2

## Fourth Year

## Mining Option

First Semester	Sem. Hrs. Credit	Second Semester	Sem. Hrs. Credit
Engineering 350.....	3	Engineering 354.....	3
Geology 264.....	2	Engineering 431.....	4
Government 10a.....	3	Government 10b.....	3
Metallurgy 261.....	2	Mining 67b.....	3
Mining 67a.....	3	Mining 268.....	2
Mining 260.....	2	Mining 361.....	3
Economics 312.....	3	Mining 074 (Senior Trip)..	0
	18		18

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Metallurgy Option

First Semester	Sem. Hrs. Credit	Second Semester	Sem. Hrs. Credit
Engineering 350.....	3	Engineering 431.....	4
Government 10a.....	3	Government 10b.....	3
Metallurgy 362.....	3	Metallurgy 264.....	2
Metallurgy 463.....	4	Metallurgy 473.....	4
Metallurgy 361.....	3	Economics 312.....	3
Mining 67a.....	3	Mining 67b.....	3
		Metallurgy 074 (Senior Trip) .....	0
	—		—
	19		19

Mining Geology Option

First Semester	Sem. Hrs. Credit	Second Semester	Sem. Hrs. Credit
Economics 312 .....	3	Engineering 354.....	3
Government 10a .....	3	Government 10b.....	3
Geology 264.....	2	Geology 423 or 427.....	4
Geology 463.....	4	Geology 365 .....	3
Geology 361.....	3	Mining 268.....	2
Mining 67a.....	3	Mining 67b.....	3
		Geology 074 (Senior Trip) .....	0
	—		—
	18		18

**GRADUATE COURSES**

Through a special arrangement with the Graduate School of the University of Texas, provision is made for graduate credit in certain departments. Students are advised to secure further information from the Registrar.

## BACHELOR OF ARTS

**General Provisions.**—No degree will be conferred except publicly and at Commencements.

All candidates are expected to attend in person the Commencement at which their degree is to be conferred unless absent for good cause, in which case they will petition the Registrar at least one week in advance, giving the reason for their absence.

No degree will be conferred without a residence of at least two long session semesters, or five summer session terms, or one long session semester and two summer session terms or an equivalent.

At least thirty semester hours of work counting toward the degree must be completed in residence.

At least twenty-four of the last thirty semester hours offered must be taken in the College.

At least six semester hours in advanced courses in the major subject must be completed in residence.

Not more than thirty semester hours of credit offered for a degree shall have been secured from other institutions by extension, correspondence, or both.

A student registering either for the first time or in a later year may obtain a degree according to the requirements of the catalogue then in force, subject, however, to the restriction that all the requirements for a degree must be completed within six years of the date of the catalogue chosen.

If any semester of a freshman course, taken to meet the requirements under Course Outlines, is finished after ninety semester hours have been completed, that semester of the course will not count toward the required minimum of 120 semester hours. If any other course of freshman rank is finished after ninety semester hours have been completed, it will count for only two-thirds of its normal value. If a condition in a course of freshman rank is removed during the session of graduation, that course will count for only two-thirds of its normal value. A condition, made by a candidate in the last semester of his session of graduation, may not be removed until the succeeding time for removal of conditions.

**Special Provisions.**—Upon completion of sixty semester hours of work, including the courses specified for the first and second years in the outline for one of the various majors, the student must petition the Faculty through the Registrar for permission to *become a candidate for a degree*. This petition will not be accepted unless the average grade of such work completed is *C* or better and all admission requirements have been satisfied.

Upon completion of ninety semester hours of work as set forth in the outline for the chosen major, the student will again petition the Faculty through the Registrar for permission to *continue his candi-*

*dacy for a degree.* This petition will not be accepted unless the average grade of such work completed is *C* or better and all admission requirements have been satisfied.

The student must make an average of at least fifteen points per semester hour in the courses taken at the College which are required and counted toward the degree, an *A* grade on a semester hour counting as 21 points; a *B* grade as 18 points; a *C* as 15 points; a *D* as 12 points; an *E*, an *F*, or a *G* as zero. The Faculty reserves the right to demand grades of *C* or better in certain courses when they are important as prerequisites or as parts of majors or minors.

A student majoring in a department which requires a major examination must pass a general four-hour written examination in his major subject on the date fixed in the Calendar next preceding the completion of the work required for the degree. At the discretion of the department concerned, one hour of oral examination may be substituted for one hour of the written examination. The chairman of the department in which the major is taken fixes the place of the examination and supervises the giving of it. In setting this examination, the Faculty of the department will take into account the particular courses elected by the student, but will expect a more mature and comprehensive knowledge than is required in the regular semester examinations.

A student who fails to pass the major examination may take the examination on the next date provided in the Calendar for such examinations, but in no case will a special examination be given.

A study of the Constitutions of the United States and of Texas is required by law.

**Course Requirements.**—In order to secure a Bachelor of Arts degree, the following minimum course requirements must be met:

1. \*Twelve semester hours in English (English 1 and 12).
2. \*Twelve semester hours of numbered courses in one foreign language, either modern or ancient. (The completion of course 12 will be considered to have satisfied this requirement.)
3. \*Six semester hours in each of any two of the natural (laboratory) †sciences.
4. \*Six semester hours in mathematics or six semester hours in numbered courses of Latin or Greek or German. Any hours of Latin or Greek or German offered in satisfaction of the mathematics requirement may not be used to satisfy Requirement 2 or as a part of a major or minor.
5. \*Six semester hours in ‡social science in addition to requirements 6 and 7.

\*These requirements should be completed by the end of the second year.

†Botany, biology, chemistry, physics, geology, zoology.

‡Economics, government, history, philosophy, psychology, sociology.

6. \*\*Six semester hours in American and Texas government (Government 10).
7. \*Three semester hours in philosophy or psychology.
8. §Not less than twenty-four semester hours in the major subject, at least twelve of which must be of advanced courses.
9. §Not less than eighteen semester hours in a minor subject or group as set forth in the Course Outline for the major subject. At least six of these eighteen semester hours must be of advanced courses.
10. §Not less than a total of thirty semester hours of advanced courses and not more than a total of sixty-six semester hours in courses in the major and minor fields.
11. Enough other courses to make at least one hundred and twenty semester hours, all the foregoing being subject further to the additional requirements set forth in the Course Outline.
12. \*Physical Training as prescribed in the Course Outline, no credit.

**Course Outlines.**—A student should choose his major subject as early as possible. He must then pursue it in accordance with the outline provided for that subject.

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\*These requirements should be completed by the end of the second year.

§The students taking Chemistry 801, 811 and 413 may count the last three semester hours as advanced. Students taking Mathematics 803 and 13 may count the semester hours in excess of the first twelve as advanced.

\*\*For students enrolling after September 1, 1937. Students enrolling prior to September 1, 1937, are required to present only three semester hours (Government 810).

**BUSINESS ADMINISTRATION MAJOR**

Minor in \*Social Science

**Requirements**

	<b>Hours</b>
1. Business Administration 311, 314, 432, and fourteen additional semester hours of business administration, at least eight of which must be advanced.....	24
2. *Social Science, eighteen semester hours, six of which must be advanced.....	18
3. English 1 and 12.....	12
4. †Foreign language—the completion of a course numbered 12 .....	12
5. Science (laboratory)—six semester hours in each of any two of the following sciences: botany, biology, chemistry, physics, geology, zoology.....	12
6. Mathematics or numbered courses of †Latin or †German or †Greek .....	6
7. Philosophy or psychology .....	3
8. Government 10.....	6
9. Electives, twelve semester hours of which must be advanced	27
10. Physical training—no credit.....	0
	120

**Order and Choice of Courses**

*Freshman Year.*—English 1; †foreign language 1; Mathematics 304, and 309 or 307K, or †Latin or †German or †Greek, six semester hours; science, six semester hours; elective, six semester hours; physical training, no credit. Total, thirty semester hours.

*Sophomore Year.*—English 12; †foreign language 12; Business Administration 311-314; science, six semester hours; ‡elective, six semester hours. Total, thirty semester hours.

*Junior Year.*—Business Administration 432; Government 10; philosophy or psychology, three semester hours; business administration, eight semester hours, two of which must be advanced; \*social science, six semester hours; elective, three semester hours. Total, thirty semester hours.

*Senior Year.*—Business Administration (advanced), six semester hours; \*social science, six semester hours; \*social science (advanced), six semester hours; elective (advanced), twelve semester hours. Total, thirty semester hours.

\*Economics or history or sociology or government or philosophy or psychology or combination.

†See Number 4 under Course Requirements.

‡The student is urged to use his elective here in beginning work on his minor.



## ECONOMICS MAJOR

Minor in Business Administration or \*Social Science

## Requirements

	Hours
1. Economics 312, 313, 329, and fifteen additional semester hours of economics, at least nine hours of which must be advanced .....	24
2. Business administration or *social science (other than economics)—eighteen semester hours, six of which must be advanced .....	18
3. English 1 and 12.....	12
4. †Foreign Language—the completion of a course numbered 12.....	12
5. Science (laboratory)—six semester hours in each of any two of the following sciences: botany, biology, chemistry, physics, geology, zoology.....	12
6. Mathematics or numbered courses of †Latin or †German or †Greek.....	6
7. Philosophy or psychology.....	3
8. Government 10.....	6
9. Electives, twelve semester hours of which must be advanced .....	27
10. Physical training—no credit.....	0
	120

## Order and Choice of Courses

*Freshman Year.*—English 1; †foreign language 1; Mathematics 304, and 309 or 307K, or †Latin or †German or †Greek, six semester hours; science, six semester hours; elective, six semester hours; physical training, no credit. Total, thirty semester hours.

*Sophomore Year.*—English 12; †foreign language 12; Economics 312-313; science, six semester hours; †elective, six semester hours. Total, thirty semester hours.

*Junior Year.*—Economics 329; philosophy or psychology, three semester hours; Government 10; economics, nine semester hours, three of which must be advanced; business administration or \*social science, six semester hours; elective, three semester hours. Total, thirty semester hours.

*Senior Year.*—Economics (advanced), six semester hours; business administration or \*social science, six semester hours; business administration or \*social science (advanced), six semester hours; elective (advanced), twelve semester hours. Total, thirty semester hours.

\*History or sociology or government or philosophy or psychology or a combination.

†See Number 4 under Course Requirements.

‡Students are urged to use their elective to begin their minor.

**\*\*EDUCATION MAJOR**

Minors in any two teaching subjects

	Hours
1. Education—twenty-four semester hours, including Education 27 or 28 and six additional semester hours of advanced courses.....	24
2. *First teaching subject—eighteen semester hours of numbered courses, six of which must be advanced.....	18
3. *Second teaching subject—eighteen semester hours of numbered courses, six of which must be advanced.....	18
4. English 1 and 12.....	12
5. *Foreign language—the completion of a course numbered 12.....	12
6. Science (laboratory)—six semester hours in each of any two of the following sciences: botany, biology, chemistry, physics, geology, zoology.....	12
7. Mathematics or numbered courses of *Latin or *German or *Greek.....	6
8. †Social Science.....	6
9. Philosophy or psychology.....	3
10. Government 10.....	6
11. **Elective, advanced courses.....	3
12. Physical Training—no credit.....	0
	120

**\*\*Order and Choice of Courses**

*Freshman Year.*—Education, six semester hours; first teaching subject, six semester hours; English 1; science, six semester hours; mathematics or \*Latin or \*German or \*Greek, six semester hours; physical training, no credit. Total, thirty semester hours.

*Sophomore Year.*—Education, six semester hours; first teaching subject, six semester hours; English 12; second teaching subject, six semester hours; \*foreign language 1, six semester hours. Total, thirty semester hours.

*Junior Year.*—Education (advanced), six semester hours; first teaching subject (advanced), six semester hours; second teaching subject, six semester hours; science, six semester hours; \*foreign language 12, six semester hours. Total, thirty semester hours.

*Senior Year.*—Education 27 or 28; second teaching subject (advanced), six semester hours; †social science, six semester hours; Government 10; philosophy or psychology, three semester hours; elective (advanced), three semester hours. Total, thirty semester hours.

\*See Number 4 under Course Requirements.

†Government or history or economics or sociology or philosophy or psychology or combination.

\*\*Students electing this major are advised to plan their course programs carefully so as to meet the General Degree Requirement (No. 10) on a total of thirty semester hours of advanced courses.

## ENGLISH MAJOR

Minor in French or Spanish or \*Social Science or Journalism

## Requirements

	Hours
1. English 1, 12, and twelve additional semester hours of advanced courses . . . . .	24
2. †French or †German or †Spanish—twelve semester hours of numbered courses . . . . .	12
3. Twelve semester hours of *social science . . . . .	12
4. Science (laboratory)—six semester hours each of any two of the following sciences: botany, biology, chemistry, physics, geology, zoology . . . . .	12
5. Mathematics or numbered courses of †Latin or †German or †Greek . . . . .	6
6. Philosophy or psychology . . . . .	3
7. Government 10 . . . . .	6
8. Electives, twelve semester hours of which must be advanced .	39
9. Physical training—no credit . . . . .	0
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10. †French or †Spanish—six additional semester hours of advanced courses . . . . .	6
	<hr/> 120
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10. †*Social science—six additional semester hours of advanced courses . . . . .	6
	<hr/> 120
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8. †Electives, twelve semester hours of which must be advanced	27
10. †Journalism—eighteen semester hours, six of which must be advanced . . . . .	18
	<hr/> 120

## Order and Choice of Courses

*Freshman Year.*—English 1; †French 1 or †Spanish 1 or †German 1; mathematics or †Latin or †German or †Greek, six semester hours; science, six semester hours; elective, six semester hours; physical training, no credit. Total, thirty semester hours.

*Sophomore Year.*—English 12; †French 12 or †Spanish 12 or †German 12; \*social science, six semester hours; science, six semester hours; elective or †journalism, six semester hours. Total, thirty semester hours.

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*Junior Year.*—English (advanced), six semester hours; \*social science, six semester hours; philosophy or psychology, three semester hours; Government 10; †French (advanced) or †Spanish (advanced) or †journalism, or §elective, six semester hours; elective, three semester hours. Total, thirty semester hours.

*Senior Year.*—English (advanced), six semester hours; \*§social science (advanced) or †journalism (advanced) or †elective, six semester hours; elective (advanced), twelve semester hours; elective, six semester hours. Total, thirty semester hours.

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\*History or sociology or government or economics or philosophy or psychology or combination.

†See Number 4 under Course Requirements.

‡If minor is in French or Spanish.

§If minor is in social science.

¶If minor is in journalism.

## HISTORY MAJOR

Minor in \*Social Science

## Requirements

	Hours
1. History—twenty-four semester hours, twelve of which must be advanced.....	24
2. *Social science—eighteen semester hours, six of which must be advanced.....	18
3. English 1 and 12.....	12
4. †Foreign language—the completion of a course numbered 12 .....	12
5. Science (laboratory)—six semester hours in each of any two of the following sciences: botany, biology, chemistry, physics, geology, zoology.....	12
6. Mathematics or numbered courses of †Latin or †German or †Greek.....	6
7. Philosophy or psychology.....	3
8. Government 10.....	6
9. Electives, twelve semester hours of which must be advanced.....	27
10. Physical training—no credit.....	0

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## Order and Choice of Courses

*Freshman Year.*—English 1; history, six semester hours; mathematics or †Latin or †German or †Greek, six semester hours; science six semester hours; elective, six semester hours; physical training, no credit. Total, thirty semester hours.

*Sophomore Year.*—English 12; history, six semester hours; \*social science, six semester hours; science, six semester hours; elective, six semester hours. Total, thirty semester hours.

*Junior Year.*—History (advanced), six semester hours; \*social science, six semester hours; †foreign language 1, six semester hours; philosophy or psychology, three semester hours; Government 10; elective, three semester hours. Total, thirty semester hours.

*Senior Year.*—History (advanced), six semester hours; \*social science (advanced), six semester hours; †foreign language 12; elective (advanced), twelve semester hours. Total, thirty semester hours.

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\*Economics or government or sociology or philosophy or psychology or combination.

†See Number 4 under Course Requirements.

