



**BULLETIN**  
OF THE  
**University of New Mexico**

WHOLE NO. 82

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CATALOGUE SERIES

MARCH, 1916

VOLUME 29

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**CATALOGUE**  
1915-1916

**ANNOUNCEMENTS**  
1916-1917

**ALBUQUERQUE, NEW MEXICO**

PUBLISHED QUARTERLY BY THE UNIVERSITY OF NEW MEXICO  
ENTERED MAY 1, 1906, AT ALBUQUERQUE, N. M. AS SECOND CLASS MATTER  
UNDER ACT OF CONGRESS OF JULY 18, 1894

# **PUBLICATIONS**

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OF THE

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## **University of New Mexico**

**A**LL the University Publications are issued as Bulletins. These are arranged in a continuous series, numbered consecutively. The Bulletins are classified according to subject matter and each class is given a separate title and carries its own volume number. These classes issued to date are as follows:

Catalogue Series, Vols. I-XXVIII; whole numbers 1-14, 40, 43, 46, 48, 50, 54, 55, 56, 59, 60, 64, 67, 70, 72, 74, 77, 78, 79, 80, 81.

Biological Series Vols. I-III; whole numbers 15, 16, 19, 22, 29-39, 44, 47, 49, 65.

Geological Series, Vols. I-III; whole numbers 17, 18, 20, 21, 23-28, 28a, 51, 76.

Educational Series, Vol. I; No. 1-8; whole numbers 41, 42, 52, 58, 61, 68, 69, 73.

Language Series, Vol. I; No. 1-12; whole numbers 45, 53.

Physics Series, Vol. I; No. 1; whole number 63.

Sociological Series, Vol. I; No. 1-3; whole numbers 57, 62, 66.

Chemistry Series, Vol. I; No. 1-2; whole numbers 71, 75.

# BULLETIN

OF THE

**University of New Mexico**

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CATALOGUE 1915-1916

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ANNOUNCEMENTS  
1916-1917

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ALBUQUERQUE, NEW MEXICO

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Evening Herald, Albuquerque, N. M.

## University Calendar

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—1916—

August 22, Tuesday—Registration Day.

August 26, Saturday—Latest date for entrance examinations.

October 21, Saturday—Mid-semester.

November 30, Thursday—Thanksgiving Day.

December 22, Friday—Close of first semester.

—1917—

January 9, Tuesday—Opening of second semester.

March 10, Saturday—Mid-semester.

May 6, Sunday—Baccalaureate sermon.

May 9, Wednesday—Commencement Day.

May 10-12, Final examinations.

May 12, Close of second semester.

# Calendar for 1916-1917

## CALENDAR-1916

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

## CALENDAR-1917

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

## **Officers of the University**

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### **Board of Regents**

HIS EXCELLENCY THE GOVERNOR OF NEW MEXICO,  
Ex-Officio.

THE STATE SUPERINTENDENT OF PUBLIC INSTRUCTION,  
Ex-Officio.

MR. GEORGE L. BROOKS.....Albuquerque

DR. J. A. REIDY.....Albuquerque

HON. HOWARD L. BICKLEY.....Raton

HON. NATHAN JAFFA.....Roswell

MR. W. G. HAYDEN.....Las Vegas

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### **Officers of the Board**

GEORGE L. BROOKS.....President

DR. J. A. REIDY.....Secretary and Treasurer

JOSEPHINE S. PARSONS..Secretary of the University

## **Administrative Officers of the University**

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**DAVID ROSS BOYD**, President of the University.

**CHARLES E. HODGIN**, Dean of the University.

**CLARENCE E. BONNETT**, Director of University Extension Division.

**JOSEPHINE S. PARSONS**, Secretary of the University.

**LYNN B. MITCHELL**, Registrar.

## Faculty of the University

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*Dean of the University, and Professor of Education.*

University Hill.

CHARLES T. KIRK, Ph. D.

*Professor of Geology.*

406 S. High Street.

LYNN BOAL MITCHELL, Ph. D.

*Professor of Latin and Greek, and Registrar.*

University Hill.

JOHN D. CLARK, Ph. D.

*Professor of Chemistry.*

University Hill.

CLARENCE E. BONNETT, B. S., A. B., B. Pd.

*Professor of Social Science, and Director of University Extension Division.*

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*Professor of Modern Languages.*

Occidental Building.



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202 N. High Street.

PROCTOR F. SHEERWIN, B. A.

*Professor of Rhetoric and the English Language.*

University Hill.

DEAN A. WORCESTER, B. A.

*Professor of Psychology and Philosophy.*

University Hill.

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*Associate-Professor of Civil Engineering, and  
Proctor.*

University Hill.

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116 S. High Street.

ARNO K. LEUPOLD, B. S. in E. E.

*Associate-Professor of Shop.*

University Hill.

RALPH F. HUTCHINSON

*Director of Physical Education.*

University Hill.

E. STANLEY SEDER, B. A., F. A. G. O.

*Director of Music.*

319 S. Third Street.

FRANCES LATHROP, Ph. B., B. S.

*Director of Home Economics.*

University Hill.

H. B. HENING

*Director of Publicity.*

I. N. PRICKETT

*Superintendent of Building and Grounds.*

#### COMMITTEES OF THE FACULTY

*Student Standing:* L. B. Mitchell, Chairman; A. O. Weese, J. L. Brenneman.

*Schedule and Curriculum:* C. T. Kirk, Chairman; C. E. Bonnett, P. F. Sherwin, J. L. Brenneman, A. W. Wand.

*Catalogue:* E. A. Hickey, Chairman; L. B. Mitchell, C. T. Kirk, C. E. Bonnett, R. R. Hill.

*Printing and Publications:* C. E. Hodgin, Chairman; E. A. Hickey, P. F. Sherwin.

*Commencement:* J. D. Clark, Chairman; A. W. Wand.

*Athletics and Eligibility:* W. E. Edington, Chairman; D. A. Worcester, R. F. Hutchinson.

*Non-Athletic Organizations:* D. R. Boyd, Chairman; J. S. Parsons, J. F. Nelson.

*Faculty Representatives on Athletic Council:* A. O. Weese, J. D. Clark.

*Library:* D. J. Sisler.

*Entertainments:* F. Lathrop, Chairman; E. S. Seder.

*Graduate Study:* J. D. Clark, R. R. Hill, C. T. Kirk.

## **General Information**

### **HISTORICAL SKETCH**

The University had its origin in an act passed February 28, 1889, by the Territorial Legislative Assembly of New Mexico, the bill being introduced by Hon. B. S. Rodey, who worked faithfully for its passage, and who has remained ever since a firm friend of the institution.

The following extracts are taken from the act:

"SECTION 1. There is hereby created and established within and for the Territory of New Mexico, an institution of learning to be known as "The University of New Mexico." Said institution is hereby located at or near the Town of Albuquerque, in the County of Bernalillo, within two miles north of Railroad Avenue in said town, upon a tract of good, high and dry land, of not less than twenty acres, suitable for the purpose of such institution, which said land shall, within six months from the passage of this act, be donated and conveyed free of any cost and expense, to the Territory of New Mexico, by G. W. Mylert; provided, that no improvements or buildings as hereinafter provided for, shall be made or erected upon said land until such deed is duly executed, recorded, and filed in the office of the Secretary of the Territory, as hereinafter provided.

"SEC. 7. The University of New Mexico, hereby created and established, is intended to be the State

University, when New Mexico shall be admitted as a state into the Union, and as such is entitled to all the donation of lands and other benefits under all acts of Congress, now in force or hereafter to be enacted, for the benefit of such educational institutions in the future state.

"SEC. 8. The object of the University hereby created shall be to provide the inhabitants of the Territory of New Mexico and the future state, with means of acquiring a thorough knowledge of the various branches of literature, science and arts.

"SEC. 9. The management and control of said University, the care and preservation of all property of which it shall become possessed, the creation and construction of all buildings necessary for its use, and the disbursement and expenditure of all moneys appropriated by this act, shall be vested in a board of five Regents, to consist of five qualified voters, who shall be owners of real estate in this Territory.

"SEC. 11. The Regents of the University and their successors in office shall constitute a body corporate under the name and style of "The Regents of the University of New Mexico," with the right, as such, of suing and being sued, of contracting and being contracted with, of making and using a common seal, and altering the same at pleasure.

"SEC. 14. The Regents shall have power and it shall be their duty to enact laws, rules and regulations for the governing of the University.

"SEC. 15. The University shall have departments, which shall hereafter be opened at such times as the Board of Regents shall deem best, for instruction in

science, literature and the arts, law, medicine, engineering, and such other departments and studies as the Board of Regents may from time to time decide upon, including military training and tactics.

"SEC. 16. The immediate government of the several departments shall be intrusted to their respective faculties, but the Regents shall have the power to regulate the course of instruction, and prescribe the books and authorities to be used in the several departments, and also to confer such degrees and grant such diplomas as are usually conferred and granted by other universities. The Regents shall have the power to remove any officer connected with the University, when in their judgment the interests require it.

"(a) The University created by this act shall be open to the children of all residents of this Territory and such others as the Board of Regents may determine, under such rules and regulations as may be prescribed by said board, whenever the finances of the institution shall warrant it, and it is deemed expedient by said Board of Regents.

"SEC. 17. No sectarian tenets or opinions shall be required to enable any person to be admitted as a student or employed as a tutor or other instructor in said University, but the same shall be forever non-sectarian."

When the bill became a law, Governor L. Bradford Prince, then New Mexico's chief executive, appointed the following Board of Regents: G. W. Mylert, Henry L. Waldo, Mariano S. Otero, Elias S. Stover, and Frank W. Clancy.

The Governor and the Superintendent of Public

Instruction, then Amado Chaves, were ex-officio members of the Board.

The Regents who have served the University are E. S. Stover, F. W. Clancy, W. B. Childers, J. H. Wroth, J. C. Armijo, E. V. Chaves, H. L. Waldo, Fletcher Cook, A. M. Mandalari, W. D. McBee, W. J. Johnson, R. W. Hopkins, A. W. Cooley, and R. W. D. Bryan.

The first faculty elected consisted of: President, E. S. Stover; Principal, George S. Ramsay; Alcinda L. Morrow, Marshall R. Gaines, Albert Cristy, G. R. Stouffer and Andrew Groh.

Many changes have since occurred in the faculty. Prof. Hiram Hadley was vice-president in charge from 1894 to 1897. Dr. C. L. Herrick, the second president of the institution, served from 1897 to 1901. The third president, Dr. W. G. Tight, served from 1901 to 1909. Upon his resignation, Dr. E. D. McQueen Gray was elected by the Board of Regents. In 1912, Dr. David Ross Boyd was elected to serve as the fifth president of the institution.

After the passage of the act creating the University, the Board of Regents secured the stipulated amount of land, and the erection of a suitable building was begun as soon as the requisite funds were available. The structure was completed and accepted by the Board in May, 1892.

The Normal School of the University was the first department organized, and was opened on June 15, 1892, for a summer term. In September of the same year the Preparatory School was opened, and the Commercial School was added in November, 1893.

In 1896 a gymnasium was erected and equipped. The Hadley Laboratory, largely the gift of Mrs. Walter C. Hadley, supplemented by donations from friends of the institution in Albuquerque and other parts of the Territory, was erected in 1899.

The administration of Dr. Tight was marked by definite advance in all departments of the University. In 1902, a start was made in providing accommodations for resident students, rooms for men being fitted up in the Administration building, and a cottage on the campus arranged as a girls' dormitory. In 1904, the men's quarters were removed to a separate building in the neighborhood of the campus. In 1906, two dormitories, constructed in the Pueblo Indian style of architecture, were erected along the eastern border of the campus. The cottage then became the Dining Hall, and by means of an addition in the summer of 1908 was rendered capable of meeting the requirements of the increasing number of students.

In 1908, the Administration Building was entirely remodeled, and another building erected, to serve as a lecture, concert and assembly hall, to the north of the Administration Building. To this new building the name Rodey Hall was given in recognition of the valuable services rendered by Delegate Rodey to the University.

On May 23, 1910, the Science Building, known as Hadley Hall, the largest and oldest building, next to the Administration Building, on the campus, was completely destroyed by fire. In addition to the Scientific and Engineering equipment this building housed the Hadley Climatological Laboratory and



the Botanical and Geological collections and the Ethnological Museum. The loss to the University and to the Territory in general was severe, especially as a large portion of the collections consisted of specimens that could not be replaced; and the destruction of the museum representative of the primitive races of the region was particularly regrettable.

Steps were at once taken to provide without loss of time a building which would meet the immediate needs of the Scientific departments; and the present Engineering Building, a one-story structure consisting mainly of concrete, was erected and equipped before the end of the year. During its erection temporary quarters were provided for the Science courses in the Gymnasium and the Administration Building. In the new Engineering Building are located a drafting room, a physical laboratory, an electrical testing room, a dark room, a machine shop, a biological laboratory, a geological laboratory, a lecture room and a chemical laboratory, together with the usual offices, stock-rooms, balance rooms, etc.

In the year 1910-11 a School of Music was initiated.

During the year 1911-12, co-ordinate with the change in state government, the institution became the State University of New Mexico. With the passing of the Territory, all territorial officers resigned; this action included the Board of Regents of the University, who were replaced in February, 1912, by a new Board. On April 6, 1912, the new Board

elected Dr. David Ross Boyd President of the University to succeed Dr. E. McQueen Gray.

During the administration of President Boyd great progress has been made in the college work of the University. The most important forward steps include the organization of the departments of Social Science in 1913, and Home Economics, Psychology and Philosophy, and History in 1914. The department of English was strengthened by the addition of a member to its faculty in 1914. In 1913-14 there was organized an Extension Division, which aims to give instruction to those who, for various reasons, cannot attend the University. The most recent improvement was the establishment of the School of Latin-American Affairs, the work of which was initiated in 1915-16.

In fact, the progress of the institution has been so great, that it has received the encouragement of increased appropriation from the Legislature for running expenses and repairs, and an appropriation of \$40,000 for the construction of a science hall.

#### **SITUATION AND ENVIRONMENT**

All writers who have treated the subject of the climatic conditions of the American continent in their relation to health and disease, are agreed in declaring that the south-eastern slopes and spurs of the Rocky Mountain range, with their elevated plateaus, upland valleys; and gently sloping stretches of open country, embrace within their boundaries the most salubrious region in the United States. In the very centre of this "health zone," as it may be

termed; stands the city of Albuquerque, the most populous town in New Mexico, and the commercial capital of the State.

Albuquerque lies on the main line of the Atchison, Topeka and Santa Fe Railway System, at the junction of the lines to El Paso and Mexico on the south, Arizona and California to the west, the Pecos Valley and south-eastern Texas to the east, and through Colorado to Kansas City and Chicago to the north, so that it enjoys railroad facilities unequalled by any other town in this region.

The situation of the city is in every respect admirable. It occupies the centre of a strip of highly fertile land on the left bank of the Rio Grande—the Rio Grande del Norte of the Spanish discoverers—at an elevation of five thousand feet above the level of the sea, in the valley formed by the river as it makes its way between the mountain ranges to the east and west; and the protected situation of the city has contributed not a little to the salubrity of its climate.

On the mesa, or elevated plateau, east of the city and about a mile distant from it, stands the University, overlooking with its seven buildings the wide valley of the Rio Grande. The free, pure air of the mesa, bracing and invigorating, surrounds the spot, and lassitude and depression are unknown in this buoyant and refreshing atmosphere.

Extremes of temperature, whether of heat or cold, which not infrequently impede the progress of educational work in other localities, are unknown in this part of New Mexico. This boon of climate has

proved an important factor in the growth of the institution; and while the University authorities wisely refuse to receive students suffering from pulmonary or other organic disease, yet many of our less vigorous youths, for whom a continued course of study would be dangerous or even impossible in a less favored region, have come from time to time from distant states to the University on the Rio Grande, and there gained health and strength while pursuing their studies and completing their education.

The New Town of Albuquerque—for there is also an Old Albuquerque, dating from the times of the first Spanish settlers, and still typically Spanish in appearance—is an essentially modern city, with paved streets, concrete sidewalks, electric light, street cars, two daily papers, and important mercantile and manufacturing establishments.

It is also an educational centre, possessing in addition to the University many schools of various kinds; while the public school system of the city compares favorably with the systems of much larger eastern towns.

It is also a city of churches, all the leading religious denominations being efficiently represented; and the members of all churches gladly welcome the University students to share in their religious and social life. The University's position in regard to religion is strictly non-sectarian, and the students are encouraged to attach themselves to the religious organizations with which their families are connected.

A weekly General Assembly is held in Rodey Hall. At this Assembly addresses are delivered on various topics of interest by the members of the faculty and by visitors to the University and the city. Opportunity is thus afforded the students to hear many eminent speakers. Short lecture courses on special subjects are sometimes arranged in connection with the General Assembly period.

The advantageous position of the city on the main line of passenger traffic east and west, furnishes to the citizens many opportunities of seeing and listening to persons of distinction in almost every department of public effort; and concerts, lectures, plays; musical and literary gatherings follow in almost unbroken succession throughout the year. The advantage to the young student of association and environment of this kind can hardly be over-estimated.

In general, the aim of the University is to develop true scholarship and to maintain a high standard of thought and conduct; and the authorities of the institution believe that by regarding these as the prime essentials of a university education, towards the promotion of which all academic effort must contribute, they will best fulfill their duty to the institution and to the State.

#### **BUILDINGS AND LABORATORIES**

The buildings of the University of New Mexico are picturesquely located on the rising mesa about a mile east of the business section of Albuquerque. They consist of the Administration Building, Rodey Hall, the Science Hall, the Women's Dormitory, the

Men's Dormitory, the Gymnasium, the Dining Hall and the Power House.

In the Administration Building are found the offices, the library and a large number of class rooms. Rodey Hall, with a seating capacity of 800, is used for all student assemblies, lectures, vesper services, and Commencement exercises. The Science Hall houses the laboratories, the scientific collections, a lecture room, and several class rooms.

The dormitories are arranged so as to provide a suite of rooms, consisting of a study and two bedrooms, for every two students. Each dormitory is provided with steam heat, electric light and hot and cold water.

The Gymnasium has been recently remodeled and is now furnished with showers, lockers, and the necessary apparatus for physical training.

The laboratories in the Science Hall include a physical laboratory, an electrical testing room, a dark room, a machine shop, a biological laboratory, a geological laboratory, and a chemical laboratory, with the usual offices and stock rooms. The physical engineering laboratories are fully described under the School of Applied Science.

The chemical department has a stock room, balance room, instructor's office, and a laboratory for qualitative analysis, quantitative analysis, and organic chemistry. The equipment of the department consists of a complete stock of chemicals, the usual lecture apparatus, and apparatus for qualitative and quantitative analysis in all the branches given

in undergraduate work. Equipment for research is added as need arises.

The best micro-photographic apparatus on the market has been purchased jointly by the departments of Biology and Geology, and the facilities for microscopic, lantern slide and opaque projection have been greatly improved by the purchase of the most complete equipment.

The biological laboratories are well lighted and adequately furnished for the most exacting work. There is an ample supply of Bausch & Lomb, Spencer and Leitz microscopes, fitted with oil immersion lenses for high power work, together with desirable microscopic accessories, such as mechanical stages, stage and ocular micrometers, double vision eyepieces, camera lucida, condenser for dark-ground illumination and ultra-microscopic observation, etc. The laboratory for histology and bacteriology contains two microtomes, a paraffin bath, electrically heated incubators, an autoclave, several sterilizers of different types, and a complete stock of media, chemicals and stains. There are a large collection of slides for histology and embryology, and systematic collections of plants and insects of the region, as well as the necessary material for routine laboratory work. The Leuckert-Chun and Pflüscheller series of Zoological charts, the Kny Botanical charts, several anatomical and embryological models by Zeigler and others, and Botanical models by Deyrolle furnish illustrative material for additional lecture and laboratory use.

During the year 1914-1915 a psychological laboratory was established which is well equipped for instruction and training in experimental psychology. The apparatus has been carefully chosen with the aim of giving to the student a thorough knowledge of modern psychological methods, apparatus and results. Instruments are provided for typical experiments in sensation, perception, association, reaction. There are also models of the brain, of the eye and of the ear. Constant additions will be made to the standard equipment and many new instruments are being devised and constructed in the University shops.

The Home Economics laboratories are located in the Administration Building and are up-to-date in every respect. The cooking laboratory has an entire electrical equipment with appliances of latest model. It is unique inasmuch as it is the only laboratory in the United States having the individual meter system.

The department equipment of the geology laboratory has been much improved recently by accessions in various lines.

The laboratory for determinative mineralogy has been resupplied to accommodate the increasing number of students. To the glass crystal models and Kranz axial models there are added numerous natural crystals, and a student set of minerals of wide range. Modern petrographic microscopes and an improved apparatus for the study of opaque minerals and metals by reflected light are available, as well as projectoscope with reflecting device and



petrographic accessories. About 250 thin sections of rocks and minerals and as many lantern slides are used with these devices. A Westphal balance and heavy solutions and a spectroscope make for refined determinations. Geologic slide rules are in stock for the computation of mineral and rock components. High temperature apparatus is being installed for the investigation of those geologic processes which are much accelerated in the neighborhood of 200 degrees centigrade. For field work there are both a telescopic and sight alidade with plane-table, a geologist's compass, Locke level, aneroid barometer, field kit for determinative mineralogy, hammers, etc., and it is planned soon to add a complete camping outfit.

The American Museum of Natural History, at New York, and the National Museum, at Washington, D. C., have sent extensive collections of fossils and many interesting rock specimens. Mr. Hugh Bryan, of Albuquerque, has recently collected and arranged for the University a complete collection of British types. The John Lee Clarke collection of minerals, rocks, and fossils forms a valuable lot of material. The Pratt and the John R. Lee collections of minerals are available for handling and study. The University laboratories and library are at the service of the New Mexico Geological Survey, which has its headquarters at the University, and in turn the University museums and library are the depositaries of the State Survey collections of specimens and books.

This arrangement is of much practical mutual value to the department and Survey.

Private collections are constantly being donated or loaned, for here they can do a greater good to a much greater number than when kept in private homes or museums.

The University library is the depository for Federal Public Documents, so that the publications of the United States Geological Survey, Bureau of Mines, Reclamation Service, and Forestry Service are at hand. The first named consists of a great series of extremely high grade monographs, professional papers, bulletins, folios, and maps. To these, students and others may have free access. In the University series of bulletins are discussed many of the local geologic problems. In addition there are kept on the shelves all the latest and best books in the various branches of geology.

#### THE LIBRARY

The University library contains about 13,000 volumes, exclusive of unbound pamphlets and duplicates. This includes both the main library and the departmental libraries, which are shelved in rooms adjoining the lecture rooms.

In exchange for the Bulletins of the University the library receives a large amount of valuable scientific literature. There are now more than one hundred and fifty societies and universities on the exchange list.

The University is one of the United States depositories for public documents. Many valuable refer-

ence books are accessible to the public during library hours.

A dictionary catalogue is being made, listing all material by author, subject, and title, thus making all the resources of the library readily accessible.

The library is open every day except Saturday and Sunday from 8:30 a. m. to 5:00 p. m.; on Saturday from 9:00 to 12.

In addition to complimentary periodicals and exchanges the following periodicals are subscribed for:

American academy of political and social science—Annals

American chemical society—Journal

American city

American cookery

American education

American educational review

American historical review

American journal of anatomy

American journal of archaeology

American journal of international law

American journal of philology

American journal of psychology

American journal of science

American journal of sociology

American library association booklist

American mathematical monthly

American mathematical society—Bulletin

American naturalist

American Oxonian

American review of reviews

Anatomical record

Art and archaeology

Astrophysical journal

Atlantic monthly

Biblical world  
Book news monthly  
Book review digest  
Bookman  
Botanical gazette  
Bulletin of bibliography  
Century  
Chemical abstracts  
Chicago tribune  
Choses et autres  
Classical journal  
Classical review  
Collier's weekly  
Cumulative book index  
Current opinion  
Dial  
Economic geology  
Educational administration and supervision  
Educational foundations  
Educational review  
Electrical world  
Engineering magazine  
Engineering news  
English journal  
Forum  
Harper's monthly  
Illustrated world  
Independent  
Index to dates  
Industrial engineering  
Information  
Journal of American history  
Journal of economic entomology  
Journal of educational psychology  
Journal of experimental zoology  
Journal of geography

Journal of geology  
Journal of home economics  
Journal of industrial and engineering chemistry  
Journal of morphology  
Journal of political economy  
Library journal  
Literary digest  
Machinery  
Mentor  
Modern language notes  
Modern philology  
Musical America  
Musician  
Nation  
National geographic magazine  
Nature study review  
New Mexico journal of education  
New republic  
New York times  
New York times current history  
North American review  
Out west  
Outlook  
Pan American union—Bulletin (Spanish edition)  
Philosophical magazine  
Physical review  
Plant world  
Playground  
Political science quarterly  
Popular science monthly  
Power  
Primary education  
Psychological bulletin  
Psychological index  
Psychological review  
Public libraries

Publishers' weekly

Quarterly journal of economics

Readers' guide to periodical literature

Readers' guide to periodical literature—Supplement

La Revue Hispanique

Science

Science abstracts—Physics

Scientific American

Scientific American supplement

Scientific monthly

Scribner's magazine

Survey

Technical world magazine

Ueber Land und Meer

Wisconsin library bulletin

World's work

## PUBLICATIONS

Bulletins of the University of New Mexico  
CATALOGUE SERIES

		Whole No.
v. 1	Catalogue 1892	1
v. 2	" 1892-93	2
v. 3	" 1893-94	3
v. 4	" 1894-95	4
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## BIOLOGICAL SERIES

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No. 7. Birtwell Observations on color-changes in the genus <i>Buttueo</i>	35
No. 8. Weinzirl Cold as a casual factor in the blood changes due to high altitude	36
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No. 10. Weinzirl Evaporation from water surface at Albuquerque, New Mexico	38
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No. 1. Watson Manual of the more common flow-	



# GENERAL INFORMATION

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ering plants growing without cultivation in Bernalillo County, New Mexico	49
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GEOLOGICAL SERIES	
v. 1 (Bound with Biological Series v. 1.)	
No. 1. Herrick Geology of the environs of Albuquerque, New Mexico	17
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PHYSICS SERIES	
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## EDUCATIONAL SERIES

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## LANGUAGE SERIES

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## SOCIOLOGICAL SERIES

v. 1	No. 1. Fergusson & Clancy Making of a constitution	57
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## CHEMISTRY SERIES

v. 1	No. 1. Kelly & Anspach Preliminary study of the waters of the Jemez Plateau, New Mexico	71
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## STUDENT PUBLICATIONS

The students of the University issue a weekly newspaper known as the U. N. M. Weekly; and publish at the end of each school year a book called the Mirage, wherein is shown the artistic, literary and executive ability of the student body.

**THE CECIL RHODES SCHOLARSHIPS**

In accordance with the provisions of the will of Cecil Rhodes, awarding two scholarships every three years to each state and territory in the United States, tenable at Oxford, England, and of the annual value of \$1,500, New Mexico has the privilege of electing a scholar from among the candidates who pass the qualifying examination set by the Oxford delegacy. The selection of scholars is made by a Committee of Selection approved by the Rhodes trustees. The scholars hitherto selected are:

1906, Thomas S. Bell; 1908, Frank C. Light; 1910, Hugh M. Bryan; 1911, Karl G. Karsten; 1914, W. Coburn Cook.

**STUDENT SOCIETIES**

There are several societies in the University subordinate to a general Student Body Organization, which insures the careful management of each. They include the Editorial Boards of the U. N. M. Weekly and the Mirage; the Dramatic Club; and the Athletic Association. In addition to these organizations governed by the student body as a whole, there are several independent or departmental associations: the Khiva Literary Society, the Choral Club, an Orchestra and a Band, the Rifle Club, the German Club, and the Spanish Club.

For the graduates of the institution the University of New Mexico Alumni Association was organized in 1894. Its purposes are to aid in promoting the interests of the University and to cultivate good fellowship. The annual meeting and annual dinner

occur during Commencement week. At this meeting, the officers of the Association are elected.

#### STUDENT AID

Each year a number of students make a large proportion of their expenses by means of outside work. There are positions in the dining hall, on the campus and in the buildings. In addition to these, many positions in the city are available for the student who is willing to do good work. Persons who must earn part of their expenses should communicate with the President before they come to the University.

# **Admission to the University**

## **METHODS OF ADMISSION**

Students are admitted either upon examination at the University or upon certificates from accredited schools, except that adult special students are admitted in accordance with the provisions stated under the Admission of Adult Special Students.

The following high schools in New Mexico are fully accredited:

Albuquerque	East Las Vegas
Alamogordo	Portales
Artesia	Raton
Aztec	Roswell
Carlsbad	Santa Fe
Carrizozo	Santa Rosa
Clayton	Socorro
Clovis	Tucumcari
Deming	Las Cruces
Farmington	

Diplomas from the above high schools admit the holders thereof to the Freshman class unconditionally whenever the course of study pursued meets the entrance requirements of the College or School in which the student desires to matriculate.

## **ENTRANCE REQUIREMENTS**

The requirements for admission are stated in terms of units. The term "unit" means the completion of a course of study consisting of five recitation periods of at least forty minutes each per

week during thirty-six weeks. A laboratory period or other practice work should extend over at least two consecutive recitation periods and is considered the equivalent of one recitation.

Fifteen units are required for admission to any College or School of the University, some of which are prescribed and the remainder elective. The variation existing between the prescribed subjects and those that may be offered as electives is shown in the following exhibit, in which list A in every case is prescribed, and the remainder of the fifteen units required for entrance may be elected from lists B and C in the amounts indicated.

**For Admission to the College of Letters and Science**

**LIST A**

English .....	3 units
History and Social Science.....	1 unit
Foreign Language .....	2 units
(in one language)	
Algebra .....	1 unit
Geometry, Plane .....	1 unit
Laboratory Science .....	1 unit
Total prescribed .....	9 units
From List B (see below).....	2-6 units
From List C (see below).....	$\frac{1}{2}$ -4 units
Total, to make .....	15 units

**For Admission to the School of Applied Science**

**LIST A**

English .....	3 units
Foreign Language .....	2 units
(in one language, preferably modern)	
Algebra .....	1 $\frac{1}{2}$ units
Geometry, Plane and Solid.....	1 $\frac{1}{2}$ units
Physics .....	1 unit

Total prescribed .....	9 units
From List B .....	2-6 units
From List C .....	$\frac{1}{2}$ -4 units
Total, to make .....	15 units

**For Admission to the School of Education****LIST A**

English .....	3 units
History and Social Science.....	2 units
(Ancient and U. S. History and Civics)	
Foreign language .....	2 units
(in one language)	
Algebra .....	1 unit
Geometry, Plane .....	1 unit
Laboratory Science .....	1 unit
Physiology .....	$\frac{1}{2}$ unit
Total prescribed .....	10 $\frac{1}{2}$ units
From List B .....	2 $\frac{1}{2}$ -4 $\frac{1}{2}$ units
From List C .....	$\frac{1}{2}$ -2 units
Total, to make .....	15 units

**For Admission to the School of Fine Arts**

Same as for admission to the College of Letters and Science.

The matriculant must offer the subjects contained in List A for admission to the College or School of which he expects to be a member. Under List C are given the minimum and maximum numbers of units that are accepted from that list by each College or School. The remainder of the fifteen units required for entrance is to be offered from List B. None of the subjects contained in List C is prescribed for entrance and if no electives are offered from this list the number of units needed in ad-

dition to List A to make a total of fifteen is to be offered from List B.

**Limitations.**—Not more than four units will be accepted from any one group in List B except in the case of foreign languages, including the amounts of that group prescribed in List A. Not more than four units will be accepted from List C, but the maximum amount accepted for entrance to the School of Education from this list is two units.

**Admission Without Foreign Language.**—Students may be admitted without foreign language under the following conditions:

- (1) They must offer fifteen units subject to all the limitations stated above except that one optional unit may be offered with one vocational subject or two optional units without a vocational subject.
- (2) They must meet the language requirement before graduation; and shall not receive college credit in the first two years of the language chosen for the requirement.

#### LIST B.

1. English Grammar and Composition, English and American Literature -----3 units  
Additional Composition, English or American Literature -----1 unit

(Note.—In the case of foreign students, their native language and literature will be accepted in lieu of the above requirement of English, if equal to this requirement in nature and amount. When this is done, a reading and speaking knowledge of English is to be offered to meet the requirement of two units in a foreign language.)

2. Group of History and Social Science.  
Ancient History ----- $\frac{1}{2}$ -1 unit  
Medieval and Modern History----- $\frac{1}{2}$ -1 unit  
English History ----- $\frac{1}{2}$ -1 unit



American History .....	$\frac{1}{2}$ -1 unit
Civics .....	$\frac{1}{2}$ unit
Economics .....	$\frac{1}{2}$ unit

### 3. Group of Foreign Language.

Six units is the maximum accepted from this group.

French .....	1-4 units
German .....	1-4 units
Greek .....	1-3 units
Latin .....	1-4 units
Spanish .....	1-4 units
Other foreign languages.....	1-4 units each

### 4. Group of Mathematics.

Algebra to Quadratics.....	1 unit
Algebra, completed .....	$\frac{1}{2}$ unit
Plane Geometry .....	1 unit
Solid Geometry .....	$\frac{1}{2}$ unit
Algebraic Theory, Advanced.....	$\frac{1}{2}$ unit
Trigonometry .....	$\frac{1}{2}$ unit

### 5A. Group of Laboratory Sciences.

Botany .....	$\frac{1}{2}$ -1 unit
Zoology .....	$\frac{1}{2}$ -1 unit
Chemistry .....	1 unit
Physics .....	1 unit
Physiology-Biology .....	1 unit
Physical Geography .....	$\frac{1}{2}$ -1 unit
Geology .....	$\frac{1}{2}$ -1 unit

### 5B. Group of Non-Laboratory Sciences.

Any of the above, if given without adequate laboratory work and the following:

General Science .....	$\frac{1}{2}$ -1 unit
Astronomy .....	$\frac{1}{2}$ unit
Psychology .....	$\frac{1}{2}$ unit

### LIST C.

The maximum amount that may be offered from this list for entrance to the various Colleges and

Schools of the University is indicated above. The maximum that will be accepted in any one subject contained in the group is shown below.

Agriculture .....	1½-2 units
Home Economics (Domestic Science) .....	1½-3 units
Commercial Subjects .....	1½-4 units
Manual Training and Arts .....	1½-2 units
Music .....	1½-2 units

**Optional Subjects.**—An optional subject is any subject taken in the high school course not included in List B or List C. A maximum of one unit in optional subjects may be accepted, subject to the nature and quality of the work done, but not with four units from List C.

#### DESCRIPTION OF COURSES ACCEPTED FOR ADMISSION

##### 1. *Group of English.*

Three units prescribed, one additional elective.

It is expected that three years of the high-school course in English will conform to the following standard. This amount of work, if of satisfactory quality, will be accepted as fulfilling the prescribed requirement of three units in English.

#### UNIFORM COLLEGE ENTRANCE REQUIREMENTS IN ENGLISH

The study of English in school has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

#### GRAMMAR AND COMPOSITION

The first object requires instruction in grammar and composition. English grammar should be

reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, sentences, and paragraphs should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise letter-writing, narration, description, and easy exposition and argument. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of using good English in his recitations and various exercises, whether oral or written.

#### LITERATURE

The second object is sought by means of two lists of books, headed respectively *Reading* and *Study*, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose

works he reads and with their place in literary history.

#### A. READING

The aim of this course is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from each of which at least two selections are to be made, except as otherwise provided under Group I.

##### Group I—Classics in Translation

The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther.

The Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII.

The Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI.

The Aeneid.

The Odyssey, Iliad and Aeneid should be read in English translations of recognized literary excellence.

For any selection from this group a selection from any other group may be substituted.

##### Group II—Shakespeare

Midsummer-Night's Dream,	Richard II,	} If not chosen for study under B.
Merchant of Venice	Richard III,	
As You Like It,	Henry V,	
Twelfth Night,	Coriolanus,	
The Tempest,	Julius Caesar,	
Romeo and Juliet,	Macbeth,	
King John,	Hamlet,	

**Group III—Prose Fiction**

Malory: *Morte d'Arthur* (about 100 pages).

Bunyan: *Pilgrim's Progress*, Part I.

Swift: *Gulliver's Travels* (voyages to Lilliput and to Brobdingnag).

Defoe: *Robinson Crusoe*, Part I.

Goldsmith: *Vicar of Wakefield*.

Frances Burney: *Evelina*.

Scott's Novels: any one.

Jane Austen's Novels: any one.

Maria Edgeworth: *Castle Rackrent*, or *The Absentee*.

Dickens' Novels: any one.

Thackeray's Novels: any one.

George Eliot's Novels: any one.

Mrs. Gaskell: *Cranford*.

Kingsley: *Westward Ho!* or *Hereward, the Wake*.

Reade: *The Cloister and the Hearth*.

Blackmore: *Lorna Doone*.

Hughes: *Tom Brown's Schooldays*.

Stevenson: *Treasure Island*, or *Kidnapped*, or *Master of Ballantrae*.

Cooper's Novels: any one.

Poe: *Selected Tales*.

Hawthorne: *The House of the Seven Gables*, or *Twice Told Tales*, or *Mosses from an Old Manse*.

A collection of *Short Stories* by various standard writers.

**Group IV—Essays, Biography, Etc.**

Addison and Steele: *The Sir Roger de Coverley Papers*, or *Selections from The Tatler and Spectator* (about 200 pages).