**MODERN LANGUAGE MAJOR**

Major in French or Spanish—Minor in Spanish or French or English

	Hours
1. *Major language—courses 1 and 12 and twelve additional semester hours of advanced courses.....	24
2. *A second language—courses 1 and 12.....	12
3. English 1 and 12.....	12
4. †Social science.....	6
5. Science (laboratory)—six semester hours in each of any two of the following sciences: botany, biology, chemistry, physics, geology, zoology.....	12
6. Mathematics or numbered courses of *Latin or *German or *Greek.....	6
7. Philosophy or psychology.....	3
8. Government 10.....	6
9. Elective, twelve semester hours of which must be advanced.....	33
10. Physical training—no credit.....	0
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11. ‡Second language—six additional semester hours of advanced courses.....	6
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11. §English—six additional semester hours of advanced courses.....	6
	120

**Order and Choice of Courses**

*Freshman Year.*—English 1; language 1; second language 1; science, six semester hours; elective semester hours; physical training, no credit. Total, thirty semester hours.

*Sophomore Year.*—English 12; language 12; second language 12; mathematics or \*Latin or \*German or \*Greek, six semester hours; elective, six semester hours. Total, thirty semester hours.

*Junior Year.*—Major language (advanced), six semester hours; †social science, six semester hours; science, six semester hours; psychology or philosophy, three semester hours; Government 10; elective, three semester hours. Total, thirty semester hours.

*Senior Year.*—Major language (advanced), six semester hours; ‡second language (advanced), or §English (advanced), six semester hours; elective (advanced), twelve semester hours; elective, six semester hours. Total, thirty semester hours.

\*See Number 4 under Course Requirements.  
 †History or sociology or government or economics or philosophy or psychology or combination.  
 ‡If minor is in language.  
 §If minor is in English.

**\*SCIENCE MAJOR**

†Biological, Chemistry, Geology, Mathematics, Physics

**Requirements**

	Hours
1. Major science—twenty-four semester hours, twelve of which must be advanced.....	24
2. A second science—eighteen semester hours, six of which must be advanced.....	18
3. English 1 and 12.....	12
4. Foreign language—the completion of a course numbered 12.....	12
5. †Mathematics .....	6
6. §Social science .....	6
7. Philosophy or psychology.....	3
8. Government 10.....	6
9. Elective, twelve semester hours of which must be advanced.	33
10. Physical training—no credit.....	0
	120

**Order and Choice of Courses**

*Freshman Year.*—Major science, at least six semester hours; second science, at least six semester hours; English 1; †mathematics, at least six semester hours; elective, six semester hours; physical training, no credit. Total, at least thirty semester hours.

*Sophomore Year.*—Major science, at least six semester hours; second science, at least six semester hours; English 12; foreign language 1, six semester hours; elective, six semester hours. Total, at least thirty semester hours.

*Junior Year.*—Major science (advanced), at least six semester hours; foreign language 12, six semester hours; Government 10; philosophy or psychology, three semester hours; §social science, six semester hours; elective, three semester hours. Total, at least thirty semester hours.

*Senior Year.*—Major science (advanced), at least six semester hours; second science (advanced), at least six semester hours; elective (advanced), twelve semester hours; elective, six semester hours. Total, at least thirty semester hours.

\*When registering for this major, the student should be careful to secure proper advice concerning the order and choice of courses.

†Includes Biology, Botany, and Zoology.

‡Mathematics 803 is required for majors in chemistry, mathematics, and physics; and for minors in mathematics and physics.

§Economics or government or history or sociology or philosophy or psychology or combination.

## PRELIMINARY WORK FOR OTHER DEGREES

Preliminary work is offered for law and medicine.

### Selection of Courses

Certain rules govern the order and choice of work, particularly for the freshman and sophomore years. These rules vary somewhat with the character of the degree for which the student proposes to become a candidate. The student should advise with his Dean concerning the selection of courses.

### Work Preparatory to Law

Minimum Requirements for Admission to The University of Texas School of Law

*Freshman Year:* English 1, six semester hours in mathematics, History 4, a natural science, an elective.

*Sophomore Year:* English 12, Government 10, Economics 312 and 313, History 315 and 316, and any other academic course which requires sophomore standing or completion of a freshman course as a prerequisite.

### Work Preparatory to 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 the School of Medicine at Galveston.

Thus both the B.A. and the M.D. degrees may be taken in seven years.

*Freshman Year:* English 1; six semester hours in French or German; six semester hours in mathematics; Chemistry 801; Zoology 1.

*Sophomore Year:* English 12; six additional semester hours in the foreign language taken in the freshman year; Chemistry 311 and 413; Physics 1; Zoology 14.

*Junior Year:* Chemistry 821 and 323; Government 10; three semester hours in economics; Psychology 310; Biology 316 and 317, or Zoology 320 and 321; elective, enough to make a total of thirty semester hours for the year.

## WORK PRELIMINARY TO OTHER ENGINEERING DEGREES

*Uniform Freshman Year.*—First semester: Mathematics 803a, Chemistry 801a, Drawing 301, English 1a, Physics 1a. Second semester: Mathematics 803b, Chemistry 801b, Drawing 302, English 1b, Physics 1b. Additional courses are offered, such as to enable students to complete in general work through the sophomore year in civil, chemical, electrical, and mechanical engineering.



**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 requirements for the six-year elementary teacher's certificate or the four-year high-school certificate are sixty semester hours of credit work including English 1, Government 10, and Education 301, 302 or 305, 314, and 317.

Students planning to teach in the elementary grades are advised to take Education 28 also.

A student who holds an A.B. degree from the College is entitled to a permanent high-school certificate, provided he has credit for Education 301, 302 or 305, 314, 317, 27, and six other semester hours of advanced courses in education.

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

## COURSES OF INSTRUCTION

For an explanation regarding numbers and letters used in titles of courses and their meanings with respect to prerequisites of residence and credit, credit hours earnable, amount of work required in and out of class, semesters in which offered, etc., please see "Explanation of Courses."

### BIOLOGICAL SCIENCES

PROFESSOR BERKMAN; ASSISTANT PROFESSOR JENNESS

#### Biology

*306f. Biology.*—A study of the structure and physical properties of plant and animal cells, nutrition in plants and animals, relation of bacteria to man, a brief survey of the anatomy of the frog, histology of animal tissues and heredity. This course is intended for students taking work in physical education and allied subjects and does not satisfy premedical requirements nor the prerequisites for courses in zoology. Two lectures and three laboratory hours, or the equivalent. Laboratory fee, \$2. Credit value: Three semester hours.

*307s. Biology and Human Physiology.*—Continuation of Biology 306. Anatomical study of a mammal, kinesiology—action of muscles and joints, human physiology and hygiene. This course is intended for students taking work in physical education and allied subjects and does not satisfy premedical requirements nor the prerequisites for courses in zoology. Prerequisite: Biology 306. Two lectures and three laboratory hours or the equivalent. Laboratory fee, \$2. Credit value: Three semester hours.

*316f. Heredity.*—Elementary presentation of fundamental principles of heredity in their application to animals, plants, and mankind. This course may not be used to satisfy the science requirement for the A.B. degree. Prerequisite: Sophomore standing. Credit value: Three semester hours.

*317s. Evolution.*—Some of the topics considered in this course are: The evidence of evolution; the methods of evolution; the course which evolution has taken. This course may not be used to satisfy the science requirement for the A.B. degree. Prerequisite: Six semester hours of complete courses in a laboratory science and sophomore standing. Credit value: Three semester hours.

*29. General Bacteriology.*—Designed to present the fundamental concepts of bacterial life. A study of the structure, reproduction and classification of bacteria, immunity, the preparation of culture

media, the principles of sterilization, the microscopic observations and isolation of pathogenic germs, and the bacterial investigation of water, air, soil and milk. Prerequisite: Twelve semester hours in botany, chemistry or zoology. Two lectures and three laboratory hours. Laboratory fee, \$4. Credit value: Six semester hours.

### Botany

1. *Elementary Botany*.—General survey of the development of the plant kingdom; cell structure, tissues, physiological processes, methods of reproduction, relation to environment, distribution, and economic importance of plants. Three lectures and two laboratory hours. Laboratory fee, \$4. Credit value: Six semester hours.

### Zoology

1. *General Zoology*.—For students beginning the study of zoology. General survey of animal life, with emphasis upon the important phases of theoretical biology. Two lectures and four laboratory hours. Laboratory fee, \$4. Credit value: Six semester hours.

14. *Vertebrate Zoology*.—Laboratory study of dog-fish, necturus, turtle, bird, mammal, and perhaps other typical vertebrates. Prerequisite: Zoology 1. Two lectures and four laboratory hours. Laboratory fee, \$4. Credit value: Six semester hours.

320a. *Cellular Biology*.—The study of cell phenomena, such as the structure of the cell, maturation, fertilization, sex-determination, cell division. Prerequisite: Zoology 14; for juniors and seniors, Zoology 1 completed with a grade of at least C, and Zoology 14 in parallel. Zoology 14 must be completed before the student can get credit for Zoology 320. Two lectures and four laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours.

321f. *Vertebrate Embryology*.—A study of the development of typical vertebrates, with emphasis on the development of the chick and a mammal. Prerequisite: Zoology 1 and 14; for juniors and seniors, Zoology 1 completed with a grade of at least C, and Zoology 14 in parallel. Zoology 14 must be completed before the student can get credit for Zoology 321. Two lectures and four laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours.

### CHEMISTRY

PROFESSOR SEAMON; ASSOCIATE PROFESSOR LAKE; INSTRUCTOR BALL

1. *General Chemistry*.—Fundamental principles of chemistry. This course does not satisfy degree requirements in engineering. Two lectures or recitations and three laboratory hours. Laboratory fee, \$4. Credit value: Six semester hours.

*801. General Chemistry.*—The laws and theories of chemistry; the chemical elements and their most important compounds with reference to their production and use. Two lectures, one recitation, and three laboratory hours. Laboratory fee, \$4. Credit value: Eight semester hours.

*311f. Qualitative Analysis.*—Intended to emphasize the principles involved in chemical analysis, to broaden the student's knowledge of inorganic chemistry, to develop deductive reasoning power, and to give practice in manipulation. The student is required to analyze unknown solids and solutions. Prerequisites: Chemistry 801 or Chemistry 1 with a grade of C. One lecture and six laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours.

*413s. Quantitative Analysis.*—The quantitative analysis of chemical salts, minerals, ores, rocks, and industrial products. Prerequisite: Chemistry 311. The last three semester hours of this course count as advanced. One lecture and eight laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours.

*21 and 821. Organic Chemistry.*—A study of the fundamental types of carbon compounds. Prerequisite: Chemistry 801 with a grade of C, and Chemistry 323 concurrently; but credit will not be given until Chemistry 323 has been completed. Three lectures and three laboratory hours per week for 821. Students registering for 21 will receive the equivalent of two lectures and three laboratory hours. Laboratory fee, \$4. Credit value for 21: Six semester hours; for 821: Eight semester hours.

*423f. Quantitative Analysis.*—A continuation of Chemistry 413. Prerequisite: Chemistry 413. One lecture and eight laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours. (To be offered in 1938-1939; to be offered as Chemistry 323 thereafter.)

*324s. Assaying.*—The determination of gold, silver, and lead by fire methods in minerals, ores, and products of mills and smelters. Prerequisite: Chemistry 323. One lecture and six laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours.

*325f. Physical Chemistry.*—Properties of substances in the gaseous, liquid, and solid state; solutions; thermochemistry. Prerequisite: Chemistry 413, Mathematics 13, and Physics 1 or 812. Two lectures and three laboratory hours per week. Laboratory fee, \$2. Credit value: Three semester hours. Cannot be counted in addition to Chemistry 860. (To be offered in 1939-1940.)

*326s. Physical Chemistry.*—Homogeneous and heterogeneous equilibria; kinetics of reaction, electrochemistry, and chemical thermodynamics. Prerequisite: Chemistry 325. Two lectures and three laboratory hours per week. Laboratory fee, \$2. Credit value: Three

semester hours. Cannot be counted in addition to Chemistry 860. (To be offered in 1939-1940.)

*251s. Physical Chemistry.*—The more important principles of physical chemistry. Properties of substances in the solid, liquid, and gaseous state; the mass-action law applied to homogeneous and heterogeneous equilibria; the phase rule kinetics of chemical reactions. Prerequisite: Chemistry 413, Physics 812, Mathematics 13, and junior standing. Two lectures per week. Credit value: Two semester hours. (To be offered in 1938-1939; to be omitted thereafter.)

*860. Physical Chemistry.*—Properties of substances in the gaseous, liquid, and solid state; solutions; thermochemistry, homogeneous and heterogeneous equilibria; kinetics of reaction; electrochemistry. Prerequisite: Chemistry 323 and 821, Mathematics 13 in advance or concurrently, and Physics 1. Three lectures and three laboratory hours per week. Laboratory fee, \$4. Credit value: Eight semester hours. (To be offered in 1938-1939; to be omitted thereafter.)

#### ECONOMICS AND BUSINESS ADMINISTRATION

PROFESSORS \*MORRIS, \*\*GRAGG; ASSISTANT PROFESSOR SMITH;  
INSTRUCTOR POLK

##### Economics

*312fs. Principles of Economics.*—A general survey of the principles and facts involved in production and exchange of goods in a capitalistic society. Factors of production; the American monetary system; banking organization; transportation; markets; value and price. Prerequisite: Sophomore standing. Credit value: Three semester hours.

*313s. Principles of Economics.*—A continuation of Economics 312. The principles of distribution of wealth in a capitalistic society. Theories underlying rent, wages, profits, and interest. Public utilities; protective tariffs; business cycles; public revenues; public credit. Prerequisite: Economics 312. Credit value: Three semester hours.

*321f. Public Finance and Taxation.*—A general treatment of financial administration by agencies of the government of the United States. Principles of taxation; the property tax; income taxes; the sales tax and other types of taxation. Analysis of governmental expenditures; public credit. Prerequisite: Economics 313. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

\*Absent on leave for session of 1937-1938 only.

\*\*Appointed for session of 1937-1938 only; substituting for Mr. Morris.

322f. *Money and Banking*.—Studies of the principles of money and banking, the existing money and banking systems of the United States and selected foreign countries, and important theories underlying credit. History of precious metals; bimetallism; banking development; relation of money and credit to prices; foreign exchange. Prerequisite: Economics 313. Credit value: Three semester hours. (Given in 1937-1938; omitted in 1938-1939.)

325s. *Business Cycles*.—A study of value and its relation to the oscillations of business. Isolation and interpretation of facts relating to the trade cycle. Analysis and evaluation of American and foreign theories of depressions. Emphasis upon current problems and proposed and attempted alleviations. Prerequisite: Economics 313. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

329s. *Economic Statistics*.—Training in the quantitative methods of dealing with mass data. The use of graphic and tabular methods of presentation of facts. Measures of central tendency; index numbers; measures of deviation and skewness; time series; correlation. Prerequisite: Economics 313 and six semester hours of mathematics. Three lectures and three laboratory hours. Laboratory fee, \$4. Credit value: Three semester hours. (May not be counted for credit in addition to Business Administration 432.)

330s. *Economic and Financial History of the United States*.—The development of agriculture, industry, and commerce of this country from colonial times to the present. Banking; trade; public finance; governmental regulation; and general economic development. Problems raised by the growth of economic complexities. Prerequisite: Economics 313. Credit value: Three semester hours. (Given in 1937-1938; omitted in 1938-1939.)

332f. *Corporation Finance*.—The promotion of corporations in the process of formation; capital sources; capital structures; internal financial management; receiverships; reorganizations; relation of corporation finance to banking; social consequences of over-promotion. Prerequisite: Economics 313. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

336f. *Agricultural Economics*.—Development of financial needs of agriculture. Application of the principles of economics to the problems of agricultural production; agricultural prices; standard of living on the farm; cooperative farming projects. Prerequisite: Economics 313. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

349f. *Labor Problems*.—Problems of the State and Federal Government in relation to labor in selected fields; child labor; minimum

wages; hours of labor; social insurance; retirement programs. The American Federation of Labor; the C. I. O.; other organizations; strikes; lockouts; current issues. Prerequisite: Economics 313. Credit value: Three semester hours. (Given in 1937-1938; omitted in 1938-1939.)

*357f. Investments.*—Investment principles; investment banking; security flotation; stock exchange trading; investment analysis; and investment policies. Prerequisite: Economics 313 and Business Administration 314. Credit value: Three semester hours. May not be counted for credit in addition to Business Administration 357. (Given in alternate years; to be offered in 1938-1939.)