Boswell: *Selections from the Life of Johnson* (about 200 pages).

Franklin: *Autobiography*.

Irving: *Selections from the Sketch Book* (about 200 pages), or *Life of Goldsmith*.

Southey: *Life of Nelson*.

Lamb: *Selections from the Essays of Elia* (about 100 pages).

Lockhart: Selections from the Life of Scott (about 200 pages).

Thackeray: Lectures on Swift, Addison and Steele in the English Humorists.

Macaulay: Any one of the following essays: Lord Clive, Warren Hastings, Milton, Addison, Goldsmith, Frederick the Great, Madame d'Arblay.

Trevelyan: Selections from the Life of Macaulay (about 200 pages).

Ruskin: Sesame and Lilies, or Selections (about 150 pages).

Dana: Two Years Before the Mast.

Lincoln: Selections, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, the Letter to Horace Greeley; together with a brief memoir or estimate of Lincoln.

Parkman: The Oregon Trail.

Thoreau: Walden.

Lowell: Selected Essays (about 150 pages).

Holmes: The Autocrat of the Breakfast Table.

Stevenson: An Inland Voyage and Travels with a Donkey.

Huxley: Autobiography and selections from Lay Sermons, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk.

A collection of Essays by Bacon, Lamb, DeQuincey, Hazlitt, Emerson, and later writers.

A collection of Letters by various standard writers.

#### **Group V—Poetry**

Palgrave: Golden Treasury (First Series): Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns.

Palgrave: Golden Treasury (First Series), Book IV, with special attention to Wordsworth, Keats and Shelley (if not chosen for study under B).

Goldsmith: The Traveller and The Deserted Village.

Pope: The Rape of the Lock.

A collection of English and Scottish Ballads, as, for example, some Robin Hood ballads, The Battle of Otterburn, King Est-

mere, Young Beichan, Bewick and Grahame, Sir Patrick Spens, and a selection from later ballads.

Coleridge: The Ancient Mariner, Christabel, and Kubla Khan.

Byron: Childe Harold, Canto III or IV, and The Prisoner of Chillon.

Scott: The Lady of the Lake, or Marmion.

Macaulay: The Lays of Ancient Rome, The Battle of Naseby, The Armada, Ivory.

Tennyson: The Princess, or Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur.

Browning: Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus,"—Instans Tyrannus.

Arnold: Sohrab and Rustum, and The Forsaken Merman.

Selections from American Poetry, with special attention to Poe, Lowell, Longfellow, and Whittier.

### B—STUDY

This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. The books provided for study are arranged in four groups, from each of which one selection is to be made.

#### Group I—Drama

Shakespeare: Julius Caesar, Macbeth, Hamlet.

#### Group II—Poetry

Milton: L'Allegro, Il Penseroso, and either Comus or Lycidas.

Tennyson: The Coming of Arthur, The Holy Grail, and The Passing of Arthur.

The selections from Wordsworth, Keats, and Shelley in Book IV of Palgrave's Golden Treasury (First Series).

**Group III—Oratory**

Burke: Speech on Conciliation with America.

Macaulay: Two Speeches on Copyright; and Lincoln: Speech at Cooper Union.

Washington: Farewell Address; and Webster: First Bunker Hill Oration.

**Group IV—Essays**

Carlyle: Essay on Burns, with a selection from Burns' Poems.

Macaulay: Life of Johnson.

Emerson: Essay on Manners.

**EXAMINATION**

However accurate in subject-matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling or other essentials of good usage.

The examination will be divided into two parts, one of which will be on grammar and composition, and the other on literature.

In grammar and composition, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors. The main test in composition will consist of one or more essays, developing a theme through several paragraphs; the subjects will be drawn from the books read, from the candidate's other studies and from his personal knowledge and experience quite apart from reading. For this purpose the examiner will provide several subjects, perhaps eight or ten, from which the candidate may



make his own selections. He will not be expected to write more than four hundred words per hour.

The examination in literature will include:

A. General questions designed to test such a knowledge and appreciation of literature as may be gained by fulfilling the requirements defined under A. READING, above. The candidate will be required to submit a list of the books read in preparation for the examination, certified by the principal of the school in which he was prepared; but this list will not be made the basis of detailed questions.

B. A test on the books prescribed for study, which will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

An additional full year's study of either American or English literature, taught as a systematic historical survey with textbook and supplementary readings, may be offered for a fourth (elective) unit.

## 2. *Group of History and Social Science.*

One unit from this group is required for admission to the College of Letters and Science and to the School of Fine Arts. Two units are required for admission to the School of Education: namely, Ancient History, 1 unit; and American History and Civics, 1 unit. A maximum of four units may be accepted from this group towards admission.

### 1. HISTORY

Each year's work should cover some standard high school text, together with a book of readings and the drawing of maps. The McKinley Outline Topics are recommended as providing ex-

cellent material for map work, as well as giving outlines, references, illustrations, and additional source materials for collateral reading. It is advisable that students present their map work and note-books upon entering the University.

The following texts and source books are indicated as examples of the amount and character of the material for each unit:

A. ANCIENT HISTORY.—Botsford, *History of the Ancient World* (McMillan); West, *The Ancient World* (Allyn and Bacon); Wolfson, *Essentials of Ancient History* (American Book Co.); Davis, *Readings in Ancient History* (Allyn and Bacon); G. W. and L. S. Botsford, *Source Book of Ancient History* (McMillan).

B. MEDIAEVAL AND MODERN HISTORY.—West, *The Modern World* (Allyn and Bacon); Harding, *Essentials in Mediaeval and Modern History* (American Book Co.); Robinson, *Readings in European History*, abridged edition (Ginn); Ogg, *Source Book of Mediaeval History* (American Book Co).

C. ENGLISH HISTORY.—Cheyney, *Short History of England* (Ginn); Andrews, *History of England* (Allyn and Bacon); Walker, *Essentials of English History* (American Book Co.); Cheyney, *Readings in English History* (Ginn); Tuell and Hatch, *Selected Readings in English History* (Ginn).

D. AMERICAN HISTORY.—Muzzey, *American History* (Ginn); Montgomery, *Student's American History* (Ginn); James and Sanford, *American History* (Scribners); Muzzey, *Readings in American History* (Ginn); James, *Readings in American History* (Scribners); Hart, *Source Book of American History* (McMillan).

If only one year's work is offered in high school, Ancient History is recommended: if two years', Ancient and American; if three years', Ancient, American, and English; if four, the order should be Ancient, Mediaeval and Modern, English, and American.

## 2. SOCIAL SCIENCE

CIVICS.—This course must not be confined to the study of

the form of our government, but must investigate the functions that it performs and the manner in which it functions. Only modern texts should be used. Among the best of these are: Beard and Beard's American Citizenship (for first-year courses), Garner's Government in the United States, and Guitteau's Government and Politics in the U. S. A copy of Macy and Gannaway's Comparative Free Government should be accessible to students.

ECONOMICS.—Acceptable work in this subject necessitates the use of a modern text like Johnson's Introduction to Economics, and Burch and Nearing's Economics, one of which must be mastered. Reference books should be available to the students.

### 3. *Group of Foreign Languages.*

Two units in one language are required for admission. For admission to the School of Applied Science a modern language is preferred. A maximum of six units may be offered from this group for admission.

#### 1. FRENCH

First Year's Work.—Elementary grammar, with the more common irregular verbs. Careful training in pronunciation. About 100 pages of easy prose should be read.

Second Year's Work.—Advanced grammar, with all the irregular verbs. Elementary composition, and conversation. About 300 pages of modern French should be read.

Third Year's Work.—Intermediate composition, and conversation. About 500 pages of standard authors should be read, including a few classics.

Fourth Year's Work.—Advanced composition, and conversation. Standard modern and classical authors should be read and studied to the extent of 700 pages.

#### 2. GERMAN

It is recommended that pupils be trained to understand spoken

German and to reproduce freely, in writing and orally, what has been read. Whatever method of teaching is used, however, a thorough knowledge of grammar is expected. No attempt is made in what follows to give more than a general outline for the work of successive years, but the German department welcomes inquiries from teachers who wish further suggestions in the planning of courses.

**First Year's Work.**—At the end of the year pupils should be able to read intelligently and with accurate pronunciation simple German prose, to translate it into idiomatic English, and to answer in German easy questions on the passage read. A few short poems may well be memorized. Elementary grammar should be mastered up to the subjunctive as arranged in most books for beginners. Easy prose composition rather than the writing of forms will be the test of this grammatical work.

**Second Year's Work.**—About 500 pages of modern writers should be read, preference being given to material which has a distinctly German atmosphere and which lends itself readily to conversational treatment in the class-room. The regular recitations should afford constant oral and written drill on the elementary grammar of the previous year. More importance is attached to accuracy and facility in simple modes of expression than to theoretical knowledge of advanced syntax.

**Third Year's Work.**—Most of the time should still be devoted to good modern prose. There should be some work in advanced prose composition—based on German models—and the daily recitations should continue to afford abundant oral practice. Pupils ought by this time to understand spoken German fairly well.

**Fourth Year's Work.**—At the end of this year a pupil should be able to read at sight any prose or verse of moderate difficulty. He should also be able to express himself orally or in writing with considerable readiness and a high degree of accuracy. It is recommended that work in composition take the form of free reproduction of portions of the texts studied rather than translation of English selections. The reading

should be divided about equally between modern and classical authors.

### 3. GREEK

First Year's Work.—The exercises in any of the beginning books, and one book of the *Anabasis* or its equivalent.

three of the *Odyssey*, and Books VI, VII, VIII of Herodotus, or

Second Year's Work.—Two additional books of the *Anabasis* and three of Homer, or their equivalents, together with an amount of Greek prose compositions equal to one exercise a week for one year.

Third Year's Work.—Three additional books of the *Iliad*, three of the *Odyssey*, and Books VI, VII, VII of Herodotus, or an equivalent from other authors.

### 4 LATIN

The requirements for admission in Latin are those recommended by the Commission on College Entrance Requirements in Latin, as follows: (a) In grammar and prose composition a knowledge of forms and syntax shall be acquired sufficient for writing simple Latin prose. (b) In reading, the amount shall not be less than Caesar, *Gallie War*, I-IV; Cicero, six orations; and Virgil, *Aeneid* I-VI, and shall be chosen from Caesar (complete), Nepos, Cicero (Orations, Letters, and *De Senectute*), Sallust, Ovid; and Virgil (complete). (c) Out of the above, the following reading is prescribed: Cicero's *Manilian Law* and *Archias* and the *Aeneid* I, II, and either IV or VI. (d) Sight translation shall be performed of prose and verse of such difficulty as the scope of the above would justify.

### 5. SPANISH

First Year's Work.—Elementary grammar, including thorough drill in the irregular verbs; careful training in pronunciation, and translation of simple Spanish when spoken; reading of about 100 pages of easy prose; simple composition and dictation.

Second Year's Work.—In addition to the foregoing, about 300 pages of modern prose; elementary syntax; dictation, composition, and translation of spoken Spanish continued.

#### 4. *Group of Mathematics.*

One unit of Algebra and one unit of Plane Geometry are required for entrance except to the School of Applied Science where the requirement is raised to one and one-half units in Algebra and the addition of Solid Geometry. A maximum of four units may be offered from the group.

1. ALGEBRA.—One unit. Elementary Algebra as far as Quadratics, including the elementary operations of polynomials and fractions, the solution of linear equations; simple factoring, simple powers, and roots. It is expected that the work be accompanied by graphical methods in the solution of equations of all types, and in the explanation of other topics.

2. ALGEBRA.—One and one-half units. Complete elements of algebra, including the above, and in addition, thorough work on quadratic equations such as is covered by such text-books as Young and Jackson or Slaught and Lennes.

3. PLANE GEOMETRY.—One unit. The work in Plane Geometry, in order to be acceptable, must cover a whole year's work in a good text and should include the applications of algebra to geometry and geometry to algebra.

4. SOLID GEOMETRY.—One-half unit. The work, to be acceptable, must cover one-half of a year's work in such a text as Wentworth or Wells.

5. ALGEBRA.—Additional half unit. This is to be taken after the completion of the unit and a half outlined above in 2 and should cover all work included in the usual advanced courses.

6. TRIGONOMETRY.—One-half unit. The work should cover the field of plane trigonometry, as given in standard textbooks, including the solution of right and oblique triangles. Special emphasis should be placed upon the solution of practical problems, trigonometric identities, and trigonometric equations.

## 5. *Group of Sciences.*

### A.—LABORATORY SCIENCES

One unit from this group must be offered for admission to the University, and in the case of the School of Applied Science this unit should be Physics. For the present some other science may be substituted for Physics, and when this is done Physics 1 and 2 must be taken by Freshmen who are registered in this School.

1. BOTANY.—One-half or one unit. A familiar acquaintance with the general structure of plants, and of the principal organs and their functions, derived to a considerable extent from a study of the objects, is required; also a general knowledge of the main groups of plants; and the ability to classify and name the more common species. Laboratory note-books and herbarium collections should be presented.

2. ZOOLOGY.—The instruction must include laboratory work equivalent to four periods a week for a half-year, besides the time required for text-book and recitation work. Note-books and drawings must be presented to show the character of work done and the types of animals studied. The drawings are to be made from the objects themselves, not copied from illustrations, and the notes are to be a record of the student's own observations of the animals examined. The amount of equipment and the character of the surroundings must, of course, determine the nature of the work done and the kinds of animals studied; but in any case the student should have at least a fairly accurate knowledge of the external anatomy of each of eight or ten animals distributed among several of the larger divisions of the animal kingdom, and should know something of their life histories and of their more obvious adaptations to environment. It is recommended that special attention be given to such facts as can be gained from a careful study of the living animal. The names of the largest divisions of the animal kingdom, with

their most important distinguishing characteristics, and with illustrative examples selected, when practicable, from familiar forms, ought also to be known. One-half or one unit.

3. CHEMISTRY.—The instruction must include both text-book and laboratory work. The work should be so arranged that at least one-half of the time shall be given to the laboratory. The course as it is given in the best high schools in one year will satisfy the requirements of the University for the one unit for admission. The laboratory notes, bearing the teacher's endorsement, must be presented as evidence of the actual laboratory work accomplished.

4. PHYSICS.—One year's high school work covering the elements of physical science as presented in the best of the current high school text-books of physics. Laboratory practice in elementary quantitative experiments should accompany the text-book work. The candidate's laboratory notebook will be considered as part of the examination.

5. BIOLOGY-PHYSIOLOGY. One unit. A profitable year's work may be done consisting of a half-year of Zoology as described above and a half-year of Physiology. There should be laboratory work throughout, with carefully kept note-books which should be presented when this combination course is offered to satisfy the requirement of one unit of laboratory science. The laboratory work in physiology should consist of demonstrations and simple experiments. The compound microscope should be used occasionally, but microscopic studies are more important. A large place in the course should be left for such practice topics as diet, sanitation, and personal hygiene.

6. GEOLOGY.—The student must show familiarity with the principles of dynamic and structural geology, and some acquaintance with the facts of historical geology as presented in Scott's *Introduction to Geology*, Brigham's *Text-book of Geology*, or an equivalent with note-book of laboratory and field work. The laboratory and field work should follow one or more of the lines indicated below, and note-books should be presented showing the character and amount of work done. (a) Studies of



natural phenomena occurring in the neighborhood which illustrate the principles of dynamic geology. Each study should include a careful drawing of the object and a written description of the way in which it was produced. (b) Studies of well-marked types of crystalline, metamorphic, and sedimentary rocks which will enable the student to recognize each type and state clearly the conditions under which it was formed. (c) Studies of minerals of economic value, including the characteristic of each, its origin, and the uses to which it is put. (d) Studies of the types of soil occurring in the neighborhood, including the origin of each and the cause of differences in appearance and fertility. One-half or one unit.

7. PHYSICAL GEOGRAPHY.—The amount and character of the work required may be seen by referring to the texts of Gilbert and Brigham, Davis, Tarr and Martin, etc. The recitations must be supplemented by at least an equal amount of time devoted to laboratory work. The laboratory exercises should follow one or more lines such as are indicated below. Each student should present a note-book showing what he has done. One-half or one unit.

(a) Studies in mathematical geography in which map and scale only are used. These should embrace such topics as length of a degree in longitude in various latitudes; length and breadth of continents, etc., in degrees and miles; relative latitudes of places; distances between cities, etc., in degrees and miles; difference in length of parallels and meridians; problems in time; location of time belts, etc.

(b) Studies of local topographical features which illustrate the various phases of stream work. Each study should include a drawing or topographic map of the object, and a full, clear description of the way in which it was formed.

(c) Studies of glacial deposits as shown in terminal and ground moraines, kames, eskers, etc.; distribution of dark and light colored soils; occurrences of lakes, ponds, gravel beds, clay banks, and water-bearing strips of sand and gravel.

(d) Studies of stream work as shown in the topographical

sheets which may be obtained from the United States Geological Survey at a nominal cost.

(e) Studies of the form, size, direction and rate of movement of high and low barometer areas, and the relation of these to direction of wind, character of cloud, distribution of heat, and amount of moisture in the air, as shown in the daily weather maps. Later these studies should lead to the making of weather maps from the data furnished by the daily papers, and to local prediction of weather changes based on the student's own observation.

(f) Studies of the climate of various countries compared with our own, the necessary data being derived from such topographic, rainfall, wind, current, and temperature maps as are found in Sydow-Wagner's or Longman's atlases.

#### B.—NON-LABORATORY SCIENCES

Four units are the maximum amount acceptable from groups 5A and 5B combined towards admission to the University. Group 5B consists of any of the subjects in 5A, if taught without laboratory work, and also the following:

1. GENERAL SCIENCE.—One-half or one unit. Intended for the first year of high school. Hessler, or Caldwell and Eikenberry is recommended as a text-book.

2. ASTRONOMY.—One-half unit. In addition to a knowledge of the descriptive matter in a good text-book, there must be some practical familiarity with the geography of the heavens, with the various celestial motions, and with the positions of the heavenly bodies conspicuous to the naked eye.

3. PSYCHOLOGY.—One-half unit is allowed for the completion of some such text-book as Halleck, Psychology and Psychic Culture, or Pillsbury, Essentials of Psychology.

#### LIST C

This list consists of various industrial subjects and Music. A maximum of four units is acceptable

from the subjects contained in this list except that only two units in industrial subjects are accepted towards entrance to the School of Education. The amount that is acceptable in each subject of the list is also to be noticed.

1. *Agriculture*.  $\frac{1}{2}$ -2 units.

The courses under this head may consist of Agronomy, Crops, Horticulture, Animal Husbandry, Irrigation, etc. There should be laboratory work given as a part of each course, and note-books should be presented.

2. *Home Economics (Domestic Science)*.  $\frac{1}{2}$ -3 units.

(a) An equivalent of 180 hours of prepared work with at least two recitation periods a week in foods. (b) An equivalent of 180 hours of prepared work with at least one recitation period a week in clothing. (c) An equivalent of 180 hours of prepared work with at least two recitation periods a week on the home. (Two periods of laboratory work are considered equivalent to one period of prepared work.) Of the foregoing, (a) will be accepted as a unit's work; or two half units taken from (a) and (b), or (a) and (c), or (b) and (c) will be accepted as a unit's work. The work is to be done by trained teachers with individual equipment.

3. *Commercial Subjects*.  $\frac{1}{2}$ -4 units.

1. **BOOKKEEPING**.—The unit of work in bookkeeping for college entrance should consist of a working knowledge of both single and double entry bookkeeping for the usual lines of business. The student should be able to change his books from single to double entry and from individual to proprietorship. At least one set of transactions should be kept by single entry and at least two sets by double entry in which the uses of the ordinary bookkeeping books and commercial papers should be involved. The student should be drilled in the making of profit and loss statements and of balance sheets and should be able

to explain the meanings of the items involved in both kinds of instruments. The work should be done under the immediate supervision of a teacher and the student should devote at least ten periods of not less than forty minutes full time in class each week for one academic year.

2. BUSINESS LAW.—The fundamental legal principles governing the business relations of men should be presented in this course by means of simple, concrete examples and problems so far as possible. While no attempt should be made to present the intricate phases of the subject, the student should not be led to believe that he has mastered the whole of the law as applied. Recommended text for this work is Huffcut's Essentials of Business Law.

3. COMMERCIAL GEOGRAPHY.—The amount and character of the work accepted in this subject is indicated by the scope of text-books such as Adams' Elementary Commercial Geography, Brigham's Commercial Geography, Macfarlane's Commercial and Industrial Geography, Redway's Commercial Geography, Robison's Commercial Geography, and Trotter's Geography of Commerce.

4. COMMERCIAL ARITHMETIC.—One-half unit.

5. STENOGRAPHY.—One-half to two units.

4. *Manual Training and Arts.*  $1\frac{1}{2}$ -2 units.

1. DRAWING.—Free-hand or mechanical drawing, or both. Drawing books or plates must be submitted. The number of units allowed depends on the quantity and quality of the work submitted.

2. BENCH, LATHE, AND FORGE.—The number of units allowed depends upon the amount and quality of work done and evidence of the work completed should be submitted.

5. *Music.*  $1\frac{1}{2}$ -2 units.

1. ELEMENTS OF COMPOSITION; HARMONY AND STRUCTURE.—One-half to 1 unit. Harmonic series. Intervals. Erection of the three primary triads. Root positions and doubling in major. Formation of scales. Relations of scale con-

stituents to root and their tendencies. Consonance and dissonance. Chord connection in four parts. Harmonizing of melodies. Elements of melodic construction; cadence; phrase and double phrase. Minor mode. Secondary triads and their use. Other sevenths (within the key). Suspension and retardation. Modulation (simple). Anticipation and embellishment.

**2. INSTRUMENTATION AND VOCAL TECHNIQUE.**—One-half to 1 unit. Ability to perform with satisfactory technique and intelligent interpretation one or more numbers in one of the following sections:

(a) Pianoforte; Bach, "Well-Tempered Clavichord," Prelude or Fugue; 2 and 3 part inventions; Mozart or Beethoven, a sonata; Chopin, study, nocturne, or prelude of moderate difficulty.

(b) Violin: Bach, Handel; Mozart, Beethoven, a sonata; Rode, Fiorillo; a study of moderate difficulty; Viotti, Spohr, a concerto.

(c) Orchestral Instruments: Similar ability to perform on any orchestral instrument.

(d) Voice: Bach, Mozart, Schubert, Schumann, Brahms, Franz, Wagner, songs; or an aria by an old Italian master.

In order to obtain entrance credit for any instrument or voice, the candidate must submit to an examination given by the Department of Music on one of the above numbers or a similar one and upon ability to read at sight a piece of moderate ability.

#### **ADMISSION TO THE GRADUATE SCHOOL**

Candidates for advanced degrees are admitted to the Graduate School upon the completion of all the scholastic requirements for the Bachelor's degree in this University or some other institution of approved rank.

#### **STUDENTS FROM OTHER COLLEGES AND UNIVERSITIES**

Students from other institutions who have pur-

sued standard college courses will be admitted and will receive credit for such courses upon the presentation of proper certificates of creditable standing and honorable dismissal.

No student from another institution will be admitted to the University as a candidate for graduation later than October 1st of the year in which he expects to graduate.

Students entering with advanced standing must complete in this University at least 30 hours of work.

#### ADMISSION OF ADULT SPECIAL STUDENTS

Students over twenty-one years of age who are not working for a degree may register for courses of their selection without fulfilling the entrance requirements, provided they give evidence of ability to pursue such courses with profit.

#### FEES AND EXPENSES

##### Registration Fees

Annual registration fee -----	\$ 5.00
Library and gymnasium fee -----	1.00
Non-resident fee, per semester -----	10.00
University Extension fee—	
Each formal course -----	13.50
Each informal course -----	3.50

##### Special Fees

Breakage fee -----	\$10.00
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At the time of registration a deposit of ten dollars to cover possible breakage or damage to University property, is required of each student. This sum, or the remainder thereof after deduction for

breakage or damage, is returned to the student at the end of the year or at withdrawal.

Late registration fee-----\$1.00

All students presenting themselves for registration later than the day appointed for registration pay an extra fee of one dollar.

Laboratory fees, per semester hour-----\$1.00

All students who take laboratory, field, or shop courses pay a fee of one dollar per semester hour of credit.

#### Board and Lodging

Board and lodging, per month-----\$18.00

Single meals ----- .25

Quarters for resident students are provided in two dormitories, one for men and one for women. These dormitories are divided into suites, each consisting of two bed rooms and a study. Two students occupy a suite. The rooms are furnished and electric light and steam heat provided, but the students supply their own bedding, towels, etc., and pay their own laundry bills. The men's dormitory is in charge of a Proctor, and the women's dormitory is supervised by the Director of Home Economics.

Meals are taken in the Dining Hall, which is a separate building. The charge for board and lodging is eighteen dollars per month. All regular boarders are required to pay the full monthly rate of eighteen dollars. Day boarders pay twenty-five cents per meal. Fractional parts of a month are charged at single meal rates.

Bills for board and lodging must be paid strictly

in advance, on the first of each month. The University authorities have no power to extend credit.

### REGISTRATION

#### Registration of New Students

All persons who expect to attend the University for the first time should send at their earliest convenience a certified record of their past work to the Dean or Director of the College of which they expect to be members. No fee is charged and no obligation whatever is incurred in having the proper authorities pass upon the credentials of prospective students. The University will gladly accredit records of past work no matter how remote are the prospects of attendance.

On the first day of the term or semester new students shall first pay the matriculation, tuition, and other fees at the office of the Secretary of the University.

They shall then furnish the Librarian the data called for by the Information Card blanks, and then consult the registration committee in the Registrar's office and under their direction enroll in the courses which they are qualified to pursue.

#### Registration of Upper Classes

All students above the rank of Freshmen, after paying their fees to the Secretary of the University, shall enroll under the direction of the registration committee in the Registrar's office, subject to advice of the heads of the departments in which their major courses lie.

#### Registration of Old Students Before End of Semester

All students attending the University shall reg-



ister for the succeeding semester before the close of the current semester.

#### Late Registration

Registration after the time appointed for this purpose, except for reasons approved by the President or Dean, may be effected only after the payment of the late registration fee of one dollar.

#### Class Hours and Credit Hours

An "hour" shall consist of 53 minutes. A laboratory period is usually twice the length of a recitation and earns the same amount of credit. Any course (Physical Education excepted), when successfully completed, earns as many credit hours as there are exercises in that course per week. Each hour per week in Physical Education earns one-half credit hour.

#### Late Class-Entrance

No student may enter a course later than four weeks from the beginning of the course, except by permission of his major professor or adviser and of the instructor of the class he proposes to enter. The instructor shall determine the amount of credit that may be earned in such cases.

#### Withdrawal From Class

No student may drop a course after the beginning of that course without the consent of his major professor or adviser and of the instructor in charge. No student may drop one course and enroll in another after the third week unless he has been passing in that course.

#### Dismissal

A student who leaves the University before the

close of a semester without the permission of the President will not be considered honorably dismissed.

### **GRADING AND EXAMINATIONS**

#### **Grading**

The grades of students are based upon the work done from day to day and upon examinations. Students making a grade of 91-100 are marked A; 81-90, B; 71-80, C; 61-70, D; 60 or below, E (failed). No substitution may be made for failures or conditions toward graduation.

Students receiving a grade of D in any course are "conditioned" in that course. Such students may receive credit in that course if the condition imposed is removed in a way prescribed by the instructor under whom the condition is incurred. Any condition remaining unremoved at the end of the semester following its incurrence automatically becomes a failure. Only one opportunity is allowed to remove a condition.

Deduction in the number of credit hours may be made for late registration, for absences, or for incomplete work.

#### **Grades Affected by Absences**

Students finding it necessary to be absent from a part of the recitation for any number of days must previously obtain permission from the instructor of the course.

No student is excused or permitted to be absent from any of the regular exercises of the classes for which he has registered, and in cases of failure to attend such classes the student loses the benefit of

class-room or laboratory work which he has missed.

In cases of sickness or other cause beyond the control of the student, an instructor may assist the student in any manner to secure the knowledge or training which he has failed to secure because of his absence, yet he may not allow full credit if the student has been seriously irregular in his attendance at the exercises of the course.

Absences equal in number to twice the credit hours in a given course plus one debar a student from receiving full credit in that course, except by special examination.

#### Examinations

Special examinations, taken at other times than regularly with the class, except entrance examinations or examinations for advanced standing, may be taken only after the payment of a special examination fee of \$2.00 to the Registrar and the issuance by him of a permit for the special examination.

No final examination may be given to a class or to an individual previous to the time appointed by the schedule committee.

#### *Suspension for Dishonesty in Examinations.*

A student detected in giving or receiving aid in a quiz, test, or examination renders himself liable to suspension or expulsion.

### UNIFORM GRADUATION REQUIREMENTS

#### Quality of Work

Candidates for all degrees and diplomas conferred by the University must fulfill the required number of hours for graduation in A work, or furnish

one additional credit hour for every 15 credit hours of B work, and one additional credit hour for every 7 credit hours of C work.

**Physical Education**

Three credit hours, secured by attaining a passing grade in a three hours' course in the Department of Physical Education during two semesters, are required of all candidates for all degrees and diplomas conferred by the University, except in the Graduate School, and this requirement must be satisfied in the Freshman year, or the first year of residence in the case of those students who enter with advanced standing without credits in this subject.

## **Graduate School**

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### **THE MASTER'S DEGREE**

For the present only the Master's degree in Arts and in Science is conferred by the University. Candidates for this degree are admitted to the Graduate School upon the completion of all the scholastic requirements for the Bachelor's degree in this University or some other institution of approved rank.

#### **Residence Requirement**

At least one year must be spent by the candidate in residence before the Master's degree will be conferred upon him. The latest date for registration is four weeks after the opening of the University.

#### **Scholastic Requirements**

Each candidate for a Master's degree shall elect a major and a minor study, which shall bear considerable relationship to each other. The selection of the minor study must meet the approval of the head of the department in which the major study lies. A committee of at least three members of the faculty of a rank above that of instructor shall supervise the candidate's course of study. The head of the department in which the major study lies shall be the chairman of this committee. The other members of this committee shall be those professors under whom work is taken. If study is pursued under

only two members of the faculty, these two shall elect a third member of the committee.

A reading knowledge of one modern language is required for admission to candidacy for a Master's degree. The language offered must meet the approval of the Chairman of the Committee. The Committee may ascertain by examination or in any other way whether this requirement has been satisfied.

The amount and nature of work required for the advanced degree lie in the discretion of the committees supervising the candidate's study but they shall always represent a certain amount of intensive study, or investigation, or both, in some limited field, and may also include some extensive study.

#### Master's Thesis

A thesis is required of each candidate for the Master's degree and it shall embody the results of intensive study or research done in some field of the major study. The latest date for announcing the subject of such thesis shall be six weeks after the beginning of the first semester. The thesis must be approved by the major professor at least three weeks before the date on which the candidate expects to receive the degree. A typewritten copy must be deposited in the Library at least one week before Commencement Day. (The Librarian should be consulted in regard to size and quality of paper and binding required.)

#### Examinations

Examinations covering the work required of the candidate by his committee may be held only at the

close of the term of study, and may be entirely oral or partly oral and partly written, but there shall be at least a public oral examination.

**Diploma Fee**

A diploma fee of eight dollars is due and payable before Commencement Day.

## **College of Letters and Science**

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The College of Letters and Science aims to provide a liberal as well as a thorough education. It offers courses of both cultural and practical nature in various departments, including biology, chemistry, English language and rhetoric, English literature, French, geology, German, Greek, history, Latin, library science, mathematics, physical education, physics, psychology and philosophy, social science, and Spanish. In addition, it accepts a certain amount of work from the Schools of Education, of Applied Science, and of Fine Arts. It also offers preliminary work for degrees in Law and in Medicine.

### **COURSE PREPARATORY TO LAW**

Inasmuch as most universities are now requiring at least two years' work in Letters and Science for entrance to their Law College, the University of New Mexico suggests the following course for students who expect to take a degree in Law. Fifteen units of preparatory work are required for admission (see page 36) and of these Latin to the amount of three units should be offered. If Latin is not offered for entrance, it must be taken the first year.

Inasmuch as colleges of law do not all have the same requirements for entrance, the exhibit of studies below is merely suggestive, and the course is modified to meet the needs of the students. The



student should at once decide what law college he will attend and his course of study will be arranged to meet his requirements, but in all cases his course should include English, history, psychology, foreign language, and as much social science as possible. In most cases, at least one year of laboratory science is advised.

## FIRST YEAR

First Semester		Credits
English 1	English Composition	3
History 1	European History	3
Social Science 1	Economic History of U. S.	3
Social Science 61	Economics	5
Foreign Language	Elective	3
Total		17

## Second Semester

English 2	English Composition	3
History 2	European History	3
Social Science 2	American Government	3
Social Science 52	Sociology	3
Foreign Language	Elective	5 or 3
Total		17 or 15

## SECOND YEAR

## First Semester

English 41	English Literature	3
History 53	English History	3
Social Science 53	Labor Problems	3
Latin 87	Roman Political Institutions	2
Psychology 51	General Psychology	3
Social Science 71	Political Science	3
Total		17

Second Semester		Credits
English 56	Argumentation and Debate	3
History 54	English History	3
Social Science 62	Business Organization	3
Latin 88	Roman Political Institutions	2
Philosophy 84	History of Philosophy	3
Social Science 74	Municipal Government	3
Total		17

Physical Education is required in the first year to the amount of three credit hours.

In some universities it is possible to arrange the course for the student in such a way that in six years he is able to receive the degrees of Bachelor of Arts and Bachelor of Law. When a student desires this combination he is able to take the first three years of this course at the University of New Mexico by adding to the above outlined course a third year's work devoted especially to further courses in the Departments of English, History, and Social Science.

#### COURSES PREPARATORY TO MEDICINE

All standard medical schools are now requiring for entrance at least two or three years of college work in which special emphasis is placed on the laboratory sciences and the modern languages. The following premedical courses are given under the direction of the Department of Biology, and include all subjects required for entrance by Class "A" Medical Colleges. The student should determine very early in his course which Medical College he is to enter, and any desirable modifications will be made in his course.

**Two-Year Course****FIRST YEAR**

First Semester		Credits
English 1	English Composition	3
German 1 or French 1	Beginning German or French	5
or		
German 51 or French 51	Second Year German or French	3
(For those offering the equivalent of Courses 1 and 2 for entrance.)		
Chemistry 1	Inorganic Chemistry	3
Biology 1	Zoology	5
Total		16 or 14

**Second Semester**

English 2	English Composition	3
German 2 or French 2	Beginning German or French	5
or		
German 52 or French 52	Second Year German or French	3
(For those offering the equivalent of Courses 1 and 2.)		
Chemistry 2	Inorganic Chemistry	5
Biology 2	Zoology	5
Total		18 or 16

**SECOND YEAR****First Semester**

German 51 or French 51	Second Year German or French	3
or		
Elective (if language courses 51 and 52 are taken the first year)		3
Chemistry 51	Qualitative Analysis	5
Biology 51	Histology	5
or		
Biology 55	General Embryology	5
Physics 1	Elementary Physics	5
Total		18

Second Semester		Credits
German 52 or French 52	Second Year German or French	3
or		
Elective (if language courses 51 and 52 are taken the first year)		3
Chemistry 52	Quantitative Analysis	5
or		
Biology 52	Histology	5
or		
Biology 64	Comparative Anatomy	5
Physics 2	Elementary Physics	5
Total		18

Physical Education is required throughout the first year to the amount of three credit hours.

### Three- and Four-Year Courses

If the student plans to spend three or four years in his premedical work, or plans to attend a Medical College where a degree is required for entrance, he will take the regular prescribed course for Freshmen and at the beginning of the Sophomore year will declare his major in the Department of Biology. His course will include the same subjects as are listed in the two-year course, together with a large number of electives in other lines, so planned as to give a thorough and broad training as a foundation for later work.

### REGISTRATION

(See page 62.)

### REGISTRATION LIMITATIONS

#### Maximum Schedule

No candidate for a B. A. degree from the University may elect more than seventeen credit hours,

unless his standing for the previous semester be A in two-thirds of his work and with no mark less than B, and then only by presenting written request to the Student Standing Committee who may at their discretion grant permission to elect extra work.

#### **Minimum Schedule**

No student shall be registered for fewer than twelve hours per week except by permission of the President.

#### **THE CURRICULUM**

A little more than one-third of the curriculum is prescribed with the intention that every student shall lay sufficiently broad foundations in English, other languages, the sciences including mathematics, psychology and philosophy, history and social science. The remainder of the curriculum is elective within the restrictions stated below.

#### **Prescribed for Freshmen**

English 1 and 2, 3 hours per semester. (See Regulation 2.)

History or Social Science, 3 hours or 6 hours per semester.  
(See Regulation 4.)

Foreign Language, 5 hours per semester. (See Regulation 3.)

Science or Mathematics, 5 or 3 hours per semester. (See Regulation 5.)

Physical Education, 3 hours (1½ credit hours) per semester.

#### **Courses Open to Freshmen**

English 1 and 2, 3 credit hours each.

History 1 and 2, 3 credit hours each.

Social Science 1 and 2, 3 credit hours each.

French 1 and 2, 5 credit hours each.

French 51 and 52, 3 credit hours each (for students who enter with the equivalent of French 1 and 2).

German 1 and 2, 5 credit hours each.

German 51 and 52, 3 credit hours each (for students who enter with the equivalent of German 1 and 2).

Geology 1 and 2, 5 credit hours each.