*358s. International Economic Relations.*—Mercantilism as a background; English commercial development; American colonial development; tariff history of the United States; problems of free trade; international movements of money; international commercial entanglements; inter-governmental debt payments; reparations. Prerequisite: Economics 313 and three semester hours of advanced economics. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

#### Business Administration

*01. Elementary Typewriting.*—A non-credit course, equivalent to the typewriting work of Business Administration 10, given for the benefit of those students who do not desire shorthand. Laboratory fee, \$4.

*10. Shorthand and Typewriting.*—Mastery of the principles of Gregg shorthand; transcription; and typewriting. Credit given for shorthand only. Six semester hours allowed as credit when shorthand and typewriting are taken together, no credit otherwise. Prerequisite: Sophomore standing. Three shorthand lecture periods and three hours of typewriting practice per week. Laboratory fee, \$4. Credit value: Six semester hours.

*211s. Engineering Accounting.*—Principles of accounting necessary for engineering practice. Balance sheets; profit and loss statements; elementary cost finding; books of original entry. For engineering students. Prerequisite: Sophomore standing. Two lectures per week. Credit value: Two semester hours. (Given in 1937-1938; to be omitted thereafter.)

*311f. Theory and Principles of Accounting.*—Principles of double entry bookkeeping and theories of general financial accounting. The analysis and recording of business transactions; adjusting and closing entries; financial statements; sole proprietorship accounting. Prerequisite: Sophomore standing. Credit value: Three semester hours.

*314s. The Practice of Accounting.*—A continuation of Business Administration 311. Partnership accounting; corporation accounting; reserves and reserve funds; manufacturing accounts; asset valuation. Prerequisite: Business Administration 311. Two hours lecture and four hours laboratory per week. Laboratory fee, \$2. Credit value: Three semester hours.

*420f. Business Correspondence.*—A course in the writing of clear, concise, and forceful business letters. Practical business situations are given as bases of letter assignments. Practice is given in the writing of sales letters; credit letters; adjustment, claim, order and collection letters. Part of the course is given over to the theory and practice of business report writing. Prerequisite: English 12 and Business Administration 314. Credit value: Four semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*23. Business Law.*—Textbook and case method; cases on the law of contracts, agency, bankruptcy, bailments, sales, mortgages, negotiable instruments. Prerequisite: Business Administration 314. Credit value: Six semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*326f. Intermediate Accounting, First Course.*—Classification and codification of accounts, forms and content of financial statements; theory involved in current assets and liabilities; practical problems. Prerequisite: Business Administration 314. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*327Ks. Intermediate Accounting, Second Course.*—Theory involved in fixed assets; statement of application of funds; statement of variation of net profits; installment and long-term contracts; practical problems. Prerequisite: Business Administration 326. Credit value: Three semester hours. (Given in alternate years; to be omitted in 1938-1939.)

*329f. Cost Accounting.*—Accounting for materials, labor and burden distribution under job costs; continuous process and assembly systems; commercial and distribution costs. Prerequisite: Business Administration 314. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

*330s. Auditing.*—Auditing procedure, reports, and working papers used in financial investigations; balance sheet and detailed audits. Prerequisite: Business Administration 314 and three semester hours of advanced accounting. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

*432s. Business Statistics.*—Training in the quantitative methods of analysis used in dealing with business data. The use of graphic methods in presenting data; the organization and description of data;



studies of the frequency distribution; measures of central tendency; dispersion and skewness; index numbers; time series; correlation. Prerequisite: Business Administration 314. Credit value: Four semester hours. Three hours lecture and five hours laboratory per week. Laboratory fee, \$4. (May not be counted for credit in addition to Economics 329.)

*334f. Office Organization and Practice.*—The location, equipment, organization, and general practice in office routine. Use of the mimeograph machine, dictaphone, and other equipment. Designed especially for those students intending to go into office work. Prerequisite: Business Administration 314 and 10. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

*437s. Principles of Marketing.*—Place of marketing in our business system. Same as Economics 337 except that student is required to perform extra work designed to apply the principles of the course to business problems. Prerequisite: Economics 313. Credit value: Four semester hours. May not be counted for credit in addition to Economics 337. (Given in 1937-1938.)

*339f. Business Salesmanship.*—A study of the economic problems connected with personal selling; an analysis of the products and the market; the planning and execution of an interview; building goodwill; consideration of the relationship between the salesman and his employer. Individual demonstrations of selling constitute an important part of the course. Prerequisite: Business Administration 314. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

*340s. Business Advertising.*—A study of the principles underlying advertising; the economic value of advertising; recent trends; correlating advertising budgets with movements in the price cycle. Study of the psychology of individual advertisements; consideration of the various media and the value of each. Prerequisite: Junior standing. Credit value: Three semester hours. (Given in Summer of 1937.)

*251s. Practical Bank Operation.*—Organization procedure, departmental set-up and practice, loan administration, and operating problems of commercial banks. Prerequisite: Business Administration 314 and Economics 313. Credit value: Two semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*353s. Foreign Exchange.*—Methods and forms used in financing the international movement of goods and services; the rate of exchange and its effect on the movement of commodities and the flow of gold; means of controlling gold movements and exchange rates, and the economic effects of such policy. Prerequisite: Business

Administration 314 and Economics 313. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

454s. *Short-Term Finance.*—Operations of commercial banks, trust companies, and other credit-granting institutions, in their relation to business; principles of banking and finance which are involved; credit analysis. Prerequisite: Business Administration 314 and Economics 313. Credit value: Four semester hours. (Given in Summer of 1937.)

357f. *Investments.*—Investment principles, investment banking, security flotation, stock exchange trading, investment analysis, and investment policies. Prerequisite: Business Administration 314 and Economics 313. Credit value: Three semester hours. May not be counted for credit in addition to Economics 357. (Given in alternate years; to be offered in 1938-1939.)

## EDUCATION AND PHYSICAL EDUCATION

### Education

PROFESSOR PUCKETT; ASSISTANT PROFESSOR \*HOARD; INSTRUCTORS  
AGEE, †REYNOLDS, \*JOHNSON

This 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 and 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 are planning to teach in the secondary schools are advised to take Education 301, 305, 316, 317, 27 and three semester hours of special methods courses in each of two high-school fields. Students who are planning to teach in the elementary schools are advised to take Education 301, 305, 314, 318, 28, and three semester hours of special methods courses in each of two elementary-school fields.

### General

301fs. *Introduction to Educational Psychology.*—A study of some of the topics in educational psychology which relate most directly to an understanding of the learning process and the conduct of children. Credit value: Three semester hours.

305fs. *An Introduction to Education.*—An introductory course in the field of education. Surveys the rise, chief concepts, and outstanding problems of modern education. An orientation course in education for beginning students. Credit value: Three semester hours.

\*Appointed September 6, 1937, full-time.

†Leave of absence, 1937-1938.

*335f. Directing Study.*—Examination of the literature on directing study. Formulation of units of work and discussion of methods for stimulating and guiding pupils at work. Prerequisite: Twelve semester hours in education. Credit value: Three semester hours. (Given in Summer Session, 1937, and Long Session, 1937-1938; to be offered in 1938-1939.)

*344f. Mental Hygiene.*—Prerequisite: Education 314 and 317 or their equivalent. (Given in 1937-1938; to be omitted in 1938-1939.)

*345s. The Psychology of Social Institutions.*—Deals with the relationships between the individual and social institutions; the psychology of number, punctuality, and precision; the psychology of language; the psychology of the fine arts; the psychology of government and governmental institutions; the psychology of systems of exchange. Prerequisite: Twelve semester hours in education, or the consent of the instructor. Credit value: Three semester hours.

*359s. Philosophy of Education.*—Educational principles governing aims, curricula, methods, and organization; relation of individual to society, the social frontier, moral and religious education, antinomic principles of education; functions of family, church, school, and state in the education of children. Prerequisite: Twelve semester hours in education. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*361K. Organization and Administration of the Public School Curriculum, with Special Reference to Installation.*—Deals with the organization and content of the New State Curriculum Revision Program courses of study. Problems of content, installation, sequence, grade placement, integration, and evaluation. For teachers, supervisors, and administrators. Prerequisite: Six semester hours of advanced courses in education, or special consent of the instructor. Credit value: Three semester hours. (Given in Summer Session, 1937; to be omitted in 1938-1939.)

#### Elementary

*314. Child Psychology.*—A study of the changes which take place in the life of the child as related to the processes of education. Prerequisite: Education 301 and 305. Credit value: Three semester hours.

*318s. Introduction to Elementary Education.*—Consideration will be given to the educational principles underlying present trends and practices in the elementary school. Special attention will be given to guiding learning through activities of children. Prerequisite: Education 301 and 305. Credit value: Three semester hours.

*324f. Language Arts in the Primary Grades.*—A study of materials and methods of teaching language, spelling, and handwriting from the standpoint of social utility in grades one, two, and three. Prerequisite: Education 314 and 318, or their equivalent. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

*28. Student-Teaching in the Elementary and Primary Grades.*—Similar to Education 27, but for the elementary and primary grades. Ordinarily, one period daily for six days a week will be required, but students are expected to have two consecutive hours, between 9 and 3 o'clock throughout the week in order to facilitate making the teaching assignments. Prerequisite: Education 314 and 318, or their equivalent. Credit value: Six semester hours.

*331s. Methods and Materials of Instruction in the Primary Grades.*—Study of the principles of method and an examination of the materials of instruction in kindergarten, first, second, and third grades. Includes intensive laboratory activity in curriculum organization. Prerequisite: Twelve semester hours in education. Credit value: Three semester hours. (Given in Summer Session, 1937; to be omitted in 1938-1939.)

*347f. Modern Techniques in the Primary Grades.*—Changes in theory, methods, and materials made necessary by a changing curriculum in the primary grades. A study will be made of the Texas Curriculum program with special attention to new methods of teaching in the language arts. Prerequisite: Twelve semester hours in education. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*348s. Teaching Arithmetic and Science in the Primary Grades.*—First half: Curriculum content in arithmetic with modern methods of teaching the subject in the first three grades. Second half: Building a background for teaching science in the primary grades, looking forward toward its inclusion in the curriculum. Prerequisite: Education 314 and 318, or their equivalent. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*349f. 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. Consideration will be given to the function of social studies in an integrated program. Prerequisite: Education 314 and 318, or their equivalent. Credit value: Three semester hours. (Given in Summer Session, 1937; to be offered in 1938-1939.)

*351f. Music in the Elementary Grades.*—A course designed to meet the immediate needs of elementary-school music teachers in

the Southwest. Open discussion of various problems with an observation schedule worked out to cover these problems. Time will be spent on baton technique and elementary theory along with actual participation in the direction of instrumental as well as singing groups. Program suggestions for child voice considering the music from the standpoint of melodic and harmonic construction and its adaptability as correlating material. Our own State's music bulletin discussed along with programs of other states. Prerequisite: Education 314 and 318, or their equivalent. Credit value: Three semester hours. (Offered in 1938-1939.)

*353s. Techniques of Teaching Reading in the Primary Grades.*—A study will be made of the basic principles underlying desirable reading experiences which contribute to the success of the child in beginning reading and subsequent growth in ability to read with speed and comprehension. The place of drills, phonics, tests and the selection of materials will be emphasized. Prerequisite: Education 314 and 318, or their equivalent. Credit value: Three semester hours. Formerly Education 313. (Offered in alternate years.)

*356f. Art in the Elementary School.*—Introduction to the structural elements of art and ways in which they may function in visual expression and environment. Methods of teaching which emphasize the relation of art to other subjects. Prerequisite: Education 314 and 318, or their equivalent. Credit value: Three semester hours. (Offered in alternate years.)

#### Secondary

*316f. Psychology of Adolescence.*—A study of the nature and development of the individual through the adolescent period. Emphasis is placed on the nature of individual differences and especially on the development of proper habits and the correct integration of behavior patterns into a socially desirable personality. Prerequisite: Education 301 and 305. Credit value: Three semester hours.

*317s. An Introduction to High-School Teaching.*—Basic principles of high-school teaching and high-school management will be considered. Prerequisite: Education 301 and 305. Credit value: Three semester hours.

*322f. Organization and Teaching of Mathematics and Science in the Secondary School.*—Methods of teaching Mathematics and Science in the secondary school. Prerequisite: Six semester hours of Science; six semester hours of Mathematics; and Education 316 and 317, or their equivalent. Credit value: Three semester hours. (Offered in alternate years.)

*323f. Teachers Course in Modern Languages.*—Methods of teaching modern languages in secondary schools. Prerequisite: Course 12

in a language; and Education 316 and 317, or their equivalent. Credit value: Three semester hours. (Offered in alternate years.)

325s. *Teachers Course in English.*—Methods of teaching English in secondary schools. Prerequisite: English 12; and Education 316 and 317, or their equivalent. Credit value: Three semester hours. (Offered in alternate years.)

27. *Student-Teaching in the High School.*—A study of the principles of teaching, observation of class work, construction of lesson plans, and teaching under supervision. Ordinarily, one period daily for six days a week will be required, but students are expected to have two consecutive hours, between 9 and 3 o'clock throughout the week, in order to facilitate making the teaching assignments. Required of all candidates for a permanent high-school certificate. Prerequisite: Education 316 and 317, or their equivalent. Credit value: Six semester hours.

329f. *Teachers Course in History.*—Methods of teaching History in secondary schools. Prerequisite: Twelve semester hours in History; and Education 316 and 317, or their equivalent. Credit value: Three semester hours. (Given in alternate years; to be offered in 1938-1939.)

352s. *Music in the High School.*—Instrumental and vocal teaching technique in the high school along with suggestions in motivating interest and in organizing bands and orchestras. Individual participation and special scheduled observations will provide the practical experience necessary. Prerequisite: Education 316 and 317, or their equivalent. Credit value: Three semester hours. (Offered in 1938-1939.)

#### Physical Education

ASSOCIATE PROFESSOR SAXON; INSTRUCTORS KANE, PHILLIPS

310s. *Theory and Practice of Playground Activities.*—This course will consider content, progression, and instruction in plays and games. Training will be given in the organization and supervision of play activities for the elementary schools. Practice in teaching and officiating is required. Open to both men and women. Laboratory fee, \$2. Prerequisite: Sophomore standing. Credit value: Three semester hours. (Offered in alternate years; given in 1937-1938.)

311f. *Personal Hygiene.*—This course presents personal and general hygiene as a means for the improvement of living. Open to both men and women. Prerequisite: Sophomore standing. Credit value: Three semester hours. (Given in Summer Session, 1937; to be offered in 1938-1939.)

*312f. Health Service.*—The scope of health service with emphasis upon the purpose, technique, and adaptation of health examinations of school children. Open to both men and women. Prerequisite: Sophomore standing. Credit value: Three semester hours. (Offered in alternate years; given in 1937-1938.)

*313s. Technique of Minor Sports.*—Theory and practice in methods and materials for the following: soccer, basket ball, playground ball, baseball, volley ball, track, and minor sports. Open to both men and women. Prerequisite: Sophomore standing. Laboratory fee, \$2. Credit value: Three semester hours. (To be offered in 1938-1939.)

*314f. Nature and Function of Play.*—An interpretation of play and a study of the function of play as it relates to each division of child life. Open to both men and women. Prerequisite: Sophomore standing. Credit value: Three semester hours. (Offered in alternate years; given in 1937-1938.)

*315s. Elementary Methods in Health Education.*—A lecture and conference course dealing with materials and practical methods in health education. Open to both men and women. Prerequisite: Sophomore standing. Credit value: Three semester hours. (To be offered in 1938-1939.)

*316f. Technique of Major Sports.*—Theory and practice in methods and materials especially for the following: football, basket ball. Open to men. Laboratory fee, \$2. Prerequisite: Sophomore standing. Credit value: Three semester hours. (To be offered in 1938-1939.)

*317s. Technique of Major Sports.*—Theory and practice in methods and materials, especially for the following: baseball, track, tennis. Open to men. Laboratory fee, \$2. Prerequisite: Sophomore standing. Credit value: Three semester hours. (To be offered in 1938-1939.)

### ENGINEERING AND DRAWING

PROFESSOR KIDD; ASSISTANT PROFESSOR DECKER; INSTRUCTOR LEECH

#### Engineering

*310s. Elements of Electrical Engineering.*—Direct current electric and magnetic circuits. Prerequisite: Physics 12a and registration in Mathematics 13b. Two recitations and one laboratory period a week. Laboratory fee, \$2. Credit value: Three semester hours.

*312f. Mechanism.*—A study of the laws which govern the motion of machine parts and the forces transmitted by the parts. Graphic analyses are made of various mechanisms, the motions produced, the velocities and accelerations of the parts; a study of links, cams, and gears. Prerequisite: Mathematics 803 and Drawing 302. Two lec-

tures and three laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours.

412f. *Mechanism*.—The same as Engineering 312, but with one additional laboratory period. Prerequisite: Mathematics 803, Drawing 302 and Physics 1. Two lectures and six laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours.

313s. *Plane Surveying*.—The theory of plane surveying, including the care and adjustment of instruments; land surveying; traverses; leveling; determination of meridian; topographic surveying; mapping; the different systems of note-keeping; the usual computations used in plane surveying; and an elementary discussion of precision. Prerequisite: Mathematics 803 and Drawing 302. Three lectures. Credit value: Three semester hours. (Formerly Engineering 213.)

414. *Field Surveying*.—Summer work; practical field course covering the topics outlined in Engineering 313. Accurate and rapid work will be insisted upon. Prerequisite: Engineering 313. Eight hours daily for four weeks preceding the opening of the session. Laboratory fee, \$4. Credit value: Four semester hours.

315f. *Technical Mechanics*.—Concurrent, parallel, and non-concurrent forces; friction, reactions; graphical and analytical determination of stresses in framed structures, centers of gravity, moments of inertia of areas. Prerequisite: Physics 1, and Mathematics 13a in advance or concurrently. Credit value: Three semester hours.

418s. *Direct and Alternating Current*.—Theory of direct and alternating current circuits and machinery; comparison of direct with alternating current for various uses in mining, metallurgical, and electro-chemical work. Prerequisite: Physics 812 and Mathematics 13. Three lectures and three laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours.

832. *Applied Mechanics and Structures*.—Center of gravity, moment of inertia, radius of gyration; bending moments; shear, torsion; resilience; flexure of beams; theory of long columns; strength of materials. The funicular polygon; moment diagram; shear diagram; determination of stresses in various types of roof and bridge trusses; completed designs in steel and timber; comparisons as to weight and cost. Prerequisite: Drawing 302, Mathematics 13, and Physics 12 or 812. Three lectures and three laboratory hours. Credit value: Eight semester hours.

350f. *Thermodynamics*.—The fundamental equations of gases and their application to the steam engine; the heating values of different fuels; the construction and operation of steam boilers; boiler feed pumps; different types of steam engines as regards speed, valves, steam consumption, comparative cost, and relative economy; adjust-



ments of valves, and determination of horsepower by the use of the indicator; steam turbines. Prerequisite: Mathematics 13 and Physics 12 or 812. Three lectures. Credit value: Three semester hours.

354s. *Hydraulics*.—Brief course of hydrostatics; fluids in motion; flow of liquids through pipes, orifices, and over weirs, fluid friction and loss of head; Bernoulli's theorem; flow of water in canals and rivers; Kutter's formula; and graphical methods. Prerequisite: Physics 12 or 812 and Mathematics 13. Three lectures. Credit value: Three semester hours.

#### Drawing

301f. *Engineering Drawing*.—For all engineering students. Geometrical construction, freehand lettering, orthographic projection, pictorial methods, working drawings, tracing, and blueprinting. One one-hour discussion and eight hours of supervised drawing per week. Laboratory fee, \$2. Credit value: Three semester hours.

301s. *Engineering Drawing*.—Repetition of 301f.

302s. *Descriptive Geometry*.—Includes intersections and development of solids, curved lines, curved surfaces, and warped surfaces, in addition to the point, line, and plane problems. Prerequisite: Drawing 301. One one-hour discussion, and eight hours of supervised drafting per week. Credit value: Three semester hours. Laboratory fee, \$2.

### ENGLISH, JOURNALISM, AND PUBLIC SPEAKING

PROFESSOR SONNICHSEN; ASSOCIATE PROFESSOR ZIMMERMAN;  
ASSISTANT PROFESSORS MOSES, EGG; INSTRUCTORS JUNELL,  
†PONSFORD; PART-TIME INSTRUCTOR BALL

#### English

For the degree of Bachelor of Arts, twelve semester hours in English are required, namely 1 and 12. English 1 is prerequisite to all other courses in English; English 12, to all other courses in English literature.

Students expecting to do advanced work in English are advised to take courses in French or German, in English and American history, and in philosophy.

1. *Rhetoric and English Composition*.—Study of the principles of good writing; outlining; analysis and discussion of typical prose selections; weekly themes; collateral reading. Prescribed for freshmen. Credit value: Six semester hours.

†Appointed September 6, 1937.

*1as. Rhetoric and English Composition.*—Repetition of the first semester of English 1.

*310f. Technical Writing.*—A course designed as a preparation for technical writing. The principal object is to train the student in outlining and writing upon technical subjects for private reports and for publications. Reports upon assigned topics are required. Prerequisite: English 1. Credit value: Three semester hours.

*12. Outline History of English Literature.*—Survey of English literature from the beginning to the present time. Study of masterpieces in prose and poetry, selections from Old English being read in translation. Frequent essays each semester. Prerequisite: English 1. English 12 is prerequisite to all other courses in English literature. Credit value: Six semester hours.

*12as. Outline History of English Literature.*—Repetition of the first semester of English 12.

*320f. Shakespeare: The Earlier Plays.*—Detailed study of a few of the plays composed before 1601, with a rapid reading of others belonging to the same period. Prerequisite: English 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

*321s. 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 320. Credit value: Three semester hours. (To be offered in 1938-1939.)

*322f. Victorian Poetry.*—Consideration of the poetic works of Browning primarily, and study of such noteworthy minor poets as Arnold, Clough, James Thomson, and others. Prerequisite: English 12. Credit value: Three semester hours. (Given in 1937-1938.)

*323s. Victorian Poetry.*—Consideration of the poetic works of Tennyson primarily, and study of such noteworthy minor poets as Swinburne, Morris, D. G. Rossetti, Christina Rossetti, and others. Prerequisite: English 12. Credit value: Three semester hours. (Given in 1937-1938.)

*327f. An Outline History of the English Novel.*—Brief history of the novel from the romances of the sixteenth century through the eighteenth and the first quarter of the nineteenth century, with study of typical works of Richardson, Fielding, Smollett, Burney, Jane Austen, and Scott. Prerequisite: English 12. Credit value: Three semester hours. (Given in 1937-1938.)

*328s. An Outline History of the English Novel.*—A continuation of English 327 with study of typical works of Dickens, Thackeray, George Eliot, Thomas Hardy, and Meredith. Prerequisite: English 327. Credit value: Three semester hours. (Given in 1937-1938.)

*331f. The Drama in England Since 1660.*—A study of the representative plays of the Restoration Age, of the eighteenth and nineteenth centuries, and of such modern English playwrights as Jones, Pinero, Barker, St. John Hankin, Shaw, Coward, etc. Prerequisite: English 12. Credit value: Three semester hours. (Given in Summer Session, 1937.)

*332s. The Development of the American Drama.*—A study of the drama of the Colonial and Revolutionary Periods. Study of the development of the drama to modern times including the study of such modern playwrights as the Mackayes, Thomas, Sheldon, Kaufman and Connolly, Crothers, Hughes, Davis, and O'Neill. Prerequisite: English 12. Credit value: Three semester hours. (Given in Summer Session, 1937.)

*336f. American Literature.*—A study of the chief American poets and prose writers including those of the Colonial and Revolutionary periods and the early nineteenth century. Prerequisite: English 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

*337s. American Literature.*—A study of the most important American poets and prose writers of the middle and late nineteenth century. Prerequisite: English 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

*339f. Eighteenth Century Prose.*—After surveying rapidly the prose of some earlier writers, the class will study that of DeFoe, Swift, Steele, Addison, Johnson, Boswell, Goldsmith, and Burke. Prerequisite: English 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

*340s. The Poetry of the English Classical Period.*—Detailed study of poems of Dryden and Pope, together with the literary theory and later influence of these writers, the most important contemporary poets furnishing material for parallel reading. Prerequisite: English 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

*341f. The Short Story.*—The literature and technique of the short story; the rise and nature of its form; an intensive study of its structure, together with an examination of short story types and masterpieces from various countries. Prerequisite: English 12. Credit value: Three semester hours. (Given in 1937-1938.)

*342s. Life and Literature of the Southwest.*—Study of verse, fiction, travels, and memoirs to acquaint students with the social inheritance, and its reflection in literature, of Texas and its neighboring territory. Prerequisite: English 12. Credit value: Three semester hours. (Given in 1937-1938.)

**Journalism**

*310s. Feature Story Writing.*—Methods of gathering material for newspaper and magazine feature stories through interviews, research, and observation; study of feature story form and style; discussions of markets for literary material; practice in writing feature stories. Prerequisite: Sophomore standing including English 1. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*12. News Gathering and Reporting.*—Instruction and practice in interviewing and writing; discussions of news sources, news values, and various types of news stories; study of the organization of newspaper staffs and news gathering associations. Prerequisite: Sophomore standing including English 1, with credit or registration for typewriting. Credit value: Six semester hours.

*320s. Editorial Writing and Direction.*—Development and importance of the editorial; subject matter, policies, purposes, structure, and style; the editorial page, features, and make-up; editorial training, responsibility, and opportunity. Lectures, class discussions, written work, and written and oral criticism of individual work. Prerequisite: Journalism 12 and English 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

*324f. 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 in rewriting news stories. Prerequisite: Journalism 12. Credit value: Three semester hours. (Given in 1937-1938.)

*346f. History of Journalism.*—Includes a study of the growth of the modern newspaper, with emphasis on great figures in American journalism, and a study of the principles of the newspaper and magazine of today. Prerequisite: Journalism 12 or English 12. Credit value: Three semester hours. (Given in Summer Session, 1937.)

**Public Speaking**

*301fs. Speech Correction.*—Training in the fundamentals of oral expression, including use of voice, pronunciation, enunciation, good usage, and correction of personal speech defects. Practice in the various forms of public speech will be required. Credit value: Three semester hours.

*305s. Principles of Speech.*—A study of the theory of expression; exercises in improving stage presence; practice in speaking with special reference to distinct, direct, and convincing delivery. Speech

material and composition emphasized. Prerequisite: Public Speaking 301. Credit value: Three semester hours.

*312f. Play Production.*—Elementary principles of play production, including acting, staging, lighting and make-up; practice in producing radio and stage plays. A study of the emotional basis of acting; the body as an expressive agent. Lectures, reports, and assigned readings in the literature of the drama and the theater. A practical course to prepare students to produce plays in schools and communities. Prerequisite: Sophomore standing or six semester hours of Public Speaking. Credit value: Three semester hours. (Given in 1937-1938; to be offered in 1938-1939.)

*313s. Play Production.*—A continuation of Public Speaking 312, with emphasis on casting, rehearsing, and directing. Prerequisite: Public Speaking 312. Credit value: Three semester hours. (To be offered in 1938-1939.)

## GEOLOGY

PROFESSOR QUINN; ASSOCIATE PROFESSOR NELSON; INSTRUCTOR \*STRAIN

*1. Principles of General Geology.*—Designed to provide a critical study of the fundamental principles of physiography and geology. The laboratory work, three hours each week, for students registering in mining engineering options will be more rigorous and quantitative. Lectures, recitations, excursions, and collateral reading. Three hours of lectures and two hours of laboratory demonstration or field work. Laboratory fee, \$4. Credit value: Six semester hours.

*316f. Mineralogy of Metallic Minerals.*—Beginning course in the determination of minerals. The course will include the study of crystallography and the determination of the more common minerals by means of their physical properties, the blowpipe, and wet methods. Prerequisite: Geology 1 and Chemistry 1 (Chemistry 801 for engineering students) in advance or concurrently. One lecture and six hours of laboratory work. Laboratory fee, \$2. Credit value: Three semester hours. (Formerly Geology 16a.)

*217s. Mineralogy of the Non-Metallic Minerals.*—A continuation of Geology 316. Special emphasis is given to the study of the rock-forming minerals and to those of economic importance. Prerequisite: Geology 316. Six hours of laboratory work. Laboratory fee, \$2. Credit value: Two semester hours. (Formerly Geology 16b.)

*321f. Advanced General Geology.*—Certain topics of general geology such as stratigraphy, petrology, and structural geology are expanded in an advanced and quantitative manner. Prerequisite: Geology 16, or 316 and 217. Three lectures and three laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours.

\*Appointed September 6, 1937.

*322s. General Economic Geology.*—A general consideration of economic occurrences of mineral deposits and rocks with considerable attention given to those of Texas and the Southwest. Prerequisite: Geology 321. Credit value: Three semester hours.

*423s. Paleontology.*—Study of fossil invertebrates including a brief outline of the stratigraphy of the Southwest. Prerequisite: Geology 321. Two lectures and six laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours. (Given in alternate years; offered in 1938-1939.)

*427s. Petrology and Petrography.*—The determination, origin, and subsequent history of minerals and rocks as revealed in mineral grains and thin sections by the petrographic microscope. Prerequisite: Geology 321 in advance or concurrently. Two lectures and six laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours. (Given in alternate years; to be omitted in 1938-1939.)

*361f. Advanced Economic Geology.*—Discussions and original papers on new developments in the field of ore deposits. Methods of geological examination; preparation of geological reports and manuscripts; bibliographical research; applications of the principles of ore deposition to the search for ore; advanced consideration of the mineral deposits of Texas. Prerequisite: Geology 427 in advance or concurrently and 322. Two lectures and three laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours. (Formerly Geology 261.)

*463f. Geology of Petroleum, the Fuels and the Non-Metallics.*—Study of the origin, migration and accumulation of petroleum and natural gas; the origin and occurrence of fuels with emphasis on coals; and the study of the important economic occurrences of the non-metallic mineral deposits, stressing those occurring in Texas and the Southwest. Prerequisite: Geology 321. Three lectures and three laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours.

*264f. Field Geology.*—The course will include a field study of a limited area near the College, and the application of quantitative standards to the mapping and geological field studies. An acceptable typed thesis will be required as evidence of the successful completion of this course. Prerequisite: Six semester hours of advanced courses in geology. One lecture and one afternoon in field studies. Laboratory fee, \$2. Credit value: Two semester hours. (Formerly Geology 364.)

*365s. Field Geology.*—A continuation of Geology 264. Prerequisite: Geology 264. One lecture and two afternoons in field. Laboratory fee, \$2. Credit value: Three semester hours. (Formerly Geology 565.)

074s. *Geology Field Trip*.—A survey trip of about two weeks covering districts of geologic interest. Required of seniors majoring in geology. No credit, but required for graduation.

### HISTORY, GOVERNMENT, AND SOCIOLOGY

PROFESSOR WALLER; ASSOCIATE PROFESSOR NULL; ASSISTANT PROFESSORS QUINN, GREGORY, †STRICKLAND

#### History

4. *History of England*.—Survey of the social, economic, political and intellectual development of Britain and the British Empire. First semester, to 1660; second semester, 1660 to the present. Credit value: Six semester hours.

9. *History of Europe, 1500-1914*.—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; 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; Triple Alliance and Entente Cordiale; background of the World War. Credit value: Six semester hours.

312f. *The Ancient World*.—A survey of the ancient civilizations—Babylonian, Chaldean, Assyrian, Persian, and Egyptian; more intensive 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 in history. Credit value: Three semester hours. (To be omitted in 1938-1939; given in 1937-1938.)

313s. *Medieval Europe*.—Renaissance and Reformation; cultural development of the Middle Ages; social, artistic, and economic phases of the Renaissance; development of feudalism and rise of city-states; causes and results of the Reformation; period of discovery. Prerequisite: Sophomore standing or six semester hours in history. Credit value: Three semester hours. (To be omitted in 1938-1939; given in 1937-1938.)

315f. *History of the United States*.—Survey history of the United States from the discovery of America to 1850. Prerequisite: six semester hours in history or Sophomore standing. Credit value: Three semester hours.

†Appointed September 6, 1937.

*316s. History of the United States.*—Survey history of the United States from the Compromise of 1850 to the present. Prerequisite: Six semester hours in history or sophomore standing. Credit value: Three semester hours.