Geology 3 and 4, 3 and 4 credit hours respectively.

Geology 5 and 6, 3 or 2 and 2 credit hours respectively.

Greek 1 and 2, 5 credit hours each.

Latin, 3 and 5 hours per semester. (The course open depends upon the amount of work completed before entrance.)

Spanish 1 and 2, 5 credit hours each.

Spanish 51 and 52, 3 credit hours each (for students who enter

Biology 1, 2, 14, 19, and 26, 2 to 5 credit hours each.

Biology 1, 2, 14, 19, and 26, 2 to 5 credit hours.

Chemistry 1 and 2, 3 credit hours each.

Home Economics 1 and 2, 5 credit hours each.

Mathematics 1, 3, 6, 12, 21, 31, 36, 3 to 5 credit hours each.

Library Science 1 and 2, 2 credit hours each.

Shop Work 1 and 2, 3 and 2 credit hours respectively.

Piano 1, or 1 and 2, 2 or 4 credit hours each.

Violin 1, or 1 and 2, 2 or 4 credit hours each.

Voice 1, or 1 and 2, 2 or 4 credit hours each.

Theory of Music 1 and 2, 3 credit hours each.

Theory of Music 7 and 8, 2 credit hours each.

Education 1 and 2, 4 credit hours each.

#### Prescribed for Sophomores

English 51 and 52, 3 hours per semester.

Psychology 51 and 56 or Philosophy 84, 3 hours per semester.

Major Course, 5 hours per semester. (See Regulation 7.)

Elective, 5 hours per semester. (See Regulations 3, 4, and 5.)

#### Prescribed for Juniors and Seniors

Juniors and Seniors will enroll with the Registration Committee and their program of study is sub-

ject to the advice of their major professors, care being taken that they meet the requirements set forth below.

### GRADUATION REQUIREMENTS

#### Regulation 1.—Requirement in Credit Hours

All candidates for the degree of Bachelor of Arts must complete the full undergraduate course of 120 credit hours, if no grade lower than A is secured. For every 15 hours of B work and for every 7 hours of C work one extra credit hour is required for graduation. In addition, 3 credit hours in Physical Education must be obtained in the first year.

#### Regulation 2.—Requirement in English

All candidates for the degree of Bachelor of Arts must complete 12 credit hours in English, namely Courses 1, 2, 41, and 52.

#### Regulation 3.—Requirement in Foreign Language

Article A. Sixteen hours of credit in languages other than English are required for graduation. But for students who enter with six units of credit in languages other than English, the college requirement is six instead of sixteen credit hours. In high school and college together the student must have credit in at least two languages other than English.

Article B. If a student elects a science or mathematics as his major study, this requirement in languages must be satisfied in German, French, or Spanish, ordinarily German.

Article C. This regulation affects classes to be graduated in 1918 and thereafter.

**Regulation 4.—Requirement in History and Social Science**

All candidates for the degree of Bachelor of Arts must complete 12 credit hours in the group of history and social science, six of which shall be in the Department of History and six in that of Social Science.

Students expecting to major in the Department of History, should elect history in the Freshman year, and those expecting to major in the Department of Social Science should elect this subject in the Freshman year. Those majoring under other departments may pursue either subject during the Freshman year. In case a student may elect a 3-hour course in foreign language in the Freshman year, it is recommended that the requirement in this group be met during this year by taking History 1-2 and Social Science 1-2.

**Regulation 5.—Requirement in Science (and Mathematics)**

**Article A.** All candidates for the degree of Bachelor of Arts must complete (a) at least five hours in a biological science (botany, physiology, zoology or psychology 51 and 56 or 84 taken with psychology 53 and 54, and (b) at least six credit hours in a non-biological science (astronomy, chemistry, geology, or physics). But students who enter with one unit in botany or zoology or one-half unit in each may be excused from requirement (a) and students who enter with one unit in physics and one unit in chemistry may be excused from requirement (b), but in no case is a student excused from both requirements.

**Article B.** The above exemptions do not apply in so far as they involve University courses in



science which are prerequisite to courses in which a student desires to enroll after finishing the Freshman year.

Article C. In order to secure exemption from either requirement (a) or (b) it is necessary for the student to present his notebooks and other evidence of completed work for the approval of the head of the department in which such exemption is sought.

Article D. A year's course in mathematics in the University is accepted in lieu of either requirement (a) or (b).

Article E. This regulation affects classes to be graduated in 1918 and thereafter.

#### Regulation 6.—Restrictions in Electives

Article A. Not more than 50 credit hours from courses open to Freshmen will be accepted toward the degree of Bachelor of Arts without reduction in the amount of credit usually given for such courses.

Article B. Not more than 20 credit hours in Theory of Music and Instrumental or Vocal Music will be accepted as electives towards the degree of Bachelor of Arts.

Article C. From the School of Education only courses in the Theory and History of Education will be accepted towards the degree of Bachelor of Arts.

#### Regulation 7.—Requirement in Major Course and Minor Study

Article A. When registering for the Sophomore year each student shall select a major course and his course of study after this time shall meet the ap-

proval of the head of the department in which the greater part of the major course lies. He shall complete in this major course at least 32 credit hours with an average grade of B. This major course will ordinarily consist of 20 credit hours in one department and 12 credit hours in an allied department or allied departments, but the amount of work to be taken in different departments shall lie in the discretion of the major professor.

Article B. The student may change his major course only by permission of the faculty, and in so doing he must complete in his newly selected major course the required number of credit hours, no matter how many credit hours he may have earned in his previously declared major course.

Article C. At least 5 credit hours in the major course must be earned in this University. No advanced standing the major course is granted to any student presenting credits from another institution until after he has been in residence at this University for at least one semester and then only after the completion of 5 credit hours in the major course at this University.

Article D. If in addition to his major course a student completes a minor study of 12 credit hours with an average grade of B, he will receive recognition for it in his diploma.

#### Regulation 8.—Thesis

Candidates for the B. A. degree may be required to prepare a thesis in the Senior year upon some subject chosen by the head of the department in which the major course lies. This thesis shall be

in the department in which the major course lies, prepared under the supervision of some professor and must be accepted three weeks before the Commencement Day on which the candidate expects to receive the degree. The requirements as to typographical form may be obtained upon application to the Librarian.

#### DEGREE

Upon recommendation of the President and Faculty, the degree of Bachelor of Arts is conferred upon those candidates who have completed at this institution not less than the last year of a four years' course in accordance with the requirements and regulations of the University. The major course and the minor study, if the latter has been completed, are indicated in the diploma.

Students who complete 100 credit hours of A work out of the total number of credit hours required for graduation receive the degree of Bachelor of Arts with honors.

#### PROFESSIONAL HIGH SCHOOL TEACHER'S CERTIFICATE

Negotiations are on foot whereby graduates of this University will be awarded a professional high school teacher's certificate where certain requirements are met. These requirements are not yet formulated but they will probably be as follows:

The inclusion in the four years' course of 20 credit hours in the group of Psychology and Education, to-wit:

Psychology, not less than 8 credit hours

History of Education, not less than 5 credit hours

High School Methods of Teaching and Classroom Management, not less than 4 credit hours  
Elective in Psychology or Education, or both, to total 20 credit hours.

The requirements in Physiology, U. S. History and Civics and the History and Civics of New Mexico to which all applicants for all grades of certificates are held will have to be met by applicants for the professional high school certificate. If these subjects have not been offered for entrance they must be taken before graduation.

Graduates of the University, who include in their course the above prescribed subjects or whatever may be determined upon by the State Department of Education, will receive a certificate showing that they have completed this work. Upon presentation of this certificate to the State Department of Education, a professional certificate will be issued permitting the holder thereof to teach in high schools in New Mexico for a period of three years. Upon the expiration of this time and upon the presentation of evidence of successful teaching, this certificate will be renewed on terms which are yet to be formulated by the State Department of Education.

# Departments of Instruction in the College of Letters and Science

## DEPARTMENT OF BIOLOGY

Professor Weese

For a major course in this department the student must present credits in Courses 1, 2, 14 and 191, or their equivalent; but credits obtained in courses 1, 2, 14 or 26 shall not be counted as fulfilling the requirement as to the number of hours to be taken in the major course, except that, at the discretion of the professor in charge of the department, credits in excess of eight hours gained in these courses may be so counted.

For a minor the student must present credits in either Course 1 or Course 14, and shall present sufficient additional credits in any other course for which he is prepared.

### \*1. ZOOLOGY

4 hours

A comparative study of the principles of structure, physiology and development in animals. The laboratory work consists essentially of a detailed examination of one or

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\*Courses numbered 1-50 are open to Freshman; 51-100 to none below Sophomore rank; 101-150, to none below Junior rank; 151-200, to none below Senior rank. Courses numbered 201 and above are graduate courses. Courses with odd numbers are given during the first semester; with even numbers, during the second.

more types in each phylum and a more superficial study of closely related organisms. A study of typical metazoan tissues is included. Laboratory work, 2h.

2. ZOOLOGY

4 hours

A continuation of Course 1. The second semester's work includes the study of some typical vertebrate, e. g., the frog, a survey of the embryology of the chick, and the consideration of important biological theories. Laboratory work, 2h.

14. BOTANY

4 hours

A study of the evolution of the plant kingdom and the underlying principles of plant life. Type studies of representatives of the principal plant groups. The life processes in the individual plant. Laboratory work, 2h.

19. PLANT IDENTIFICATION

2 or 3 hours

A laboratory and field course in the identification and recognition of common flowering plants of New Mexico. While this is not a formal course in taxonomy, the general principles of plant classification will be considered. The manuals of Wooten and Standley, Coulter and Nelson, and Clements will be used. Laboratory and field work, 2h. (Not given in 1916-1917.)

26. ELEMENTARY PHYSIOLOGY

3 hours

A course intended primarily for those preparing to teach in the high schools. The stress in this course will be placed upon physiology and hygiene, personal and civic, anatomy and histology being reduced to their lowest terms. Elementary chemistry should be offered in preparation. Laboratory work, 1h.

51. HISTOLOGY

5 hours

The minute structure of the animal as an organism built up of tissues combined into organs. Practice in general methods of micro-technique and the use of apparatus. Prerequisites: Courses 1 and 2 or their equivalent. Laboratory work, 3h. (Not given in 1916-1917.)

52. HISTOLOGY 5 hours  
A continuation of Course 51. (Not given in 1916-17.)
54. HISTOLOGICAL TECHNIQUE 3 or 5 hours  
Practical work in the preparation of histological and embryological material. May be taken in connection with Courses 51 and 52. (Not given in 1916-1917.)
55. GENERAL EMBRYOLOGY 5 hours  
The development of the individual treated from its broadly biological standpoint. The main facts of chordate development are considered in the laboratory. Prerequisites: Courses 1 and 2 or their equivalent. Laboratory work, 3h. (Not given in 1916-1917.)
56. VERTEBRATE EMBRYOLOGY 5 hours  
A continuation of Course 55 in which special attention is given to the embryology of the chick. Practical work in the preparation of material for study. Reconstruction methods, etc. Laboratory work, 3h. (Not given in 1916-1917.)
64. COMPARATIVE ANATOMY 5 hours  
The detailed study of the anatomy of some mammal, e. g., the cat, the study of the brain of the sheep, and the comparative study of other animals including man. Prerequisites: Courses 1 and 2 or their equivalent. Laboratory work, 3h. (Not given in 1916-1917.)
71. ENTOMOLOGY 5 hours  
The structure, physiology, development and economic relations of insects. A discussion of the principles of taxonomy and their application to the classification of insects. Prerequisites: Courses 1 and 2 or their equivalent. Laboratory work, 3h. (Not given in 1916-1917.)
85. GENERAL ECOLOGY 5 hours  
A study of the factors which make up the home of the organism. Response of the organism to its environment. Adaptation and the origin of new forms. Regional rela-

tions of plant and animal life. Prerequisites: Courses 1 and 14 or their equivalent. Laboratory and field work, 3h.

91. BACTERIOLOGY 3 hours  
Morphology, culture and physiology of micro-organisms. Microbiology of air, water, sewage; soil, and special industries. Plant and animal diseases and their control. Household bacteriology. Prerequisite: Chemistry 1. Laboratory work, 1h.
101. GENERAL PHYSIOLOGY 3 hours  
The physical, structural and functional features of living substance; the cell, present conditions and expressions of life, and the theories of the origin of life. The organism as a whole in relation to its surroundings. Prerequisites: Courses 1 and 2, and two other courses in the department. (Not given in 1916-1917.)
104. ANIMAL BEHAVIOR 3 or 5 hours  
This course, offered in collaboration with the Department of Psychology, is listed as Course No. 104 in the statement of that department. The tropisms, instincts and intelligence of animals, and the general evolution of the animal mind. Laboratory work, 1 or 2h.
120. ORGANIC EVOLUTION 3 hours  
The history of the evolution idea, modern theories, experimental evolution, practical aspects, present-day problems in genetics. Lectures and assigned reading. Much attention will be paid to the reading and discussion of current literature pertaining to the subject matter of the course. Prerequisites: Four courses in the department.
- 171-172. ADVANCED WORK along the lines indicated by the above introductory courses may be elected by students having proper preparation. Problems. Semi-independent work. Details must be arranged in consultation with the professor in charge.
- 191-192. THESIS for students whose major has been elected in this department, and research for graduates.



## DEPARTMENT OF CHEMISTRY

Professor Clark

For a major course in this department the student must present credits in Courses 1, 2, 51, and 52 or their equivalent, but Courses 1, 2, and 51 shall not be counted as fulfilling the requirements as to the number of hours taken in the major subject, except that in the discretion of the professor in charge of the department, credits in excess of eight hours gained in these courses may be counted.

For a minor the students must present credits in Courses 1, 2, 51 and 52.

## 1. INORGANIC CHEMISTRY

3 hours

Lectures and recitations on general and theoretical chemistry, illustrated by demonstrations, charts, lantern slides, specimens, etc. Solution of chemical problems is required. Laboratory work, 1h.

## 2. INORGANIC CHEMISTRY

5 hours

Course 2 is a continuation of Course 1, but the time will be spent mainly on the metallic elements, their metallurgy, salts, etc. Prerequisite: Chemistry 1. Laboratory work, 2h.

## 51. QUALITATIVE ANALYSIS

5 hours

Chemistry 51 consists of laboratory practice with occasional lectures. The student is expected to become proficient in the separation and detection of the common acids and bases, and to keep a full set of notes. Frequent quizzes are given. These dwell upon the theory of the work. Prerequisites: Chemistry 1 and 2.

## 52. QUANTITATIVE ANALYSIS

5 hours

This course gives practice in the greatest variety of manipulation. Types of the important methods are taken up. Analysis of ores, metals, slags, alloys, fuels, soils, fertilizers, dairy products, food stuffs, waters, urine, poisons,

drugs, gases, and oils, are taken. The needs of the individual student will be considered in the work. Prerequisite: Chemistry 51. Laboratory work, 5h.

101. QUANTITATIVE ANALYSIS 5 hours  
A continuation of Course 52. Laboratory work, 5h.
102. QUANTITATIVE ANALYSIS 5 hours  
A continuation of Course 101. Laboratory work, 5h.
61. ORGANIC CHEMISTRY 3 hours  
Lectures and recitations. A study of the chemistry of the carbon compounds. Laboratory work taken in Course 62. Prerequisites: Courses 1, 2 and 51. (Given in alternate years.)
62. ORGANIC CHEMICAL LABORATORY 3 hours  
This course consists mainly of laboratory practice in preparing and purifying organic compounds and a study of qualitative organic reactions and analysis. Prerequisite: Course 61. Laboratory work, 3h. (Given in alternate years.)
111. PHYSICAL CHEMISTRY 5 hours  
This work consists of advanced study of chemistry theory. Practice experiments will be performed with the aid of the students in the determination of vapor density, molecular weights, specific heats, etc., and the study of isomorphism, the phase rule, etc., will take up much of the time. Prerequisites: Courses 1, 2, 51 and 52. (Given in alternate years.)
112. INDUSTRIAL CHEMISTRY 2 hours  
This course consists of lectures on chemical manufactures such as sugar, sodium carbonate, fertilizers, sulfuric acid, glass, matches, paints, dyes, illuminating gases, petroleum, etc. The lectures will be illustrated by lantern slides and charts. Prerequisites: Courses 1, 2 and 51. (Given in alternate years.)

113. METALLURGY 2 hours  
This course consists of lectures describing the processes employed in the smelting of iron, lead, copper, zinc, silver, gold, etc. Prerequisites: Courses 1, 2, and 51. (Given in alternate years.)
131. GEOLOGICAL CHEMISTRY 2 hours  
This course is intended primarily for major students of geology. The work of the course covers the main features of the chemistry of the atmosphere, hydrosphere and lithosphere, and especially those processes involved in the formation, alteration, and decay of minerals and rocks. Prerequisites: Geology 1 and 2, Geology 3 and 4, and Chemistry 111. (Given in alternate years.)
- 141-142. ADVANCED WORK FOR INDIVIDUAL STUDENTS
- 171-172. THESIS 5 hours

**DEPARTMENT OF THE ENGLISH LANGUAGE AND  
RHETORIC**

Professor Sherwin

Courses 1 and 2 are required of all Freshmen, and Courses 41 and 52 of all Sophomores in the College of Letters and Science. These courses may not be counted towards a major or a minor course in the department.

In addition to the above, a major course in the Department of the English Language and Rhetoric will ordinarily consist of the following: a minimum of six other courses (18 hours) in this department; a minimum of 12 to 18 hours in the Department of English Literature; at least two of the following courses pursued as electives in the Department of Psychology and Philosophy—82, 84, 101, 121, 122; and Courses 61 and 62 in the Department of His-

tory. The study, throughout three or four years of the course, of at least one other language and literature, particularly Greek, Latin, French, or German, is generally recommended. The following is a suggested outline for a four years' course:

	Fresh.	Soph.	Jun.	Sen.	Total
Prescribed Eng. -----	6	6			12
Foreign Lang. -----	10	6	6	6	28
Hist. and Soc. Sci. -----	6	6	6		18
Math. or Nat. Sci. -----	10				10
Psy. and Phil. -----		6-10	6-8		12-18
Eng. Lang. -----		6	6	6	18
Eng. Lit. -----			6	6-12	12-18
Elective -----		0-6	0-6	6-18	6-30
Total -----	32	30-36	30-36	30-36	122-140

No arrangement of courses which does not include at least 36 hours of specialized study under its direction will be accepted by the department as a major course.

A minor course in the Department of the English Language and Rhetoric will consist of a minimum of four courses (12 hours) elected within the department and under its approval.

Without the approval of the department no student may elect in any one semester more than one course in composition, i. e., of the following courses: 1, 2, 52, 53, 54, 55, 56, 57, 58.

1. RHETORIC AND ENGLISH COMPOSITION,  
ORAL AND WRITTEN

3 hours

Thorough review of English grammar. Oral and written practice of exposition and argumentation with training in

the use of sentences, paragraphs, and whole compositions. Prescribed for Freshmen.

2. RHETORIC AND ENGLISH COMPOSITION,

ORAL AND WRITTEN

3 hours

Continuation of the above. Written practice of description and narration, and oral practice of the latter, if time permits. Exercises in the use of words. Letter writing. Prescribed for Freshmen.

12. ENGLISH GRAMMAR REVIEW (FOR TEACHERS)

3 hours

41. INTRODUCTION TO ENGLISH LITERATURE

3 hours

Prescribed for Sophomores. (See Department of English Literature.)

51. PUBLIC SPEAKING

Vocal and platform practice, extempore or memoriter. Individual or class instruction in the presentation of original addresses, arguments, or narratives, or in the interpretation of literary prose and poetry. One hour of credit will be given for one exercise each week of the semester. Open either semester to students who have completed 1 and 2.

52. FORMS OF PUBLIC ADDRESS

3 hours

Study, with oral and written practice, of such forms as the speech for a cause, the eulogy, the commemorative address, the dedication, the toast and the after-dinner speech, speeches of presentation and acceptance, of welcome and farewell, the nomination speech, the inaugural address, the legislative address, the political speech. Prescribed for Sophomores. With the consent of the instructor 56 may be substituted for this course.

53. SHORT-STORY WRITING

3 hours

Open to students whose ability has been shown in 2 or in manuscript submitted to the instructor. With his consent, this course may be elected twice for credit. (Not given in 1916-1917.)

54. **ESSAY (OR MAGAZINE) WRITING** 3 hours  
Practice in writing expository articles and personal essays. Open to students who have completed 1 and 2. (Not given in 1916-1917.)
55. **NEWS WRITING** 3 hours  
Practice in writing simple, feature, re-write, and follow up news stories and in reporting speeches and interviews, court, social, sporting, human interest, and dramatic news, etc. Open to students who have completed 1 and 2. (Not given in 1916-1917.)
56. **DEBATING AND PARLIAMENTARY LAW** 3 hours  
Practice in writing briefs and arguments and in their use in public speaking, and instruction in the conduct of parliamentary assemblies, writing minutes, reports, resolutions, etc. Open to students who have completed 1 and 2. With the consent of the instructor, this course may be elected twice for credit. (Not given in 1916-1917.)
57. **BUSINESS ENGLISH AND CORRESPONDENCE** 3 hours  
Practice in writing business letters, advertisements, reports, etc. Open to students who have completed 1 and 2.
58. **LITERARY CRITICISM AND BOOK REVIEWING** 3 hours  
Study and practice of these forms of writing, designed particularly for students who are doing major work in the Department of English Literature. Open to students who have completed 1 and 2.
63. **CHAUCE** 3 hours  
An introductory course with extensive reading.
70. **INTRODUCTION TO MEDIEVAL ENGLISH LITERATURE, C. 700-1557** 3 hours  
Lectures, text-book, and selected readings, largely in translation. (Exclusive of Chaucer.)

101. PRINCIPLES AND HISTORY OF RHETORIC  
AND LITERARY CRITICISM 3 hours  
Lectures and readings on the development of the principles and practice of rhetoric and literary criticism from Aristotle to the Renaissance.
102. PRINCIPLES AND HISTORY OF RHETORIC  
AND LITERARY CRITICISM 3 hours  
Continuation of the above from the Renaissance to the present day.
109. TYPES OF LITERATURE — POETRY: PRO-  
SEMINAR 3 hours  
Reading in class of one or more specimens of the following types of poetry: narrative, philosophical or didactic, dramatic, and lyric; with discussion of rhetorical qualities and application of principles of literary criticism in fortnightly or term papers based on outside investigation. Open to approved students.
110. TYPES OF LITERATURE — PROSE: PRO-  
SEMINAR 3 hours  
Continuation of the above with the following types of prose: oration, essay, short-story, novel. Open to approved students.
131. SHORT-STORY 3 hours  
Historical and critical study of the short-story from Poe and Mérimée to Kipling, with some consideration of ancient, medieval, and Renaissance antetypes. (Not given in 1916-1917.)
132. LITERARY ESSAY 3 hours  
Reading and study of the literary essay in English from Montaigne and Bacon to the present day.

**DEPARTMENT OF ENGLISH LITERATURE**

Associate-Professor Hickey

Courses 41 and 52 (see Department of the English Language and Rhetoric) are required of all

students in the College of Letters and Science before the completion of the Sophomore year. In addition, students taking a major course in the Department of English Literature must complete Courses 71, 72, 73, 74, 75, 76, and at least nine other hours in the department. A minimum of six to twelve hours in the Department of the English Language and Rhetoric, exclusive of Courses 1 and 2, is also required. Courses 58, 101 and 102 are especially recommended.

A minor in the Department of English Literature will consist of a minimum of twelve hours, exclusive of Course 41.

- |   |         |
|---|---------|
| 41. INTRODUCTION TO ENGLISH LITERATURE  | 3 hours |
| A general survey of the historical development of English literature by means of readings chronologically arranged, a brief text-book, and interpretative lectures from the instructor. |         |
| 71. ENGLISH LITERATURE, 1557-1599   | 3 hours |
| 72. ENGLISH LITERATURE, 1559-1660   | 3 hours |
| 73. ENGLISH LITERATURE, 1660-1781   | 3 hours |
| 74. ENGLISH LITERATURE, 1782-1832   | 3 hours |
| 75. ENGLISH LITERATURE, 1833-1910 (POETRY)  | 3 hours |
| 76. ENGLISH LITERATURE, 1833-1910 (PROSE)   | 3 hours |
| 82. AMERICAN LITERATURE   | 3 hours |
| 121. THE DRAMA, 1551-1642   | 2 hours |
| History and study of the English drama from the opening of the modern period to the outbreak of the Civil War.  |         |
| 122. DRAMA, 1660-1916   | 2 hours |
| Continuation of the above from the opening of the theatres to the present day, with consideration of contemporary forms and tendencies.   |         |



127. NOVEL, 1579-1800 2 hours  
The historical development of the English novel from  
Lyly's Euphues to Jane Austen.
128. NOVEL, 1800 TO THE PRESENT DAY 3 hours  
Continuation of the above to Stevenson and Kipling.
141. SHAKESPEARE 3 hours
144. TENNYSON AND BROWNING 3 hours
91. GREEK IN ENGLISH TRANSLATION 2 hours  
(See Department of Greek.)
94. GREEK IN ENGLISH TRANSLATION 2 hours  
(See Department of Greek.)

#### DEPARTMENT OF FRENCH

Professor Nelson

To complete a major course in a modern language, it is necessary for the student first to declare in which language he proposes to take the greater part of his major course. About eighteen credit hours must be earned in this language above Courses 1 and 2, which cannot be counted toward his major course. The remainder of the 32 credit hours shall be taken in additional foreign language under the direction of the major professor.

1. ELEMENTARY FRENCH 5 hours  
Principles of grammar, oral and written exercises, phonetics and pronunciation. Text, Fraser and Squair, Part I, and about 100 pages of reading.
2. ELEMENTARY FRENCH 5 hours  
Dictation, drill on the irregular verbs, prose composition from Fraser and Squair, Part II. Reading about 150 pages of selected prose.
51. SECOND-YEAR FRENCH 3 hours  
Reading, selected modern text. Syntax, composition,

idioms. Some works will be read at home, reports brought to class, and discussed in French.

52. SECOND-YEAR FRENCH 3 hours.  
A continuation of Course 51.
101. THIRD-YEAR FRENCH 3 hours.  
Advanced French prose composition. Translation into French of selected English texts. A study of the principal authors of the Classical Period. Representative texts from the works of Corneille, Racine, Moliere, Voltaire, Le Sage, La Fontaine, Boileau.
102. THIRD-YEAR FRENCH 3 hours.  
Continuation of Course 101. Study of the writers of the Romantic School. Discussion of literary and colloquial forms and critical points in grammar.
151. FOURTH-YEAR FRENCH 2 hours.  
History of French literature, with readings from principal authors. From the Renaissance to the end of the Seventeenth Century.
152. FOURTH-YEAR FRENCH 2 hours.  
History of French literature, with readings from principal authors. From the beginning of the Eighteenth Century to the present time.

A phonograph with records by Professor de Sumichrast of Harvard University, and Madame Marion, is used as an aid to accurate pronunciation, and to facilitate an early recognition of spoken French.

#### DEPARTMENT OF GEOLOGY

Professor Kirk

For a major course in this department the student must present credits in Courses 1, 2, 3-4 or 101, and 5, or their equivalent; but credits obtained in Courses 1, 2, and 5 shall not be counted as fulfilling

the requirement as to the number of hours to be taken in the major course, except that at the discretion of the professor in charge of the department, credits in excess of eight hours in these courses may be so counted.

For the minor, the student must present credits in Courses 1-2; additional minor work should include either Courses 3-4 or 101.

1. PHYSICAL GEOLOGY 5 hours

Physiographic, structural, and dynamic processes are considered in a general way, to be applied more specifically during Course 2 in the second semester. One-fifth of the work is devoted to studies of topographic and geologic maps and the handling, identification, and interpretation of illustrative minerals, rocks, fossils, models. Occasional field trips are required to areas reasonably accessible from the campus. Elementary chemistry is necessary for progress in this course, and physics and mineralogy are desirable.

2. HISTORICAL GEOLOGY 5 hours

The principles of Course 1, together with the elements of paleontology, are applied to the study of the origin and development of the earth, and to the evolution of life forms as governed by their migrations and adaptations. A large collection of accurately labeled fossils is available for laboratory work. An area near the campus is mapped topographically and its geologic problems discussed by the class. Acquaintance with modern geologic field instruments and methods is insisted upon. Prerequisite: Geology 1.

3. MINERALOGY, INTRODUCTORY 3 hours

Crystallographic, physical, chemical, and descriptive mineralogy are given in lectures and recitations, and illustrated by specimens, models, and slides. Each student is

equipped with a laboratory blowpipe and chemical set for work preliminary to determinative mineralogy. A limited number of unknowns are determined, as an introduction to Course 4. Elementary chemistry is required, but may be taken along with the course. See also Course 55.

4. MINERALOGY, DETERMINATIVE 5 hours

Three-fifths of the work is devoted to the determination of unknowns in the laboratory. After sufficient training in this means of identification is had, sight identification is practiced, followed by use of the spectroscope, gravity separations, and preparation and microscopic examination of opaque minerals by reflected light. Occurrence, origin, uses, conservation, and, where applicable, the principles of metallurgy of the minerals are considered in lectures and recitations. Prerequisites: Geology 3 and Chemistry 1.

5. PHYSIOGRAPHY 3 or 5 hours

This course is planned to supplement the usual courses in general geography and at the same time lead to an understanding of the geologic control of surficial features and products. It includes a study of the earth's astronomic relations, atmosphere, rivers, oceans, landmasses. Regional comparisons are made of Eastern and Western physiographic features of the United States and the developments of resources and industries from a knowledge of geology, topography, soil, and climate. Extensive use is made of maps and models in the laboratory, and various short field trips are required. During these the student is acquainted with the use of compass, clinometer, plane-table, alidade, rod, and methods of constructing topographic maps and sketches. This may be elected as a general cultural course. It is required of majors in geology.

6. CLIMATOLOGY 2 hours

Recent researches into prehistoric climatic variation are opening new fields in this subject. The modern advances

in the methods of the U. S. Weather Bureau are likewise of extreme interest and importance. Unusual opportunities are presented in this region for the application of theory and its checking with practical observation.

7. COMMERCIAL GEOGRAPHY 4 hours

This course is intended primarily for freshmen in the School of Commerce, but is open to other students interested in political, social, and especially environmental factors in the development of man. It forms a connection between the natural sciences on the one hand and the social sciences on the other. Descriptions and mnemonic exercises are reduced to a minimum, the end being to correlate facts and events so as to show concrete commercial, physical, historical and social relations in the sense now coming to be recognized as constituting geography in the broader sense of that term.

51. ECONOMIC GEOLOGY 3 or 5 hours

This may be otherwise described as applied geology. Occurrence, geographic and geologic distribution, origin, alterations, uses, and conservation of useful geologic products are investigated. Both non-metallic and metallic resources receive attention, particularly those common to the United States. The principles of mining and metallurgy are dealt with to some extent. Publications and maps of the Federal Geological Survey as well as those of state and foreign surveys are used freely. Illustrative specimens are handled, and practical field problems submitted to the class. Recourse is had occasionally to such experimental work as the examination of polished ore specimens by reflected light, and quantitative laboratory work is conducted. Elementary chemistry and mineralogy, as well as either Geology 1-2, or 102 are prerequisites. (Alternate years, 1917-1918.)

52. ECONOMIC GEOLOGY 5 hours  
Continuation of Course 51.

## 53. PALEONTOLOGY

5 hours

Studies of those plant and animal forms useful in representing geologic history and biologic development. Attention is confined mainly to the extinct marine invertebrate animals. The influence of enemies, barriers, migration, and commingling are investigated. Development of species and recapitulation are considered through study of interior structure as well as of exterior form. Characteristic or index species receive especial attention. Prerequisite: Geology 1-2, or 102.

## 54. HISTORICAL GEOLOGY

3 or 5 hours

The origin and development of the earth and its oceans and land masses receive detailed attention. Succession of life forms, significance of faunal and floral connections and separations, likenesses and unlikenesses, climatic conditions, structural features, probable land-and-sea boundaries form subjects for discussion. Reading researches are assigned. Certain phases of oceanography as well as continental conditions are involved. Prerequisites: Geology 1-2, or 102.

## 55. PETROGRAPHY

2 hours

This work is intended especially to familiarize the student with applied crystallography through drills on crystal forms, crystal projection, and the use of the goniometer, both crystal models and natural crystals being used. Preliminary study of microscopic technique and the preparation of thin sections and polished surfaces of opaque minerals are taught in connection with light phenomena as seen in the petrographic microscope, and microchemical phenomena in the reflection microscope. It may be given with geology 4, in which case the latter course deals largely with blowpipe determinations. Prerequisites: Physics and Chemistry. See also Course 3.

## 56. PETROLOGY

5 hours

The ultimate aim of this course is training in rock classifi-

cation as arrived at through petrographic, chemical, and field studies of the rock-forming minerals and their possible combinations. Igneous rocks are studied in particular, but the petrology of sediments and paragenesis of metalliferous minerals are also investigated. Thin sections, polished surfaces, cleavage fragments, gravity separations, and field evidences are made use of. Much emphasis is placed upon the manipulation of petrographic and reflection microscopes, and other laboratory devices. Prerequisite: Geology 3-4 or 55 or 101, and preferably, either 1 or 102.

**57. INTERPRETATION OF MAPS**

3 hours

This is otherwise called indoor field geology. Topographic and geologic maps and folios are its bases. Training is had in detecting topographic and geologic form. Field operations are planned as if to meet the conditions implied by the maps. The making and criticism of contour and geologic maps and of geologic cross-sections is practiced. Prerequisite: Geology 1-2, or 102. (Alternate years, 1917-1918.)

**101. ENGINEERING MINERALOGY**

5 hours

This is designed as a short course in determinative mineralogy and rock identification and classification, primarily for engineers and chemists. It consists mainly of laboratory work, but a brief treatment of crystallography is given. Microscopic observations of polished surfaces of minerals and metals is here offered. Prerequisites: Chemistry 1-2 and Physics 1-2.

**102. ENGINEERING GEOLOGY**

5 hours

A course intended for those majoring in civil engineering. It includes the elements of mineral and rock recognition, and the principles of weathering, erosion, sedimentation, and particularly structural geology, with brief attention to historical phases. Geologic field instruments are made use of, and reconnaissance methods and mapping practiced

briefly. Prerequisites: Chemistry 1 and 2, Physics 1 and 2. (Alternate years, 1917-1918.)

103. LOCAL GEOLOGY

2 hours

This includes the broader geologic problems of the Southwest and the geology of New Mexico as far as known. Particular attention is directed to conditions in the region of the University. Faulting, vulcanism, local water supply, soils, road metals, and other structural and economic features offer problems for solution here.

104. GEOLOGIC SEMINAR

2 to 5 hours

The departmental library is a depository for Federal Geological Survey and New Mexico Natural Resources Survey publications, and is kept up to date in state and many foreign geologic papers. An added incentive to reading and research with these facilities is seen in the fact that the geologic problems in New Mexico are as yet blocked out in only their broadest outlines, and await investigation by those acquainted with local conditions and the published results from this and related regions. Those desiring to emphasize local phases should precede or accompany this course with Geology 103. For juniors and seniors who are adjudged prepared for the course.

151. THESIS

3 to 5 hours

Obviously those who major in a growing subject can best become acquainted with their line of preference by focusing efforts and ideas upon a concrete problem. As implied in the last paragraph above, this state is well nigh a virgin field for geologic research.

DEPARTMENT OF GERMAN

Professor Nelson

For requirements in major course and the minor in foreign languages, see Department of French.

1. ELEMENTARY GERMAN

5 hours

Grammar, translation and conversation, and memorizing



simple German verse. Text: Bierwirth, **Beginning German**; and some selected prose.

2. **ELEMENTARY GERMAN** 5 hours  
Grammar completed. Reading about 200 pages of prose. Memorizing German poetry.
51. **SECOND-YEAR GERMAN** 3 hours  
Prerequisite: One year of German in college or two years of German in high school. Prose composition, conversation, memorizing, and reading of **Wilhelm Tell**, and **Minna von Barnhelm**.
52. **SECOND-YEAR GERMAN** 3 hours  
**Die Journalisten, Zwischen Himmel und Erde**; or, **Dippold's Scientific German Reader**. Composition and conversation continued.
101. **SCHILLER'S LIFE AND WORKS** 2 hours  
Conducted in German. Life and times of Schiller discussed. Reading of several of his dramas, and one of Lessing's for comparison of technique. Original composition based on the reading.
102. **GOETHE'S LIFE AND WORKS** 2 hours  
Conducted in German. Reading of **Goetz**, **Iphigenie**, **Tasso**, and selections from **Dichtung und Wahrheit**, etc. Original composition.
151. **HISTORY OF GERMAN LITERATURE** 2 hours  
German literature of the Eighteenth Century. Open to college students who have had at least two years of German. Discussion and reports based on the reading of typical classics. Kluge's **Deutsche Nationalliteratur** will furnish the guiding outline.
152. **HISTORY OF GERMAN LITERATURE** 2 hours  
German literature of the Nineteenth Century. Requirements and methods the same as in Course 151.

## DEPARTMENT OF GREEK

Professor Mitchell

Assistant Feather

A major course in this department shall consist of at least 20 credit hours earned in courses offered in this department exclusive of Greek 1 and of at least 12 credit hours earned in the department of Latin in courses that shall meet the approval of the head of this department.

A minor in this department shall consist of 12 credit hours earned in courses offered in this department that meet the approval of the head of the department.