*323f. Europe, 1870-1900.*—A survey of the different countries of Europe and their internal developments to the close of the century. Prerequisite: Twelve semester hours in history. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*324s. Europe after 1900.*—Europe in the twentieth century. The last years of peace, the World War, the peace treaties. Prerequisite: Twelve semester hours in history. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*325f. 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 in history. Credit value: Three semester hours. (Given in 1937-1938; to be offered in 1938-1939.)

*326s. History of the United States, 1787-1829.*—Confederation and Constitution; formulation of foreign policy, culminating in classic expression in the Monroe Doctrine; Jeffersonian Democracy and Hamiltonian Federalism; expansion and development of Jacksonian Democracy; rise of nationalism and conflict over States' Rights. Prerequisite: Twelve semester hours in history. Credit value: Three semester hours. (Given in 1937-1938; to be offered in 1938-1939.)

*327f. Social and Intellectual Development of the United States before 1860.*—This course deals with the gradual development of American civilization. Emphasis is given to social customs, economic influences, racial contributions, religious beliefs, and humanitarian movements, as well as to the intellectual, artistic, and scientific interest of the people. May be counted as advanced work in sociology. Prerequisite: Twelve semester hours in history or Sociology 310 and 311, depending upon whether the course is to be counted as advanced work in history or sociology. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*328s. Social and Intellectual Development of the United States since 1860.*—Special emphasis is given to the shifting of American life to the cities and the influence of new immigrants. May be counted as advanced work in sociology. Prerequisite: Twelve semester hours in history or Sociology 310 and 311, depending upon whether the



course is to be counted as advanced work in history or sociology. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*335f. 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 state rights; slavery and cotton capitalism. Prerequisite: Twelve semester hours in history. Credit value: Three semester hours. (To be omitted in 1938-1939; given in Summer Session, 1937.)

*336s. History of the United States, 1850-1865.*—Slavery controversy; manifest destiny; party history, breakdown of the Whigs, rise of the Republican Party, new leaders; Civil War, its causes, economic and social factors, military operations, results. Prerequisite: Twelve semester hours in history. Credit value: Three semester hours. (To be omitted in 1938-1939; given in Summer Session, 1937.)

*347f. Latin America: The Colonial Period.*—This course gives a survey of the history and institutional development of Spanish and Portuguese America in the Colonial period. Prerequisite: Twelve semester hours in history. Credit value: Three semester hours. (To be offered in 1938-1939.)

*348s. Latin America: The National Period.*—This course deals with the empires and republics of Latin America after the Wars for Independence. Prerequisite: Twelve semester hours in history. Credit value: Three semester hours. (To be offered in 1938-1939.)

*349f. The Mexican Nation.*—The cultural and political evolution of Mexico from Independence to the present time. Emphasis will be placed upon Mexico's social development, her people, their arts and crafts, the years of revolution and their aftermath. Prerequisite: Twelve semester hours of history. Credit value: Three semester hours. (Given in Summer Session, 1937; to be omitted in 1938-1939.)

*353f. A Survey of Political and Social Britain from 1815 to 1895.*—Tory England, the beginnings of reform, leaders and events in the making of modern Britain. Prerequisite: Twelve semester hours in history. Credit value: Three semester hours. (To be offered in 1938-1939.)

*354s. 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 in history. Credit value: Three semester hours. (To be offered in 1938-1939; given in Summer Session, 1937.)

*355f. History of the United States Since the Civil War, 1865-1900.*—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 in history. Credit value: Three semester hours. (To be offered in 1938-1939.)

*356s. Contemporary History of the United States, 1900 to the Present.*—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 in history. Credit value: Three semester hours. (To be offered in 1938-1939.)

#### Government

*310fs and 10. American Government.*—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 a course on the Constitutions of the United States and of Texas. Prerequisite: Sophomore standing. Credit value for 310: Three semester hours; for 10: Six semester hours.

*311fs. European Governments.*—The governments of the British Empire, the British Commonwealth of Nations, France, Germany, Switzerland, Italy, and Russia, with some attention to the governments of the lesser European states. Prerequisite: Sophomore standing. Credit value: Three semester hours. (Given in 1937-1938; to be omitted thereafter.)

*323f. The Governments of England and the British Commonwealth of Nations.*—The rise of English political institutions; a critical analysis of the English and British systems of government with special emphasis on their practical workings; the larger problems of the British Empire and Commonwealth of Nations. Prerequisite: Government 310 and 311, or 10. Credit value: Three semester hours. (To be offered in 1938-1939.)

*324s. The Governments of Continental Europe.*—The governments and politics of France, Italy, Switzerland, Germany, and Russia, with some attention given to lesser European countries; recent revolutionary and constitutional changes are emphasized. Prerequisite: Government 310 and 311, or 10. Credit value: Three semester hours. (To be offered in 1938-1939.)

*330f. International Politics.*—The 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 310 and 311, or 10. Credit value: Three semester hours. (Given in Summer Session, 1937.)

*331s. International Organization and Administration.*—The development of the machinery and procedure of international government for the peaceful settlement of international disputes. Prerequisite: Government 310 and 311, or 10. Credit value: Three semester hours. (Given in Summer Session, 1937.)

*334f. 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 the National Court system. Prerequisite: Government 310 and 311, or 10. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*335s. American National Government and Administration.*—A general view of the powers of Congress; National Executive and National Court System; the organization, personnel, and work of the Civil Service and of the Budget Bureau. Prerequisite: Government 310 and 311, or 10. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

#### Sociology

*310fs. Introduction to the Study of Society.*—The local social milieu and social institutions; the process and products of interaction; mechanism of interactions, competition, conflict, accommodation, assimilation; society and the person; social control; social change; social movements. Prerequisite: Sophomore standing. Credit value: Three semester hours.

*311fs. Social Pathology.*—Physical and mental defectiveness considered from the sociological viewpoint; defects in social organization; poverty and dependency; pathology of personality. Social controls applied to social problems. Prerequisite: Sophomore standing. Credit value: Three semester hours.

*345f. The Community: A Study of Rural Life.*—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 in modern communities. Prerequisite: Sociology 310 and 311. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*346s. The Community: A Study of Urban Life.*—Prerequisite: Sociology 310 and 311. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*347f. Population Problems and Immigration.*—Population movements and their social control; problems of population, distribution, and assimilation. Social questions attending the complex composition of the American people; an examination of the ethnic origin and racial characteristics of "old" and "new" immigrants, taking up the economic, political, and social aspects of their migration to America. Consideration of Americanization programs and immigration laws. Prerequisite: Sociology 310 and 311. Credit value: Three semester hours. (To be offered in 1938-1939.)

*348a. 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. Credit value: Three semester hours. (To be offered in 1938-1939.)

#### HOME MANAGEMENT

##### INSTRUCTOR POOL

*311f. Food Management.*—A practical course of value to women students and special students interested in the marketing, storing, preparing, and serving of foods as related to the efficient management of the home and the family. Attention will be given, also, to the functions of the hostess in the arrangement of foods for teas, receptions, dinners, and entertainments in the home. Prerequisite: *Sophomore standing.* Credit value: Three semester hours. (Given in 1937-1938; to be offered in 1938-1939.)

*312s. Management of Family Relationships.*—A course designed to present a study of the functions of interior decoration and all furnishings in a well-balanced home. The value of efficient budgeting of time, money, interests, work, and leisure by the home-maker as related to family life, will be emphasized. Prerequisite: *Sophomore standing.* Credit value: Three semester hours. (To be offered in 1938-1939.)

#### MATHEMATICS AND PHYSICS

PROFESSOR KNAPP; ASSOCIATE PROFESSOR DURKEE; ASSISTANT PROFESSOR TURRITTIN; INSTRUCTORS LILES, LEECH

##### Mathematics

*803. Elementary Mathematical Analysis.*—The first two weeks are devoted to an intensive review of secondary-school algebra. Students who at the end of this period show that they do not possess a good working knowledge of secondary-school algebra are transferred to a special section and given additional work. The course is designed

to give the student a good foundation for the study of calculus, the natural sciences, and engineering. Four recitations. Credit value: Eight semester hours.

*304fs. Algebra.*—Rapid review of algebra with extensions to prepare the student for Mathematics 309. Credit value: Three semester hours.

*307Ks. Mathematics of Investment.*—An elementary course in the theory and application of the mathematics of finance. Topics covered include logarithms, progressions, simple and compound interest, annuities, amortization, perpetuities. Credits earned may be applied toward satisfying the mathematics requirement or elective hours for the B.A. degree. Prerequisite: Mathematics 304 or 803a. Credit value: Three semester hours.

*208fs. Solid Geometry.*—Required of candidates for engineering degrees who do not present solid geometry for entrance. These students must pass it in first semester of the first year in order to continue under that registration. Counts toward academic degrees but not toward engineering degrees. Credit value: Two semester hours.

*309fs. Mathematical Analysis.*—A course in mathematical analysis designed for general students who do not plan to take any further courses in college mathematics. Elements of statistics, graphical methods in the solution of common problems, logarithms, progressions, investments. Prerequisite: Mathematics 304. Credit value: Three semester hours.

*13. Calculus.*—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, minima, rates, velocity, acceleration, and geometrical applications. The work in integral calculus drills the student in the integration of forms occurring in mechanics and physics; in evaluating areas, moments, moments of inertia, and volumes, in finding the center of gravity and center of stress; and in the derivation and application of the fundamental formulas of hydrostatics and hydraulics. Prerequisite: Mathematics 208 unless solid geometry is presented for entrance, and Mathematics 803. The last two semester hours of this course count as advanced. Three recitations. Credit value: Six semester hours.

*325f. Advanced Calculus.*—The topics of Mathematics 13 will be 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; series, approximations of definite integrals, partial differentiation, complex variables, elementary Four-

ier expansions, and an introduction to the differential equations. Prerequisite: Mathematics 13. Credit value: Three semester hours. Formerly Mathematics 25a. (To be offered in 1938-1939.)

326s. *Differential Equations.*—A study of the common types of ordinary and partial differential equations of geometry, mechanics, and electricity. Theory and applications are alternated throughout the course. Prerequisite: Mathematics 13. Credit value: Three semester hours. Formerly Mathematics 25b. (To be offered in 1938-1939.)

41. *Analytical Mechanics.*—Equilibrium and motion of a particle and rigid body in two or three dimensions. May be counted as six advanced semester hours in physics. Prerequisite: Mathematics 13 with a grade of C. Credit value: Six semester hours. (Given in alternate years; to be omitted in 1938-1939.)

### Physics

1. *General Physics.*—Three lectures and two laboratory hours. Laboratory fee, \$4. Credit value: Six semester hours.

12. *Second-Year Physics.*—First semester: light and heat; second semester: mechanics, electricity, magnetism, and sound. Prerequisite: Physics 1, and Mathematics 13 concurrently. Two lectures and three laboratory hours. Laboratory fee, \$4. Credit value: Six semester hours.

812. *Physics: Mechanics, Heat, Electricity, and Magnetism.*—Includes a thorough grounding in kinematics, dynamics, statics, kinetics, the elements of precision of measurements, properties of matter, thermometry, expansion, calorimetry, heat and work, change of state, vaporization, condensation of gases, radiation, magnetism, the magnetic field, magnetic induction, electrostatics, electro-dynamics, radioactivity. Particular attention is given to composition and resolution of forces, accelerations, and velocities, to simple harmonic motion and to the moment of inertia. Prerequisite: Mathematics 13 concurrently. Three recitations and three laboratory hours. Laboratory fee, \$4. Credit value: Eight semester hours.

221s. *Problems in Physics.*—A practical course in the application of advanced methods in the solution of a wide range of physical problems. Prerequisite: Mathematics 13 and eight semester hours in physics. Credit value: Two semester hours.

34. *Electricity and Magnetism.*—Advanced theory and laboratory work. Prerequisites: Physics 12 or 812, and Mathematics 13. Two lectures and three laboratory hours. Credit value: Six semester hours. Laboratory fee, \$4.

*Mathematics 41. Analytical Mechanics.*—Equilibrium and motion of a particle and rigid body in two or three dimensions. May be counted as six advanced semester hours in physics. Prerequisite: Mathematics 13 with a grade of C. Credit value: Six semester hours. (Given in alternate years; to be omitted in 1938-1939.)

## MINING AND METALLURGY

PROFESSOR GRAHAM; ASSISTANT PROFESSOR THOMAS

### Mining

*310s. Mining Methods.*—Prospecting, exploration, development, exploitation, explosives, breaking ground, drifting, shaft sinking, stoping, timbering, drainage, and ventilation of coal and metal mines. Prerequisite: Chemistry 311, Geology 1a, Drawing 302, and Physics 312a. Three lectures. Credit value: Three semester hours.

*321f. Mining Methods.*—Continuation of Mining 310. Prerequisite: Mining 310. Three lectures. Credit value: Three semester hours.

*322s. Mine and Route Surveying.*—Shaft plumbing, underground surveying, mapping of underground connections, surface surveying in connection with mineral claims, and all ordinary operations and calculations that the mine surveyor is called upon to perform. Theory and practical application of simple, reverse and compound curves; rights-of-way; cross-sections; and estimates. Prerequisite: Engineering 414 and Mining 321. Two lectures and three laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours.

*223s. 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 310. Two lectures. Credit value: Two semester hours.

*224. Mine Surveying.*—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. Prerequisite: Mining 322. Eight hours daily for two weeks immediately following the close of the Spring semester. Laboratory fee, \$2. Credit value: Two semester hours.

*280f. Advanced Mining.*—A detailed study of underground transport, hoisting plant, shaft pockets, ore bins, compressed air plant, mechanical ventilation, pumping, and electric power for mine service. Prerequisite: Senior standing. Two lectures. Credit value: Two semester hours.

*361s. Advanced Mining.*—A continuation of the work given in Mining 260. Also, 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. Prerequisite: Mining 260. One lecture and six laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours.

*67. Management.*—Mine examination, sampling, reporting, welfare, organization, financing, and other interesting management problems are considered in a lecture course given only to students who have senior standing in mining engineering options. Three lectures. Credit value: Six semester hours.

*268s. Mining Law.*—The principles governing contracts, liabilities of mine operators, compensation and insurance of workmen, and the laws and court decisions of the United States, Texas, and Mexico, so far as they relate to locations and acquirements of titles to mines, are carefully considered in course of lectures. Prerequisite: Senior standing in mining engineering options. Two lectures. Credit value: Two semester hours.

*074s. Mining Trip.*—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 1938 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. Although this trip is not a credit course, it will be required for graduation. Prerequisite: Completion of the requirements for the Bachelor of Science degree by the end of the following fall semester. No credit, but required for graduation.

### Metallurgy

*321f. General Metallurgy.*—Introductory course covering a description of the various processes for treating all the ordinary metals, with a calculation of slags and furnace charges. Prerequisite: Chemistry 413, Physics 812, and Geology 316 and 217. Three lectures. Credit value: Three semester hours.

*423s. Ore Dressing and Milling.*—Study of the principles of crushing and grinding, amalgamation, concentration, and ore dressing. Prerequisite: Metallurgy 321. Three lectures and three laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours.

*361f. Iron, Copper, and Lead.*—A study of 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. Three lectures. Credit value: Three semester hours.



*261f. Iron, Copper, and Lead.*—This course is 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. Two lectures. Credit value: Two semester hours.

*362f. Metallurgy of Leaching Processes.*—Study of the chemical and physical properties of the metals and such of their compounds as are of importance in connection with the leaching processes; the cyanide process, and leaching methods employed in the metallurgy of copper, lead, and zinc. Prerequisite: Metallurgy 321. Two lectures and three laboratory hours. Laboratory fee, \$2. Credit value: Three semester hours.

*463f. Ore Dressing and Milling.*—A continuation of Metallurgy 423, with the emphasis laid upon ore testing and plant design. Prerequisite: Metallurgy 423. Two lectures and six laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours.

*264s. Metallurgical Laboratory.*—In this course 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. Prerequisite: Metallurgy 361 and Metallurgy 362. Six laboratory hours. Laboratory fee, \$2. Credit value: Two semester hours.

*473s. Metallography.*—An elementary course in the metallography of various metals and products and the heat treatment of iron and steel. Prerequisite: Metallurgy 321. Three lectures and three laboratory hours. Laboratory fee, \$4. Credit value: Four semester hours.

*074s. Metallurgical Trip.*—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. Prerequisite: Completion of the requirements for the Bachelor of Science degree by the end of the following Fall semester. No credit, but required for graduation.

#### MODERN LANGUAGES

PROFESSOR BACHMANN; ASSISTANT PROFESSORS AVERETT, ELDRIDGE,  
OLMSTED; INSTRUCTOR FINEAU

The admission requirement of two units is represented by Course A, which will not count toward a degree for students presenting two admission units in a modern language. Those with two units will enter Course 1a in the same language. For those presenting three

units neither Course A nor Course 1a will count. Such students will enter Course 1b.

The department offers majors in Spanish and French.

#### French, German, Spanish

*A. Fundamentals of Grammar and Pronunciation.*—Elementary grammar; reading of easy texts; dictation; oral drill; conversation. Credit value: Six semester hours.

*1. Grammar, Reading and Composition.*—Grammar review, written exercises, dictation, reading of intermediate texts. Outside readings with weekly conferences and reports. Prerequisite: Course A or two admission units in the language. Credit value: Six semester hours.

*12. Intermediate Reading and Elementary Survey of Literature.*—Reading of an easy anthology and of selected masterpieces. Oral and written reports, weekly conferences and assigned outside readings; outline of the history of the literature. Prerequisite: Course 1. Credit value: Six semester hours.

#### French

*335f. Modern Novel: Early Period.*—Reading of eighteenth century novelists such as Lesage, L'abbé Prévost and Bernadin de St. Pierre and of 19th century novelists up to about 1850. Prerequisite: French 12. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*336f. Modern Drama: Early Period.*—Plays by followers of Molière, such as Lesage, Marivaux and Beaumarchais will be read as well as dramas by Hugo, de Vigny, and Musset. Prerequisite: French 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

*337s. Modern Novel: Later Period.*—A study of the naturalistic school of novelists from Flaubert to Maupassant. Prerequisite: French 12. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*340s. Modern Drama: Later Period.*—A study of the naturalistic and social drama from Becque to Brieux. Parallel readings and reports. Prerequisite: French 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

#### Spanish

*13. Social and Business Usage.*—Translation, composition, and conversational practice in the language of business and everyday life.

Reading of texts, building up of practical vocabulary, and grammatical drill in essential constructions. This course is not intended for Spanish majors but is recommended for students who do not wish to continue into courses in the literature. Prerequisite: Spanish 1. Credit value: Six semester hours.

*328f. Golden Age Drama.*—A study of the leading dramatists, such as: Lope de Vega, Tirso de Molina, Calderón de la Barca, Ruiz de Alarcón, Moreto, and others. Readings of selected masterpieces; outside readings and reports. Prerequisite: Spanish 12. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*329s. Classical Epoch Prose.*—A study of the movements in the prose writings of the sixteenth and seventeenth centuries, such as: novelesque, chivalresque, picaresque, satirical, pastoral, mystic, etc. Readings of masterpieces; outside reading reports. Prerequisite: Spanish 12. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*334f. Early Epics and Ballads.*—A study of the field of ballads and epics. Special emphasis on the epic heroes in the ancient ballads. Readings of special selections; outside readings and reports. Prerequisite: Spanish 12. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

*335f. Modern Novel: Early Period.*—A study of the trends in the development of the novel from the latter part of the eighteenth to the latter part of the nineteenth century. Readings from such authors as: Padre Isla, Fernán Caballero, Pedro Antonio de Alarcón, Juan Valera, José María de Pereda, etc.; outside reading reports. Prerequisite: Spanish 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

*336f. Modern Drama: Early Period.*—A study of the trends in the development of the drama from the latter part of the eighteenth to the latter part of the nineteenth century. Readings from such dramatists as: Leandro Fernández de Moratín, Martínez de la Rosa, Bretón de los Herreros, López de Ayala, Tamayo y Baus, etc.; outside reading reports. Prerequisite: Spanish 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

*337s. Modern Novel: Later Period.*—A study of the trends in the development of the novel from the latter part of the nineteenth century to the present. Selected readings from such authors as: Pérez, Galdós, Pardo Bazán, Palacio Valdes, Blasco Ibáñez, Pío Baroja, Ricardo León, Pérez de Ayala, etc.; outside reading reports. Prerequisite: Spanish 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

338s. *The Romantic Period.*—A study of the development of romanticism in the literature of the early nineteenth century. Selected readings of such writers as: Espronceda, José de Larra, Duque de Rivas, García Gutiérrez, Hartzenbusch, José Zorrilla, etc.; outside readings. Prerequisite: Spanish 12. Credit value: Three semester hours. (Given in Summer Session, 1937.)

340s. *Modern Drama: Later Period.*—A study of the trends in the development of the drama from the latter part of the nineteenth century to the present. Readings of representative works from such dramatists as: Echegaray, Pérez, Galdós, Jacinto Benavente, Linares Rivas, Los Quinteros, Martínez Sierra, Eduardo Marquina, etc.; outside reading reports. Prerequisite: Spanish 12. Credit value: Three semester hours. (To be offered in 1938-1939.)

357f. *Advanced Composition and Grammar Review.*—A course recommended especially for teachers and language majors. An intensive review of grammatical principles, idiomatic usage and style. Exercises in translation and composition. Prerequisite: Spanish 12 or 13. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

358s. *Contemporary Literature.*—A consideration of the movement in contemporary literature, with study of representative authors of the various movements. Outside readings and reports. Prerequisite: Spanish 12. Credit value: Three semester hours. (Given in Summer Session, 1937.)

## PHILOSOPHY AND PSYCHOLOGY

PROFESSOR ROTH

### Philosophy

312f. *Logic.*—Introduction to essentials of correct thinking; deductive and inductive reasoning; fallacies and argumentation. Prerequisite: Sophomore standing. Credit value: Three semester hours. (Given in 1937-1938; to be omitted in 1938-1939.)

314f. *Problems of Philosophy.*—An introduction to the main general problems of philosophy such as those of matter, mind, life, truth and value; the field of philosophy with its relation to the special sciences and to scientific method is stressed. Prerequisite: Sophomore standing. Credit value: Three semester hours. (To be offered in 1938-1939.)

316s. *Philosophics of Life.*—Study of the various classical philosophies of life from the point of view of their moral, religious, and aesthetic values. Prerequisite: Sophomore standing. Credit value: Three semester hours. (To be offered in 1938-1939.)

*317e. The Philosophy of Civilization.*—A comprehensive study of man's social, economic and ethical development as viewed in the light of the contributions of the modern sciences. His place in the world today, and his potential future destiny will be evaluated. Prerequisite: Sophomore standing. Credit value: Three semester hours. (Given in Summer Session, 1937, and Long Session, 1937-1938.)

*328f. History of Ancient Philosophy.*—Survey of the development of philosophic thought from Thales to Descartes with readings from the philosophers. Prerequisite: Six semester hours in philosophy, or three semester hours in philosophy and three semester hours in psychology. Credit value: Three semester hours. (Given in 1937-1938; to be offered in 1938-1939.)

*329s. History of Modern Philosophy.*—Survey of the development of philosophic thought from Descartes to the end of the nineteenth century with readings from the philosophers. Prerequisite: Six semester hours in philosophy, or three semester hours in philosophy and three semester hours in psychology. Credit value: Three semester hours. (To be offered in 1938-1939.)

### Psychology

*310fs. Introductory Psychology.*—A survey of the field of general psychology. Prerequisite: Sophomore standing. Credit value: Three semester hours.

*311s. Fields of Psychology.*—Survey of genetic, animal, abnormal, social, and applied psychology; mental measurements and experimental methods. Prerequisite: Psychology 310. Credit value: Three semester hours.

*319f. The Psychology of Personality.*—A study of the fundamental traits of personality, their origin, development and control; maladjustments and disorders of the personality and their treatment. Prerequisite: Psychology 310. Credit value: Three semester hours. (Given in 1937-1938; to be offered in 1938-1939.)

## DEGREES CONFERRED IN JUNE, 1937

### BACHELOR OF SCIENCE IN MINING ENGINEERING

Arguelles, Edmundo	Navarro, Albert
Ceballos, Alberto	Peinado, Emilio
Latham, Lindley	Rogers, Bill J.
Lopez, Manuel	Vertiz, Oscar
Marshall, Grady	

### BACHELOR OF ARTS

Ballentine, Douglas Kelley	McKenney, Leslie Rae
Bernhardt, George	Mann, Mary Ethelyn
Bowman, E. R., Jr.	Miller, Lucia Ellen
Bradshaw, Elizabeth	Morrow, Louise
Branch, Amelia Louise	Naylor, Harold H.
Bulger, Gordon W.	Nigra, John Oscar
Castor, Gaylord B.	Niland, William H.
Chambers, Ida Marie	Norman, Mildred Louise
Chant, Leonard Howard	Peters, Dorothy Jean
Cuen, Gloria E.	Robinson, Leona
Davis, Margaret	Schuyler, Peter V. R., Jr.
Durham, Doris Belle	Sheehan, Betty
Elliott, Hardie Bishop	Stansbury, Ruth
Finley, Marshall Thompson	Stitt, Barbara Lee
Foote, Sara Bain	Thomas, Clarence G.
Grant, Ruby	Tracy, Donald Edward
Gribble, Bertha Jane	Vance, Mary Frances
Grubbs, Mary McKnight	Weyerts, Lucille
Haffner, Mary Louise	White, Argyra
Hale, Nadine	Williams, Marjorie Bernice
Harlacker, Mary Louise	Wright, Fanny A.
Jarrett, Juanita May	Wynn, A. O., Jr.

## DEGREES CONFERRED IN AUGUST, 1937

### BACHELOR OF SCIENCE IN MINING ENGINEERING

Richmond, Kenneth C.

### ENGINEER OF MINES

Davis, Carlos Guillermo

**BACHELOR OF ARTS**

Arroyo, Irene  
Brasmer, Leanora Amelia  
Cronkhite, Glen  
Dale, Erwin Randolph  
Dunne, Dorothy  
Farnsworth, Mary Lee  
Gardiner, Gertrude Clement  
Gary, Queen  
Gates, Walter B.  
Hawley, Lewis Lee  
Iverson, Marguerite  
Ivey, Carl T.  
Johnson, Helene Hubbard  
Jordan, Robert Eugene, Jr.

Light, Edward S.  
McBeth, Leslie Murkel  
Martin, Frederick Christopher  
Miller, Hubert W.  
O'Donnell, Thomas Joseph  
Page, L. O., Jr.  
Pukli, Frank M., Jr.  
Ravel, Jerome Olkin  
Stigler, Annie Lou Cole  
Travis, Nell Harleston  
Van Trease, Ruth Rutherford  
White, Emilie Carter  
Woods, John Louis  
Yarbro, Maybelle

## REGISTER OF STUDENTS

LONG SESSION, 1936-37

Abadie, Robert	Austin	Blanchard, Mrs. Kate	El Paso
Abdon, Mary Lee	El Paso	Blythe, Olive	El Paso
Abraham, Mary	El Paso	Boehm, Fred	El Paso
Acreman, Molly	El Paso	Bonorden, Marie	El Paso
Adkins, Marvin	Lawton, Okla.	Borunda, Octavio	El Paso
Agee, Forrest J.	El Paso	Bowden, Mary Jane	El Paso
Alarcon, Seferino	El Paso	Bowling, Bob	El Paso
Alexander, Emmie	El Paso	Bowman, Dale	El Paso
Allen, Faye W.	El Paso	Bowman, E. R.	El Paso
Alton, Josephine	El Paso	Bowman, Nathan	El Paso
Alvarez, Fernando	El Paso	Box, James	Olmito
Alverson, Hunter	El Paso	Boyce, E. G.	El Paso
Anderson, Mrs. Amelia	El Paso	Boyer, Mildred	El Paso
Anderson, Mrs. J. E.	El Paso	Bozeman, George	El Paso
Andreas, Vincent	El Paso	Bradley, Jack	El Paso
Andresen, Winnifred	El Paso	Bradshaw, Elizabeth	El Paso
Andrews, Lionel	Canton	Bradt, Estelle	El Paso
Antoine, Mary	Clarksville	Branch, Amelia	El Paso
Arguelles, Edmundo	El Paso	Branch, Bill	El Paso
Arms, Homer	Sulphur, Okla.	Bray, Fannie Lee	Hayden, N. M.
Armstrong, Fred	Pecos	Brewer, Eugene	El Paso
Arnold, Boyd	Bearden, Ark.	Britton, Marvin	El Paso
Arnold, Ira	Roscoe	Brooks, W. P.	El Paso
Arnold, LuVenia	El Paso	Brown, Millard, Jr.	El Paso
Arredondo, Cecilio, Jr.	El Paso	Bruce, R. L.	El Paso
Arroyo, Cesar	El Paso	Bryan, Edith A.	El Paso
Arroyo, Irene	El Paso	Bryan, Margaret L.	El Paso
Asmann, Margaret	El Paso	Buchholz, Oscar	Pecos
Attel, George	El Paso	Buckner, Edna	El Paso
Babcock, Clarence	Ft. Davis, Texas	Bulger, Gordon	El Paso
Baca, Albert	El Paso	Bull, Evelyn	El Paso
Bagley, Henry	Denver, Colo.	Bunting, John S.	El Paso
Baker, Stanley	San Benito	Burciaga, Carmen	El Paso
Balenti, Mike	Altus, Okla.	Burciaga, Ernesto	El Paso
Balenti, Richard	Altus, Okla.	Burciaga, Estela	El Paso
Ballentine, Kelley	El Paso	Burgard, Pete	El Paso
Baltz, Ferd	El Paso	Burrus, Constance	El Paso
Banister, Myrtle Sue	El Paso	Burrus, Madeline	El Paso
Banks, Mary Etta	El Paso	Burton, Martha	El Paso
Barber, Francis C.	El Paso	Bush, Mary E.	El Paso
Barboglio, Pete	El Paso	Byers, Ballard	El Paso
Bardsley, Bernard	El Paso	Byers, Howard	El Paso
Barlow, Jane	San Angelo	Byers, William John	El Paso
Barnes, Margaret	El Paso	Byrd, H. F.	Anthony, N. M.
Barrett, Fred	Dawson, Okla.	Calisch, Charles	El Paso
Barrett, Gwynne	El Paso	Camp, Fannie	El Paso
Barrett, Joe Charles	Temple	Camp, Jennie	El Paso
Barron, Margaret	El Paso	Campos, Jose	El Paso
Battle, Fred	El Paso	Carlson, Robert	El Paso
Bean, Willis	El Paso	Carlton, Paul	El Paso
Beard, Jack	El Paso	Carpenter, Ada Kurtz	El Paso
Beaty, John	El Paso	Carpenter, A. J.	El Paso
Bennett, Mrs. Efa Lou	El Paso	Carpenter, F. C.	El Paso
Bennett, Elnora	El Paso	Carpio, Federico	Juarez, Mex.
Bennold, Ruby Lee	El Paso	Carrasco, Mike	El Paso
Benson, Robert	El Paso	Carrera, Julius	El Paso
Berliner, Edwin	El Paso	Cashon, Edwin	Hornbeak, Tenn.
Bernhardt, George	El Paso	Casner, Mrs. N. L.	El Paso
Berry, Hazel	Big Spring	Castor, Gaylord	Tucson, Ariz.
Berryhill, Richard	El Paso	Cates, Martha Ruth	El Paso
Bess, Virginia	El Paso	Ceballos, Alberto	Winslow, Ariz.
Bew, Margie Lee	El Paso	Chambers, Ida Marie	El Paso
Beys, George	El Paso	Chant, Leonard	El Paso
Bickley, Rachel	El Paso	Chapman, Christine	El Paso
Biggerstaff, Mary Lee	El Paso	Chavez, Oscar	El Paso
Biggs, Mrs. Irene	El Paso	Cherry, Rex	Granbury
Bilbro, Catherine June	El Paso	Chew, Gan	El Paso
Bishop, Laura	El Paso	Chinn, Patty Mae	El Paso
Black, Buddy	El Paso	Clark, Otha Lee	Snyder
Black, Charles	Barstow	Clark, Robert	El Paso
Black, Gordon	El Paso	Clausewitz, Erlwood	El Paso
Black, Kate	El Paso	Clayton, Frances	El Paso
Black, Wilma	El Paso	Clayton, W. G.	El Paso
Blalock, William	El Paso	Cobos, Oscar	El Paso