1. ELEMENTARY GREEK 5 hours  
Grammar and composition. The common forms, idioms, and constructions, and the grammatical principles of Attic Greek prose.
2. ELEMENTARY READING COURSE 3 hours  
Xenophon's Anabasis, Books I-III. A review of Greek history from the close of the Peloponnesian war through the time of Alexander the Great.
12. GREEK GRAMMAR AND GREEK PROSE COM-  
POSITION 2 hours  
Intended to accompany Course 2.
21. ATTIC GREEK PROSE 3 hours  
Selected orations of Lysias, and Plato's Apology of Socrates are translated. Assigned readings in reference works. Prerequisites: Greek 1 and 2 or their equivalent.
24. EPIC GREEK POETRY 3 hours  
Selections from the Iliad of Homer are translated in class. A study of the epic as a species of literature and of early Greek civilization. The remainder of the Iliad and all of the Odyssey are read in translation.

51. GREEK HISTORY 3 hours  
Herodotus, Book I or VII or selections. A study of the beginning and development of historical writing. Reading in English of other portions of Herodotus and other Greek historians.
54. GREEK DRAMA 3 hours  
One play of Sophocles and two of Euripides are studied. The origin and development of the drama as a species of literature are treated. Assigned readings on correlated topics.
- 61-62. ADVANCED GREEK COMPOSITION 2 hours
73. GREEK ARCHITECTURE AND ART 2 hours  
Lectures, quizzes, assigned readings, and reports. No knowledge of Greek is required for admission to this course. (Not given in 1916-1917.)
88. GREEK PUBLIC AND PRIVATE LIFE 2 hours  
A study of the civilization, customs, and institutions of the ancient Greeks, lectures, assigned readings, quizzes, and reports. No knowledge of Greek required for admission to this course. (Not given in 1916-1917.)
91. GREEK IN ENGLISH TRANSLATION  
THE DRAMA 2 hours  
The rise and development of the drama among the Greeks and Romans. Intensive study of several Greek plays and outside reading of other plays of Aeschylus, Sophocles, Euripides, Aristophanes, Plautus, and Seneca. Lectures, assigned readings, quizzes, and reports. No previous knowledge of Greek required for admission to this course. (Not given in 1916-1917.)
94. GREEK IN ENGLISH TRANSLATION 2 hours  
A study is made of the contribution of the Greeks to other species of literature outside of the drama, especially in realms of epic and lyric poetry, history, philosophy, and the romance. (Not given in 1916-1917.)

Note.—Courses 91 and 94 may be taken for credit in the Department of English Literature.

## DEPARTMENT OF HISTORY

Professor Hill

Students taking a major course under the direction of the Department of History will take a group of courses in the department amounting to not less than 20 credit hours, so arranged as to give a knowledge of the general field of history, with special reference to one chosen field. In addition, 12 credit hours, not including the Freshman requirement, must be taken in some other department which shall be determined in consultation with the head of the Department of History. History 1-2 will not be counted toward the fulfillment of the above requirement. All students taking a major course under this department will be required to take History 149-150, in order to graduate.

A minor in this department shall consist of 12 credit hours, subject to the approval of the head of the department and exclusive of History 1-2. While it is advisable that courses continuing throughout the year shall be taken in both semesters, permission may be secured from the head of the Department of History to pursue the work of either semester. After 1916-17, History 1-2 or its equivalent in courses numbered less than 50 will be a prerequisite to all other courses in the department.

1. MODERN EUROPEAN HISTORY 3 hours  
A study of the progress and development of the European nations from the Age of Discovery to the present time. Special attention will be given to historical method.
2. MODERN EUROPEAN HISTORY 3 hours  
Continuation of Course 1.

61. ENGLISH HISTORY 3 hours  
A general survey of the history of Greater Britain from the earliest times to the present, giving attention to the political, constitutional, economic and social phases.
62. ENGLISH HISTORY 3 hours  
Continuation of Course 61.
73. UNITED STATES HISTORY, 1789-1829 3 hours  
A study of the various phases of United States History from the formation of the Constitution to the present.
74. UNITED STATES HISTORY, 1829-1916 3 hours  
Continuation of Course 73.
81. LATIN AMERICA; COLONIAL PERIOD 2 hours  
An account of the European background of American history, the Age of Discovery, and the establishment and development of the Spanish and Portuguese colonial systems. Lectures and readings. (Not given in 1916-1917.)
82. LATIN AMERICA: THE REPUBLICS 2 hours  
A study of the struggle for independence, the establishment and progress of the several Latin-American States, and their present political conditions. (Not given in 1916-1917.)
85. LATIN AMERICA: GEOGRAPHY AND RESOURCES 3 hours  
The physical and political geography of the several countries, the natural products and the possibilities of development will be considered. (Given in 1916-1917 if called for by a sufficient number.)
86. LATIN AMERICA: TRADE AND TRANSPORTATION 3 hours  
The trade relations of Latin America with the United States and Europe, the history of their development and possible expansion, the natural and artificial means of transportation and the problems involved in their improvement will be studied. (Given in 1916-1917, if called for by a sufficient number.)

97. CURRENT EVENTS 2 hours  
A study of contemporary events and problems, based on periodicals, newspapers and recent publications. Lectures and discussions.
98. CURRENT EVENTS 2 hours  
Continuation of Course 97.
131. SPANISH HISTORY 2 hours  
A consideration of the rise and development of the Spanish nation, with special reference to the relations with American history. This course is given entirely in Spanish and students who enroll in it must have a speaking knowledge of this language. (Given in 1916-1917 if called for by a sufficient number.)
132. SPANISH HISTORY 2 hours  
Continuation of Course 131. (Given in 1916-1917 if called for by a sufficient number.)
135. THE SPANIARDS IN THE UNITED STATES 2 hours  
This course will deal with the work of Spanish colonization within the present area of the United States, with the exception of New Mexico.
136. HISTORY OF NEW MEXICO 2 hours  
This course will make a study of the native races of New Mexico, the establishment of Spanish rule, the colonial period, the Mexican regime, the acquisition by the United States, the struggle for statehood, and the progress of the State of New Mexico.
141. ELEMENTS OF INTERNATIONAL LAW 2 hours  
(Not given in 1916-1917.)
142. ELEMENTS OF INTERNATIONAL LAW 2 hours  
Continuation of Course 141. (Not given in 1916-1917.)
149. BIBLIOGRAPHY, METHODS AND PROBLEMS  
IN HISTORY; A PRO-SEMINAR 2 hours  
This course is designed to acquaint students with the various bibliographical aids and methods used in testing

historical sources and in writing history. Attention will also be given to the subject of teaching of history in the high schools. Problems will be assigned to each student for investigation. The general subject to be considered will vary from year to year. Required of all students majoring in history and may be taken by others who have completed History 1-2 and six other credit hours in this department.

150. BIBLIOGRAPHY, METHODS AND PROBLEMS  
IN HISTORY; A PRO-SEMINAR 2 hours  
Continuation of Course 149. Required of all students majoring in History.
182. RELATIONS OF LATIN AMERICA AND THE  
UNITED STATES 3 hours  
(Not given in 1916-1917.)
191. HISTORY OF AMERICAN DIPLOMACY 3 hours  
(Not given in 1916-1917.)

#### DEPARTMENT OF ITALIAN

Professor Nelson

1. ELEMENTARY ITALIAN 3 hours  
Grammar, translation, composition, and conversation.  
Text-books: A. Arrib-Costa's "Italian First Lessons" and  
Bowen's "Italian Reader."
2. ITALIAN LITERATURE 3 hours  
The reading is chosen to suit the tastes and the ability of  
the class. Composition continued.

#### DEPARTMENT OF LATIN

Professor Mitchell

Assistant Feather

Courses 1-4 cover the ground usually covered in high schools and are intended for those students who come to the University without Latin and who

are able to take these courses at a rapid rate. These courses are not accepted towards a major course or a minor study. A major course in this department shall consist of at least 15 credit hours in translation courses, 2 credit hours in Latin 31-32 or 61-62, and the remaining three or more hours from courses above 1-4. The remaining 12 credit hours required for a major course must be taken in some allied department such as Greek, Romance Languages, or Ancient History subject to the approval of the head of this department.

A minor in Latin shall consist of 12 credit hours earned in courses offered in this department exclusive of Latin 1-4 and must include Latin 31-32 or 61-62.

Course 87-88 is recommended to those students who expect to study law.

1. BEGINNING LATIN 6 hours  
This course is for students who have not previously studied Latin. Grammar and Composition. A beginning Latin book and a Latin reader will be studied.
2. CAESAR AND LATIN PROSE COMPOSITION 5 hours  
A further study of grammar and syntax. Translation of detached sentences into Latin. Selections from Caesar to the amount of four books or the equivalent in other authors.
3. CICERO AND COMPOSITION 5 or 6 hours  
Six orations of Cicero or two orations of Cicero and the Catiline of Sallust. Latin Prose Composition. Special attention is given to the art of translating into clear, vigorous English. A brief study of Roman Political Institutions.



4. VERGIL 5 or 6 hours  
Translation of six books of Vergil's Aeneid or the equivalent. Special study of epic poetry as a species of literature. Outside reading of Homer's epics in English translation. Comparison of the religious beliefs held by the Ancients and the people of the Middle Ages, as portrayed by the Odyssey, Book xi, the Aeneid, Book vi, and the Divine Comedy of Dante. Topics for private investigation and report.
21. FRESHMAN LATIN 3 hours  
Cicero's Essay on Old Age and Selections from Livy. Review of grammar and syntax. Outside readings, especially topics on Roman History. Prerequisite: Four units in Latin.
22. FRESHMAN LATIN 3 hours  
Livy continued. Horace, Odes and Epodes. Outside readings, especially in the Latin Lyric Poets.
- 31-32. LATIN COMPOSITION 1 or 2 hours  
Translations into Latin of detached sentences and connected narrative. Grammar and Syntax. Intended to accompany 21-22.
51. SOPHOMORE LATIN 3 hours  
Cicero's Essays on Friendship and Selections from Catullus, Propertius, and Tibullus. History of Roman Literature through the Republic, and assigned readings.
52. SOPHOMORE LATIN 3 hours  
Two comedies of Plautus and one of Terence are read. A study of the Roman drama. Outside reading in other dramas.
- 61-62. ADVANCED LATIN COMPOSITION 1 or 2 hours
- 71-72. ROMAN ANTIQUITIES AND PRIVATE LIFE 1 or 2 hours  
A study of the remains of ancient Rome and Pompeii, the organization of society, education, the house, furniture,

dress, food, amusements, sources of income, wedding and funeral ceremonies, etc. Lectures, in part illustrated, assigned readings and reports. Prerequisite: At least three years of high school Latin. (Not given in 1916-1917.)

- 87-88. ROMAN POLITICAL INSTITUTIONS 2 hours  
A study of the Roman Constitution, the contribution of the Romans to modern government and political science and to the acquisition of civic rights. An investigation is made of the Roman methods of dealing with the Initiative and Referendum, the Recall, the Tariff, the government of cities, provinces, and protectorates, etc. Lectures, outside readings, and reports. Prerequisite: Three years of high school Latin.
101. ADVANCED LATIN 3 hours  
Tacitus, Germania and Agricola and the Letters of Pliny the Younger. Outside readings bearing on the condition of the Roman people during the first century A. D.
102. ADVANCED LATIN 3 hours  
Silver Latin. Apuleius, or Petronius and Latin Hymns. A study of the development of the Roman novel and romance. Assigned readings on kindred subjects. (Not given in 1916-1917.)
105. ADVANCED LATIN 3 hours  
Selected readings from the philosophical writings of Cicero, Lucretius, and Seneca. Assigned readings and reports on the philosophical system of the Greeks and Romans. (Not given in 1916-1917.)
106. ADVANCED LATIN 3 hours  
Selections from Lucilius, Horace, Persius, and Juvenal. A study is made of the development of Roman Satire, and the works of the Satirists will be read either in the original or in translation. (Not given in 1916-1917.)
162. TEACHERS' COURSE 2 hours  
A study and criticism of various text-books. Lectures on the scope and aim of Latin study, a teacher's equipment

and reference library, and methods of teaching. Discussions of the difficulties which confront a teacher of Latin. A special study of the subjunctive mood and the essentials of classical philology.

### DEPARTMENT OF LIBRARY SCIENCE

Associate-Professor Sisler

1. ELEMENTARY COURSE 2 hours

The purpose of this course is to teach students how to use the library and to give them a general idea of library work. Special emphasis will be given to the principles which should guide in the selection of books for a school library and to the relation of the public library to the public school.

2. ELEMENTARY COURSE 2 hours

The purpose of this course is to teach students how to care for a library. The following subjects will be included in the course: How to order books and periodicals, trade bibliography, accessioning, classification, author numbers, shelf listing, simple cataloguing, mechanical preparation of books for the shelves, how to care for gifts and exchanges.

51. ADVANCED COURSE 2 hours

Open to students who have completed Library Science 2. Advanced work in cataloguing, classification and reference. Other subjects included in the course are: Care of serials, binding, charging systems, library legislation, organization and administration.

52. ADVANCED COURSE 2 hours

A continuation of Course 51.

### DEPARTMENT OF MATHEMATICS

Professor Edington

The more elementary courses in this department are adapted to two classes of students; first, those

who are enrolled in the Department of Engineering, and second, those students who are planning to make mathematics their major study or who wish to study pure mathematics rather than applied mathematics. Certain of these courses are offered primarily for engineering students, and others for the second class of students, but all courses are open to all students who are sufficiently prepared to enter upon them.

1. COLLEGE ALGEBRA AND PLANE TRIGONOMETRY

5 hours

Primarily for engineering students. A rapid review of elementary algebra is made, followed by a more careful treatment of simultaneous linear and quadratic equations, both analytically and graphically, the quadratic equation, binomial formula, logarithms, undetermined coefficients, partial fractions, and determinants. In plane trigonometry, especially, emphasis is put upon the solution of right and oblique triangles together with the applications of trigonometry to practical problems of surveying. The rapid and accurate use of logarithms in the solution of these problems is insisted upon.

3. COLLEGE ALGEBRA

5 hours

Analytical and graphical solution of simultaneous linear and quadratic equations, quadratic equations, imaginaries, ratio, proportion, variation progressions, binomial formula, mathematical induction, logarithms, permutations and combinations, limits, convergency of series, undetermined coefficients, partial fractions, determinants, and elementary theory of equations.

6. PLANE AND SPHERICAL TRIGONOMETRY

5 hours

Trigonometric ratios, functions, equations and identities, solution of right and oblique triangles by means of logarithms, both plane and spherical, and the applications of

trigonometry to problems in surveying, navigation, and astronomy. A knowledge of solid geometry is prerequisite to this course.

12. PLANE ANALYTIC GEOMETRY 5 hours  
Co-ordinates, the straight line, conic sections, transformation of co-ordinates, problems on loci, higher plane curves, and transcendental equations, empirical equations, and an introduction to analytic geometry of three dimensions. Courses 1 or 3 and 6 are prerequisites for this course.
21. MODERN GEOMETRY 5 hours  
Principle of duality, projection, section, perspectivity, cross ratio, and general introduction to non-metric geometry. This course is especially helpful to teachers of high school mathematics.
31. MECHANICAL DRAWING 3 hours  
Same as Civil Engineering 1. Primarily for first year engineering students.
36. DESCRIPTIVE GEOMETRY 3 hours  
Same as Civil Engineering 2. Primarily for first year engineering students.
51. DIFFERENTIAL AND INTEGRAL CALCULUS 5 hours  
The fundamental rules for differentiation and integration with application to such problems as are ordinarily considered in a first course in Calculus. Prerequisites for all higher courses in mathematics, all courses in engineering, and physics above Course 110. Courses 1 and 12, or Courses 3, 6 and 12 are prerequisites for this course.
52. DIFFERENTIAL AND INTEGRAL CALCULUS 5 hours  
A continuation of Course 51.
101. LIMITS AND SERIES 3 hours  
Limits of functions of a real variable, of a continuous variable, with applications to the Calculus; convergence of infinite series, and expansions of elementary functions into infinite series, and the determination of their intervals of

- convergence. One year of Calculus is prerequisite for this course. (Not given in 1916-1917.)
112. GRAPHICAL ANALYSIS 3 hours  
Study of number by means of space. The purpose of the course is to enable the student to apply certain fundamental space properties of number to the study of functions and equations whereby their properties are discovered. One year of Calculus is prerequisite for this course. (Not given in 1916-1917.)
124. HISTORY OF MATHEMATICS 3 hours
131. DIFFERENTIAL EQUATIONS 3 or 5 hours  
The three-hour course is offered primarily for engineering students. Ordinarily and partial differential equations. Text: Murray's *Differential Equations*. One year of Calculus is prerequisite for this course.
134. ADVANCED CALCULUS 3 hours  
A continuation of Course 52, with introduction to the theory of functions of the complex variable.
137. DEFINITE INTEGRALS 3 hours  
Principles of definite integrals, fundamental notion of function, its continuity, proper and improper definite integrals, Beta and Gamma functions, multiple and line integrals by methods of approximation. One year of Calculus is prerequisite for this course.
140. ENGINEERING MATHEMATICS 5 hours  
Primarily for students in Electrical Engineering. Hyperbolic functions, introduction to vector methods, functions of the complex variable applicable to engineering problems, theory of probability, method of least squares, studies in graphic papers, such as logarithmic and cosine, and practical applications to electrical problems. Mathematics 131 and Physics 51 and 52 are prerequisites for this course.
141. DETERMINANTS 1 or 2 hours  
Properties of determinants; applications to elementary algebra and theory of equations; determinants of special

forms, application to calculus, linear transformations. Courses 51 and 52 are prerequisite to this course, and if possible, it should be carried simultaneously with Course 143.

143. THEORY OF EQUATIONS 3 hours  
Continuation of Course 3. General properties of equations, transformation of equations, solution of cubic and biquadratic, determinants, elimination. This course, upon request, will be extended to 5 hours, and an elementary study of the Galois Theory of Equations will be made.
144. ADVANCED ALGEBRA 3 hours  
Based on Bocher's *Introduction to Higher Algebra* with lectures on additional topics. Courses 21 and 143 are prerequisites.
154. SOLID ANALYTICAL GEOMETRY  
Lines and planes in space, quadric surfaces, and brief introduction to the theory of surfaces in general. Courses 21 and 131 are prerequisites.
161. PROJECTIVE GEOMETRY 5 hours  
Courses 21, 131 and 144 are prerequisites. (Not given in 1916-1917.)
174. THEORY OF FUNCTIONS OF THE COMPLEX VARIABLE 5 hours  
Courses 131, 143, and 144 are prerequisites. (Not given in 1916-1917.)
185. FOURIER'S SERIES AND BESSEL'S FUNCTIONS 3 hours
206. THEORY OF NUMBERS 3 hours
211. VECTOR ANALYSIS 3 hours  
SEMINAR

## DEPARTMENT OF PHYSICS

Professor Brenneman

1. **ELEMENTARY PHYSICS** 5 hours  
A beginning course in physics, including mechanics, heat, electricity, sound, and light, following Millikan and Gale's **First Course in Physics**. Class work with demonstrations, three hours, and laboratory, four hours. Half year credit not given. Preparatory credit, 5 hours; college credit, 3 hours. Prerequisites: Algebra and plane geometry.
2. **ELEMENTARY PHYSICS** 5 hours  
A continuation of Physics 1.
51. **GENERAL PHYSICS** 5 hours  
Mechanical, molecular physics, heat, electricity, wave motion, sound, light, and radio-activity. Recitations, and laboratory work. Laboratory, two to four hours. Half year credit not given. Prerequisites: Physics 1 and 2, or their equivalent, and Mathematics 1.
52. **GENERAL PHYSICS** 5 hours  
A continuation of Physics 51.
62. **THERMODYNAMICS** 5 hours  
Theory and principles underlying the operation of steam boilers and engines of various types, such as simple, compound, uni-flow, etc., and gas engines. Methods of analyzing the heat losses and determining their efficiencies. Operation of steam turbines, air compressors, and refrigerator plants. The course is given from the engineering standpoint. Prerequisites: Physics 51 and 52, and Mathematics 51 and 52, or taken simultaneously.
107. **HEAT** 3 hours  
Measurement of thermal conductivity, cubical coefficient of expansion, specific heat, radiation constants, high temperature measurements, lowering of freezing point, and raising of boiling point of solutions. Recitations and laboratory work. Prerequisites: Physics 51 and 52.



108. HEAT 5 hours  
A continuation of Course 107.
121. THEORETICAL MECHANICS 3 hours  
An advanced course taking up the mathematical treatment of the subject. Composition of forces and couples, center of gravity of areas and volumes, conditions for equilibrium, principle of virtual work, free and damped periodic motion, motion with central forces, moment of momentum and moment of inertia. Prerequisites: Physics 51 and 52, and Mathematics 131.
125. LIGHT 3 hours  
Polarization, refraction, reflection, interference, absorption, and emission of light. Modern theories concerning the relation existing between electricity, magnetism, ether, and light. Recitations and laboratory. Either semester. Prerequisites: Physics 51 and 52, and Mathematics 131.
131. ELECTRICITY AND MAGNETISM 5 hours  
A course treating of the self-inductance, mutual inductance, capacity, resistance, and leakage of various shaped conductors, circuits, and dielectrics. Recitations and laboratory. Either semester. Prerequisites: Physics 51 and 52, and Mathematics 51 and 52.
132. ELECTRICITY AND MAGNETISM 5 hours  
Advanced course treating of the electrical skin effect, Hall effect, free and forced electrical oscillations, wave analysis, hysteresis, and eddy currents. Recitations and laboratory. Either semester. Prerequisites: Physics 131, and Mathematics 131.
199. THESIS 5 hours  
At the beginning of the first semester of the Senior year, students who are majoring in physics are required to take up some special line of investigation. The work will continue throughout the year and shall constitute a thesis for graduation.

## DEPARTMENT OF PHYSICAL TRAINING

Mr. R. F. Hutchinson

A well-equipped gymnasium, containing locker rooms and shower baths, is open throughout the year for the use of the students of the University.

## For Men

The gymnasium, in charge of a professional director, is open for the young men. The training and exercise are under the immediate oversight and authority of the director, and are wholly with a view to the healthful development of the whole student body. All young men are required to be examined by the director of physical culture upon registration, and during the course, as often as the indications of the physical conditions may require.

The decision of the director will be either:

1. Advisory, indicating what course of hygiene and exercises will best sustain and improve the health of the students, or,
2. Mandatory, requiring the students to pursue the course of hygiene and physical exercise necessary for the proper care of health, and the discharge of their duties as students.

All men whose rank is below that of a Sophomore, are required to take the course in Physical Training. Three hours per week throughout the year are required. The required work includes a course on personal hygiene during the first semester.

## For Women

The course in Physical Training is required of the women of the University, whose rank is below

that of a Sophomore, as a regular part of their work.

The work consists of systematic exercises for the development of all parts of the body.

Women pursuing this course are required to provide themselves with a gymnasium suit, consisting of a blouse waist and bloomers, with the regulation shoes. In addition to the class work, sports and pastimes are open to all women of the University, such as basketball, tennis, etc.

A physical examination is made of each student, and physical measurements are taken in the fall and again in the spring.

The required work includes a course in personal hygiene during the first semester.

The following courses are given:

1. PHYSICAL TRAINING FOR MEN 1½ hours  
Course for Freshmen. Elementary exercises to correct slight body defects, as well as exercises to promote muscular tone, vigor, vitality and endurance. Elementary work on the apparatus.
2. PHYSICAL TRAINING FOR MEN 1½ hours  
Continuation of Course 1. Indian Club drill and a course in elementary mat work.
3. PHYSICAL TRAINING FOR WOMEN 1½ hours  
Course for Freshmen. Elementary exercises to correct slight body defects as well as exercises to promote tone, vigor, vitality and endurance. Marching and setting-up exercises.
4. PHYSICAL TRAINING FOR WOMEN 1½ hours  
Continuation of Course 3. Indian Club and dumb bell drills and elementary work on the apparatus.

**ADVANCED COURSE IN PHYSICAL TRAINING**

This course is elective and is offered to those who have completed the prescribed Freshman course, and who wish to become teachers. One hour credit a semester is allowed to those who satisfy the requirements of this course.

- |   |        |
|---|--------|
| 51. PHYSICAL TRAINING FOR MEN   | 1 hour |
| Lecture and recitation on personal hygiene. Instruction in the making of physical examinations, measurements, and strength tests, for determining muscular efficiency. Opportunities to lead classes in various gymnastic drills are given the candidate. |        |
| 52. PHYSICAL TRAINING FOR MEN   | 1 hour |
| The course includes the principles of coaching and training for the various outdoor and indoor sports. The candidate is required to participate to a certain extent in these sports.  |        |
| 53. PHYSICAL TRAINING FOR WOMEN   | 1 hour |
| The same as Course 51.  |        |
| 54. PHYSICAL TRAINING FOR WOMEN   | 1 hour |
| The same as Course 52.  |        |

**DEPARTMENT OF PSYCHOLOGY AND PHILOSOPHY**

Professor Worcester

Six credit hours in this department are required of all Sophomores in the College of Letters and Science and in the School of Home Economics. Eight credit hours of Psychology and four hours of Ethics or Logic are required of students in the Teacher's Course.

Courses 51 and 52 or 56 together with Courses 53 and 54 may be offered in satisfaction of the requirements for graduation in the Biological group.

It is desirable that students majoring in Psychology should pursue elementary courses in Biology and in Physics. A thorough reading knowledge of French and of German is also important.

51. GENERAL PSYCHOLOGY 3 hours

The aim of this course is to give a general understanding of the essential facts and of the fundamental laws of mind. It is required of all Sophomores in the College of Letters and Science and in the School of Home Economics. It is also required in the first year of the Teachers' Course.

52. ADVANCED PSYCHOLOGY 3 hours

May be taken as a continuation of Course 51. An intensive study of selected problems. Prerequisite: Course 51.

53. EXPERIMENTAL PSYCHOLOGY 2 hours

This laboratory course seeks to give an introduction to modern psychological methods and to familiarize the student with the use of apparatus. Typical experiments and demonstrations in the psychology of the senses, particular attention being given to the "personal equation" and its influence on results.

54. EXPERIMENTAL PSYCHOLOGY 2 hours

A continuation of Course 53. Experiments in perception, association, reaction, etc.; mental and physical tests. Courses 53 and 54 should be taken, if possible, in connection with Course 51 and with Course 52 or its equivalent.

55. EXPERIMENTAL PEDAGOGY 2 hours

This is a laboratory course in which may be tested the value of the various suggested applications of psychology to education and in which new applications may be devised. Anthropometric measurements, physical and mental tests, statistical methods. Required in the Teachers' Course in connection with Course 51.

56. EDUCATIONAL PSYCHOLOGY 3 hours

Continuation of Course 51. The applications of the prin-

ciples of psychology to education and the way in which experimental psychology is modifying the curriculum and methods of instruction in the schools will be shown in this course. Required in the Teachers' Course and in the School of Home Economics. Prerequisite: Course 51.

57. PSYCHOLOGY OF ADVERTISING AND BUSI-

NESS EFFICIENCY

3 hours

Prerequisite: Course 51.

81. ETHICS

4 hours

A study of the beginnings and of the development of moral conduct; an analysis and criticism of the leading conceptions of moral theory; and an attempt to make application of modern ethical theories to present-day social and economic conditions. Required in the second year of the Teachers' Course.

82. LOGIC

4 hours

The principles of deductive and of inductive reasoning.

84. HISTORY OF PHILOSOPHY

3 hours

A chronological study of the development of thought with brief discussions of the leading thinkers and of the leading philosophical systems of each period.

101. SOCIAL PSYCHOLOGY

3 hours

A discussion of the influence of the individual mind upon the group and of the influence of the group upon the individual mind; the spread of ideas; mob mind; fads; customs; conventionalities, etc. Prerequisite: Two courses in the Department.

104. COMPARATIVE PSYCHOLOGY

3 hours

Lectures, 2 hours; laboratory, 1 hour. This course, which is given in collaboration with the Department of Biology, will be a systematic study of the development of the mind in the race and in the individual. In the biological laboratory the student may see for himself the behavior of lower organisms with reference to their instincts, habits, and evidences of intelligence. The development of the nervous

impulse and the development of the mental functions in the individual in childhood and in adolescence will be discussed in the lectures. Prerequisites: Two courses in the Department.

121. INTRODUCTION TO PHILOSOPHY 3 hours-  
An introductory study of the various schools of philosophical thought.
122. INTRODUCTION TO PHILOSOPHY 3 hours  
A continuation of Course 121.
151. PATHOLOGICAL PSYCHOLOGY 2 hours  
Readings and theses. A study of the disorders of sensation, memory, imagination, association, the emotions and volition. Open upon consultation to advanced students only.
152. PATHOLOGICAL PSYCHOLOGY 2 hours  
A continuation of Course 151.

### SHOP WORK

Mr. Leupold

1. ELEMENTARY SHOP WORK 3 hours  
Bench and lathe work in wood. Practice in the interpretation of working drawings.
3. ADVANCED WOOD WORK 3 hours  
A continuation of Course 1, including pattern making and the principles of cabinet work. Prerequisite: Course 1 or its equivalent. This course may be taken by students who have had the equivalent of Course 1 in their preparatory work.
11. LATHE WORK IN METALS 2 hours  
Turning, boring and thread cutting in cast iron, steel, and brass.
16. ELEMENTARY FOUNDRY 1 hour  
The theory and practice of foundry work.

## DEPARTMENT OF SOCIAL SCIENCE

Professor Bonnett

Courses 1 and 2 must be taken by all students who choose their major course in Social Science and before the end of the Sophomore year. These courses will not count toward meeting the requirements of hours for a major. Courses 52 and 61 must be taken by all students whose major course is in this department.

1. ECONOMIC HISTORY OF THE UNITED STATES

3 hours

The main purpose of this course is to give the student an insight into the economic phases of the history of the United States. It deals with the development of industry and the origin of most of our modern economic, political and social problems.

2. AMERICAN GOVERNMENT AND POLITICS

3 hours

This course offers a thorough-going study of our governmental institutions as to origin, the methods used in making and administering laws, and the means of securing an expression of the will of the people. While constitutions are here studied intensively, the actual workings of the government through the party system are given as much attention, because the actual operation is as important as the principles upon which the government is based.

4. GOVERNMENT OF NEW MEXICO

2 hours

The course in the government of New Mexico is offered in connection with the course in the history of New Mexico, for students in the School of Education. (Given the second semester in 1916-1917.)

52. SOCIOLOGY

3 hours

As an introduction to the study of society, of groups and group relations, interests, associations and conflicts, this course is designed to form a basis for the investigation of



our most pressing social problems. Social conditions, problems and proposed solutions will be considered briefly.

53. LABOR PROBLEMS AND CONDITIONS 3 hours

Under this head a study will be made of the conditions of labor, as to hours, wages, and the workshop; of the organizations of workmen, and of employers, and their relations; and of the various problems that have grown out of the factory system. (Not given in 1916-1917.)

54. THE FAMILY 3 hours

As the primary group in society—the problems of society in their evolution, and the functions of the family in modern society—the family is here studied to gain a keener insight into sociological principles and problems. The educational phases are not neglected. (Not given in 1916-1917.)

56. EMPLOYERS' ASSOCIATIONS 3 hours

A study of typical associations, their activities, viewpoints, and the problems that they are trying to solve, will be made in this course. It affords an extremely valuable insight into the most important, yet neglected, phases of industrial organization. (Not given in 1916-1917.)

58. IMMIGRATION 3 hours

This course will consider immigration in both its good and bad aspects, the problems that the immigrant has brought us, and his contribution to our institutions. (May be offered second semester 1916-1917.)

61. PRINCIPLES OF ECONOMICS 3 hours

Economic principles are studied intensively in this course. It presents a comprehensive view of these principles operating in the commercial and industrial world.

62. BUSINESS ORGANIZATION AND MANAGEMENT

3 hours

The manner in which modern, commercial and industrial organizations are formed and their functions in the pres-

ent industrial system, form the main subjects in this course.

64. CURRENT ECONOMIC PROBLEMS 3 hours  
A continuation of the course in the Principles of Economics,—it is given over to a more intensive study of current problems than is possible to the novice in economic matters. (Not given in 1916-1917.)
71. INTRODUCTION TO POLITICAL SCIENCE 3 hours  
A study of the origin and the nature of the state, and the principles of government as found in a brief survey of the governments of the leading nations, is made in this course. (Not given in 1916-1917.)
72. GOVERNMENTS OF EUROPE 3 hours  
A comparison of governments in Europe is made in this course in order to determine the best methods of government and the underlying principles of each. (Not given in 1916-1917.)
73. POLITICAL PARTIES AND POLITICS 3 hours  
This course investigates party structure, platforms, machinery, methods, functions and abuses. Proposed reforms for securing efficiency in government and in insuring a clear expression of the will of the people will also be examined.
74. MUNICIPAL GOVERNMENT 3 hours  
Such problems of city government as taxation, regulation or ownership of public utilities, health, etc., will be studied and comparisons made between American and European municipal governments.
80. RELATION OF GOVERNMENT TO PROPERTY  
AND INDUSTRY 3 hours  
A course designed with the prime purpose of showing the varied relations of government to business and business administration—it is especially of value to those students who plan to assume duties of business administration. (Not given in 1916-1917.)

101. STATISTICAL METHODS 3 hours  
Methods of acquiring data, formulating such, and drawing conclusions therefrom, especially in the social and economic fields, form the general considerations of this course.
111. MONEY, CREDIT AND BANKING 3 hours  
Besides dealing with standard money and currency, this course investigates the operation of the extended credit system of today; the bank is taken as the typical credit institution. (Not given in 1916-1917.)
113. PUBLIC FINANCE 3 hours  
Methods of raising funds by the various sorts of taxes, and the manner in which these funds are expended, form the subject-matter of this course. (May be offered in 1913-1917.)
114. HISTORY OF ECONOMIC THOUGHT 3 hours  
This course aims to relate economic thinking to the stages of industrial evolution, and to show the origin of many of our popular economic fallacies of the present day. (Not given in 1916-1917.)
121. RAILWAY ECONOMICS 3 hours  
Rate regulation as it affects railway finance and the channels of trade, the various methods of rate making, and the character of the railroad business, constitute the main topics in this course.
122. RAILWAY ECONOMICS 3 hours  
This course continues the advanced problems of the previous course.
161. INDUSTRIAL COMBINATIONS—TRUSTS 3 hours  
The organization, methods, and problems of trusts are here studied and the proposed solutions appraised. (Not given in the year 1916-1917.)
162. CORPORATION FINANCE 3 hours  
Through this course the student obtains an understanding of the methods of financing corporations, the evil prac-

tices as well as the legitimate. A study of accounting must precede this course. (Not given in the year 1916-1917.)

### DEPARTMENT OF SPANISH

Associate-Professor Parsons

For requirements in the major course and the minor in foreign languages, see Department of French.

1. **ELEMENTARY SPANISH** 5 hours  
Hills' and Ford's **Spanish Grammar**; Hills' **Spanish Tales for Beginners**. Writing from dictation and practice in speaking.
2. **ELEMENTARY SPANISH** 5 hours  
Grammar completed; **Tales for Beginners** finished, **Zaragüeta**, **Taboada's Cuentos alegres**. Conversation.
51. **SECOND-YEAR SPANISH** 3 hours  
Prerequisite: Courses 1 and 2, or two years of high school Spanish. Composition, conversation, and extensive reading. Loiseaux' **Spanish Composition**, essays, Hills' and Reinhardt's **Spanish Short Stories**; Tamayo's **Un drama nuevo**, **Palacio Valdes' La hermana San Sulpicio**.
52. **SECOND-YEAR SPANISH** 3 hours  
Continuation of Course 3. Plays by Echegaray, Moratin, etc.
101. **SPANISH DRAMA OF THE SEVENTEENTH CENTURY** 2 hours  
Prerequisite: Courses 1, 2, 51 and 52, or the equivalent. Lope de Vega's **La moza de cantaro** and **La estrella de Sevilla**; Tirso de Molina's **La prudencia en la mujer** and **El burlador de Sevilla**; Alarcon's **La verdad sospechosa**; Moreto's **El desden con el desden**; Calderon's **La vida es sueño** and **El magico prodigioso**. In addition extracts will be assigned from standard histories of Spanish literature.

102. SPANISH LITERATURE OF THE NINETEENTH CENTURY 2 hours  
Prerequisite: Courses 1, 2, and 52 or the equivalent. Study of the important drama, novel and lyric poetry of recent Spanish writers. Zorrilla's *Don Juan Tenorio*, Ayala's *Consuelo*, Galdos' *Electra*. Outside reading in standard histories of Spanish literature and other works; two Spanish novels to be read outside.
151. SPANISH BALLAD POETRY 1 hour  
Origin and Development of the Spanish Epic from the Middle Ages to the present day. Morley's *Spanish Ballads*; Wolf and Hofmann's *Primavera y flor de romances*. Lectures.
152. HISTORY OF SPANISH LITERATURE  
For advanced students, a survey of Spanish Literature from the earliest times to the present day will be arranged, with wide reading of texts and of criticism bearing upon them.

The following courses from the various schools will be accepted by the College of Letters and Science:

#### DEPARTMENT OF CIVIL ENGINEERING

Associate-Professor Wand

- |                             |         |
|-----------------------------|---------|
| 1. ELEMENTS OF DRAFTING     | 3 hours |
| (See page 157.)             |         |
| 2. DESCRIPTIVE GEOMETRY     | 3 hours |
| (See page 158.)             |         |
| 51. ELEMENTARY SURVEYING    | 5 hours |
| (See page 158.)             |         |
| 52. TOPOGRAPHICAL SURVEYING | 4 hours |
| (See page 158.)             |         |

The student in the College of Letters and Science may elect any other course in the department for which he has fulfilled the prerequisites.

**DEPARTMENT OF HOME ECONOMICS****Director Lathrop**

- |                        |         |
|------------------------|---------|
| 1. TEXTILES AND SEWING | 2 hours |
| (See page 173.)        |         |
| 2. TEXTILES AND SEWING | 2 hours |
| (See page 173.)        |         |
| 55. FOODS              | 3 hours |
| (See page 174.)        |         |
| 56. FOODS              | 3 hours |
| (See page 174.)        |         |

The student in the College of Letters and Science may elect any other course in this department for which she has fulfilled the prerequisites.

**SCHOOL OF EDUCATION****Dean Hodgkin**

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|---|---------|
| 1. HISTORY OF EDUCATION                     | 4 hours |
| (See page 195.)                             |         |
| 2. EDUCATION IN AMERICA                     | 4 hours |
| (See page 195.)                             |         |
| 51. PRINCIPLES OF EDUCATION                 | 4 hours |
| (See page 196.)                             |         |
| 65. SCHOOL MANAGEMENT AND ADMINISTRATION    | 4 hours |
| (See page 196.)                             |         |
| 15. EDUCATION AND SCHOOL LAW IN NEW MEXICO  | 1 hour  |
| (See page 199.)                             |         |
| 64. SEMINAR IN CURRENT EDUCATIONAL PROBLEMS | 1 hour  |
| (See page 199.)                             |         |

**SCHOOL OF FINE ARTS****Director Seder****Piano**

- |          |         |
|----------|---------|
| 1. PIANO | 4 hours |
| 2. PIANO | 4 hours |

**Voice**

- |          |         |
|----------|---------|
| 1. VOICE | 4 hours |
| 2. VOICE | 4 hours |

**Violin**

- |           |         |
|-----------|---------|
| 1. VIOLIN | 4 hours |
| 2. VIOLIN | 4 hours |

**Theory of Music**

- |                      |         |
|----------------------|---------|
| 1. HARMONY           | 3 hours |
| 2. HARMONY           | 3 hours |
| 61. HISTORY OF MUSIC | 2 hours |
| 62. HISTORY OF MUSIC | 2 hours |
| 121. COUNTERPOINT    | 2 hours |
| 122. COUNTERPOINT    | 2 hours |

For description of these courses, see page 210 ff.

## **School of Applied Science**

The School of Applied Science, organized in 1906, comprises the Departments of Chemical, Civil, Electrical, and Geological Engineering, and the Department of Home Economics; it offers, in addition, at least the first two years of four-year courses in Mechanical, Mining, and Sanitary Engineering, and a two-year course for a teacher's certificate in Home Economics. The aim of each department is to make entrance requirements and requirements for graduation up to the standard of the leading scientific schools. The courses have been outlined so as to include both professional and cultural studies in order that the student may not only receive instruction in theory and practice but may also enlarge his mental horizon.

### **THE DEPARTMENTS OF ENGINEERING**

It is the endeavor of the departments of engineering to give a thorough grounding in mathematics and theoretical subjects during the earlier years, with a reasonable amount of specialization during the later years in each course. The drawing and laboratory courses continue progressively throughout the four years in each course. Sufficient foreign language is introduced to enable the graduate to read professional German, Spanish or French. In the fourth year of each course, with the exception of Electrical and Civil Engineering, some spe-



cial subject for investigation is taken up as a thesis for graduation.

#### Equipment

The physics and engineering laboratories are located in the Engineering Building, which was erected in the autumn of 1910 shortly after the destruction of Hadley Hall. Also in this building are located the laboratories in chemistry and geology, well equipped in these subjects and at the disposal of engineering students.

The general library contains ample reference books in chemistry, physics, geology and engineering and is growing constantly as new books come from the press. It also contains the leading technical periodicals of this and foreign countries.

The physics laboratory is large and well lighted. The equipment is new, and has been selected for the general course in physics and for special work in exact electrical measurements. However, as other courses develop a need for additional apparatus, it will be supplied as the demand necessitates. There is a good dark room for photographic work and photometry. Special apparatus for investigation will be supplied when needed.

The electrical engineering laboratories are well equipped for general electrical engineering instruction. They contain alternating and direct current motors and generators, transformers, indicating wattmeters and watt-hour meters, alternating and direct current ammeters and voltmeters of the portable and switchboard type, an electrostatic voltmeter, a frequency meter, a power-factor meter and

all accessory equipment, making this one of the best equipped electrical engineering laboratories in the West.

Civil engineering is located at present in Main Hall. The draughting room is equipped with desks and drawing boards, but each student is required to furnish his own instruments, T-squares, triangles, etc. There is a complete equipment for surveying.

The machine shops, located in the Engineering Building, afford facilities for carpenter work, wood and metal turning, bench work and pattern making. The shops will soon be provided with new machinery for metal work, making the equipment ample for the engineering courses offered.

Chemical engineering is well taken care of. The laboratory in chemistry is well equipped, and in addition the machine shops and other engineering laboratories are open to chemical engineers.

In view of the recent great developments in hydrographic, economic, and mining geology in New Mexico and neighboring states, the geological laboratories have been equipped for courses in engineering geology.

#### Inspection Tours

From time to time throughout the course inspection tours are made, under the direction of an instructor, to engineering and industrial establishments in the city of Albuquerque, and the coal and metal mines, the mills, kilns and smelters in this region. Through the courtesy of these concerns it is possible for the engineering students to get a much better idea of the actual process and methods

in use in up-to-date, practical plants than could possibly be gained in the shops and laboratories of an educational institution where the equipment must of necessity be limited and more or less obsolete. In this way the observation work in connection with the discussions and practical work at the University shops offers excellent opportunity for the students to become familiar with shop practice.

### **FIELD WORK**

College credit is allowed for practical or applied field, laboratory, or office work, under the guidance of the professor in charge, on the basis of one hour's credit for each two calendar weeks occupied, provided that no more than 15 hours of such credits be allowed toward the graduation of any student.

### **DEPARTMENT OF HOME ECONOMICS**

The department of home economics is organized to meet the special needs of women students. A general course extending through four years and leading to the degree of Bachelor of Science is planned for those wishing to specialize in home economics; and this course may be varied considerably to meet the needs of the various students. Courses are open to all students who meet the requirements regarding prerequisites. The department offers, also, in co-operation with the School of Education, a two years course for the training of teachers who find it impossible to complete the four year course.

The aim of the department is to give women students an opportunity to acquire a comprehensive

knowledge of the social and economic phases of household management as well as of the primary mechanical phase.

The courses in sewing include a study of textiles, care and repair of clothing, and something of the hygiene of clothing, and cannot be considered complete without a certain amount of training along artistic and economic lines.

The care of the house leads directly into the scientific field and to the study of bacteriology, which is the basis of house sanitation as well as the foundation on which rests all our advance in sanitary science. Moreover, the housekeeper broadens her field to include municipal housekeeping because she knows that neglect of that side of the question will prevent securing health and happiness for her own family.

One of the most important phases of the work is that which deals with the food question; as a foundation for thorough work in this line, a course is given in foods, their composition and the principles of cookery. This includes experimental work on which all the food courses are based, and gives a thorough understanding of the composition of our common foods and their use in the body. This work is supplemented by courses in dietetics and advanced cooking. The question of the balanced ration is carefully studied and applied. Standard dietaries are compared and the conditions affecting food requirements are discussed.

On the whole, the work in the department involves the study of chemistry, philosophy and biol-

ogy to such a large extent, that it places the department in the School of Applied Science.

#### Equipment

The Home Economics laboratories are located in the Administration Building and are up to date in every respect. The cooking laboratory has an entire electrical equipment with appliances of latest model which are satisfactory in every way. It is unique in one respect at least for it is the only laboratory in the United States having the individual meter system. The work in chemistry, biology, physiology, and bacteriology is given in the regular departmental laboratories under the heads of the various departments. The general library is provided with an admirable list of reference books all of which represent the latest authoritative work.

#### Registration

(See General Information.)

#### Graduation Requirements

All candidates for the degree of Bachelor of Science in Engineering courses must complete 146 credit hours with an average grade of B; 1 hour may be subtracted for each fifteen hours of A work, and 1 hour must be added for each fifteen hours of C work.

For Bachelor of Science in Home Economics, 128 hours.

All the above mentioned graduation requirements are exclusive of one year (3 credit hours) in Physical Education, to be earned in the freshman year.

**Major Study**

The major of the student in the School of Applied Science is fixed by his choice of course.

The student may change his major subject only by permission of the faculty but in so doing he must complete all the work required in his major for graduation, no matter how much he may have taken in other departments.

**Thesis**

Candidates for the B. S. degree in Chemical and Geological Engineering are required to prepare a thesis in the Senior year upon some subject chosen by the head of the department in which the major study is being taken. The requirements as to typographical form may be ascertained upon application.

Complete four year courses are offered in Chemical, Civil, Electrical, and Geological Engineering, and at least the first two years of a four-year course in Mechanical, Mining, and Sanitary Engineering.

**CHEMICAL ENGINEERING COURSE**

Leading to the B. S. Degree in Chemical Engineering

**FRESHMAN YEAR**

First Semester		Credits
English 1	English Composition	3
Mathematics 1	Algebra and Trigonometry	5
Chemistry 1	Inorganic Chemistry	3
Civil Engineering 1	Mechanical Drawing	3
Shop Work 1 or 3	Woodworking	3
Total		17

## SCHOOL OF APPLIED SCIENCE

141

Second Semester		Credits
English 2	English Composition	3
Mathematics 12	Analytical Geometry	5
Chemistry 2	Inorganic Chemistry	5
Shop Work 11	Metal Working	2
Civil Engineering 2	Descriptive Geometry	3
Total		18

## SOPHOMORE YEAR

First Semester		
Chemistry 51	Qualitative Analysis	5
Mathematics 51	Differential and Integral Calculus	5
Physics 51	General Physics and Laboratory Practice	5
English 41	(Or Advanced French, German or Spanish)	3
Total		18

## SOPHOMORE YEAR

Second Semester		
Chemistry 61	Organic Chemistry	3
Mathematics 52	Differential and Integral Calculus	5
Physics 52	General Physics and Laboratory Practice	5
English 52	(Or Advanced French, German or Spanish)	3
Physics 62	Thermodynamics	3
Total		19

## JUNIOR YEAR

Second Semester		
Chemistry 52	Quantitative Analysis	5

	Credits
Chemistry 62 -----Organic Chemistry Laboratory	3
Civil Engineering 105-----Analytical Mechanics	5
Elective -----	5
Total-----	18

## Second Semester

Chemistry 101 -----Quantitative Analysis	5
Chemistry 111 -----Physical Chemistry	5
Civil Engineering 108-----Hydraulics	3
Civil Engineering 106-----Mechanics of Materials	4
Chemistry 113 -----Metallurgy	2
Total-----	19

## SENIOR YEAR

## First Semester

Chemistry 102 -----Quantitative Analysis	5
Electrical Engineering 101--Direct Current Machinery	3
Electrical Engineering 121--Direct Current Laboratory	2
Chemistry 171 -----Thesis	3
Electrical Engineering 56--Machine Design	3
Elective -----	2
Total-----	18

## First Semester

Electrical Engineering 102--Alternating Current Machinery	3
Electrical Engineering 122--Alternating Current Laboratory	2
Electrical Engineering 181--Applied Electrochemistry	3
Social Science 62-----Business Organization and Management	3
Chemistry 171 -----Thesis	5
Elective -----	2
Total-----	18



**CIVIL ENGINEERING .**

Leading to the Degree of B. S. in Civil Engineering

**FRESHMAN YEAR.**

First Semester		Credits
English 1	English Composition	3
Chemistry 1	Inorganic Chemistry	3
Mathematics 1	Algebra and Trigonometry	5
Civil Engineering 1	Mechanical Drawing	3
Shop 1 or 3	Wood Working	3
Total		17
Second Semester		
English 2	English Composition	3
Chemistry 2	Inorganic Chemistry	5
Mathematics 12	Analytical Geometry	5
Civil Engineering 2	Descriptive Geometry	3
Shop 12	Metal Working	2
Total		18

**SOPHOMORE YEAR**

First Semester		
Mathematics 51	Calculus	5
Physics 51	General Physics	5
Civil Engineering 51	Elementary Surveying	5
English 41	(Or Advanced German, French or Spanish)	3
Total		18
Second Semester		
Mathematics 52	Calculus	5
Physics 52	General Physics	5
Civil Engineering 52	Topographical Surveying (4)	5
Civil Engineering 54	Railroad Curves (1)	
English 52	(Or Advanced German, French or Spanish)	3
Total		18

## JUNIOR YEAR

First semester	Credits
Civil Engineering 101.....Railroad Surveying .....	5
Civil Engineering 105.....Analytical Mechanics .....	5
Geology 101 .....Mineralogy .....	5
Optional—	
Mathematics 131 .....Differential Equations .....	
Elective .....	3
Total.....	18

## Second Semester

Civil Engineering 106.....Mechanics of Materials.....	4
Civil Engineering 108.....Hydraulics .....	3
Civil Engineering 112.....Graphic Statics .....	3
Civil Engineering 130.....Road Engineering .....	2
Physics 112 .....Steam Engines, Boilers, etc.....	3
Geology 102 .....Engineering Geology .....	3
Total.....	18

## SENIOR YEAR

## First Semester

Civil Engineering 151.....Masonry Construction .....	4
Civil Engineering 155.....Bridge Analysis and Details...	5
Civil Engineering 157.....Metal Structures .....	1
Civil Engineering 171.....Water Supply .....	3
Electrical Engineering 101	
and 121 .....D. C. Machinery .....	5
Total.....	18

## Second Semester

Civil Engineering 152.....Reinforced Concrete Design...	3
Civil Engineering 156.....Bridge Design .....	5
Civil Engineering 172.....Sewerage .....	3
Civil Engineering 190.....Seminar .....	1
Elective .....	5
Total.....	17

Suggested electives:	Credits
Civil Engineering, 180-----	2
Electrical Engineering, 102 and 122-----	5
Social Science, 52-----	3
Social Science, 62-----	3
Social Science, 5-----	5
Mathematics, 140-----	3
Civil Engineering, 150-----	2

**ELECTRICAL ENGINEERING COURSE**

Leading to the Degree, B. S. in Electrical Engineering

**FRESHMAN YEAR**

First Semester	Credits
English 1 ----- English Composition -----	3
Chemistry 1 ----- Inorganic Chemistry -----	5
Mathematics 1 ----- Algebra and Trigonometry -----	5
Civil Engineering 1 ----- Mechanical Drawing -----	3
Shop 1 or 3 ----- Wood Working -----	3
Total-----	17

Second Semester	
English 2 ----- English Composition -----	3
Chemistry 2 ----- Inorganic Chemistry -----	3
Mathematics 12 ----- Analytical Geometry -----	5
Civil Engineering 2 ----- Descriptive Geometry -----	3
Shop 11 ----- Metal Working -----	2
Total-----	18

**SOPHOMORE YEAR**

First Semester	
Mathematics 51 ----- Calculus -----	5
Physics 51 ----- General Physics -----	5
Civil Engineering 51 ----- Elementary Surveying -----	5
English 41 ----- (Or Advanced German, French, or Spanish) -----	3
Total-----	18

Second Semester		Credits
Mathematics 52	Calculus	5
Physics 52	General Physics	5
Electrical Engineering 55	Mechanism	2
Physics 62	Thermodynamics	3
English 52	(Or Advanced German, French, or Spanish)	3
Total		18

## JUNIOR YEAR

First Semester		
Electrical Engineering 101		
and 121	Direct Current Machinery	5
Electrical Engineering 131	Electrical Measurements and Meters	3
Civil Engineering 105	Analytical Mechanics	5
Optional—		
Mathematics 131	Differential Equations	
Elective		5
Total		18
Second Semester		
Electrical Engineering 102		
and 122	Alternating Current Machinery	5
Physics 112	Steam Engines, Boilers, etc.	3
Civil Engineering 106	Mechanics of Materials	4
Civil Engineering 108	Hydraulics	3
Optional—		
Mathematics 140	Engineering Mathematics	
142		
56	Machine Design	3
Total		18

## SCHOOL OF APPLIED SCIENCE

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## SENIOR YEAR

First Semester	Credits
Electrical Engineering 103	
and 123 -----D. C. Circuits and Laboratory_	4
Electrical Engineering 151	
and 161 -----A. C. Machinery and Labora- tory -----	4
Electrical Engineering 171_D. C. Dynamo Design-----	2
Electrical Engineering 181_Electrical Applications -----	5
Electrical Engineering 62__Water Power Engineering-----	3
Total-----	18

Second Semester	
Electrical Engineering 152	
and 162 -----A. C. Circuits and Machinery--	5
Electrical Engineering 182_Electrical Applications -----	5
Electrical Engineering 191_Seminar (Reading and Discus- sion of Current Topics)-----	2
Civil Engineering 180____Contracts and Specifications--	2
Optional—	
Social Science 62____Business Organization -----	
Elective -----	3
Total-----	17

## Suggested Electives:

Physics 107, 125, 131, 132  
 Chemistry 51, 52, 111, 112, 113  
 Civil Engineering 52, 151, 152  
 Electrical Engineering 199  
 Geology 51, 101, 102  
 Mathematics 101, 134, 137, 185  
 History 81, 82, 85, 86  
 Social Science 61, 80, 121, 122  
 Advanced German or Spanish.

**GEOLOGICAL ENGINEERING COURSE**

Leading to the Degree B. S. in Geological Engineering

**FRESHMAN YEAR**

First Semester		Credits
English 1 .....	English Composition .....	3
Chemistry 1 .....	Inorganic Chemistry .....	3
Mathematics 1 .....	Algebra and Trigonometry.....	5
Civil Engineering 1.....	Mechanical Drawing .....	3
Language 1 .....	Spanish, French, German.....	5
Total.....		19

Second Semester		
English 2 .....	English Composition .....	3
Chemistry 2 .....	Inorganic Chemistry .....	3
Mathematics 12 .....	Analytical Geometry .....	5
Civil Engineering 2.....	Descriptive Geometry .....	3
Language 2 .....	Spanish, French, German.....	5
Total.....		19

**SOPHOMORE YEAR**

First Semester		
Geology 101 .....	Engineering Mineralogy .....	5
Physics 51 .....	General Physics .....	5
Mathematics 51 .....	Calculus .....	5
Language 51 .....	Spanish, French, German.....	3
Total.....		18

Second Semester		
Geology 102 .....	Engineering Geology .....	3
Chemistry 52 .....	Qualitative Chemistry .....	3
Physics 52 .....	General Physics .....	5
Mathematics 52 .....	Calculus .....	5
Language 52 .....	Spanish, French, German.....	3
Total.....		19

## JUNIOR YEAR

First Semester		Credits
Geology 51	Economic Geology	5
Civil Engineering 51	Plane Surveying	5
Civil Engineering 106	Mechanics of Materials	4
Chemistry 51	Qualitative Chemistry	3
Elective		2
Total		19

Second Semester		
Geology 52	Economic Geology	3
Geology 56	Petrology	5
Civil Engineering 52	Topographic Surveying	4
Civil Engineering 54	Railway Curves	1
Elective		5
Total		18

## SENIOR YEAR

First Semester		
Geology 103	Local Geology	2
Chemistry 131	Geo-Chemistry	2
Chemistry 111	Physical Chemistry	5
History 81	Latin America: The Colonies	3
Electives		5
Total		17

Second Semester		
Geology 104	Local Geology	2
Geology 151	Thesis	5
History 82	Latin America: The Republic	3
Social Science 2	Business Management	3
Elective		4
Total		17

Electives: Paleontology, Metallurgy, Psychology, Public Speaking, and Social Science.

**MECHANICAL ENGINEERING COURSE**

(First two years)

**FRESHMAN YEAR**

Same as Electrical Engineering

**SOPHOMORE YEAR**

First Semester		Credits
Mathematics 51	Calculus	5
Physics 51	General Physics	5
English 41	(Or Advanced German, French or Spanish)	3
Shop 3 or 11	Advanced Wood or Metal Working	2
Elective		3
Total		18
Second Semester		
Mathematics 52	Calculus	5
Physics 52	General Physics	5
English 52	(Or Advanced German, French or Spanish)	3
Electrical Engineering 55	Mechanism	2
Optional—		
Physics 112	Steam Eng., boilers, Sta. Aux.)	
Physics 62	Thermodynamics	
Civil Engineering 108	Hydraulics	3
Total		18

**OUTLINE OF COURSE IN HOME ECONOMICS**

Leading to Degree of B. S. in Home Economics

**FRESHMAN YEAR**

First Semester		Credits
English 1	English Composition	3
Chemistry 1	Inorganic Chemistry	3



## SCHOOL OF APPLIED SCIENCE

151

	Credits
Biology 26 -----	3
Home Economics 1 ----- Textiles and Sewing -----	2
Modern Language -----	5
Total -----	16

## Second Semester

English 2 ----- English Composition -----	3
Chemistry 2 ----- Inorganic Chemistry -----	5
Home Economics 2 ----- Textiles and Sewing -----	2
Modern Language -----	5
Total -----	15

## SOPHOMORE YEAR

## First Semester

English Literature -----	3
Psychology 51 ----- General Psychology -----	3
Biology 71 ----- Bacteriology -----	3
Home Economics 55 ----- Foods -----	3
Home Economics 72 ----- Home Nursing -----	3
Modern Language -----	3
Total -----	18

## Second Semester

English Literature -----	3
Psychology 56 ----- Educational Psychology -----	3
Home Economics 56 ----- Foods -----	3
Home Economics 62 ----- Advanced Sewing -----	3
Modern Language -----	3
Total -----	15

## JUNIOR YEAR

## First Semester

Home Economics 165 ----- Dressmaking -----	2
Social Science 61 ----- Principles of Economics -----	5
Home Economics 155 ----- Advanced Foods -----	2

	Credits
Electives -----	6
Total -----	15
Second Semester	
Home Economics 176 ----- Dietetics -----	5
Social Science 54 ----- The Family -----	3
Electives -----	8
Total -----	16

## SENIOR YEAR

First Semester	
Home Economics 183 ----- House Management and Sanitation -----	4
Social Science 53 ----- Labor Problems and Conditions -----	3
Electives -----	8
Total -----	15
Second Semester	
Home Economics 194 ----- Teacher's Course and Demonstration -----	5
Electives -----	10
Total -----	15

## Two Year Course in Home Economics for Teacher's Certificate

## FIRST YEAR

	Credits
First Semester	
Home Economics 1 ----- Textiles and Sewing -----	2
Psychology 51 ----- General Psychology -----	3
English 1 ----- English Composition -----	3
Education 1 ----- History of Education -----	4
Education 9 ----- Ortheopy -----	3
Elective -----	3
Total -----	18

Second Semester		Credits
Home Economics 2	Textiles and Sewing	2
Psychology 56	Educational Psychology	3
English 2	English Composition	3
Education 2	History of Education	4
Biology	Physiology	3
Elective		3
Total		18

## SECOND YEAR

First Semester		
Home Economics 61	Foods	3
Education 51	Principles of Education	4
Philosophy 81	Ethics	3
Education 65	School Management	4
Home Economics 72	Home Nursing	2
Total		16

Second Semester		
Home Economics 55	Advanced Sewing	2
Home Economics 194	Teacher's Course and Demonstration	5
Social Science 52	Sociology	3
Current Problems in Education		1
Elective		6
Total		17

Summary of Requirements in the Department of Home  
Economics:

English	12
Chemistry	8
Biology	6
Modern Language	16

	Credits
Major Study -----	33
Social Science -----	10
Electives -----	39
	<hr/>
	124

## **Departments of Instruction in the School of Applied Science**

### **DEPARTMENT OF BIOLOGY**

**Professor Weese**

- |                           |         |
|---------------------------|---------|
| 1. ZOOLOGY                | 4 hours |
| (See page 83.)            |         |
| 26. ELEMENTARY PHYSIOLOGY | 3 hours |
| (See page 84.)            |         |
| 91. BACTERIOLOGY          | 3 hours |
| (See page 86.)            |         |

The student in the School of Applied Science may elect any other course in this department for which he has fulfilled the prerequisites.

### **DEPARTMENT OF CHEMISTRY**

**Professor Clark**

- |   |         |
|---|---------|
| 1. INORGANIC CHEMISTRY  | 3 hours |
| Lectures and recitations on general and theoretical chemistry, illustrated by demonstrations, charts, lantern slides, specimens, etc. Solution of chemical problems is required. Laboratory work, 1 hour. |         |
| 2. INORGANIC CHEMISTRY  | 5 hours |
| Course 2 is a continuation of Course 1, but the time will mainly be spent on the metallic elements, their metallurgy, salts, etc. Laboratory work, 2 hours. Prerequisite: Chemistry 1.                    |         |

51. QUALITATIVE ANALYSIS 5 hours  
Chemistry 3 consists of laboratory practice with occasional lectures. The student is expected to become proficient in the separation and detection of the common acids and bases, and to keep a full set of notes. Frequent quizzes are given. These dwell upon the theory of the work. Prerequisites: Chemistry 1 and 2.
52. QUANTITATIVE ANALYSIS 5 hours  
This course gives practice in the greatest variety of manipulation. Types of the important methods are taken up. Analysis of ores, metals, slags, alloys, fuels, soils, urine, poisons, drugs, gases, and oils, are taken. The needs of the individual student will be considered in the work. Laboratory work, 5 hours. Prerequisite: Chemistry 51.
101. QUANTITATIVE ANALYSIS 5 hours  
Continuation of Course 52. Laboratory work, 5 hours.
102. QUANTITATIVE ANALYSIS 5 hours  
Continuation of Course 101. Laboratory work, 5 hours.
61. ORGANIC CHEMISTRY 3 hours  
Lectures and recitations. A study of the chemistry of the carbon compounds. Laboratory work taken in Course 62. Prerequisite: Courses 1, 2 and 51.
62. ORGANIC CHEMICAL LABORATORY 3 hours  
This course consists mainly of laboratory practice in preparing and purifying organic compounds and a study of qualitative organic reactions and analyses. Laboratory work, 3 hours. Prerequisite: Course 61. (Given in alternate years.)
131. GEOLOGICAL CHEMISTRY 2 hours  
This course is intended primarily for major students of geology, the work of the course covers the main features of the chemistry of the atmosphere, hydrosphere and

lithosphere, and especially those processes involved in the formation, alteration and decay of minerals and rocks. Prerequisite: Geology 1 and 2, Geology 4-5 or 101, and Chemistry 10. (Given in alternate years.)

**111. PHYSICAL CHEMISTRY** 5 hours

This work consists of advanced study of chemistry theory. Practice experiments will be performed with the aid of the student in the determination of vapor density, molecular weights, specific heats, etc., and the study of isomorphisms, diffusion of gases, solutions, ionization, electrolysis, molecular and atomic volumes, thermochemistry, equilibrium, the phase rule, etc., will take up much of the time. Prerequisites: Courses 1, 2 and 51. (Given in alternate years.)

**112. INDUSTRIAL CHEMISTRY** 2 hours

This course consists of lectures on chemical manufactures such as sugar, sodium carbonate, fertilizers, sulfuric acid, glass, matches, paints, dyes, illuminating gases, petroleum, etc. The lectures will be illustrated by lantern slides and charts. Prerequisites: Courses 1, 2 and 51. (Given in alternate years.)

**113. METALLURGY** 2 hours

This course consists of lectures describing the processes employed in the smelting of iron, lead, copper, zinc, silver, gold, etc. Prerequisites: Courses 1, 2 and 51. (Given in alternate years.)

**141-142. ADVANCED WORK FOR INDIVIDUAL STUDENTS**

**171-172. THESIS** 5 hours

**DEPARTMENT OF CIVIL ENGINEERING**

Associate-Professor Wand

**1. ELEMENTS OF DRAFTING** 3 hours

Lettering; isometric oblique and perspective drawing; orthographic projection; working drawings. Lettering;

mechanical styles and the making of name plates and titles for mechanical drawings. Mechanical drawings from parts of standard machines, with tracings of each.

2. **DESCRIPTIVE GEOMETRY** 3 hours  
The point, line, and plane; the properties of surfaces; intersections and developments. Practical problems. Prerequisites: Solid geometry, college algebra, plane trigonometry.
51. **ELEMENTARY SURVEYING** 5 hours  
The theory, use, and adjustment of the compass, level, and transit. Field work; the determination of distances with chain and tape; the determination of areas with the transit, plane table, and compass; profile and differential leveling; City and farm surveying; practical problems. Prerequisites: Civil Engineering 1, and 2; Mathematics 1.
52. **TOPOGRAPHICAL SURVEYING** 4 hours  
The theory and use of the plane table, stadia, and other instruments used in making a topographical survey. The plotting of field notes for making a complete topographic map. Prerequisites: Civil Engineering 1 and 51.
54. **RAILWAY CURVES** 1 hour  
An introductory course in the computation and field location of simple and compound curves as applied to railroad work. Prerequisites: Civil Engineering 1, 2, and 51.
101. **RAILROAD SURVEYING** 5 hours  
The principles of economic location and the construction of railways. The theory of field and office work necessary to survey and construct a railway line. Preliminary and location survey of a line of railroad, in which the student makes a complete set of notes, maps, profiles, and estimates. Prerequisites: Civil Engineering 51, 52, and 54.
105. **ANALYTICAL MECHANICS** 5 hours  
The mechanics of engineering problems; fundamental con-



cepts; statics; kinematics; kinetics; work and energy; impulse and momentum. Prerequisite: Mathematics 52.

106. MECHANICS OF MATERIALS 4 hours  
The mechanics of materials and problems in engineering construction. Theory of beams, columns, and shafts. The study of requirements for structural materials. Prerequisites: Civil Engineering 105, and Mathematics 52.
108. HYDRAULICS 3 hours  
The elementary principles and theory of the mechanics of fluids; pressure and flow of water through orifices, channels, weirs, turbines and water wheels. Prerequisites: Civil Engineering 105, Mathematics 52.
112. GRAPHIC STATICS 3 hours  
Elements of graphic statics; determination of stresses in bridge and roof trusses. Solution of practical problems. Prerequisites: Civil Engineering 1 and 105, Mathematics 52.
130. ROAD ENGINEERING 2 hours  
Construction of earth, gravel, concrete, and bituminous macadam roads. Methods of construction, cost, and durability of roads. Street pavements; grades, kinds and costs of pavements, maintenance, and cleaning. Prerequisites: Civil Engineering 51, 52 and Mathematics 2.
151. MASONRY CONSTRUCTION 4 hours  
The study of the nature of stone, brick, lime, cement, sand, gravel, and concrete as applied to engineering. The theory of masonry structures; foundations, culverts, retaining walls and arches. Prerequisites: Civil Engineering 105, 106, and 112.
152. REINFORCED CONCRETE 3 hours  
The principles of reinforced concrete beams, slabs, columns, retaining walls, dams, arches, and other masonry structures. The design of reinforced concrete structures. Prerequisites: Civil Engineering 105 and 151.

155. BRIDGE ANALYSIS AND DETAILS 5 hours  
Computation of stresses in various forms of bridge trusses. Investigation of a bridge from a detailed shop drawing; standard details for bridges; estimate of cost. Prerequisites Civil Engineering 105, 106, and 112.
156. BRIDGE DESIGN 5 hours  
The design of a railroad plate girder and truss span; sections and details drawn, and a complete set of drawings. Prerequisite: Civil Engineering 155.
157. METAL STRUCTURES 1 hour  
The design and calculation of stresses in mill and steel-skeleton buildings; standard details. Complete design of a mill building. Prerequisites: Civil Engineering 112 and 155.
158. ADVANCED BRIDGE ANALYSIS 2 hours  
The theory of continuous, cantilever, draw, suspension, and metal arch bridges. The history of large bridges of the world, erection and cost. Prerequisite: Civil Engineering 155.
171. WATER SUPPLY 3 hours  
Source of supply; hydraulics of wells; stream flow; reservoirs, conduits and pipe lines; pumps and pumping machinery; stand-pipes and elevated tanks; water supply systems. Prerequisites: Civil Engineering 105 and Physics 112.
172. SEWERAGE 3 hours  
The design and methods of construction of sewerage systems; surveys and general plans; hydraulics of sewers; house sewerage and its removal; sanitary necessity of sewers; sewage disposal; estimate and specifications. Complete design and estimate of a small system. Prerequisites: Civil Engineering 105, 108, and 171.

**180. CONTRACTS AND SPECIFICATIONS 2 hours**

The law of contracts as applied to engineering work; the study of engineering specifications. Each student prepares a contract and a complete set of specifications for some engineering structure. Prerequisites: Civil Engineering 105, 151, and 155, or Electrical Engineering 101 and 102.

**190. SEMINAR 1 hour**

Reading and discussion of important articles on engineering topics. Each student presents papers upon assigned topics and participates in the discussions of others. Prerequisite: Full senior standing in Civil Engineering.

**DEPARTMENT OF ELECTRICAL ENGINEERING**

Professor Brenneman

**55. MECHANISM 2 hours**

The motions and velocities of machine parts. Design of cams, gears, and belts. Text: **Mechanism** by Keown. Prerequisites: Physics 51, and Civil Engineering 1.

**62. WATER POWER ENGINEERING 3 hours**

Rainfall, stream flow, dams, storage basins, water wheels, and auxiliary equipment, following Mead's **Water Power Engineering**. Prerequisite: Civil Engineering 108.

**101. DIRECT CURRENT MACHINERY 3 hours**

The construction, operation, and efficiencies of direct current dynamos and motors. The effects of changes in speed, load, connections, and temperature upon the operation of generators. The effects of changes in voltage, load, connections, and temperature upon the operation of various types of motors. For both Civil and Electrical Engineers. Prerequisites: Physics 52.

**102. ALTERNATING CURRENT MACHINERY 3 hours**

The construction, operation, and efficiencies of alternating current motors and generators of the synchronous and in-

duction types. Study of the effects of power factor, speed, saturation and current or voltage harmonics in the different types. Operation of transformers. For both Civil and Electrical Engineers. Prerequisites: Electrical Engineering 101 and 121; and Mathematics 51 and 52.

103. DIRECT CURRENT CIRCUITS AND MAGNETISM

3 hours

Intended to supplement Course 101 for Electrical Engineering students. Calculation of the voltage at various points in a complex system of conductors, generators, motors, and storage batteries. Calculation of the resistance of various shaped conductors, and the magnetic field about various shaped circuits. Division of load between direct current motors and generators running in parallel or series. Prerequisites: Electrical Engineering 101, and Mathematics 51 and 52.

121. DIRECT CURRENT LABORATORY

2 hours

Testing of direct current generators and motors. Illustrative of the problems discussed in Course 101. For both Civil and Electrical Engineering students. Course 101 must be taken before or simultaneously.

122. ALTERNATING CURRENT LABORATORY

2 hours

Testing of alternating current generators, synchronous and induction motors. For both Civil and Electrical Engineering students. Course 102 must be taken before or simultaneously.

123. DIRECT CURRENT LABORATORY

1 hour

Some additional methods of determining efficiencies and analyzing losses of direct current motors and generators. Operation of motors and generators in series and parallel. Course 103 must be taken before or simultaneously.

131. ELECTRICAL MEASUREMENTS AND METERS

3 hours

A laboratory course treating of the measurements of

various electrical quantities, together with methods of checking and calibrating the instruments and meters used in Electrical Engineering. Prerequisites: Physics 51 and 52.

142. MACHINE DESIGN 3 hours

The relative motions of machine parts, belting, gears, cams, chains, etc. Prerequisites: Mathematics 1 and 12, Physics 51, Civil Engineering 105, and 106, and Electrical Engineering 55.

151. ALTERNATING CURRENT MACHINERY 3 hours

Intended to supplement Course 102 for Electrical Engineering students. Combinations of inductances, resistance, and capacity in single phase, three phase, and quarter phase circuits. Operation of alternating current motors and generators in parallel. Theory and operation of the rotary converter, induction repulsion motor, single phase series motor, three phase commutator motor, inductor and induction generators. Prerequisites: Courses 102 and 122.

152. ALTERNATING CURRENT CIRCUITS AND  
AUXILIARIES

3 hours

Design of a transformer. Combinations and connections of transformers. Operation of transmission lines and distribution circuits. Change of voltage and current along line as caused by changes in resistance, inductance, power factor, capacity, etc. Resonance in circuits, protective devices for lightening, short circuits, overload, etc. Prerequisites: Course 151.

161. ALTERNATING CURRENT LABORATORY 1 hour

Generator and induction motor tests continued. Combinations of inductance, resistance, and capacity. Prerequisite: Course 122. Course 151 must be taken before or simultaneously.