McMillan, Joe	El Paso	Okies, Michael	El Paso
McMorris, J. S.	Seattle, Wash.	O'Leary, Albert	El Paso
McNamee, John	El Paso	Oliver, Mary	El Paso
McNeil, Irving	El Paso	Olson, John	El Paso
McNeil, Mary Elizabeth	El Paso	Oppenheim, William	El Paso
McNitt, Jack	El Paso	Ortiz, Ignacio	Chihuahua, Mex.
Maddox, Maude	El Paso	Outlaw, Eleanor	El Paso
Maachtel, Helen	El Paso	Overton, Charles	El Paso
Maese, Beatriz	El Paso	Page, L. O., Jr.	Quanah
Mann, Douglas	El Paso	Page, Mary	El Paso
Mann, Mary E.	El Paso	Page, Nelson	Quanah
Marshall, Grady	El Paso	Page, Sallie	El Paso
Marshall, Howard	El Paso	Palm, Wilma Lee	El Paso
Martin, Margaret	El Paso	Paredes, Felipe	El Paso
Martin, Vivian	El Paso	Paredes, Peter	El Paso
Martinez, Fernando	El Paso	Parsons, Frank	El Paso
Martinez, Rosito	El Paso	Pearce, Odie	El Paso
Mateus, Carlos	El Paso	Peden, Jack	El Paso
Matthews, Horace	Lamesa	Peevey, Roscoe	Roscoe
Matthews, Jesse	High Island	Peevey, Katherine	El Paso
Maurice, James	Odessa	Painado, Emilio	El Paso
Maxon, Louise	El Paso	Pell, George	El Paso
May, O. P.	Livingston, La.	Penick, Billy	Sonora
Mayfield, Geraldine	El Paso	Pennington, Barry	Georgetown
Mayhew, Haden	Port Arthur	Perez, Luis	El Paso
Medina, Jose	El Paso	Perez, Nicolas	El Paso
Melendez, Jose	El Paso	Perez, Porfirio	El Paso
Morkin, Alfred	El Paso	Perez-Rul, Alberto	El Paso
Michael, Bill	El Paso	Perkins, Judith	El Paso
Middleton, J. E.	Laredo	Peters, Dorothy	El Paso
Mier, Carlos	El Paso	Pharr, Viola	El Paso
Miller, Elizabeth	El Paso	Phillips, Jack	El Paso
Miller, Helen	El Paso	Phillips, Sallie	El Paso
Miller, Laymon	El Paso	Phillips, Ted	Big Spring
Miller, Lucia	Greenfield, Ind.	Pickle, Judith	Big Spring
Miller, W. E.	El Paso	Pillow, Mrs. Lucille	El Paso
Miller, W. H.	El Paso	Pitts, Richard	El Paso
Mingus, John B.	Abilene	Polk, Molly	El Paso
Miskimins, Harry	El Paso	Pool, Henry Heath	Troup
Mitcham, Robert	El Paso	Porter, David	Breckenridge
Mitcham, Tom	El Paso	Poske, Jane	El Paso
Mitchell, B. M., Jr.	Carthage	Poston, Marcus	El Paso
Mitchell, Ernest	El Paso	Prado, Enrique	El Paso
Moeller, Elmo	San Marcos	Prado, Miguel	El Paso
Montro, Donald	El Paso	Price, R. E.	El Paso
Montague, Harry	El Paso	Prieto, John	El Paso
Montenegro, Alfonso	Juarez, Mex.	Prieto, Philip	El Paso
Moor, Mary Lou	El Paso	Pritchard, T. H.	El Paso
Moore, A. Ross	Saripita, La.	Pukli, Frank	El Paso
Mora, Salvador	El Paso	Purdy, Delbert	El Paso
Morales, Antonio	El Paso	Quaid, Margaret	El Paso
Morris, Harriet	El Paso	Quevedo, Alberto	El Paso
Morris, Harry B.	El Paso	Rains, Marjorie	El Paso
Morales, Arturo	El Paso	Ramsay, Peggy	El Paso
Morrow, Louise	El Paso	Randel, Maggie	Big Spring
Mosley, Harold	El Paso	Raney, Morris	El Paso
Mottinger, William	El Paso	Rathbun, Lavonne	El Paso
Mueller, William	El Paso	Reed, Mack	El Paso
Muerdter, Kurt	El Paso	Reed, Sam H.	El Paso
Mumford, Griffin	El Paso	Reedman, Lawrence	El Paso
Murphy, Elizabeth	El Paso	Resch, Marion	El Paso
Nalley, Hardy	Dallas	Reynolds, Mel	El Paso
Navarro, Albert	Los Angeles, Calif.	Rheinheimer, Emile	El Paso
Naylor, Harold	El Paso	Rice, Alonzo	El Paso
Neel, Alan F.	El Paso	Rice, Virginia	El Paso
Neeson, Mary	El Paso	Richerson, Felix A.	El Paso
Neill, Thomas	El Paso	Richerson, Wilma W.	El Paso
Nelson, Betty Ann	El Paso	Richmond, Kenneth	El Paso
Nelson, Paul G. B.	El Paso	Riggins, Lee	El Paso
Nelson, Lloyd A., Jr.	El Paso	Rigney, Anne	El Paso
Neugebauer, Eugene	El Paso	Rinehart, Mrs. Clinton	El Paso
Newell, Oliver	Point Loma, Calif.	Rinehart, Tiffany	El Paso
Newman, Frances	El Paso	Rister, Eugene	El Paso
Newman, Tom B.	El Paso	Rivera, Carlos	El Paso
Nigra, John O.	El Paso	Roberts, Mrs. Fred	El Paso
Nigra, Le Roy	El Paso	Roberts, Jo Ruth	El Paso
Niland, William	El Paso	Robinson, Mrs. Eudora	El Paso
Norman, Mildred	El Paso	Robinson, L. H.	El Paso
O'Donnell, Tom	El Paso	Robinson, Leona	El Paso
O'Keefe, Adelbert	El Paso	Robinson, Mary Jo	El Paso
		Robinson, Patricia	El Paso

Roby, Cynthia	El Paso	Stull, Charles	El Paso
Rockwell, Harry	El Paso	Sturman, W. A.	El Paso
Roden, Mildred	El Paso	Strzelecki, Arthur	Brooklyn, N. Y.
Rodgers, Pollard	Barstow	Sullivan, Arlene	El Paso
Rodin, Harry	Philadelphia, Pa.	Sullivan, Eugene	El Paso
Rodriguez, Siomara	El Paso	Sullivan, Patrick G.	El Paso
Rogers, Bill	Wink	Sundquist, Thelma	El Paso
Rogers, Grace Florabel	El Paso	Tappan, David	El Paso
Romney, Keith	El Paso	Tappan, Marion	El Paso
Rosas, Justo	El Paso	Tatum, Marion	El Paso
Rosenbaum, Arthur	El Paso	Tcague, Keith	El Paso
Rosenberg, Harry	El Paso	Teel, Adelaide B.	El Paso
Rosenberg, Sam	El Paso	Terrazas, Alfredo	El Paso
Roslyn, Mrs. Margaret	El Paso	Terrazas, Nicholas	El Paso
Ross, Rose	El Paso	Thede, Mary Elizabeth	El Paso
Rouse, Joe	El Paso	Thomas, Cecil	Thorpe Springs
Rousseau, Elizabeth	El Paso	Thomas, Clarence	El Paso
Ruiz, Adalberto	El Paso	Thomas, Inez	El Paso
Ruiz, Victor	El Paso	Thomas, Louise	El Paso
Saffold, Bill	El Paso	Thomas, Nellie K.	El Paso
Saldana, Nicanor	El Paso	Thomas, Philip K.	El Paso
Salsar, Robert Allan	Lamesa	Thompson, Gerald	El Paso
Sanders, Virgil	Big Spring	Tilley, Joseph	Ft. Clayton, Canal Zone
Schell, Jimmie	El Paso	Tillman, Juanice	El Paso
Schuller, J. Leroy	El Paso	Tunnin, Lee	El Paso
Schuyler, Peter	El Paso	Tipton, Stanley	El Paso
Schwartzau, William	El Paso	Tomlinson, Shields	El Paso
Scott, Jeanne	El Paso	Towe, Beulah	El Paso
Scott, Mrs. Lillian	El Paso	Tracy, Donald	El Paso
Scurlock, Doris	El Paso	Travis, Brooks	El Paso
Segura, Pablo	El Paso	Travis, Nell	El Paso
Shackelford, Wilton	Prescott, Ark.	Trevino, Salvador	Mexico City, Mex.
Shamaley, John	El Paso	Trimble, Elizabeth	El Paso
Shapleigh, Robert	El Paso	Triolo, Jerome	El Paso
Sheehan, Betty	El Paso	Twiss, Freeman	El Paso
Shields, Dorothy	El Paso	Valdez, Evaristo	El Paso
Sibley, M. C.	El Paso	Valencia, Samuel	El Paso
Silberg, Arthur	El Paso	Valkenaar, John J.	El Paso
Simmons, Elizabeth	El Paso	Vance, Mary Frances	El Paso
Simon, Joe	El Paso	Vance, Mrs. Mary	El Paso
Simpson, Andrew	El Paso	Vandemoer, Edward	El Paso
Simpson, June	El Paso	Van Doren, Donald	El Paso
Skala, Anne	Red Lake Falls, Minn.	Van Trease, Mrs. Ruth	El Paso
Skidmore, Rosser	El Paso	Vasquez, Alfredo	El Paso
Skousen, Greer	Chihuahua, Mex.	Vasquez, Eduardo	El Paso
Smith, Einma Lee	El Paso	Vega, Arnulfo	El Paso
Smith, Floyd	El Paso	Vertiz, Oscar	El Paso
Smith, Mary Frances	El Paso	Villalobos, Carmen	El Paso
Smith, Ralph	El Paso	Villareal, Federico	Monterrey, N. L., Mex.
Snyder, Robert	El Paso	Villareal, Rodolfo	Monterrey, N. L., Mex.
Sofral, Daniel	El Paso	Vinson, David	El Paso
Soltner, Marie	El Paso	Vinson, Benita	El Paso
Sommerville, Naomi	El Paso	Voelzel, Lucille	El Paso
Sonnichsen, Augusta	El Paso	Walker, Allen	El Paso
Soucek, Mae	El Paso	Walker, Clarence	Madill, Okla.
Sparks, Glynn	El Paso	Walker, Lytle	El Paso
Specht, Isabel	El Paso	Walker, R. W.	El Paso
Stablein, Betty	El Paso	Walt, Rosalie	El Paso
Stacy, Jim	El Paso	Ward, Nora	El Paso
Stacy, Mary Gray	El Paso	Warne, John D.	El Paso
Stansbury, Ruth	El Paso	Warren, Ruth	El Paso
Stansbury, Virginia	El Paso	Warwick, Billy	Stamford
Stanton, Elbert	Gladewater	Weaver, Margaret	El Paso
Stanton, Lawrence	El Paso	Webb, Charles	Elgin
Staus, Christine	El Paso	Webb, Claude	Iraan
Steele, Hart	El Paso	Webb, Malcolm	El Paso
Stevenson, Boynton	El Paso	Weiss, Mrs. Deveryle	El Paso
Stewart, Mrs. Alyne	El Paso	Welsh, Jack W.	Ysleta
Stewart, Glendyne	Durango, Mex.	Wessels, Noma	Stuttgart, Ark.
Stiles, Ray	El Paso	West, Mrs. Bertha	El Paso
Stirman, Marion	El Paso	West, Marizoe	Merkel
Stitt, Barbara	El Paso	Weyerts, Lucille	El Paso
Stitt, Jack	El Paso	Wheeler, Edison	El Paso
Story, Orval	Tesnus	Whisenhunt, Nellie	El Paso
Stowell, Alta F.	El Paso	Whitaker, Nell	El Paso
Stowe, Jimmie Louise	El Paso	Whitaker, Opal	El Paso
Strawn, Miriam	El Paso	White, Betsy	El Paso
Street, Novian	El Paso	White, Emily	El Paso
Stringer, Billy	El Paso	White, James	El Paso
Stueber, Josephine	El Paso	White, Mary	El Paso

Whitenack, Katherine.....	El Paso	Wiser, Ortella.....	El Paso
Whitlock, R. A.....	El Paso	Wolf, Elsie.....	El Paso
Wieland, Bernard.....	El Paso	Womack, Lenora.....	El Paso
Wilbourn, Donald.....	El Paso	Womeldorf, E.....	El Paso
Wilcman, Alice.....	El Paso	Woods, J. L., Jr.....	El Paso
Wiley, Howard.....	El Paso	Work, Salvador.....	El Paso
Wilkenfeld, Allen.....	Houston	Worman, Rebecca.....	El Paso
Wilkes, Morgan.....	Wichita Falls	Wright, Fannie.....	El Paso
Williams, Arthur.....	El Paso	Wright, Mrs. Marguerite.....	El Paso
Williams, Edna Mae.....	El Paso	Wynn, A. O.....	El Paso
Williams, George.....	El Paso	Yager, Louis.....	Ysleta
Williams, Hugh.....	Deming, N. M.	Yapor, John.....	El Paso
Williams, Marjorie.....	El Paso	Yarbro, May Belle.....	El Paso
Williams, Ruth.....	El Paso	Young, Bess.....	El Paso
Williams, William A.....	El Paso	Ziier, Don.....	El Paso
Williamson, Joe.....	El Paso	Zlabovsky, Esther.....	El Paso
Willis, Joe Sam.....	El Paso	Zlabovsky, Julia.....	El Paso
Wilson, Jane.....	El Paso	Zozaya, Jose.....	El Paso
Wimberly, Charles.....	Plainview		