162. **ALTERNATING CURRENT LABORATORY** 2 hours  
Testing rotary converters, alternating current commutator motors, induction regulators, potential and current transformers. Wave form. Prerequisites: Courses 151 and 161. Course 152 must be taken before or simultaneously.
171. **DIRECT CURRENT DYNAMO DESIGN** 2 hours  
The student is given the problem of designing a direct current motor or generator to meet given requirements. Prerequisites: Courses 101 and 121.
181. **ELECTRICAL APPLICATIONS** 5 hours  
(a) Electro-chemistry and electro-metallurgy.  
(b) Illumination and photometry.  
(c) Electric railways. A study of the various direct current and alternating current systems. Course 151 must be taken before or simultaneously.
182. **ELECTRICAL APPLICATIONS** 5 hours  
(a) Design of insulation for high voltages.  
(b) Central stations and sub-stations; their equipment and arrangement; protective and emergency devices.  
(c) The application of electric motors to industries; their competition with other forms of power, and the competition of electricity with other forms of transmitting power. Cost analysis of electrical power. Prerequisites: Courses 103 and 151.
191. **SEMINAR** 2 hours  
The student is given or selects several topics along Electrical Engineering lines for special reading and report to class. Also discussion of current articles in the technical journals. Prerequisites: Courses 103 and 151.
199. **SEMINAR**  
Students may choose with the consent of the major professor special topics in Electrical Engineering for reading and report. Hours credit is dependent upon the amount and quality of the work done.

**DEPARTMENT OF THE ENGLISH LANGUAGE AND  
RHETORIC****Professor Sherwin**

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|---|---------|
| 1. COMPOSITION AND RHETORIC<br>(See page 90.) | 3 hours |
| 2. COMPOSITION AND RHETORIC<br>(See page 91.) | 3 hours |
| 52. FORMS OF PUBLIC ADDRESS<br>(See page 91.) | 3 hours |

The student in the School of Applied Science may elect any other course in this department for which he has fulfilled the prerequisites.

**DEPARTMENT OF ENGLISH LITERATURE****Associate-Professor Hickey**

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|--|---------|
| 41. INTRODUCTION TO ENGLISH LITERATURE<br>(See page 94.) | 3 hours |
| 82. AMERICAN LITERATURE<br>(See page 94.)                | 3 hours |

The student in the School of Applied Science may elect any other course in this department for which he is prepared.

**DEPARTMENT OF FRENCH****Professor Nelson**

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|--|---------|
| 1. ELEMENTARY FRENCH<br>(See page 95.) | 5 hours |
| 2. ELEMENTARY FRENCH<br>(See page 95.) | 5 hours |

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|---|---------|
| 51. SECOND-YEAR FRENCH<br>(See page 95.)  | 3 hours |
| 52. SECOND-YEAR FRENCH<br>(See page 96.)  | 3 hours |
| 101. THIRD-YEAR FRENCH<br>(See page 96.)  | 3 hours |
| 102. THIRD-YEAR FRENCH<br>(See page 96.)  | 3 hours |
| 151. FOURTH-YEAR FRENCH<br>(See page 96.) | 2 hours |
| 152. FOURTH-YEAR FRENCH<br>(See page 96.) | 2 hours |

#### DEPARTMENT OF GEOLOGY

Professor Kirk

- |                     |         |
|---------------------|---------|
| 1. PHYSICAL GEOLOGY | 5 hours |
|---------------------|---------|
- Physiographic, structural, and dynamic processes are considered in a general way, to be applied more specifically during Course 2 in the second semester. One-fifth of the work is devoted to studies of topographic and geologic maps and the handling, identification, and interpretation of illustrative minerals, rocks, fossils, models. Occasional field trips are required to areas reasonably accessible from the campus. Elementary chemistry is necessary for progress in this course, and physics and mineralogy are desirable.
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|-----------------------|---------|
| 2. HISTORICAL GEOLOGY | 5 hours |
|-----------------------|---------|
- The principles of Course 1, together with the elements of paleontology, are applied to the study of the origin and development of the earth, and to the evolution of life forms as governed by their migrations and adaptations. A large



collection of accurately labeled fossils is available for laboratory work. An area near the campus is mapped topographically and its geologic problems discussed by the class. Acquaintance with modern geologic field instruments and methods is insisted upon. Prerequisite: Geology 1.

**3. MINERALOGY, INTRODUCTORY** 3 hours

Crystallographic, physical, chemical, and descriptive mineralogy are given in lectures and recitations, and illustrated by specimens, models, and slides. Each student is equipped with a laboratory blowpipe and chemical set for work preliminary to determinative mineralogy. A limited number of unknowns are determined, as an introduction to Course 4. Elementary chemistry is required, but may be taken along with the course. See also Course 55.

**4. MINERALOGY, DETERMINATIVE** 5 hours

Three-fifths of the work is devoted to the determination of unknowns in the laboratory. After sufficient training in this means of identification is had, sight identification is practiced, followed by use of the spectroscope, gravity separations, and preparation and microscopic examination of opaque minerals by reflected light. Occurrence, origin, uses, conservation, and, where applicable, the principles of metallurgy of the minerals are considered in lectures and recitations. Prerequisites: Geology 3, and Chemistry 1.

**5. PHYSIOGRAPHY** 3 or 5 hours

This course is planned to supplement the usual courses in general geography and at the same time lead to an understanding of the geologic control of surficial features and products. It includes a study of the earth's astronomic relations, atmosphere, rivers, oceans, landmasses. Regional comparisons are made of Eastern and Western physiographic features of the United States and the developments of resources and industries from a knowledge of geology, topography, soil, and climate. Extensive use is made of maps and models in the laboratory, and various

short field trips are required. During these the student is acquainted with the use of compass, clinometer, plane-table, alidade, rod, and methods of contrasting topographic maps and sketches. This may be elected as a general cultural course. It is required of majors in geology.

6. CLIMATOLOGY 2 hours

Recent researches into prehistoric climatic variation are opening new fields in this subject. The modern advances in the methods of the U. S. Weather Bureau are likewise of extreme interest and importance. Unusual opportunities are presented in this region for the application of theory and its checking with practical observation.

7. COMMERCIAL GEOGRAPHY 4 hours

This course is intended primarily for freshmen in the School of Commerce, but is open to other students interested in political, social, and especially environmental factors in the development of man. It forms a connection between the natural sciences and the social sciences. Descriptions and mnemonic exercises are reduced to a minimum, the end being to correlate facts and events so as to show concrete commercial, physical, historical, and social relations in the sense now coming to be recognized as constituting geography in the broader sense of that term.

51. ECONOMIC GEOLOGY 5 hours

This may be otherwise described as applied geology. Occurrence, geographic and geologic distribution, origin, alteration, uses, and conservation of useful geologic products are investigated. Both non-metallic and metallic resources receive attention, particularly those common to the United States. The principles of mining and metallurgy are dealt with to some extent. Publications and maps of the Federal Geological Survey as well as those of state and foreign surveys are used freely. Illustrative specimens are handled, and practical field problems submitted to the class. Recourse is had occasionally to such experimental

work as the examination of polished ore specimens by reflected light, and quantitative laboratory work is conducted. Prerequisites: Elementary chemistry and mineralogy, as well as either Geology 1-2, or 102.

52. ECONOMIC GEOLOGY 5 hours

Continuation of Course 51.

53. PALEONTOLOGY 5 hours

Studies of those plant and animal forms useful in representing geologic history and biologic development. Attention is confined mainly to the extinct marine invertebrate animals. The influence of enemies, barriers, migration, and commingling are investigated. Development of species and recapitulation are considered through study of interior structure as well as of exterior form. Characteristic or index species receive especial attention. Prerequisite: Geology 1-2, or 102.

54. HISTORICAL GEOLOGY 3 or 5 hours

The origin and development of the earth and its oceans and land masses receive detailed attention. Succession of life forms, significance of faunal and floral connections and separations, likenesses and unlikenesses, climatic conditions, structural features, probable land-and-sea boundaries form subjects for discussion. Reading researches are assigned. Certain phases of oceanography as well as continental conditions are involved. Prerequisites: Geology 1-2, or 102.

55. PETROGRAPHY 2 hours

This work is intended especially to familiarize the student with applied crystallography through drills on crystal forms, crystal projection, and the use of the goniometer, both crystal models and natural crystals being used. Preliminary study of microscopic technique and the preparation of thin sections and polished surfaces of opaque minerals are taught in connection with light phenomena as seen in the petrographic microscope, and microchemical phe-

nomena in the reflection microscope. It may be given with geology 4, in which case the latter course deals largely with blowpipe determinations. Prerequisites: Physics and chemistry. See also Course 3.

56. PETROLOGY

5 hours

The ultimate aim of this course is training in rock classification as arrived at through petrographic chemical, and field studies of the rock-forming minerals and their possible combinations. Igneous rocks are studied in particular, but the petrology of sediments and paragenesis of metalliferous minerals are also investigated. Thin sections, polished surfaces, cleavage fragments, gravity separations, and field evidences are made use of. Much emphasis is placed upon the manipulation of petrographic and reflection microscopes, and other laboratory devices. Prerequisites: Geology 3-4 or 55 or 101 and either 1 or 102.

57. INTERPRETATION OF MAPS

3 hours

This is otherwise called indoor field geology. Topographic and geologic maps and folios are its bases. Training is had in detecting topographic and geologic form. Field operations are planned as if to meet the conditions implied by the maps. The making and criticism of contour and geologic maps and of geologic cross-sections is practiced. Prerequisite: Geology 1-2, or 102. (Alternate years, 1917-1918.)

101. ENGINEERING MINERALOGY

5 hours

This is designed as a short course in determinative mineralogy and rock identification and classification, primarily for engineers and chemists. It consists mainly of laboratory work, but a brief treatment of crystallography is given. Microscopic observations of polished surfaces of minerals and metals is here offered. Prerequisites: Chemistry 1-2 and Physics 1-2.

102. ENGINEERING GEOLOGY

5 hours

A course intended for those majoring in civil engineering.

It includes the elements of mineral and rock recognition, and the principles of weathering, erosion, sedimentation, and particularly structural geology, with brief attention to historical phases. Geologic field instruments are made use of, and reconnaissance methods and mapping practiced briefly. Prerequisites: Chemistry 1 and 2 and Physics 1 and 2. (Alternate years 1917-1918.)

103. LOCAL GEOLOGY

2 hours

This includes the broader geologic problems of the Southwest and the geology of New Mexico as far as known. Particular attention is directed to conditions in the region of the University. Faulting, vulcanism, local water supply, soils, road metals, and other structural and economic features offer problems for solution here.

104. GEOLOGIC SEMINAR

2 to 5 hours

The departmental library is a depository for Federal Geological Survey and New Mexico Natural Resources Survey publications, and is kept up to date in state and many foreign geologic papers. An added incentive to reading and research with these facilities is seen in the fact that the geologic problems in New Mexico are as yet blocked out in only their broadest outlines, and await investigation by those acquainted with local conditions and the published results from this and related regions. Those desiring to emphasize local phases should precede or accompany this course with Geology 103. Juniors and seniors from other departments are admitted when adjudged to be prepared for the course.

151. THESIS

3 to 5 hours

Obviously those who major in a growing subject can best become acquainted with their line of preference by focusing efforts and ideas upon a concrete problem. As implied in the last paragraph above, this state is well nigh a virgin field for geologic research.

**DEPARTMENT OF GERMAN****Professor Nelson**

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|--|---------|
| 1. ELEMENTARY GERMAN<br>(See page 102.)              | 5 hours |
| 2. ELEMENTARY GERMAN<br>(See page 103.)              | 5 hours |
| 51. SECOND-YEAR GERMAN<br>(See page 103.)            | 3 hours |
| 52. SECOND-YEAR GERMAN<br>(See page 103.)            | 3 hours |
| 101. SCHILLER<br>(See page 103.)                     | 2 hours |
| 102. GOETHE<br>(See page 103.)                       | 2 hours |
| 151. HISTORY OF GERMAN LITERATURE<br>(See page 103.) | 2 hours |
| 152. HISTORY OF GERMAN LITERATURE<br>(See page 103.) | 2 hours |

**DEPARTMENT OF HISTORY AND INTERNATIONAL LAW****Associate-Professor Hill**

History 1 and 2, generally required for advanced courses in Latin-American history may be waived for students in schools of engineering.

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|---|---------|
| 1. MODERN EUROPEAN HISTORY<br>(See page 106.) | 3 hours |
| 2. MODERN EUROPEAN HISTORY<br>(See page 106.) | 3 hours |
| 61. ENGLISH HISTORY<br>(See page 107.)        | 3 hours |
| 62. ENGLISH HISTORY<br>(See page 107.)        | 3 hours |

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|------------------------------|---------|
| 73. AMERICAN HISTORY         | 3 hours |
| (See page 107.)              |         |
| 74. AMERICAN HISTORY         | 3 hours |
| (See page 107.)              |         |
| 81. LATIN AMERICA: COLONIES  | 2 hours |
| (See page 107.)              |         |
| 82. LATIN AMERICA: REPUBLICS | 2 hours |
| (See page 107.)              |         |

The student in the School of Applied Science may elect any other course in this department for which he has fulfilled the prerequisites.

#### DEPARTMENT OF HOME ECONOMICS

Director Lathrop

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|--|---------|
| 1. TEXTILES AND SEWING   | 2 hours |
| Study of textiles and textile industries. Consideration of economic and hygienic aspect of textiles. Care and repair of clothing. Study of the elements of handsewing and their application to practical problems. Laboratory work: 2 two-hour periods. Required of all students in the department. Fee, \$1.00.                     |         |
| 2. TEXTILES AND SEWING   | 2 hours |
| Continuation of Course 1. Study of dyeing, weaves, laundering, machine work, and principles underlying the same. Study of patterns, altering, interpreting, drafting, and testing. Use of commercial patterns. Laboratory work: 2 two-hour periods. Prerequisite: Course 1. Required of all students in the department. Fee, \$1.00. |         |
| 62. ADVANCED SEWING  | 2 hours |
| Practical work in making of undergarments, using patterns. Study of materials from the standpoint of suitability, cost and durability. Laboratory work two 2-hour periods. Prerequisites: Courses 1 and 2. Fee, \$1.00.  |         |

165. DRESSMAKING 2 hours  
Importance of artistic dress. Economics of dress. Designing and making of one wool dress or tailored skirt. Laboratory work, two 2-hour periods. Prerequisites: Courses 1, 2 and 62. Fee, \$1.00.
55. FOODS 3 hours  
This course is intended as a preparation for later courses in foods. Emphasis is placed on manual dexterity, economy of labor through proper use of utensils, speed and quiet in carrying them out. Principles of cookery are studied and applied in the preparation of simple foods; cooking of cereals, vegetables and eggs. Laboratory work, two 2-hour periods. Class work, one 1-hour period. Fee, \$3.00.
56. FOODS 3 hours  
Continuation of Course 55. Composition and characteristics of foodstuffs. Cooking of vegetables, meats, and breads. Study of milk and its products with the combination of milk and eggs. Laboratory work, two 2-hour periods. Class work, one 1-hour period. Prerequisites: Course 55, and Inorganic Chemistry. Fee, \$5.00.
155. ADVANCED FOODS 2 hours  
Study of food preservation and Pure Food Laws. Extensive work with flour mixtures, including bread, cake, and pastry. Laboratory work, two 2-hour periods. Prerequisites: Courses 55 and 56, and Bacteriology. Fee, \$5.00.
176. DIETETICS 5 hours  
Study of dietary standards; relation of food to health, quantitative requirements of the human body according to varying conditions of age, occupation, and health. Prerequisites: Courses 55 and 56, and Bacteriology.
72. HOME NURSING 2 hours  
This course includes the study of sick-room location, furnishing and care. Beds and bed-making. Personal hy-



giene. Care of patient. Contagion and disinfection. Simple emergencies and bandaging.

183. HOUSE MANAGEMENT AND SANITATION 4 hours  
This course treats of care of the house; household accounts; ventilation; water supply, heating and lighting. The home as a social center, and rules of conduct. Site and surroundings of the house. Drawing of plans and house furnishings.
194. TEACHERS' COURSE AND DEMONSTRATION 5 hours  
Includes methods of presentation; the principles underlying the planning of curricula; the planning of domestic science laboratories and their equipment. The presentation by each student of the problems in cookery, the care of textiles and sewing. Laboratory work, two 2-hour periods. Class work, three 1-hour periods. Prerequisites: Courses 55, 56, and 1 and 2.

#### DEPARTMENT OF MATHEMATICS

Professor Edington

The more elementary courses in this department are adapted to two classes of students, first, those students who are enrolled in the School of Engineering, and, second, those students who are planning to make mathematics their major study or who wish to study pure mathematics rather than applied mathematics. Certain of these courses are offered primarily for engineering students, and others for the second class of students, but all courses are open to all students who are sufficiently prepared to enter upon them.

##### 1. COLLEGE ALGEBRA AND PLANE TRIGONOMETRY

5 hours

Primarily for engineering students. A rapid review of elementary algebra is made, followed by a more careful

treatment of simultaneous linear and quadratic equations, both analytically and graphically, the quadratic equation, binomial formula, logarithms, undetermined coefficients, partial fractions, and determinants. In plane trigonometry especial emphasis is put upon the solution of right and oblique triangles together with the applications of trigonometry to practical problems of surveying. The rapid and accurate use of logarithms in the solution of these problems is insisted upon.

3. COLLEGE ALGEBRA

5 hours

Analytical and graphical solution of simultaneous linear and quadratic equations, quadratic equations, imaginaries, ratio, proportion, variation, progressions, binomial formula, mathematical induction, logarithms, permutations and combinations, limits, convergency of series, undetermined coefficients, partial fractions, determinants, and elementary theory of equations.

6. PLANE AND SPHERICAL TRIGONOMETRY

5 hours

Trigonometric ratios, functions, equations and identities, solution of right and oblique triangles by means of logarithms, both plane and spherical, and the applications of trigonometry to problems in surveying, navigation and astronomy. Prerequisite: A knowledge of solid geometry.

12. PLANE ANALYTIC GEOMETRY

5 hours

Coordinates, the straight line, conic sections, transformation of coordinates, problems on loci, higher plane curves and transcendental equations, empirical equations and an introduction to analytical geometry of three dimensions. Prerequisite: Courses 1 or 3 and 6.

21. MODERN GEOMETRY

5 hours

Principle of duality, projection, section, perspectivity, cross ratio, and general introduction to non-metric geometry.

31. MECHANICAL DRAWING 3 hours  
Same as Civil Engineering 2. Primarily for first year engineering students.
36. DESCRIPTIVE GEOMETRY 3 hours  
Same as Civil Engineering 2. Primarily for first year engineering students.
51. DIFFERENTIAL AND INTEGRAL CALCULUS 5 hours  
The fundamental rules for differentiation and integration with application to such problems as are ordinarily considered in a first course in Calculus. Prerequisite for all higher courses in mathematics, all courses in engineering, and physics above Course 110. Prerequisites: Courses 1 and 12 or 3, 6 and 12.
52. DIFFERENTIAL AND INTEGRAL CALCULUS 5 hours  
A continuation of Course 51.
101. LIMITS AND SERIES 3 hours  
Limits of functions of a real variable, of a continuous variable, with applications to the Calculus; convergence of infinite series, and expansions of elementary functions into infinite series and the determination of their intervals of convergence. Prerequisite: One year of Calculus.
112. GRAPHICAL ANALYSIS 3 hours  
Study of number by means of space. The purpose of the course is to enable the student to apply certain fundamental space properties of number to the study of functions and equations whereby their properties are discovered. Prerequisite: One year of Calculus.
131. DIFFERENTIAL EQUATIONS 3 or 5 hours  
The three-hour course is offered primarily for engineering students. Ordinary and partial differential equations. Text: Murray's Differential Equations. Prerequisite: One year of Calculus.
134. ADVANCED CALCULUS 3 hours  
A continuation of Course 52, with introduction to the theory of functions of the complex variable.

137. **DEFINITE INTEGRALS** 3 hours  
Principles of definite integrals, fundamental notion of function, its continuity, proper and improper definite integrals, beta and gamma functions, multiple and line integrals, computation of definite integrals by methods of approximation. Prerequisite: One year of Calculus.
140. **ENGINEERING MATHEMATICS** 3 hours  
Primarily for students in electrical engineering. Hyperbolic functions, introduction to vector methods, functions of the complex variable applicable to engineering problems, theory of probability, method of least squares, studies in graphic papers such as logarithmic and cosine, and practical applications to electrical problems. Prerequisites: Mathematics 131 and Physics 51 and 52.
141. **DETERMINANTS** 1 or 2 hours  
Properties of determinants; applications to elementary algebra and theory of equations, determinants of special forms, application to calculus, linear transformations. Courses 51 and 52 are prerequisite to this course, and, if possible, it should be carried simultaneously with Course 143.
143. **THEORY OF EQUATIONS** 3 hours  
Continuation of Course 3. General properties of equations, transformation of equations, solution of cubic and biquadratic, determinants, elimination. This course, upon request, will be extended to 5 hours, and an elementary study of the Galois Theory of Equations will be made.
144. **ADVANCED ALGEBRA** 3 hours  
Based on Bocher's **Introduction to Higher Algebra** with lectures on additional topics. Prerequisites: Courses 21 and 143.
154. **SOLID ANALYTICAL GEOMETRY**  
Lines and planes in space, quadric surfaces, and brief introduction to the theory of surfaces in general. Prerequisites: Courses 21 and 131.

161. PROJECTIVE GEOMETRY 5 hours  
Prerequisites: Courses 21, 131 and 144.
174. THEORY OF FUNCTIONS OF THE COMPLEX  
VARIABLE 5 hours  
Prerequisites: Courses 131, 143 and 144.
185. FOURIER'S SERIES AND BESSEL'S FUNCTIONS 3 hours
206. THEORY OF NUMBERS 3 hours
211. VECTOR ANALYSIS 3 hours
- SEMINAR

## DEPARTMENT OF PHYSICS

Professor Brenneman

1. ELEMENTARY PHYSICS 5 hours  
A beginning course in physics, including mechanics, heat, electricity, sound and light. Following Millikan and Gale's **First Course in Physics**. Class work with demonstrations, three hours, and laboratory four hours. Half year credit not given. Preparatory credit, 5 hours; college credit, 3 hours. Prerequisites: Algebra and plane geometry.
2. ELEMENTARY PHYSICS 5 hours  
Continuation of Physics 1.
51. GENERAL PHYSICS 5 hours  
Mechanics, molecular physics, heat, electricity, wave motion, sound, light and radio-activity. Recitations, demonstration and laboratory work. Laboratory, two to four hours. Half year credit not given. Prerequisites: Physics 1 and 2 or its equivalent, and Mathematics 1.
52. GENERAL PHYSICS 5 hours  
Continuation of Physics 51.
62. THERMODYNAMICS 3 hours  
Theory and principles underlying the operation of steam boilers and engines of various types, such as simple, compound, uni-flow, etc., and gas engines. Methods of analyz-

ing the heat losses and determining their efficiencies. Operation of steam turbines, air compressors, and refrigerator plants. The course is given from the engineering standpoint. Physics 51 and 52, and Mathematics 51 and 52, must be taken before or simultaneously.

107. HEAT 3 hours

Measurement of thermal conductivity, cubical coefficient of expansion, specific heat, radiation constants, high temperature measurements, lowering of freezing point, and raising of boiling point of solutions. Recitations and laboratory work. Prerequisites: Physics 51 and 52.

108. HEAT 3 hours

A continuation of Course 107.

112. STEAM ENGINES, BOILERS, AND STATION

AUXILIARIES

3 hours

Intended to follow Course 62, laying more stress on the mechanical features and details of practice in construction and operation. Subjects treated are selected mainly from Gebhardt's **Steam Power Plant Engineering**. This course is open to civil engineers without Course 62. Prerequisite: Physics 51.

121. THEORETICAL MECHANICS 3 hours

An advanced course taking up the mathematical treatment of the subject. Composition of forces and couples, center of gravity of areas and volumes, conditions for equilibrium, principle of virtual work, free and damped periodic motion, motion with central forces, moment of momentum and moment of inertia. Prerequisites: Physics 51, and Mathematics 131.

125. LIGHT 3 hours

Polarization, refraction, reflection, interference, absorption and emission of light. Modern theories concerning the relation existing between electricity, magnetism, ether and light. Recitation and laboratory. Either semester. Prerequisites: Physics 51 and 52, and Mathematics 131.

131. **ELECTRICITY AND MAGNETISM** 5 hours  
A course treating of the self-inductance, capacity, resistance, and leakage of various shaped conductors, circuits, and dielectrics. Recitation and laboratory. Either semester. Prerequisites: Physics 51 and 52, and Mathematics 51 and 52.
132. **ELECTRICITY AND MAGNETISM** 5 hours  
Advanced course of the electrical skin effect, hall effect, free and forced electrical oscillations, wave analysis, hysteresis, and eddy currents. Recitation and laboratory. Either semester. Prerequisites: Physics 131, and Mathematics 131.

**DEPARTMENT OF PHYSICAL EDUCATION**

Director Hutchinson

1. **PHYSICAL TRAINING FOR MEN** 1½ hours  
(See page 121.)
2. **PHYSICAL TRAINING FOR MEN** 1½ hours  
(See page 121.)
3. **PHYSICAL TRAINING FOR WOMEN** 1½ hours  
(See page 121.)
4. **PHYSICAL TRAINING FOR WOMEN** 1½ hours  
(See page 121.)

**DEPARTMENT OF PSYCHOLOGY AND PHILOSOPHY**

Professor Worcester

51. **GENERAL PSYCHOLOGY** 3 hours  
(See page 123.)
56. **EDUCATIONAL PSYCHOLOGY** 3 hours  
(See page 123.)
81. **ETHICS** 4 hours  
(See page 124.)

The student in the school of Applied Science may elect any other course in this department for which he has fulfilled the prerequisites.

**SHOP WORK****Associate-Professor Leupold**

1. **ELEMENTARY SHOP WORK** 3 hours  
Bench and lathe work in wood. Practice in the interpretation of working drawings.
3. **ADVANCED WOOD WORK** 3 hours  
A continuation of Course 1, including pattern-making and the principles of cabinet work. Prerequisite: Course 1, or its equivalent. This course may be taken by students who have had the equivalent of Course 1 in their preparatory work.
11. **LATHE WORK IN METALS** 2 hours  
Turning, boring and thread cutting in cast iron, steel, and brass.

**DEPARTMENT OF SOCIAL SCIENCE****Professor Bonnett**

53. **LABOR PROBLEMS AND CONDITIONS** 5 hours  
Under this head a study will be made of the conditions of labor, as to hours, wages, and the workshop; of the organizations of workmen, and of employers, and their relations; and of the various problems that have grown out of the factory system.
61. **PRINCIPLES OF ECONOMICS** 5 hours  
Economic principles are studied extensively in this course. It affords a comprehensive view of these principles operating in the commercial and industrial world. Consideration is given to our great economic problems.
62. **BUSINESS ORGANIZATION AND MANAGEMENT** 3 hours  
The manner in which modern commercial and industrial organizations are formed and their functions in the present industrial system, form the main subjects in this course.

Students in the School of Applied Science may



elect any other course in this department for which they have fulfilled the prerequisites.

**DEPARTMENT OF SPANISH****Associate-Professor Parsons**

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|--|---------|
| 1. ELEMENTARY SPANISH<br>(See page 130.)                 | 5 hours |
| 2. ELEMENTARY SPANISH<br>(See page 130.)                 | 3 hours |
| 51. SECOND-YEAR SPANISH<br>(See page 130.)               | 3 hours |
| 52. SECOND-YEAR SPANISH<br>(See page 130.)               | 3 hours |
| 101. SPANISH DRAMA, 17TH CENTURY<br>(See page 130.)      | 2 hours |
| 102. SPANISH LITERATURE, 19TH CENTURY<br>(See page 131.) | 2 hours |
| 151. SPANISH BALLAD POETRY<br>(See page 131.)            | 1 hour  |
| 152. HISTORY OF SPANISH LITERATURE<br>(See page 131.)    |         |

## **School of Education**

### **GENERAL INFORMATION**

The purpose of the Courses in Education is to provide thorough professional instruction for teachers.

The conscious aim of this department is to bring together the essentials of all that directly bears upon pedagogy from descriptive, physiological, and experimental psychology; from the history of education; sociology, ethics, and a comparative study of the present educational systems—to the end that students may gain such knowledge of the nature and function of the subjects to be taught, as will give ability and power in the process of teaching. But the primary object throughout the course is to secure for the teacher adequate intellectual and moral development, high educational ideals, and the unfolding of his own originality and resourcefulness.

The students of this department have excellent opportunities for observing regular school work in the modern and progressive schools of the City of Albuquerque, where all grades are represented, including an exceptionally well-equipped and up-to-date High School with an enrollment of 350 students.

Visits are made under the direction or assignment of the professor in charge.

Students entering the College of Letters and Science with a view to a subsequent course in the School of Education, may take up majors in any department; or they may select, subject to the approval of the Professor of Education and the Student Standing Committee, a combined course of study designed to prepare them for the profession they have chosen, subject to the requirements of the College.

#### **ADMISSION OF STUDENTS**

Graduates of the Preparatory School, of four-year high school courses and students who have otherwise satisfied the Entrance Requirements of the University as outlined on pages 35-59 are admitted to the School of Education.

#### **REGISTRATION OF STUDENTS**

For Plan of Registration, see page 62.

#### **COURSE OF STUDY**

The School of Education offers two courses, a four-year course leading to the degree of Bachelor of Pedagogy on the same scholastic basis as a B. A. degree, and a two-year course leading to a professional certificate, from the University, for work covered, and a three-year State Certificate.

#### **THE FOUR-YEAR COURSE**

This course is intended to afford adequate training for prospective high school teachers and principals, for teachers and principals of elementary schools, supervisors of special subjects and for superintendents of school systems.

The preparation for teaching which is afforded by this course includes a thorough grounding in the correct use of English, both spoken and written. No student should enter the teaching profession without adequate training of this kind, whatever subjects he may expect to teach, and graduation from the School of Education requires the attainment of a satisfactory standard in this particular.

The professional preparation of the teacher is found in the educational courses—psychology in education, history and theory of education, school management and administration, special methods in teaching, etc.

Another phase of the teacher's preparation is the knowledge of subjects to be taught. The four-year course makes provision for ample training in the languages, history, mathematics and the sciences including Home Economics.

#### THE DEGREE OF BACHELOR OF PEDAGOGY

The degree of Bachelor of Pedagogy is conferred upon candidates who fulfill the requirements set forth below:

1. The completion of 120 credit hours in subjects of college grade in addition to 4 credit hours in Physical Education. For every 15 credit hours of B work and every 7 credit hours of C work one extra credit hour is required. No student may carry more than 18 hours nor less than 12 hours without approval of the Head of the School of Education.

2. Candidates must have completed at least 25 credit hours in the group of psychology and phil-

osophy, and the history and principles of education.

3. A sufficient number of courses must be taken in the subject of the two closely allied subjects which the candidate expects to teach in an elementary or high school, to satisfy the requirements of a major study, namely, 30 credit hours.

The diploma received upon the completion of these courses entitles the holder to the degree of Bachelor of Pedagogy and to a professional State Certificate.

#### PROFESSIONAL CERTIFICATES

In the administration of the law concerning the granting of professional certificates, the State Board of Education makes its own rules. The following are the present rules:

Three grades of professional certificates are granted: One for three years, one for five years, and one for life. All credits offered must be of high school or higher standard. A fee of one dollar (\$1.00) is charged the applicant for each examination; several subjects may be taken consecutively at each examination.

A professional three-year certificate may be granted to a candidate presenting any five credits (a credit shall consist of five forty-five minute recitations a week for a period of thirty-six weeks, or its equivalent,) named in Group II following and all credits named in Group I, except "Observation (1-2), Practice (1)."

After three years of successful experience, the holder of a professional three year certificate may be granted a professional five-year certificate.

A person who has all the credits in Group I following, and any five credits selected from Group II, shall be considered as having the legal qualifications for a professional five-year certificate.

Five-year certificates which are not extensions of three-year professional certificates may be renewed for three years.

Twenty-seven school months of four weeks each of successful teaching will be accepted in lieu of the half year of observation and the one year of practice teaching specified in Group I.

Equivalents of like kind will be accepted for any subject in either group except the bold face subjects.

On presentation of four credits in addition to those upon which the five-year certificates are granted, approved by the State Board of Education, a holder of a professional five-year certificate, after five years of successful experience, may be granted a professional life certificate.

A fee of three dollars (\$3.00) is charged for the three-year certificate, five dollars (\$5.00) for five-year certificate, and ten dollars (\$10.00) for the life certificate.

Do not remit until after having received notice of favorable action on your application.

### Group I

**Arithmetic Review (1-2), Geometry, Plane or Plane and Solid (1), Zoology (1-2), Algebra (1), English Grammar Review (1-2), Composition and Rhetoric (1), History of English Literature and English and American Classics (2), United States History including New Mexico History (1-2), Civics including New Mexico Civics (1-2), General History (1), Physiology and Hygiene (1-2), Botany (1-2), Physical Geography (1-2), Industrial Subject (Agriculture, Manual Training, Domestic Science), Commercial Branch (1-2), Psychology (1), History of Education, including a general knowledge of the following school systems: the German, the French, the United States, and the New Mexico (1-2), School Management (1-2), Principles of Education (1-2), Special Methods in Reading, Geography, Language, Spelling and Primary Arithmetic (1), Observation (1-2), Practice (1).** Practice teaching should be construed to mean actual teaching in an elementary school under the supervision of a critic teacher. If New Mexico History and Civics are not included in United

States History and Civics, applicants must present New Mexico History and Civics (1-2). All professional subjects must be of college rank.

#### Group II

Latin (2), (3), or (4); Spanish (2), Greek (2), German (2); Trigonometry (1-2); Sociology (1-2), Ethics (1-2), Geology (1-2); Astronomy (1-2), Commercial Law (1-2), English History (1-2); Chemistry (1), Bookkeeping (1-2), Physics (1), Calculus (1-2), Electives.

The sum of credits in the professional studies for a state professional certificate shall not be less than five (5) units distributed respectively as follows: Psychology 1 unit, History of Education 1-2 unit, School Management and Supervision 1-2 unit, Principles of Education 1-2 unit, Special Methods, 1 unit, Observation and Practice 1 1-2 units. (Twenty-seven months successful teaching shall be accepted in lieu of Observation and Practice, 1 1-2 units.) No credit shall be counted in Psychology for less than 18 weeks. In other professional subjects no credit shall be accepted for less than 12 weeks. When the total credits in professional subjects do not equal 5 units, the board of education reserves the right to designate in what particular subject or subjects the candidate shall make his or her additional credits in order to meet these requirements. Substitutions for any subject must be of like kind, Mathematics for Mathematics, History for History, Science for Science, but there shall be no substitution for Arithmetic Review 1-2 unit, Grammar Review 1-2 unit, English 3 units, Physiology and Hygiene 1-2 unit, Civics 1-2 unit, United States History 1-2 unit, New Mexico History and Civics 1-2 unit, industrial subject 1-2 unit.

The minimum educational requirements for teachers in a high school shall be graduation from the New Mexico Normal School or from the Normal University or the completion of work equivalent to that required for graduation from these schools. This requirement may be waived temporarily by the State Superintendent of Public Instruction in cases where such teachers have manifest qualifications for the position.

Credits not to exceed 1 1-2 units for work done in New Mexico Normal Summer Schools shall be accepted for professional certificates with the same value as is given to such credit toward graduation in said institutions; provided said credits shall be earned by an attendance of not less than eight consecutive weeks. The State Board of Education may allow credit for additional subjects.

Graduates of the University of New Mexico having 120 hours to their credit including 30 hours in Psychology and Education, shall after 27 months of experience receive a five-year professional certificate, provided they have had all subjects required by law.

Satisfactory standings in not to exceed four subjects from the State Normal Summer School may be accepted for any grade of elementary certificate provided such standings are secured as a result of pursuing a course for at least eight weeks in each subject.

Elementary first grade certificates when granted on credits from educational institutions shall be granted for one year only except when application is accompanied by satisfactory evidence of one year of successful teaching. When application is accompanied by such evidence, such first grade certificates for three years, renewable, may be granted on credits by the State Board of Education. One year elementary first grade certificates granted on credits may be extended two years and renewed in the same manner as such first grade certificates granted on examination.

Credits will be allowed for correspondence work done with educational institutions in the state, but for elementary certificates such credits are limited to three units or their equivalent.

Grades secured from the Normal Summer Schools can be used only once on the same grade of certificate of third or second grade elementary rank.

Business College Certificate may be granted on same subjects and percentages as elementary first grade certificate, and in addition all branches found in any one of the full courses of a



standard business college. The fee for such a certificate is \$1.00.

Elementary first grade certificates for one year may be issued upon credits when the applicant shows the completion of a good four-year high school course or its equivalent covering at least 15 units, one unit being a subject pursued 36 weeks, five 40-minute recitations per week or 32 weeks, five 45-minute recitations per week, including Physiology, U. S. History and Civics, New Mexico History and Civics, and Industrial Subject (Agriculture, Domestic Science, Manual Training), Pedagogy and Psychology. When applicants offer satisfactory credits in first grade certificate subjects after pursuing these subjects for at least eighteen weeks in advance of the eighth grade, the department may accept their grades made in these subjects in educational institutions, to be combined with grades made in other subjects required for first grade certificates in the regular examination. It is permitted to substitute Physical Geography for Geography, Elocution for Reading and Commercial Arithmetic for Arithmetic.

One or two points may be added to the general average in an examination for elementary certificates for satisfactory examinations in one or two industrial subjects but no such credit shall be given for the industrial subject offered as the required branch.

### PROFESSIONAL HIGH SCHOOL TEACHER'S CERTIFICATE

Negotiations are under way whereby graduates of this University will be awarded a professional high school teacher's certificate when certain requirements are met. These requirements are not yet formulated but they will probably be as follows:

The inclusion in the four years' course of 20 credit hours in the group of Psychology and Education, to-wit:

Psychology, not less than 8 credit hours

History of Education, not less than 5 credit hours

High School Methods of Teaching and Classroom Manage-

ment, not less than 4 credit hours

Elective in Psychology or Education, or both, to total 20 credit hours.

The requirements in Physiology, U. S. History and Civics, and the History and Civics of New Mexico, to which all applicants for all grades of certificates are strictly held, will have to be met by applicants for the professional high school certificate. If these subjects have been offered for entrance they must be taken before graduation.

Graduates of the University, who include in their course the above prescribed subjects or whatever may be determined upon by the State Department of Education, will receive a certificate showing that they have completed this work. Upon presentation of this certificate to the State Department of Education, a professional certificate will be issued permitting the holder thereof to teach in high schools in New Mexico for a period of three years. Upon the expiration of this time and upon the presentation of evidence of successful teaching, this certificate will be renewed on terms which are yet to be formulated by the State Department of Education.

#### **CURRICULUM OF FOUR-YEAR COURSE**

- (a) English 1 and 2\_\_\_\_\_ (3-3) 6 hours  
 English 41 and 52\_\_\_\_\_ (3-3) 6 hours

(b) One of the following languages which must be continued through both the first and second years:

Greek 1 and 2_____	16 credit hours
Latin _____	16 credit hours
French 1 and 2_____	16 credit hours
German 1 and 2_____	16 credit hours
Spanish 1 and 2_____	16 credit hours

The second year will not be required of students who offer six entrance units in foreign languages.

- (c) Mathematics 1 and 2\_\_\_\_\_ 10 credit hours

This requirement is waived for students not electing mathematics as a major study.

(d) One out of each of the following groups:

Biological—

Physiology -----3 credit hours

Zoology -----5 credit hours

Botany -----5 credit hours

Non-Biological—

Physics -----10 credit hours

Chemistry -----6 or 8 credit hours

Geology -----10 credit hours

Home Economics -----10 credit hours

Taking into account his preparatory course, the student, at the end of his second year, must have completed both one biological and one non-biological science. If neither physics nor chemistry is offered for entrance, one of these subjects must be taken in the University.

(e) One of the following:

History (American) -----6 credit hours

Social Science 1 and 2

Physiology -----8 credit hours

Physical Education -----4 credit hours

(f) Psychology -----8 credit hours

(g) Physical Education -----4 credit hours

### THE TWO-YEAR COURSE

Students who complete the two-year course will be granted a certificate indicating the amount of work completed. This certificate will entitle the holder to the three years' professional certificate issued by the State Board of Education, and renewable without examination, *provided*, the prepara-

tory work required by the State Board has been completed. For this certificate no substitution is allowed for U. S. History, Civics and Physiology, all of a high school grade.

### OUTLINE OF TWO YEARS' COURSE

#### FIRST YEAR

First Semester		Credits
Physical Education 1	Physical Education	2 hours
Psychology 51 and 55	General Psychology	5 hours
Education 1	History of Education	4 hours
Education 9	Orthoepy	3 hours
Education 15	Education and School Law in New Mexico	1 hour
Music	Public School Music	1 hour

Second Semester		
Physical Education 2	Physical Education	2 hours
Psychology 56	Educational Psychology	3 hours
Education 2	Education in America	4 hours
Education 10	Professional Course in Gram- mar	4 hours
Education 18	Child Study	1 hour
Music	Public School Music	1 hour

#### SECOND YEAR

First Semester		
Physical Education 51	Physical Education	2 hours
Philosophy 81	Ethics	4 hours
Education 51	Principles of Education	4 hours
Education 57	Special Methods	4 hours
Education 65	School Management	4 hours
Manual Training-Drawing.		

Second Semester		
Physical Education 52	Physical Education	2 hours
Social Science 52	Sociology	3 hours

Education 52	Professional Course in Arith-	
	metic	4 hours
Education 58	Special Methods	4 hours
Education 64	Seminar in Current Problems	1 hour
Education 72	Observation and Conference	1 hour

The required professional courses in the School of Education may be taken in the Freshman and Sophomore years, or may be intercolated with the entire University course.

Special adjustment of courses will be made for students who elect Home Economics.

Elective subjects will be considered upon application of individual students.

#### DESCRIPTION OF COURSES IN THE SCHOOL OF EDUCATION

##### 1. HISTORY OF EDUCATION 4 hours

Education in the Orient, of the ancient classical nations, and in Europe from the beginning of Christian Education to the present, with special consideration of the school systems of England, Germany and France. The course includes a study of the great educational theorists and leaders.

Special texts: Graves' *A Student's History of Education*, Monroe's *Brief Course in the History of Education*, and Painter's *History of Education*.

##### 2. EDUCATION IN AMERICA 4 hours

This course makes a survey of the educational conditions in colonial, revolutionary and reorganization periods. It takes into account the development and influence of academies, high schools, and includes a study of the leading educators, of the higher educational institutions, State systems, educational extension work and, modern systems including the Montessori method.

Reference texts: Dexter's **History of Education in the United States** and Brown's **Making of Our Middle Schools**.

51. **PRINCIPLES OF EDUCATION** 4 hours

Consideration is given to education as physiological, sociological and psychological adjustment; the nature and principles of education; analysis and synthesis; induction and deduction; concentration; the educational value of apperception; the doctrine of interest; correlation and the "culture epochs" theory.

Text: Klapper's **Principles of Educational Practice**.

65. **SCHOOL MANAGEMENT AND ADMINISTRATION** 4 hours

The fundamental laws of the school. The different factors to be held in unity. School incentives. School economy. The ideal school building and study room. The class and the class individual system of grading. The Batavia plan. Relation of the school and the home.

Special texts: Dutton's **School Management** and Holme's **School Organization and the Individual Child**.

57. **SPECIAL METHODS** 4 hours

In this course application of the general principles is made, and steps pointed out in the following school subjects:

**Reading.** Nature of reading, its general and comparative value. Analysis of the reading process. Mental steps in expression. Reading as a mode of thinking. Relative importance of silent and oral reading. Various methods of teaching supplementary reading.

**Language.** Theories of language origin. Means of communication preceding language development. Relation of language to thought. How the child learns his vocabulary. Methods of presenting language in the grades.

**Spelling and Penmanship** will receive attention from the standpoint of Method.

**Arithmetic.** Special stress is placed upon the development and close relation of the various phases of Arithmetic.

Psychical nature, origin, and development of number, which is the measurement of energy. Form, size and weight defined as results of energy. The decimal system. Roman notation, its regular varying scale. Merits and demerits of the "Grube Method" of numbers. Practical presentation of the subjects of fractions, decimals, percentage, interest and other phases.

**Physiology and Hygiene.** The need of practical work in this subject. Relation of health to the work of life. Study of physical defects. School room hygiene. Need of exercise, rest and recreation. Suggestions for right living in the home. Cause and effect of common diseases and precautions to be taken.

**58. SPECIAL METHODS**

5 hours

General principles applied to the following subjects:

**Geography.** The scheme of concentration with geography as a center. Logical and chronological analysis of geographical facts. The earth as a whole and as a member of the solar system. Knowledge to be gained by observation, by inference, by testimony. Study of geographic controls, responses and type forms. Use and abuse of text books and maps. Importance of local geography. Dynamic ideas in geography. Value of newspapers and government publications in geography teaching. Consideration of a course of study in geography for the grades. Correlation of history with geography. Reference texts: Sutherland's *The Teaching of Geography* and Holtz' *Principles and Methods of the Teaching of Geography*.

**History.** The method work in history seeks to turn the student from the lifeless forms of memorized dates and diagrams to the dynamical interpretation of history as the movement of a people toward freedom. The two factors involved are mind and the facts of history. Historical forces. The organizing principle—the growth of institutional life. Educational and ethical value of interpreta-

tion. History in the grades. Use of biography. Historical reading for grades and comparison of text-books in history.

10. PROFESSIONAL COURSE IN GRAMMAR 4 hours

In view of the importance of the subjects for teachers and to conform to the requirements of the State Board of Education for the professional State certificate this special review course in grammar is given.

9. ORTHOEPEY 3 hours

The purpose of the work in orthoepey is to give a scientific basis for teaching the sounds of the language and an intelligent use of the dictionary. The subject is viewed under the following topics: Vocal physiology as the basis for the voice production; phonology; analysis and classification of vocal elements; diacritical marking; imperfections of English orthography; noted attempts at perfect phonetic representation; orthoepic elements—syllabication, accentuation, articulation, vowels and consonants in unaccented syllables; special dictionary study; comparisons of systems of dictionary markings; onomatopy; theories of the origin of speech and language; difference between speaking and singing tones. Special reading work will involve a consideration of rhythm in human speech and animal utterances; the discovery and significance of inflection, and the employment of gesture. Text: Hodgin's *A Study of Spoken Language*.

52. PROFESSIONAL COURSE IN ARITHMETIC 4 hours

Conforming to the requirements of the State Board of Education for the professional State certificate, this special course is given as a review in arithmetic with reference to teaching the subject.

18. CHILD STUDY 1 hour

This course considers the value of child study for educators, methods of studying the child, historical accounts of child study movement, records of results from experiments and observation, children of uncivilized peoples,



child character in history and fiction, abnormal conditions in children; physical characteristics, plays, secret languages, fears, affections, ideas of punishment and reward, and religious notions. Lectures, readings, discussions.

15. EDUCATION AND SCHOOL LAW IN NEW

MEXICO

1 hour

History of education in New Mexico as a territory. Early school laws. The change of education with statehood. The present school laws. The modern school system. Its organization, rural schools, city graded schools, high schools, State Institutions and summer institutes. Early work of the denominational schools. Growth and influence of the State Educational Association. The library movement and educational extension work.

64. SEMINAR IN CURRENT EDUCATIONAL PROBLEMS

1 hour

This course will discuss modern ideas and tendencies in education, and current problems. Some of the subjects considered will be: The changed conception of the school and its function, recent tendencies in correlating home work with that of the school, rural school development, socializing school centers, the modern playground movement, open air schools, vocational education and guidance, work of the Bureau of Education of the United States, and studies in current educational literature.

72. OBSERVATION AND CONFERENCE

1 hour

The course will consist of observation of class-room work in various grades and schools under the direction of the professor in charge, or by special assignment.

Conferences will be held for discussion of school visits, and for studying standards for judging class work. Prescribed readings and written reports will be required.

The assignment for observation will be made with special reference to the particular interests of the individual students.

For courses in Psychology see page 124 ff.

For courses in Ethics see page 124.

For courses in Sociology see page 126.

For courses in Home Economics see page 173.

For courses in Manual Training see page 125.

For courses in Drawing see page 157.

## **School of Fine Arts**

The School of Fine Arts offers thorough courses in instrumental and vocal music, and in the theory of music. At a later date it is planned to incorporate courses in painting, drawing, oratory and allied subjects coming within the field of this School. Full four-year courses are offered in piano, voice and violin, leading to the degree of Bachelor of Music. These courses embrace four years' study of an instrument or voice, together with a study of theoretical music and cultural subjects included in the curriculum of the College of Letters and Science, thus combining specific musical study with the advantage of a liberal university course.

### **ENTRANCE REQUIREMENTS**

The requirements for entrance to this School are the same as for entrance to any other College or School of the University, viz., fifteen units of high school. For entrance requirements to Course 1 in the Piano Department, see page 212.

### **RULES GOVERNING REGISTRATION**

#### **Method**

The student, upon entering the University, must pay the matriculation, tuition and other fees at the office of the Secretary of the University, and receive the necessary blanks for enrollment. He shall then fill out these blanks under the direction of the

Director of Music, who will issue class cards admitting the student to respective classes.

#### LATE REGISTRATION

The first day of each semester is known as Registration Day and it is intended that all students shall completely arrange on this day their course of study for the current semester.

Registration after the day appointed for this purpose, except for reasons approved by the President, can be effected only after the payment of the late registration fee of one dollar.

#### MAXIMUM SCHEDULE

No candidate for the degree of Bachelor of Music is allowed to carry more than seventeen hours, unless his standing for the previous semester be A in two-thirds of his work and with no mark less than B, and then only by presenting written request to the Student Standing Committee who shall grant permission to carry extra work at their discretion.

#### MINIMUM SCHEDULE

No student shall be registered for fewer than twelve hours per week except by permission of the President.

#### LATE CLASS ENTRANCE

No student may enter a course later than four weeks from the beginning of the course, except by permission of the Director of Music and of the instructor of the class he proposes to enter. The instructor shall determine the amount of credit that may be earned in such cases.

**WITHDRAWAL FROM CLASS**

No student may drop a subject after the beginning of a course without the consent of the Director of Music and of the instructor in charge. No student may drop one course and enroll in another after the third week unless he has been passing in that course.

**DISMISSAL**

A student who leaves the University before the close of a semester without the permission of the President will not be considered honorably dismissed.

**SPECIAL STUDENTS**

Students over twenty-one years of age who are not working for a degree may register for courses of their selection without fulfilling the entrance requirements, provided they give evidence of ability to pursue such courses with profit.

**EXPENSES**

In addition to the usual fees for entrance to the University, students enrolled in Piano, Voice, Violin, Viola or Violoncello are required to pay the following fees:

Per semester, one lesson-hour per week.....\$12.50

Per semester, two lesson-hours per week..... 25.00

**REQUIREMENTS FOR GRADUATION**

All candidates for the degree of Bachelor of Music must complete the courses as outlined below, consisting of 122 credit hours in Piano course, and 120 credit hours in Voice and Violin Courses. In

addition they must complete four credit hours in Physical Education.

#### CLASS HOURS AND CREDIT HOURS

An "hour" shall consist of 53 minutes. But two hours per week. Chorus or Orchestra earn one credit hour. Two hour lessons per week in Piano, Voice and Violin with a passing grade in the required work of the course earn 4 credit hours. A laboratory period is usually twice the length of a recitation and earns the same amount of credit. Other courses earn as many credit hours as there are exercises in that course per week.

#### GRADING AND EXAMINATIONS

The grades of students are based upon the work done in recitations and examinations. Students making a grade of 91-100 are marked A; 81-90, B; 71-80, C; 61-70, D; 60 or below, E (failed). No substitution may be made for failures or conditions toward graduation.

Students receiving a grade of D in any course are "conditioned" in that course. Such students may receive credit in that course if the condition imposed is removed in a way prescribed by the instructor under whom the condition is incurred. Any condition remaining unremoved at the end of the semester following its incurrence automatically becomes a failure. Only one opportunity is allowed to remove a condition.

Deductions in the number of credit hours may be made for late registration, for absences, or for incomplete work.

Special examinations, taken at other times than regularly with the class, except entrance examinations or examinations for advanced standing, can be taken only after paying a special examination fee of \$2.00 to the Registrar and the issuance by him of a permit for the special examination.

No final examination may be given to a class or to an individual previous to the time appointed by the schedule committee.

### **COURSE OF STUDY LEADING TO DEGREE OF BACHELOR OF MUSIC**

#### **FRESHMAN YEAR**

#### **Piano, Violin and Voice**

First Semester	Credits
Physical Education 1.....	1
Piano 1, or Violin 1, or Voice 1.....	4
Theory of Music 1.....Harmony .....	3
Modern Language .....	5
English 1 .....	English Composition .... 3
Chorus or Orchestra.....	1
<hr/>	
Total, excluding Physical Education.....	16
<hr/>	
Second Semester	
Physical Education 2.....	1
Piano 2, or Violin 2, or Voice 2.....	4
Theory of Music 2.....Harmony .....	3
Modern Language .....	5
English 2 .....	English Composition .... 3
Chorus or Orchestra.....	1
<hr/>	
Total, excluding Physical Education.....	16

Note.—In case the student has already taken elementary course in Modern Language, he will enroll for a 3-hour course in Modern Language and elect 2 or 3 hours from the following: History 1 and 2, Social Science 1 and 2, or Foreign Language.

## SOPHOMORE YEAR

## Piano, Violin and Voice

First Semester	Credits
Physical Education 51.....	1
Piano 51, or Violin 51, or Voice 51.....	4
Theory of Music 51.....Advanced Harmony	2
Theory of Music 61.....History of Music	2
Psychology and Philosophy 51.....General Psychology	3
Modern Language .....	3
Chorus or Orchestra .....	1
<hr/>	
Total, excluding Physical Education.....	15

## Second Semester

Physical Education 52.....	1
Piano 52, or Violin 52, or Voice 52.....	4
Theory of Music 52.....Advanced Harmony	2
Theory of Music 62.....History of Music	2
Psychology and Philosophy 84.....History of Philosophy	3
Modern Language .....	3
Chorus or Orchestra .....	1
<hr/>	
Total, excluding Physical Education.....	15

## JUNIOR YEAR

## Piano

First Semester	
Piano 101 .....	4
Theory of Music 121.....Counterpoint	2
Theory of Music 125.....Composition	1
Theory of Music 141.....Normal Class	1
History .....	3
Second or Modern Language.....	5
Chorus or Orchestra .....	1
<hr/>	
Total .....	17



# SCHOOL OF FINE ARTS

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Second Semester		Credits
Piano 102	-----	4
Theory of Music 122	-----Counterpoint-----	2
Theory of Music 126	-----Composition-----	1
Theory of Music 142	-----Normal Class-----	1
History	-----	3
Second or Modern Language	-----	5
Chorus or Orchestra	-----	1
Total		17

## Violin and Voice

First Semester		
Violin or Voice 101	-----	4
Theory of Music 121	-----Counterpoint-----	2
Theory of Music 125	-----Composition-----	1
Theory of Music 141	-----Normal Class-----	1
Piano 1 (half semester)	-----	2
History	-----	3
Chorus or Orchestra	-----	1
Total		14

Second Semester		
Violin 102 or Voice 102	-----	4
Theory of Music 122	-----Counterpoint-----	2
Theory of Music 126	-----Composition-----	1
Theory of Music 142	-----Normal Class-----	1
Piano 1 (half semester)	-----	2
History	-----	3
Chorus or Orchestra	-----	1
Total		14

## SENIOR YEAR

### Piano

First Semester		
Piano 151	-----	4

	Credits
Theory of Music 175.....Advanced Composition ..	1
°Theory of Music 171.....Canon and Fugue.....	1
Theory of Music 191.....Musical Analysis .....	1
English .....	2
History .....	3
Chorus or Orchestra .....	1
<b>Total .....</b>	<b>13</b>
<b>Second Semester</b>	
Piano 152 .....	4
Theory of Music 176.....Advanced Composition ..	1
Theory of Music 182.....Instrumentation .....	1
Theory of Music 192.....Musical Analysis .....	1
English .....	2
History .....	3
Chorus or Orchestra .....	1
<b>Total .....</b>	<b>13</b>
<b>Violin and Voice</b>	
<b>First Semester</b>	
Violin 151 or Voice 151.....	4
Piano 51 (half semester).....	2
Theory of Music 175.....Advanced Composition ..	1
Theory of Music 171.....Canon and Fugue.....	1
Theory of Music 191.....Musical Analysis .....	1
English .....	2
History .....	3
Chorus or Orchestra .....	1
<b>Total .....</b>	<b>15</b>
<b>Second Semester</b>	
Violin 152 or Voice 152.....	4
Piano 51 (half semester).....	2
Theory of Music 176.....Advanced Composition ..	1
Theory of Music 182.....Instrumentation .....	1

## SCHOOL OF FINE ARTS

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Theory of Music 192-----Musical Analysis -----	1
English -----	2
History -----	3
Chorus or Orchestra-----	1
	<hr/>
Total -----	15

All students registered for courses in music must enroll for chorus or orchestra, unless excused by the director of music.

## Departmental Courses in the School of Fine Arts

### DEPARTMENT OF THEORY OF MUSIC

Director Seder

1. HARMONY 3 hours  
Study of scales, intervals, triads, close and open harmony, dominant ninth and diminished seventh chords and inversions. Harmonization of melodies and basses. Chadwick, **Harmony**.
2. HARMONY 3 hours  
Continuation of Course 1.
41. PUBLIC SCHOOL MUSIC 1 hour  
Study of the child voice; methods of drilling grade children; study of rote songs of various grades of difficulty. Lectures and demonstrations.
42. PUBLIC SCHOOL MUSIC 1 hour  
Continuation of Course 41.
51. ADVANCED HARMONY  
Study of modulations, irregular resolutions, altered chords, suspensions, passing tones, organ point. Chadwick, **Harmony**, for reference, Prout, **Harmony**, and Hull, **Modern Harmony**. Prerequisite: Course 2.
52. ADVANCED HARMONY 2 hours  
Continuation of Course 51.
61. HISTORY OF MUSIC 2 hours  
Comprehensive study of the evolution of music from ancient to modern times, with special attention given the periods of Palestrina, Bach, Mozart, Beethoven and the Romantic composers. Hamilton, **Outlines of Music History**.

62. HISTORY OF MUSIC 2 hours  
Continuation of Course 61.
121. COUNTERPOINT 2 hours  
Different species of single counterpoint in two, three, four and five or more parts. Double counterpoint at the octave, twelfth and fifteenth. Modern counterpoint. Bridge, Counterpoint. Prerequisite: Course 2.
122. COUNTERPOINT 2 hours  
Continuation of Course 121.
125. COMPOSITION 1 hour  
Simple song and dance forms. Theme with variations, analysis of classical models and original work. Stainer, Composition, for reference, Stanford, Musical Composition. Prerequisite: Course 52.
126. COMPOSITION 1 hour  
Continuation of Course 125.
141. NORMAL CLASS 1 hour  
Methods of arranging and presenting courses in theoretical and practical music. Lectures and demonstrations.
142. NORMAL CLASS 1 hour  
Continuation of Course 141..
171. CANON AND FUGUE 1 hour  
Various forms of canon and their use; fugue in two, three and four parts; analysis of Bach fugues and original work. Bridge, Double Counterpoint and Canon; Higgs, Fugue. Prerequisite: Course 122.
175. ADVANCED COMPOSITION 1 hour  
Sonata and rondo forms; analysis of classical works, and original works in larger forms. Prerequisite: Courses 122 and 126.
176. ADVANCED COMPOSITION 1 hour  
Continuation of Course 175.
182. INSTRUMENTATION 1 hour  
Nature and treatment of the orchestral instruments;

analysis of classical and modern scores; original work in orchestration. Prout, **Instrumentation**. Prerequisite: Course 126.

191. **MUSICAL ANALYSIS** 1 hour  
Analysis from standpoints of form and content of Bach fugues, Beethoven sonatas and symphonies, compositions of Schumann, Schubert, Chopin, Brahms, Tschaikowsky and others.
192. **MUSICAL ANALYSIS** 1 hour  
Continuation of Course 191.

### DEPARTMENT OF PIANO

Director Seder

Requirements for entering Piano 1 are the ability to play correctly, with proper style and phrasing, major scales in all keys in octaves, and Mozart, First Sonata or Loeschorn, Op. 52, or the equivalent. Any deficiency must be made up before entering Course 1.

1. **FRESHMAN COURSE** 4 hours  
Exercises for independence of fingers; scales in thirds and sixths, parallel and contrary motion; arpeggios; chord playing; octaves begun. 12 studies from Loeschorn, Op. 66, Heller, Op. 46 and 47, Czerny, Op. 636 and 299, and 12 pieces by standard classic and modern composers. 2 hour lessons per week.
2. **FRESHMAN COURSE** 4 hours  
Continuation of Course 1.
51. **SOPHOMORE COURSE** 4 hours  
Octaves continued; scales in double thirds; special technical exercises suited to the student. 10 studies selected from Cramer, **Etudes**, Kullak, **Octave School**, Bach, **Easy Preludes and Fugues**, 10 sonatas and pieces by Beethoven, Mozart, Mendelssohn, Grieg and others. 2 hour lessons per week.

52. SOPHOMORE COURSE 4 hours  
Continuation of Course 51.
101. JUNIOR COURSE 4 hours  
Advanced technical work, greater velocity in scales and arpeggios. 8 studies from Clementi, **Gradus ad Parnassum**, Bach, **Two and Three Part Inventions**, Phillipp, **School of Double Notes**. 8 sonatas and pieces by Beethoven, Weber, Henselt, Moszkowski and modern composers. 2 hour lessons per week.
102. JUNIOR COURSE 4 hours  
Continuation of Course 101.
151. SENIOR COURSE 4 hours  
Special technical exercises. Six studies from Bach, **Well Tempered Clavichord**, Chopin **Etudes**, Phillipp **School of Octaves**. Six sonatas and concert pieces by Beethoven, Schumann, Chopin, Liszt, McDowell and others. 2 hour lessons per week.
152. SENIOR COURSE 4 hours  
Continuation of Course 151.

**DEPARTMENT OF VOICE**

Director Seder

1. FRESHMAN COURSE 4 hours  
Principles of breathing, tone production, study of vowels and simple intervals; formation of scales, ear-training and sight reading; theory of music; elementary harmony, general exercises for tone placing. Randegger, **Singing Primer**, Sieber, **Elementary Vocalises**. 2 hour lessons per week.
2. FRESHMAN COURSE 4 hours  
Continuation of Course 1.
51. SOPHOMORE COURSE 4 hours  
Advanced work in tone-sustaining. Randegger, **Singing Primer**, Marchesi, **Advanced Exercises**, Spieker, **Masterpieces of Vocalization I**. Easy songs, German lieder and duetts. 2 hour lessons per week.

52. SOPHOMORE COURSE 4 hours  
Continuation of Course 51.
101. JUNIOR COURSE 4 hours  
Advanced work in breath control. Spicker, **Masterpieces of Vocalization, II and III.** Concert songs, classic opera and oratorio; ensemble work. 2 hour lessons per week.
102. JUNIOR COURSE 4 hours  
Continuation of Course 101.
151. SENIOR COURSE 4 hours  
Special attention given to interpretation. Henschel, **Studies.** Modern songs, oratorio and modern opera. 2 hour lessons per week.
152. SENIOR COURSE 4 hours  
Continuation of Course 151.

#### DEPARTMENT OF VIOLIN

1. FRESHMAN COURSE 4 hours  
Exercises for the foundation of violin technic, and studies from Beriot, **Method**, Hollman, **50 Exercises Finger Mechanism**, Dancs **50 Finger Velocity.** 2 hour lessons per week.
2. FRESHMAN COURSE 4 hours  
Continuation of Course 1.
51. SOPHOMORE COURSE 4 hours  
Intermediate technical exercises. Studies from Second Beriot, **Method**; Kreutzer, **Etudes**; Second Piott, **Method**, with easy pieces. 2 hour lessons per week.
52. SOPHOMORE COURSE 4 hours  
Continuation of Course 51.
101. JUNIOR COURSE 4 hours  
Advanced technical work. Studies from Fiorillo, **60 Etudes**; Rode, **50 Exercises.** More difficult pieces by standard composers. 2 hour lessons per week.
102. JUNIOR COURSE 4 hours  
Continuation of Course 101.



## 151. SENIOR COURSE

4 hours

Special technical work and interpretation. Studies from Markees, Technique; Spohr, 55 Etudes; Paganini, Celebrated Etudes. Advanced sonatas and pieces by classic and modern composers. 2 hour lessons per week.

## 152. SENIOR COURSE

4 hours

Continuation of Course 151.

Viola and Violoncello

Full courses will be offered in both of these instruments. Detailed outlines will be furnished on request to anyone interested.

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**Chorus.** All students registered in the music courses of this School are required to enroll in either Choral or Orchestral work, unless excused by the Dean. Thorough training in part-singing, secular and sacred, is given by the University Choral Club, which appears in concert several times during the year. Director Seder.

**Orchestra.** An orchestra of some twelve or fourteen pieces is maintained, in which training in the routine of orchestral playing is offered. Music is furnished for assemblies, plays, concerts and other public occasions. Director Seder.

**Band.** A uniformed band of twenty pieces has been organized, which has played at athletic contests, and musical events. Applicants must be fairly proficient on their respective instruments. Director Seder.

**DEPARTMENT OF THE ENGLISH LANGUAGE AND  
RHETORIC****Professor Sherwin**

Courses 1, 2, 52, 54, 55, 56, etc. For detailed description of courses, see page 90.

**DEPARTMENT OF ENGLISH LITERATURE****Associate-Professor Hickey**

Courses 121, 122, 123, 124, 141, 145, etc. For detailed description of courses, see page 94.

**DEPARTMENT OF FRENCH****Professor Nelson**

Courses 1, 2, 51, 52, 101, 102, 151, 152. For detailed description of courses, see page 95.

**DEPARTMENT OF GERMAN****Professor Nelson**

Courses 1, 2, 51, 52, 101, 102. For detailed description of courses, see page 102.

**DEPARTMENT OF GREEK****Professor Mitchell**

Courses 1, 2, 21, 24, 73, 88, 91, 94. For detailed description of courses, see page 104.

**DEPARTMENT OF HISTORY****Associate-Professor Hill**

Courses 1, 2, 51, 52, 55, 56, 101. For detailed description of courses, see page 106.

**DEPARTMENT OF LATIN****Professor Mitchell**

Courses 71, 72, 87, 88. For detailed description of courses, see page 110.

**DEPARTMENT OF PHYSICAL EDUCATION****Director Hutchinson**

Courses 1, 2, 3, 4. For detailed description of courses, see page 121.

**DEPARTMENT OF PSYCHOLOGY AND PHILOSOPHY**

**Professor Worcester**

Courses 51, 84. For detailed description of courses, see page 123.

**DEPARTMENT OF SOCIAL SCIENCE**

**Professor Bonnett**

Courses 1, 2, 3, 52, 54, 62, 71, 72, 74, 111, 172. For detailed description of courses, see page 126.

**DEPARTMENT OF SPANISH**

**Associate-Professor Parsons**

Courses 1, 2, 51, 52, 101, 102. For detailed description of courses, see page 130.

## **School of Commerce**

The growing complexity of modern business and industry has brought into prominence an increasing number of perplexing problems. The small retailer, as well as the giant corporation has its share of problems to meet. With the more progressive businesses, efficiency and service have become the watchwords.

In 1915, over 1 per cent of all business undertakings failed, and of these failures, over 30 per cent were due to incompetence and lack of experience. These figures include only those failures where creditors lost, and not those whose business was simply unsuccessful, a large number in itself. The number of failures, in the past 35 years, is equal to 23 per cent of the total number of concerns now engaged in business. In view of these facts, one can readily see that the young man just entering business must learn far more of efficiency than the old-time business man ever knew. The young man of today makes many mistakes in business through thinking that all he needs to have is simply one phase of business training, usually salesmanship, but he must know and use a system of accounting in order to sell at the best price, and above all, have an insight into economic principles in order to foretell the probable outcome of the many industrial changes.

Furthermore, the ambitious young man cannot afford to ignore the governmental side to business, for the relations between business and government are rapidly increasing. The growth of governmental commissions, inspectors, laws regulating food, drugs, and even the securities of a business, makes a study of the underlying principles of these matters necessary. Service is being given by many, but the government is now forcing others to render such. The wiser business man leads and accordingly reaps the greater reward with the fewer risks. For, to reduce the risks of business, is ultimately to make the greater gains.

The School of Commerce has been organized to meet this growing need. It aims to give a training in the basic principles of business. It offers an opportunity for business specialization, but only after the fundamentals have been mastered.

#### ADMISSION AND REGISTRATION OF STUDENTS

See page 62.

#### GRADUATION REQUIREMENTS

Upon completing the required courses and elective courses to the number necessary to meet the hours required in the College of Letters and Science, the student will have conferred upon him the degree of Bachelor of Science in Business. The following work is required:

English Composition, Business English, and Public	
Speaking .....	10 hours
European History .....	6 hours
Modern Language—all in one, Spanish, German, or	
French .....	16 hours

Psychology, General and Business Procedure.....	6 hours
Commercial Geography .....	4 hours
Business and Social Sciences.....	61 hours

Total required hours.....103

The student is expected to take the work as outlined below.

### REQUIRED COURSE OF STUDY

#### FRESHMAN YEAR

First Semester	Credits
Economic History of the United States.....	3
Commercial Geography .....	4
European History .....	3
Modern Language .....	5
English Composition .....	3
Second Semester	
American Government .....	3
Sociology .....	3
European History .....	3
Modern Language .....	5
English Composition .....	3

#### SOPHOMORE YEAR

First Semester	
Principles of Economics.....	3
Accounting .....	3
Political Parties .....	3
General Psychology .....	3
Modern Language .....	3
Business English .....	2
Second Semester	
Current Economic Problems.....	3
Accounting .....	3
Business Organization and Management.....	3
Psychology of Business Procedure.....	3

Modern Language .....	3
Public Speaking .....	2

## JUNIOR YEAR

## First Semester

Railway Economics .....	3
Money, Credit and Banking .....	3
Advertising .....	3
Statistics .....	3
Business Law .....	2
Labor Problems .....	3

## Second Semester

Railway Economics .....	3
Relation of Government to Business .....	3
Advertising .....	3
Salesmanship .....	3
Business Law .....	2
Employers' Associations .....	3

## FOURTH YEAR

For the fourth year the student will choose electives from the following list, in consultation with the instructors and head of the School, and with a due regard to the line along which the student wishes to specialize:

Advertising, Salesmanship, Business Law, Insurance, Corporation Finance, Industrial Combinations, Commercial Organizations in Foreign Trade, Geography and Resources of South America, Trade and Transportation of South America, International Law, History of American Diplomacy, Relation of U. S. to Latin America, Social Psychology, Immigration, English History, English Composition, Debating, Public Finance, Banking, History of Economics, Introduction to Political Science, Governments of Europe, or Rural Economics.

## **School of Latin-American Affairs**

The School of Latin-American Affairs is designed to aid in strengthening and developing the relations between the United States and Latin America. The growth of Pan-Americanism, the still all-too-prevalent ignorance as to the Latin-American countries, the expanding relations between the United States and Latin America, and the increasing opportunities which are being opened in the Republics south of the Rio Grande, are the fundamental reasons for this School.

The most essential factor in the development of the above mentioned relations is education. The United States needs to know more about the Latin-American countries and their people, their languages and literatures, their history and geography, and their natural resources and economic conditions. The School affords such information. Further it meets one of the greatest needs of New Mexico along educational lines. It recognizes the various elements of the New Mexican population and will serve to develop more sympathetic relations between its Anglo-Saxon and Latin elements.

The School of Latin-American Affairs offers every facility to the students who desire to acquire a complete knowledge regarding the countries south of the Rio Grande. It will also give preparation to those who desire to teach Spanish and allied sub-



jects in the United States, as well as to fill commercial positions where this language is a prerequisite. Every course will be taught by a specialist, who is in sympathy with his subject as well as with the people of our sister Republics. These specialists will continually make further investigations regarding Latin America, in order that the teaching may be of the most effective type.

The curriculum of the School will include courses covering the various phases of knowledge respecting Latin America, as well as such other courses from the various schools and departments of the University as will afford a well rounded education to the student.

#### **CONDITIONS OF ENTRANCE**

The student will be expected to present the regulation fifteen units of secondary work to enter this School. (See page 35.) It is recommended that not less than two units in Latin, one in Spanish and two in history be offered for entrance; otherwise time will be lost in entering upon the special studies.

#### **REGISTRATION**

(See page 62.)

#### **REGISTRATION LIMITATIONS**

(See page 74.)

#### **GRADUATION REQUIREMENTS**

(See page 77.)

#### **DEGREE**

(See page 81.)

**CURRICULUM**

As indicated above it is necessary that the standard requirements of the College of Letters and Science for graduation must be met. The course of study, however, may be arranged to meet the needs of every student.

The following is given as a suggestive and typical course for one desiring to enter upon one of the lines of service in Latin America.

**FRESHMAN YEAR**

First Semester		Credits
English 1	Composition and Rhetoric	3
Spanish 51	Second Year Spanish	3
History 1	Modern Europe	3
Social Science 1	Economic History of the United States	3
Geology 7	Economic and Commercial Geography	4
Second Semester		
English 2	Composition and Rhetoric	3
Spanish 52	Second Year Spanish	3
History 2	Modern Europe	3
Social Science 2	American Government	3
Science or Mathematics (elective)		4

**SOPHOMORE YEAR**

First Semester		
English 41	Introduction to English Literature	3
Social Science 61	Principle of Economics	3
Spanish 101	Third-Year Spanish	2
History 81	Latin America: Colonies	2
History 85	Latin America: Geography and Resources	2

Electives:		Credits
History 73	American History	3
Science or Mathematics		4 or 3
Second Semester		
English 52	Public Speaking	3
Social Science 52	Sociology	3
Spanish 102	Third-Year Spanish	2
History 82	Latin America: Republics	2
History 86	Latin America: Trade and Transportation	2
Electives:		
History 74	American History	3
Science or Mathematics		4 or 3

## JUNIOR YEAR

First Semester		
English 57	Business English	3
Spanish	Business Spanish	3
History 141	Elements of International Law	2
Psychology 51	General Psychology	3
Social Science	Money, Credit and Banking	3
Electives:		
History 135	Spaniards in the United States	2
	Science	3
	Business Law	2
	Second Modern Language	3
Second Semester		
	Advertising	3
Spanish	Business Spanish	3
History 142	Elements of International Law	2
	Salesmanship	3
Social Science	Finance	3
Electives:		
	Science	3
	Business Law	2
	Second Modern Language	3

## SENIOR YEAR

First Semester	Credits
History 191 ----- History of American Diplomacy	3
History 109 ----- Europe Since 1850	3
Social Science ----- Foreign and Domestic Exchange	3

## Electives:

Second Modern Language, 2d Year	3
Science -----	3
Social Science -----	3
History -----	2 or 3
Commercial Organization in Foreign Trade -----	3

## Second Semester

History 182 ----- Relations of the United States and Latin America	3
History 110 ----- Europe Since 1850	3
Social Science ----- Foreign Credit, Banking and Finance, with special reference to Latin America	3

## Electives:

Total -----	9
Second Modern Language, 2d Year	3
Science -----	3
Social Science -----	3
History -----	2 or 3
Social Science 62 ----- Business Organization and Management	3

Students who desire to teach Spanish and allied subjects in the United States will take more work in the Department of Spanish, pursue certain courses in the School of Education, and omit some of the commercial subjects.