## REGISTER OF STUDENTS

### SUMMER SESSION, 1937

Abadie, Bob.....	Austin	Delaney, Helen W.....	E Paso
Abdou, Mary Lee.....	E Paso	De Leon, Alfredo.....	E Paso
Abdow, Sammy.....	E Paso	Del Valle, Salvador.....	E Paso
Adams, Mrs Elizabeth.....	E Paso	Dennis, Elizabeth Ann.....	E Paso
Ainsworth, John M.....	E Paso	Desmond, Vincent.....	Brooklyn, N. Y.
Allen, Faye W.....	E Paso	Dickenson, Mrs Helen.....	E Paso
Anderson, Mrs. J. E.....	E Paso	Dodson, Winifred Kilgore.....	E Paso
Andreas, Vincent B.....	E Paso	Drees, Mary Alice.....	E Paso
Andrews, Lionel.....	E Paso	Droleskey, Mrs. Ada.....	E Paso
Armstrong, R. W.....	E Paso	Duckworth, Katherine.....	E Paso
Arnold, Boyd.....	Bearden, Ark.	Duke, Jack.....	E Paso
Arroyo, Irene.....	E Paso	Dunne, Dorothy.....	E Paso
Atkinson, Mrs. Esther.....	E Paso	Duty, Lucille.....	E Paso
Baltz, Ferd.....	E Paso	Easley, Myrtis.....	E Paso
Banks, Mary Ella.....	E Paso	Eckhardt, Alvina.....	E Paso
Barlowe, Emily.....	E Paso	Egbert, Rosa Mae.....	E Paso
Barnett, Edmund.....	E Paso	Eisert, Arthur.....	E Paso
Barrett, Gwynne.....	E Paso	Erickson, Vivian.....	E Paso
Bass, Mrs. Attie.....	E Paso	Hscajeda, Maria Luisa.....	E Paso
Beaty, John.....	E Paso	Farnsworth, Mary Lee.....	E Paso
Beaudett, Anne.....	E Paso	Fernandez, Abraham.....	E Paso
Bellman, Dorothy.....	E Paso	Fernandez, William.....	E Paso
Benson, Robert.....	E Paso	Fields, Charles.....	Hornbeak, Tenn.
Berliner, Edwin.....	E Paso	Fino, Ben.....	E Paso
Beys, George.....	E Paso	Fletcher, Dick.....	E Paso
Bibo, Mrs. Bernice W.....	E Paso	Floyd, Jack.....	E Paso
Bickley, Rachel.....	E Paso	Foote, Sara Bain.....	E Paso
Biedeger, Marie.....	E Paso	Force, Charlotte.....	E Paso
Black, Buddy.....	E Paso	Ford, Mary Louise.....	E Paso
Black, Kate.....	E Paso	Foster, Mrs. Theodosia.....	E Paso
Blanchard, Mrs. Kate.....	E Paso	Fox, Mrs. Edna.....	E Paso
Blythe, Olive.....	E Paso	Fraser, Edgar Lee.....	E Paso
Boehm, Fred.....	E Paso	Fraser, Mary Lee.....	E Paso
Bomar, Frank E.....	E Paso	French, Mrs. Alice.....	E Paso
Bowden, Dorothy.....	E Paso	French, E. C.....	E Paso
Howman, Dale.....	E Paso	French, Loretta.....	E Paso
Bowman, Meta.....	E Paso	Galentine, Elma.....	E Paso
Bowman, Nathan.....	E Paso	Gallagher, Mary B.....	E Paso
Brasmer, Leonora.....	E Paso	Galvan, Juliet.....	E Paso
Breedlove, Lillian M.....	E Paso	Gantt, Mildred S.....	E Paso
Bridgers, Rowena.....	E Paso	Garcia, Armando.....	E Paso
Brown, Lyle.....	E Paso	Garcia, Esequiel.....	E Paso
Buckner, Edna.....	E Paso	Gardiner, Mrs. Gertrude.....	E Paso
Burgard, Pete.....	E Paso	Gary, Mrs. Queen.....	E Paso
Burrus, Constance.....	E Paso	Gales, Walter.....	E Paso
Burrus, Madeline.....	E Paso	Gemoets, Martin J.....	E Paso
Calisch, Charles A.....	E Paso	Gibson, Evelyn.....	E Paso
Campos, Jose.....	E Paso	Gilchrist, Sophia.....	E Paso
Carlton, Julia.....	E Paso	Goakes, Ruby R.....	E Paso
Carpio, Federico.....	E Paso	Gonzales, Rosario.....	E Paso
Carrera, Julius.....	E Paso	Gordon, Bernice.....	E Paso
Cates, Martha Ruth.....	E Paso	Gorham, George.....	E Paso
Chapman, Christine.....	E Paso	Grady, Annie.....	E Paso
Clark, Robert.....	E Paso	Gregg, Brooks.....	E Paso
Coblentz, Mrs. Luther.....	E Paso	Gregg, Lucie Lee.....	E Paso
Cobos, Oscar.....	E Paso	Griffin, G. A.....	E Paso
Cobos, Victor.....	E Paso	Gruber, Doris.....	E Paso
Cohen, Mildred B.....	E Paso	Guthrie, Julia Ann.....	E Paso
Cole, Hilda.....	E Paso	Hall, Mrs. Mabel.....	E Paso
Conly, Myrtis.....	E Paso	Halpern, Beulah.....	E Paso
Connolly, Julia.....	E Paso	Hanna, Mrs. Ethel.....	E Paso
Connor, Leonard.....	E Paso	Hannifin, Margaret.....	E Paso
Cooper, Forrest W.....	E Paso	Hardaway, George.....	E Paso
Cowherd, Florence.....	E Paso	Hargrove, Eugene.....	E Paso
Crockett, Bob.....	E Paso	Harlacker, Mary Louise.....	E Paso
Cronkrite, Glen.....	E Paso	Harman, Betty.....	E Paso
Crowell, Cathren.....	E Paso	Harman, Jack.....	E Paso
Dacey, A. L.....	E Paso	Harman, Mary.....	E Paso
Dale, Randolph.....	E Paso	Harper, James R.....	E Paso
Daugherty, Mrs. Emily.....	E Paso	Harper, Mary Elizabeth.....	E Paso
Davis, Jimmie.....	E Paso	Harris, Helen.....	E Paso
Davis, Roy.....	E Paso	Harrison, Elizabeth.....	Helena, Ark.

Hawley, Louis	El Paso	McKee, John	El Paso
Hazellon, Bob	El Paso	McKinney, Elizabeth	El Paso
Heller, Isaac	El Paso	Maddox, Maude	El Paso
Hemley, Barbara	El Paso	Madland, R. D.	El Paso
Hendon, Louise	El Paso	Maese, Beatriz	El Paso
Hernandez, Tony	El Paso	Martin, Fred C.	El Paso
Herron, Emilia	El Paso	Martin, Margaret	El Paso
Higdon, Rosemary	El Paso	Martin, Vivian	El Paso
Hignett, Mary L.	El Paso	Matthews, Horace	El Paso
Hill, Vernon	El Paso	Maxon, Louise	El Paso
Hintun, Mary Blair	El Paso	May, Kathryn	El Paso
Hirsch, Jeanne	El Paso	Medina, Jose	El Paso
Hoard, Dorothy	El Paso	Meccc, Bessie	El Paso
Hoard, Frances	El Paso	Michael, Bill	El Paso
Holguin, Dora	El Paso	Miller, Christine	El Paso
Hooten, Mrs. Grace	El Paso	Miller, Mrs. Fred	El Paso
Howard, Wanda	El Paso	Miller, Helen W.	El Paso
Howard, William	El Paso	Miller, Laymon	El Paso
Howell, Emma Gene	El Paso	Miller, William E.	El Paso
Howertone, Ora	El Paso	Miskimins, Harry	El Paso
Hubbard, Edwin	El Paso	Mitcham, Robert	El Paso
Huitron, Estela Romo	El Paso	Mitcham, Tom	El Paso
Hunter, Frank H.	El Paso	Montenegro, Alfonso	Juarez, Mex.
Indermichle, Lloyd	El Paso	Moon, Louisa J.	El Paso
Irvin, Hallic Ray	El Paso	Moore, Albert Ross	El Paso
Iverson, Marguerite	El Paso	Mora, Salvador	El Paso
Ivey, Carl	El Paso	Mcrales, Antonio	El Paso
Ivey, Lee	El Paso	Mosley, Harold	El Paso
Jackson, Dorothy	El Paso	Myers, J. H.	El Paso
Jackson, Sue	El Paso	Nash, Emma Bell	El Paso
Jameson, Louise	El Paso	Naxon, Mary	El Paso
Jameson, Naomi	El Paso	Nelson, Lloyd A., Jr.	El Paso
Jenness, Richard	El Paso	Nelson, Patsy Ruth	El Paso
Johnson, Betty	El Paso	Neugebauer, Eugene	El Paso
Johnson, Helene Hubbard	El Paso	Newman, Frances	El Paso
Jones, Juanita	El Paso	Newman, Tom	El Paso
Jordani, Eugene	El Paso	Nowlin, Gertrude	El Paso
Joseph, Isabel	El Paso	O'Donnell, Tom J.	El Paso
Junell, Elizabeth	Abilene	Oliver, Mary	El Paso
Junell, Maxine	El Paso	O'Neill, Susie	El Paso
Keeler, Veva	El Paso	Ortiz, Ignacio	El Paso
Kelly, Josephine	El Paso	Osborn, Cordelia	El Paso
Keltner, Edwarda	El Paso	Paredes, Felipe	El Paso
Kenuelly, William J.	El Paso	Park, Mrs. Ola D.	El Paso
Kerley, Bernard	El Paso	Parsons, Frank	El Paso
Kerley, Daniel	El Paso	Patton, Jack	El Paso
Kilgore, Mrs. Volita	El Paso	Perez, Charles	El Paso
Kilgore, Zora	El Paso	Perez, Nicholas	El Paso
Kinard, Luther	El Paso	Perez-Rul, Alberto	El Paso
King, Virginia	El Paso	Perkins, Judith	El Paso
Kirby-Smith, Selden	El Paso	Phillips, Sallie	El Paso
Kilson, Nancy	El Paso	Pickles, Fanny	El Paso
Knolle, Dorothy	El Paso	Pitts, Richard	El Paso
Lambert, Cy	El Paso	Plass, Martin	El Paso
Lassiter, Virginia	El Paso	Pool, Heath	Troun
Lavender, Eunice	El Paso	Porter, David	El Paso
Lavigne, Virginia	El Paso	Poske, Jane	El Paso
Lee, Henry	El Paso	Potash, Melvin	El Paso
Lee, Tom	El Paso	Price, Hazel G.	El Paso
Lefkowitz, Florence	El Paso	Pukli, Frank	El Paso
Lefkowitz, Mildred	El Paso	Quevedo, Alberto	El Paso
Leverett, Mary Gay	Presidio	Rainey, Frieda Helen	El Paso
Lewis, Richard	El Paso	Rains, Marjory	El Paso
Light, Edward	El Paso	Ray, Elizabeth	Croton-on-Hudson, N. Y.
Light, Ellen M.	El Paso	Reynolds, Melville	El Paso
Locke, Marjorie	Woodward, Okla.	Rheinheimer, Frieda	El Paso
Loewenstein, Robert	El Paso	Rice, Virginia	El Paso
Loomis, Mrs. Eliza	El Paso	Richardson, Charles	El Paso
Loomis, Jane	El Paso	Richmond, Kenneth	El Paso
Love, Mrs. Myrtle	El Paso	Rigdon, Dorothy	El Paso
Love, Tom	El Paso	Riggins, Lee	El Paso
Lockett, Joe	Knippa	Riggs, Ted	El Paso
Lynde, Bill	El Paso	Rigney, Ann	El Paso
Lyon, Mary Eleanor	El Paso	Roberts, Jo Ruth	El Paso
McAdoo, Fay	El Paso	Robinson, Mrs. Annie	El Paso
McBeth, Leslie	El Paso	Robinson, L. H.	El Paso
McCall, Martha	El Paso	Robinson, Patricia A.	El Paso
McCord, Frank	El Paso	Roden, Mildred	El Paso
McCullough, Elizabeth	El Paso	Rodin, Harry	El Paso
McCulchan, Roy	El Paso	Rodriguez, Siomara	El Paso

Register of Students

Romero, Robert	El Paso	Thomas, Mrs. Incz	El Paso
Rose, Mrs. Grace B	El Paso	Thomas, Mrs. Nellie K	El Paso
Ruiz, Adalberto	El Paso	Thompson, Mrs. Grace	El Paso
Rush, Mrs. Lucy	El Paso	Tilley, Joseph	Fl. Clayton, Canal Zone
Ryan, Fred	El Paso	Tillman, Juanice	El Paso
Saldana, Nicanor	El Paso	Travis, Nell	El Paso
Salscr, Robert Allan	El Paso	Valdes, Evaristo	El Paso
Salyer, Rose	El Paso	Valencia, Samuel	El Paso
Sanders, Virgil	Big Spring	Vandemoer, Edward	El Paso
Schell, James A	El Paso	Van Trease, Mrs. Ruth	El Paso
Schuck, Louise	El Paso	Vazquez, Alfredo	El Paso
Schwankhaus, Annie Laurie	El Paso	Vega, Arnulfo	El Paso
Schwartz, Albert	El Paso	Villarcal, Federico, Monterrey, N. L.	Mex.
Schwartz, Herbert	El Paso	Villarcal, Rudolfo, Monterrey, N. L.	Mex.
Schwartz, Jean	El Paso	Wajde, Mrs. Roxey Lee	El Paso
Scott, Lillian	El Paso	Walker, Mrs. R. W	El Paso
Scotten, Wilma	El Paso	Walsh, Jane	El Paso
Shamaley, John	El Paso	Walton, Mrs. Lucy	El Paso
Shannon, Jennie Lee	El Paso	Weir, J. D.	El Paso
Shaw, Mignon L	El Paso	Weiss, Miriam	El Paso
Shaw, Richard G	El Paso	Wells, Louise	El Paso
Sheehan, Catherine	El Paso	Whisenhunt, Nellie	El Paso
Shelton, Iona	El Paso	Whitaker, Opal	El Paso
Sherrrod, Nellyc Bell	El Paso	White, Betsy	El Paso
Simpson, Andrew	El Paso	White, Emily	El Paso
Skinner, Maurine	Clint	White, James	El Paso
Snecht, Isabel	El Paso	White, Katherine G	El Paso
Spencer, Trixy	El Paso	White, Mary Evelyn	El Paso
Stacy, Mary Gray	El Paso	White, Robert E.	El Paso
Stark, Mrs. Lydia	El Paso	White, Truman	El Paso
Staus, Christine	El Paso	Wiggs, Ethel	El Paso
Stevens, Margaret	El Paso	Wilkenfeld, Allen	El Paso
Stevenson, Boynton	El Paso	Wilkes, Morgan	Wichita Falls
Stewart, Glendyne	El Paso	Williams, Athalie Nell	El Paso
Stigler, Annie Lou	El Paso	Williams, Edna Mae	El Paso
Stiles, Ray	El Paso	Williams, Ruth	El Paso
Stirman, Marion W.	El Paso	Williams, William	El Paso
Stoker, Eryline	El Paso	Wilson, Mary	El Paso
Stone, Mrs. Thelma	El Paso	Wilson, Mrs. Mildred	El Paso
Stowell, Alta P	El Paso	Wimberley, Charles	Palestine
Strandberg, Florence	El Paso	Womack, Lenora	El Paso
Stull, Charles	El Paso	Wood, David	El Paso
Sturman, William	El Paso	Woods, John	El Paso
Sullivan, Eugene	El Paso	Worman, Rebecca	El Paso
Swann, Alicia	El Paso	Wright, Carrie	El Paso
Tappan, Marion	El Paso	Yarbro, Mrs. May Belle	El Paso
Tatuin, Marion C.	El Paso	York, Patricia Pearl	El Paso
Teague, Keith	El Paso	Young, Mrs. Elmore C.	El Paso
Tendick, Katherine Lois	El Paso	Zlabovsky, Vera	El Paso
Terrazas, Alfredo T	El Paso	Zollars, Fanilee	El Paso
Thede, Betty	El Paso	Zumwalt, Eva	El Paso
Thomas, Cecil	Thorp Springs		

## STATISTICAL SUMMARIES

### DEGREES CONFERRED, 1916-1937

Engineer of Mines (1916-1937) .....	45
Bachelor of Science in Mining Engineering (1924-1937) .....	133
Bachelor of Arts (1932-1937) .....	281
Total Number of Degrees Conferred .....	459

### STUDENTS

	Long Session, 1935-36					Long Session, 1936-37				
	Men		Women		Total	Men		Women		Total
	Reg-ular	Irreg-ular	Reg-ular	Irreg-ular		Reg-ular	Irreg-ular	Reg-ular	Irreg-ular	
<b>ENGINEERING:</b>										
Postgraduates.....	0	0	0	0	0	0	0	0	0	0
Seniors.....	14	0	0	0	14	12	1	0	0	13
Juniors.....	14	0	0	0	14	12	3	0	0	15
Sophomores.....	25	1	0	0	26	44	2	0	0	46
Freshmen.....	100	5	0	0	105	126	8	0	0	134
Unclassified.....	0	1	0	0	1	0	0	0	0	0
<b>Totals.....</b>	<b>153</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>160</b>	<b>194</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>208</b>
<b>ACADEMIC:</b>										
Postgraduates.....	0	3	0	5	8	0	6	0	23	29
Seniors.....	11	1	19	26	57	18	2	39	24	67
Juniors.....	31	3	34	37	105	30	0	57	18	93
Sophomores.....	40	5	66	20	131	40	6	57	18	121
Freshmen.....	116	16	109	18	259	132	9	108	29	278
Unclassified.....	0	3	0	1	4	0	20	2	7	29
<b>Totals.....</b>	<b>198</b>	<b>31</b>	<b>228</b>	<b>107</b>	<b>564</b>	<b>220</b>	<b>43</b>	<b>227</b>	<b>127</b>	<b>617</b>
<b>Total Individual Students in The College of Mines and Metallurgy..</b>	<b>351</b>	<b>38</b>	<b>228</b>	<b>107</b>	<b>724</b>	<b>414</b>	<b>57</b>	<b>227</b>	<b>127</b>	<b>825</b>

### STUDENTS, SUMMER SESSIONS

	1936			1937		
	Men	Women	Total	Men	Women	Total
Students registered in the first term.	112	182	294	132	184	316
Students registered in the second term.....	91	129	220	115	148	263
<b>Total registered in both terms</b>	<b>203</b>	<b>311</b>	<b>514</b>	<b>247</b>	<b>332</b>	<b>579</b>
Students registered in both terms (deduct).....	67	76	143	83	89	172
<b>Individual students in the Summer Session.....</b>	<b>136</b>	<b>235</b>	<b>371</b>	<b>164</b>	<b>243</b>	<b>407</b>

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