For description of courses see the several departments in the College of Letters and Science.

## **Extension Division**

### **DEPARTMENTS AND ACTIVITIES OF THE EXTENSION DIVISION**

**Professor Bonnett, Director**

*Correspondence Study* in college and vocational subjects under the direction of the University Faculty.

*Lectures* in series, with syllabi, for study-club; single lectures for special groups and general audiences.

*Extension Teaching* in co-operation with educational institutions conducting continuation and evening schools.

*Debating and Public Discussions* stimulated and organized by state contest, bulletins containing formulated questions with briefs and bibliographies, and library loan material.

*General Information* on matters pertaining to education, state and local government, public health, civic improvement and other subjects of special but common interest.

*Surveys, Research, and Investigation* in fields and on subjects of community and state importance.

*Suggestive Aid* for county, town, and municipal boards, commissions and councils, school boards, commercial clubs, civic and economic betterment associations.

*Exhibits, Conferences and Institutes* for public information upon vocational, educational and social welfare matters.

For further information about the above, address the Director of the Extension Division.

**CORRESPONDENCE STUDY COURSES CONDUCTED BY  
UNIVERSITY PROFESSORS**

The University offers this year to non-resident students a large number of courses by correspondence. These courses enable the ambitious to pursue studies anywhere in the state. Spare moments may thus be utilized to the best advantage. The papers sent in by the student are read and corrected by head instructors only; no student-assistants are assigned to do this work. This assures the very highest and best instruction. The charge for tuition in these courses is \$4.50 per credit hour. For example, a three-hour college course costs \$13.50. A full year's preparatory course also costs \$13.50, a half year's, \$6.75.

All courses carry a credit of three hours, unless otherwise indicated.

**MR. BONNETT:**

(Preparatory Courses.)

- (1) Elements of Economics,  $\frac{1}{2}$  unit.
- (2) Civil Government,  $\frac{1}{2}$  unit.
- (3) Elements of Sociology,  $\frac{1}{2}$  unit.

(University Courses.)

- (1) Principles of Economics.
- (2) American Government and Politics
- (3) Principles of Sociology.
- (4) Money and Banking.

- (5) Labor Problems.
- (6) Employers' Associations in Industrial Peace and Warfare.
- (7) Municipal Government.
- (8) Taxation.
- (9) Governments of Europe.
- (10) Political Parties.
- (11) Introduction to Political Science.

**MR. BRENNEMAN:**

- (1) General Physics.

**MR. CLARK:**

- (1) Foundations of Chemistry.

**MR. EDINGTON:**

- (1) College Algebra.
- (2) Analytical Geometry.
- (3) Plane Spherical Trigonometry.
- (4) Differential and Integral Calculus.
- (5) Differential and Integral Calculus, 5 hours.
- (6) Differential Equations.
- (7) Analytical Geometry of Three Dimensions.
- (8) Definite Integrals.
- (9) Advanced Algebra.
- (10) Theory of Equations.
- (11) History and Teaching of Elementary Mathematics.

**MISS HICKEY:**

- (1) English Literature, 1557-1599.
- (2) English Literature, 1599-1660.
- (3) English Literature, 1660-1781.
- (4) English Literature, 1782-1832.
- (5) English Literature, 1833-1910 (Poetry).
- (6) English Literature, 1833-1910 (Prose).
- (7) American Literature.
- (8) Short History of the Novel.

**MR. HILL:**

- (1) Ancient History.

- (2) Mediaeval History.
- (3) Modern European History.
- (4) English History, 55 B. C.-1603 A. D.
- (5) English History, 1603-1910.
- (6) American History, 1492-1829.
- (7) American History, 1829-1913.
- (8) Latin American History.

MR. HODGIN:

- (1) History of Education.
- (2) Education in the United States.
- (3) Principles of Education.

MR. KIRK:

- (1) Mineralogy.
- (2) Physiography.
- (3) Economic Geology.

MR. MITCHELL:

Greek Language and Literature.

- (1) Elementary Greek.
- (2) The Anabasis of Xenophon.
- (3) Attic Greek Prose.
- (4) The Drama.

Latin Language and Literature.

- (1) Elementary Latin, six hours.
- (2) Caesar, De Bello Gallico and Latin Composition, six hours.
- (3) Cicero's Orations and Composition, six hours.
- (4) Sallust's Catiline and Composition.
- (5) Vergil's Aeneid, six hours.
- (6) Latin Prose Composition.
- (7) Advanced Composition.

MR. NELSON:

- (1) German, Schiller's Dramas.
- (2) French, Moliere's Dramas.
- (3) Spanish, Dramas of the Nineteenth Century.
- (4) Advanced Spanish Composition and Grammar.



**MR. SEDER:**

- (1) Harmony, two hours.
- (2) History of Music.

**MR. SHERWIN:**

- (1) Rhetoric and English Composition.
- (2) Rhetoric and English Composition.
- (3) Short-Story Writing.
- (4) Essay (or Magazine) Writing.
- (5) News Writing.
- (6) Literary Criticism and Book Reviewing.

**MR. WAND:**

- (1) Shop Sketching.
- (2) Reinforced Concrete Construction.
- (3) Elements of Structures.
- (4) Steam Boilers.
- (5) Shop Arithmetic.
- (6) Shop Mathematics.

**MR. WEESE:**

- (1) General Biology.
- (2) Elementary Physiology.
- (3) Zoology.
- (4) Botany.

**MR. WORCESTER:**

- (1) General Psychology.
- (2) Social Psychology.
- (3) Child Psychology.

**LECTURE COURSES PROVIDED BY THE UNIVERSITY**

Prompted by the idea of being of real service to all the citizens of New Mexico, the University has prepared a list of lectures which will be given in any locality in the state whenever suitable arrangements can be made.

Cities may arrange lecture courses during the fall, winter and spring. By organizing a circuit,

cities can reduce the expenses of the lectures to a minimum.

The lectures given cover a wide range of thought. These lectures will be presented in a popular way for the general public, and made interesting and instructive.

The University makes no charge for these lectures. It does, however, require the locality or group of cities to pay the traveling expenses of the lecturer. Communities which desire these lectures should write early to the Director of the Extension Division and state their wants. Then if circuits can be organized, the applicants will be notified.

The following is a partial list:

By MR. BONNETT:

1. Is Our Democracy in Danger?
2. What Is a Progressive?
3. The Economic Law of Efficiency.
4. Our Labor Wars.
5. Regulation or Public Ownership.
6. The Prospects for a World-Wide Peace.

By MR. BRENNEMAN:

1. How We Measure the Size of an Electron.
2. The Electric Theory of Energy and Matter.
3. How We Analyze the Sun.

By MR. CLARK:

1. Matter in the Making.
2. The Air We Breathe.
3. The Great Iron and Steel Industry.
4. Madame Curie and the Discovery of Radium.
5. Ptomaines and Leucomaines.
6. The Adulteration of Foods.
7. Dangers of Fire and Explosions.

By MISS LATHROP:

1. Business Methods of Home Making and Household Finance.
2. The Home as a Center of Consumption and the Consumer's Responsibility.
3. The Relation of the Home to the Community and Civic Problems that are of Vital Interest to the Home-maker.
4. Labor and Time-saving Devices in the Home.
10. A Survey of the Field of Home Economics.
11. Practical Application of the Results of Recent Researches in Dietetics.

By MR. HODGIN:

1. Seven Hundred Miles Up the Nile.
2. The Holy Land.
3. Greece—"Yesterday and Today."
4. Modes of Travel and Customs of the People.
5. Removing Limitations.
6. The Emotional Life.
7. Rousseau—"The Strangest Man of France."
8. "The Story of the Stars."

By MR. KIRK:

1. Origin of Surface Features of New Mexico and the Southwest.
2. The Derivation of Soils From Rocks.
3. The Canyons and Buried Channels of Western Streams.
4. The Place and Effect of Man in Nature.
5. Underground Waters.
6. The Coal Resources of New Mexico and Their Conservation.

By MR. MITCHELL:

1. Illustrated Lecture on Pompeii.

By MR. SHERWIN:

1. Great English Prose Writers.
2. Great English Literary Critics.

3. The Short-Story in America.
4. The Literary Essay in England.

By MR. WEESE:

1. Modern Aspects of Heredity.
2. Some Physico-Chemical Properties of Living Matter.
3. The Origin of Life.
4. The Philosophy of Science.

By MR. WORCESTER:

1. The United States in the Philippines.
2. What We Do and Why We Do It. (A study of reflexes and habits.)
3. Are You Sure of It? (Some peculiarities of sense perception.)

## **Preparatory Department**

While the aim of the University of New Mexico is to extend to High School graduates an opportunity for obtaining higher education, it has a duty to those communities where complete preparatory training is not available. The Preparatory Department of the University is therefore maintained in order that worthy students, from such communities, may complete their preparation for work of college grade. Students are advised to complete the high school course offered and then they will be received at the University, credit being given for work done. In some cases the library equipment or laboratory facilities are not sufficient for a part of the work offered. For this reason a high school diploma does not necessarily mean admission to the University without condition, but full credit will be given for all work thoroughly done. A minimum of four high school units must be presented in any case.

Blanks will be mailed to all high schools in the state and principals are requested to make out a statement of the work done by each student completing his course. The amount of credit which this student can obtain at the University will then be determined on the basis of this report and the student will be given a certificate indicating the amount of credit he can receive at the University. Other prospective students may obtain blanks on application to the Registrar.

Inasmuch as the majority of the students who present themselves for preparatory courses are more mature in years than the average of the students attending high schools and desire to make as rapid progress as possible, practically all of the courses offered in this department cover the field more rapidly than is done in high schools. Some courses accomplish two years of high school work in one year and the others accomplish in the same time one and one-half years' work as usually done in high schools. The Preparatory Department exists, therefore, only for those earnest and diligent students who are desirous of making rapid progress and are willing to exert themselves sufficiently.

The requirements for graduation from the Preparatory Department of the University of New Mexico are the completion of fifteen high school units,  $9\frac{1}{2}$  of which are prescribed and  $5\frac{1}{2}$  elective. The prescribed units are distributed as follows:

- I. English, three years; including the study of rhetoric, composition and literature as laid down in the regulations of college entrance requirements. 3 units.
- II. History, one year. 1 unit.
- III. Language, two years; consisting of two years' study of any one of the following languages: French German, Spanish, Latin or Greek. 2 units.
- IV. Mathematics,  $2\frac{1}{2}$  years; consisting of one and one-half years of algebra, bringing the study of the subject up to the end of school algebra, and one year of plane geometry.  $2\frac{1}{2}$  units.
- V. Science, 1 year; consisting of one year of physics or chemistry or one semester each of any two of the following

subjects: Physiology, botany, zoology, physical geography. 1 unit.

The 5½ elective units may be chosen from the list of subjects offered in the Preparatory Department.

For detailed description of requirements, see page 35.

#### DESCRIPTION OF COURSES OFFERED IN THE PREPARATORY DEPARTMENT

##### A<sub>1</sub>. ZOOLOGY ½ unit

###### Biology

Dissections of representative forms of the main groups of the animal kingdom. Written descriptions and drawings are required. The evidence of a gradual development of animal forms will be considered. Laboratory work, 2 hours. Not given for a class of fewer than ten.

##### A<sub>2</sub>. BOTANY ½ unit

An elementary consideration of the structure, evolution and classification of plants; the elementary relations of the plant to its surroundings. Laboratory work, 2 hours. Not given for a class of fewer than ten.

#### English Language and Rhetoric

##### A. FIRST AND SECOND YEAR HIGH SCHOOL ENGLISH 2 units

Grammar review, principles of rhetoric, and practice in composition. Reading of the books prescribed for the College Entrance Requirements in English under the head of A: Reading. Both semesters.

##### B<sub>1</sub>. THIRD YEAR HIGH SCHOOL ENGLISH 1 unit

More advanced practice in composition. Reading and study of the books prescribed for the College Entrance Requirements in English under the head of B: Study. First semester.

**English Literature**

- B<sub>2</sub>. **FOURTH YEAR HIGH SCHOOL ENGLISH** 1 unit  
Historical survey, with supplementary reading, of either English or American literature. Second semester.

**French**

- A. **FRENCH** 1 unit  
This course does not differ from Courses 1 and 2 described in the Department of French, College of Letters and Science.
- B. **FRENCH** 1 unit  
The same as Courses 51 and 52 in the Department of French in the College of Letters and Science.

**Geology**

- A. **PHYSIOGRAPHY** ½ unit  
See Course 5 under Department of Geology, College of Letters and Science, and in School of Applied Science.

**German**

- A. **ELEMENTARY GERMAN** 1 unit  
The same as Courses 1 and 2 described in the Department of German, College of Letters and Science.
- B. **SECOND YEAR GERMAN** 1 unit  
The same as Courses 51 and 52 described in the Department of German, College of Letters and Science.

**History**

- A. **ANCIENT HISTORY** 1 unit  
Texts: Botsford, *History of the Ancient World*, and McKinley, *Outline Topics in Ancient History*. First semester.
- B. **AMERICAN HISTORY** 1 unit  
Texts: Muzzey, *American History*, and McKinley, *Outline Topics in American History*. Second semester.

**Latin**

- A. **BEGINNING LATIN AND CAESAR** 2 units  
This course is designed to cover rapidly the work usually



done in two years. The first semester will be devoted to a study of the common forms, idioms, and construction and to the translation of Latin as contained in some good Primer. The second semester will be given to the reading of four books of Caesar or the equivalent, to advanced grammar and syntax and prose composition. 6 hours.

B. CICERO AND COMPOSITION 1 unit

Six orations of Cicero or two orations of Cicero and the Catiline of Sallust. Latin Prose Composition. An introduction to the study of Roman Political Institutions. Special attention is given to the art of translating into clear, vigorous English. First semester. 5 hours, half year.

C. VERGIL 1 unit

Translation of six books of the Aeneid or of the equivalent. Special study of epic poetry as a species of literature. Outside reading of Homer in English translation. A comparison of the religious beliefs held by the Ancients and the people of the Middle Ages, as portrayed by the Odyssey, Book XI, the Aeneid, Book VI, and the Divine Comedy of Dante. Topics for private investigation and report. Second semester. 5 hours, half year.

Mathematics

A. BEGINNER'S COURSE IN ALGEBRA 1 unit

Covering the requirement of the College Entrance Board for Algebra.

B. PLANE GEOMETRY  $\frac{1}{2}$  unit

First semester.

B. SOLID GEOMETRY  $\frac{1}{2}$  unit

Second semester.

Mechanical Drawing

A. MECHANICAL DRAWING  $\frac{1}{2}$  unit

See Department of Civil Engineering, School of Applied Science.

**Physics****A. PHYSICS**

The required unit includes an amount of class work represented by Carhart and Chute's **High School Physics**, or Millikan and Gale's **First Course in Physics**. The instruction in the class-room should be supplemented by four hours per week in the laboratory throughout the school year.

**Shop**

**A. ELEMENTARY SHOP WORK** ½ unit

**B. ADVANCED WOOD WORK** ½ unit

This course is open only to those students who have completed Course A or its equivalent.

**Spanish**

**A. ELEMENTARY SPANISH** 1 unit

Hill's and Ford's **Spanish Grammar**, Hill's **Spanish Tales for Beginners**. Zaragueta, Taboada's **Cuentos Alegres**. Writing from dictation and practice in speaking.

**B. SECOND YEAR SPANISH** 1 unit

Prerequisite: Course A. Composition, conversation, and extensive reading. Loiseaux' **Spanish Composition**. Hill's and Reinhardt's **Spanish Short Stories**. Tamayo's **Un drama nuevo**, Palacio Valdes' **La hermana San Sulpicio**; plays by Echegaray, Moratin, etc.

## Students

### Graduate School

Feather, George Adlai, Latin and Greek... Artesia  
 Smoot, Harvey Clinton, Chemistry..... Acoma  
 Weese, Mrs. Josephine Mousley, History... Albuquerque

### College of Letters and Science

Amsden, Charles Avery... Freshman ..... Farmington  
 Anderman, Eleanor G..... Freshman ..... Albuquerque  
 Anderson, Mary Eleanor... Freshman ..... Albuquerque  
 Arnot, Eliz. Barnes..... Freshman ..... Albuquerque  
 Ashley, Sylvia Virginia... Freshman ..... Albuquerque  
 Aydelotte, Carl Edw..... Freshman ..... Roswell  
 Beals, Carolyn, B. Ped..... Senior ..... Lake Valley  
 Beck, Earl Joseph..... Freshman ..... Dexter  
 Bell, Louise ..... Freshman ..... Albuquerque  
 Birkhoff, Gertrude ..... Freshman ..... Albuquerque  
 Bixler, Allene Mable..... Junior ..... Albuquerque  
 Blickenderfer, Harold V... Freshman ..... Albuquerque  
 Boldt, Irene Anna..... Junior ..... Albuquerque  
 Boldt, Leslie G..... Freshman ..... Albuquerque  
 Brorain, Carl David..... Junior ..... Albuquerque  
 Brorain, Mary Catherine.. Freshman ..... Albuquerque  
 Bruce, Allen E..... Junior ..... Albuquerque  
 Butler, Geo. Lyndall..... Junior ..... Farmington  
 Carter, Mary de Von..... Senior ..... Albuquerque  
 Chaves, Katherine Isabel.. Senior ..... Albuquerque  
 Chavez, Esquiél Chavez... Freshman ..... Albuquerque  
 Claiborne, Leonard J..... Sophomore ..... Albuquerque  
 Clark, Homer ..... Freshman ..... Prescott, Ariz.  
 Conway, Katherine L..... Freshman ..... Albuquerque  
 Cook, Mgt. Louise..... Sophomore ..... Davenport, Ia.

Cooper, Lulu Emily.....	Freshman	Gallup
Cory, Hugh .....	Sophomore	Keokuk, Ia.
Cox, Abe L.....	Junior	Clovis
Croft, Geo. Viotti.....	Freshman	Albuquerque
Davis, Lois Aleen.....	Freshman	Albuquerque
Dennis, Howard O.....	Sophomore	Clovis
Duke, Prunella.....	Freshman	Roswell
Dunn, Myrtle L., Ped. M....	Senior	Miami, Ariz.
Eaves, Mary Leona.....	Freshman	Lovington
Eldodt, Joseph M.....	Freshman	Chamita
Emmons, Glenn Leonidas..	Sophomore	Albuquerque
Espinosa, Rosalina .....	Junior	Albuquerque
Feather, Landis B.....	Freshman	Artesia
Feather, Shirley Sabra....	Freshman	Artesia
Fergusson, Lina .....	Sophomore	Albuquerque
Fielder, Forrest .....	Sophomore	Deming
Flournoy, Mgt. Ethel.....	Freshman	Albuquerque
Frank, Elise May.....	Freshman	Espanola
Gaines, Frank Edwin.....	Freshman	Gallup
Gerhardt, Earl A.....	Freshman	Tucumcari
Gouin, Walter F.....	Senior	Silver City
Gustafson, Lillian .....	Sophomore	Albuquerque
Hall, Ernest Wilfred.....	Senior	Albuquerque
Hamilton, Bernice .....	Junior	Blackwell, Tex.
Hamilton, Jos. Sayers.....	Junior	Blackwell, Tex.
Hammond, Wm. Ernest....	Freshman	Albuquerque
Hart, Mayme Burnette....	Freshman	Lovington
Hawthorne, Alberta O....	Freshman	Albuquerque
Heacock, Abby G.....	Freshman	Albuquerque
Henderson, Martha .....	Freshman	Roswell
Higgins, Marie Sarah.....	Sophomore	Albuquerque
Hope, Myrl .....	Sophomore	Albuquerque
Howell, Robt. West.....	Freshman	Albuquerque
Horner, Rebecca .....	Freshman	Albuquerque
Houchen, Chas. Arthur....	Freshman	Clovis
Howden, Douglas F.....	Freshman	Albuquerque

Hunt, Albert Shirley.....	Senior .....	Albuquerque
Hussey, J. Gordon.....	Freshman .....	Albuquerque
Isenberg, Edith .....	Freshman .....	Albuquerque
Isenberg, Gertrude .....	Freshman .....	Albuquerque
Johnson, Katherine Wise..	Sophomore .....	Ruidosa
King, Edw. Eugene.....	Sophomore .....	Gypsum, Kas.
Knox, Earl .....	Freshman .....	Lake Arthur
Kraxberger, Lydia .....	Senior .....	Albuquerque
Lee, Floyd W.....	Sophomore .....	Albuquerque
Lewis, Robt. S.....	Junior .....	Duluth, Minn.
Logan, Leslie E., Ped. B....	Senior .....	Albuquerque
Loudon, Thelma D.....	Sophomore .....	Albuquerque
Lowber, Louise .....	Sophomore .....	Albuquerque
Masten, Alfred B.....	Freshman .....	Cimarron
Miller, Harold .....	Freshman .....	Hagerman
Miller, Jos. Claude.....	Freshman .....	Albuquerque
Morgan, Seals G.....	Freshman .....	Roswell
Murphy, Dempster O.....	Sophomore .....	Albuquerque
McC Campbell, Coleman W..	Sophomore .....	Corpus Christi, Tex.
McCanna, Jos. Edw.....	Junior .....	Albuquerque
McCanna, Raymond J.....	Junior .....	Albuquerque
McKinney, Sidney S.....	Sophomore .....	Albuquerque
McKowen, Ruth Emmett..	Senior .....	Albuquerque
McVicker, Fred .....	Freshman .....	Dexter
Nohl, Louis E.....	Freshman .....	Espanola
Olds, Earl P.....	Sophomore .....	Albuquerque
Ott, Lawrence E.....	Freshman .....	Gypsum, Kas.
Perry, Harold C.....	Freshman .....	Albuquerque
Porterfield, Earl C.....	Sophomore .....	Albuquerque
Rahfield, Margaret .....	Senior .....	Chicago, Ill.
Redfield, Jas. J.....	Sophomore .....	Albuquerque
Reeves, Hazel F.....	Junior .....	Las Cruces
Rosenbach, Jos. B.....	Junior .....	Albuquerque
Sampson, Geo. P.....	Freshman .....	Winslow, Ariz.
Shepard, Robert .....	Freshman .....	Shelby, O.
Simms, Elizabeth H.....	Sophomore .....	Albuquerque

Smith, Mary Ellis.....	Sophomore	Albuquerque
Spickard, Lillian M.....	Freshman	Nashville, Tenn.
Stewart, Annarah Eliz....	Sophomore	New Martinsville, W. Va.
Taylor, Richard Kahn.....	Freshman	Deming
Thacker, Helen .....	Freshman	Baton
Threlkeld, Geo. A.....	Senior	Artesia
Timmons, Pryor Brown....	Junior	Portales
Tipton, Everett Howard...	Freshman	Alamogordo
Toothaker, Lee .....	Freshman	Westmoreland, Kas.
Upton, Philip Richard....	Sophomore	Deming
Venable, Jessie Irene....	Freshman	Albuquerque
Vincent, Helen .....	Freshman	Seattle, Wash.
Vincent, Lyle Staver.....	Freshman	Seattle, Wash.
von Wachenhusen, H. S....	Sophomore	Silver City
Walker, Lee Winston.....	Sophomore	Alamogordo
White, Geo. Walter.....	Sophomore	Albuquerque
Wigely, Robt. Graham....	Freshman	Albuquerque
Wilkinson, Louise .....	Junior	Albuquerque
Williams, Lillian B.....	Freshman	Albuquerque
Wilson, Byron Fuller.....	Freshman	Albuquerque
Wilson, John Donald.....	Freshman	Albuquerque

#### School of Applied Science

Allison, Limuel Riley.....	Freshman	Roswell
Balcomb, Kenneth C.....	Senior	Albuquerque
Barber, Geo. Bernard.....	Freshman	Carriozo
Barnes, Robt. Wertz.....	Sophomore	Albuquerque
Bateman, Howard S.....	Senior	Albuquerque
Blom, Harvey Eric.....	Sophomore	Roswell
Bower, Chalmers H.....	Freshman	Alamogordo
Bradley, Floyd Lester....	Freshman	Dexter
Brantley, Edm. Brook....	Sophomore	East Brook Springs, Tenn.
Chandler, Geo. Orin.....	Freshman	Cimarron
Claiborne, Geo. Robt.....	Sophomore	Albuquerque

Clarke, Chas. Rae.....	Freshman .....	Albuquerque
Crebbs, Chester Marvin...	Sophomore .....	Kansas
Davis, Irwin Jos.....	Freshman .....	Flora Vista
Day, Willard Tenney.....	Freshman .....	Albuquerque
Doering, Milan Langer.....	Junior .....	Albuquerque
Erb, John Elias.....	Freshman .....	Roswell
Fetzer, Clair .....	Freshman .....	Alamogordo
Fortney, Daphne Harriett..	Junior .....	Albuquerque
Fortney, Thelma Emma...	Junior .....	Albuquerque
Friday, Elmer Ellsworth...	Sophomore .....	Santa Fe
Fullerton, Howard B.....	Junior .....	Albuquerque
Hoch, Lucien Herman ...	Freshman .....	Albuquerque
Johnson, Edw. Washburn..	Sophomore .....	Albuquerque
Kieke, Ethel Louise.....	Sophomore .....	Albuquerque
Langston, Calvin Lee.....	Freshman .....	Portales
Lapraik, John Alexander..	Junior .....	Bland
Long, Kathleen .....	Sophomore .....	Albuquerque
Loudon, Robt. Ernest.....	Sophomore .....	Albuquerque
Mozley, Paul Phillips....	Freshman .....	Elk
McClellan, Pelham L.....	Sophomore .....	Albuquerque
McGary, Orie Roland.....	Sophomore .....	Roswell
McLaughlin, John H.....	Freshman .....	Albuquerque
McMains, Orion Leroy....	Freshman .....	Dexter
Pierce, Conway .....	Freshman .....	Alamogordo
Shelton, Geo. Herbert.....	Sophomore .....	Alamogordo
Simmons, Paul Clarence...	Sophomore .....	Belén
Sundt, Thorolf M.....	Freshman .....	Las Vegas
Thackrey, Lyman A.....	Freshman .....	Albuquerque
Vauchelet, Laurie J.....	Freshman .....	Roswell
Wimberley, Arthur B.....	Freshman .....	Hagerman
Wolking, Clifford G.....	Sophomore .....	Albuquerque

#### School of Education

Carmony, Florence A.....	Freshman .....	Albuquerque
Colgan, Laura Beatrice...	Sophomore .....	Albuquerque
Graham, Mary Rebecca...	Sophomore .....	Lovington

Maharam, Rose .....	Sophomore .....	Albuquerque
Michael, Carolyn Eliz.....	Freshman .....	Albuquerque
McDonough, Eleanor .....	Sophomore .....	Deming
Polk, Jas. K.....	Sophomore .....	Albuquerque
Selsor, Beatrice .....	Freshman .....	Albuquerque
Stateson, Ruth .....	Sophomore .....	Albuquerque
Stearns, Lois .....	Freshman .....	Santa Rosa
Tyler, Katherine G.....	Freshman .....	Los Angeles, Calif.

### Special Students

Allen, Laura Chase.....	Albuquerque
Arakel, John .....	Albuquerque
Arens, Emily .....	Des Moines, Ia.
Beck, Belle .....	Portales
Boyd, Louie Croft.....	Albuquerque
Causey, Agnes Castus.....	Grants
Childers, Edith Symington.....	Albuquerque
Coker, Sarah Elizabeth.....	Albuquerque
Doud, Stephen Jos.....	Albuquerque
Durling, Mrs. Jessamine.....	Albuquerque
Frazey, Joe .....	Albuquerque
Gerard, Theodorine .....	Des Moines, Ia.
Gruner, John Walter.....	Albuquerque
Gund, Torrey .....	Albuquerque
Hall, Roy L.....	Anadarko, Okla.
Harden, Mrs. Emma.....	Albuquerque
Horton, Eula .....	Albuquerque
Howden, Angelica .....	Albuquerque
Karl, Valentine .....	Bryn Athyn, Pa.
Laughlin, Howard Wilson.....	Albuquerque
Little, Clinton .....	Roswell
McGough, Francis, Jr.....	Albuquerque
Partch, Mrs. Jennie.....	Albuquerque
Ritch, Ola Cooke.....	Albuquerque
Rodey, Pierce C., L. L. B.....	Albuquerque
Sabin, T. Fred.....	Albuquerque



**EXTENSION DIVISION****247**

Stewart, Hazel Vivian .....	New Martinsville, W. Va.
Wilson, Grover .....	Union City, Tenn.
Watson, Mrs. Edna .....	Albuquerque

**Extension Division**

Forney, Neva .....	Alamogordo
Howarth, Barbara .....	Raton
Keir, Floyd Earl .....	Elwood, Ill.
Zorna, W. S. ....	Lockhart, Tex.

**Preparatory Department**

Burlingame, Paul .....	Magdalena
Gerhardt, Paul .....	Puerto de Luna
Gonzalez, Fernando A. ....	Monterey, Mex.
James, Henry M. ....	Dawson
Jenkins, Mary H. ....	Albuquerque
Lallance, Agnes .....	Albuquerque
McGowan, Gertrude M. ....	Taos
Phillips, Ralph J. ....	Taos
Pratt, Geo. Wm. ....	Albuquerque
Putney, Lyman B. ....	Albuquerque
Ray, Russell Jos. ....	Aztec
Sinesio, Pietro .....	Dawson
Stewart, Harold McK. ....	New Martinsville, W. Va.
Trotter, Evelyn .....	Albuquerque

**Summary**

Students of College rank:	
Graduate students .....	3
College of Letters and Science .....	118
School of Applied Science .....	42
School of Education .....	11
Special .....	29
Extension .....	4
Total .....	<hr/> 207

## Students under College rank:

Preparatory Department .....	14
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Total enrollment, 1915-1916.....	221
Enrollment last year.....	137
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Increase .....	84
Increase, per cent.....	61.4

## SCHEDULE FOR SECOND SEMESTER, 1916-1917

	8:00	9:00	10:00	11:00	1:00	2:00	3:00	4:00
<b>BIOLOGY</b>	Biol. 85, T. Th. Lect. Biol. 85, S. Field	Biol. 85, T. Th. Lab. Biol. 85, S. Field Biol. 128a, M. W. F.	Biol. 85, S. Field Biol. 91, M. W. F.	Biol. 85, S. Field Biol. 91, F. Biol. 191-192, M. T. W. Th.		Biol. 1-2, Lecture, T. Th. Biol. 1-2, Sec. I, M. W. Biol. 1-2, Sec. II, F.	Biol. 1-2, Sec. I, M. W. Biol. 1-2, Sec. II, T. Th. Biol. 1-2, Sec. II, F.	
<b>CHEMISTRY</b>	Chem. 1-2, M. W. F.				Chem. 51, M. T. W. Th. F. 52A-101B	Chem. 51, M. T. W. Th. F.		
<b>CIVIL ENGINEERING</b>		C. E. 105, M. T. W. Th. F.	C. E. 1, S.	C. E. 1, S.	C. E. 51-52, M. W. F. C. E. 101, M. W. F.	C. E. 51-52, T. Th. C. E. 2, M. W. F. C. E. 1, T. Th. C. E. 101, M. W. F.	C. E. 2, M. W. F. C. E. 1, T. Th. C. E. 101, M. W. F.	
<b>EDUCATION</b>	Educ. 9-10, M. W. F.	Educ. 65-(64-72), M. W. Th. F.	Educ. 1-2, M. W. Th. F.	Educ. 15, Th. 51, M. T. W. F.	Educ. 57, M. W. Th. F.			
<b>ENGLISH LANGUAGE</b>	Engl. 1-2, T. Th. S. Engl. 1-2, M. W. F.	Engl. 1-2, T. Th. S. Engl. 1-2, M. W. F.		Eng. 57-52, T. Th. S. Eng. 155, M. W. F.	Eng. 63-70, M. W. F.	Engl. 109-110, M. W. F.		
<b>ENGLISH LITERATURE</b>		Engl. 121, T. Th.	Engl. 141-145b, W. F.	Eng. 51-83B, T. Th. S. Eng. 73-74, M. W. F.		Engl. 75-76, M. W. F.		
<b>GEOLOGY</b>	Geol. 7, M. T. W. Th.	Geol. 1-2, M. T. W. Th.	Geol. 56, 3 Hrs. arranged	Geol. 101-102, M. W.	Geol. 1-2, W. Lab. 7, M. Lab. Geol. 101-102, T. Th. Lab.	Geol. 7, M. Lab. Geol. 101-102, T. Th. Lab.	Geol. 56, M. W. F. Geol. 101-102, T. Th. Lab.	Geol. 56, M. W. F.
<b>GREEK AND LATIN</b>		Latin 101, M. W. F. Latin 87-88, T. Th.	Latin 3, M. W. Th. F. S.	Lat. 51-52, M. W. F. Lat. 31-32, Th. Lat. 1-2, S. Greek 61-62, S.	Lat. 1-2, M. T. W. Th. F. Greek 1-2-12, M. T. W. Th. F.	Greek 51-52, M. W. F. Greek 21-22, M. W. F.		
<b>HISTORY</b>	Hist. 73-74, M. W. F.	Hist. 61-62, M. W. F. Hist. 97-98, T. Th.	Hist. 1-2, M. W. F.	Hist. 85-86, M. W. Hist. 131-132, T. Th.		Hist. 135-136, Th. Hist. 149-150, T.	Hist. 135-136, Th. Hist. 149-150, T.	
<b>HOME ECONOMICS</b>	H. E. 183, W.	H. E. 183, M. H. E. 1-2, T. Th. H. E. 55-56, W. F.	H. E. 1-2, Th. H. E. 55-56, M. W. F.	H. E. 72, M. W. H. E. 1, T. H. E. 183, Th. F.	H. E. 155, T. Th. H. E. 183, F. H. E. 165, M. W.	H. E. 55-56, T. Th. H. E. 183, F. H. E. 165, M. W.		
<b>LIBRARY SCI.</b>	Lib. Sci. 1-2, T. Th.							
<b>MATHEMATICS</b>	Math. 21-12, M. T. W. Th. F.	Math. 51-52, M. T. W. Th. F. Math. B, M. T. W. Th. F.	Math. 131-140, M. W. F.	Math. 1-12, M. T. W. Th. F. Math. 3-6, M. T. W. Th. F.	Math. 1-12, M. T. W. Th. F.	Math. A-A, M. T. W. Th. F.		
<b>MODERN LANGUAGES</b>	French 1-2, M. T. W. Th. F.	Span. 101-102, M. W. F. French 101-102, T. Th.		Ger. 1-2, M. T. W. Th. F. Span. 1-2, M. T. W. Th. F.	French 51-52, M. W. F.	Ger. 51-52, M. W. F. Span. 51-52, M. W. F.	Ger. 101-102, W.	Ger. 101-102, W.
<b>MUSIC AND FINE ARTS</b>			Chorus 10:30 T.	Music 41, Th.	Music 1-2, M. W. F.			
<b>PHYS. &amp; ELECT. ENGINEERING</b>	Phys. 51-52, T. W. Th. F. (S. Lab.)	Phys. 51-52, S. Lab.	Phy. 51-52, S. Lab. Phy. A, M. W. Th. F.	Phy. 51-52, S. Lab. E. E. 101-102, M. W. Th. F.	E. E. 121, M. E. E. 131, Th. Phy. 112	E. E. 121, M. E. E. 131, T. Th. Phy. 112 Phy. A, F. Lab.	E. E. 121, M. E. E. 131, T. Th. Phy. A, F. Lab.	E. E. 121, M. E. E. 131, T. Th. Phy. A, F. Lab.
<b>PHYS. EDUC.</b>		Phys. Ed. 1-2, M. W. F. (Men)	Phys. Ed. 1-2, M. W. F. (Men)	Phys. Ed. 1-2, M. W. F. (Men)		Phys. Ed. 1-2, M. W. F. (Women)	Phys. Ed. 1-2, M. W. F. (Women)	
<b>PSYCH. &amp; PHILOSOPHY</b>	Psy. 55, T. Th. Psy. 101-104, M. W. F.	Psy. 55, T. Th.	Phil. 81-82, M. W. Th. F.	Psy. 121-122, M. W. F.	Psy. 51-56, M. W. F. Psy. 53-54, T. Th.	Psy. 53-54, T. Th.		
<b>SHOP</b>	Shop 1-3, Sec. I, T. Th. S. Shop 11, Sec. I, T. Th.	Shop 11, Sec. I, T. Th.	Shop 3-11, Sec. I, M. W. F. Shop 11, Sec. II, M. W. Shop 1-3, Sec. II, M. W. F.	Shop 3-11, Sec. I, M. W. F. Shop 11, Sec. II, M. W. Shop 1-3, Sec. II, M. W. F.		Shop 1-3, Sec. III, M. W. F. Shop 3, Sec. II, M. W. F. Shop 11, Sec. III, M. W. F.	Shop 1-3, Sec. III, M. W. F. Shop 3, Sec. II, M. W. F. Shop 11, Sec. III, M. W. F.	
<b>SOCIAL SCIENCE</b>	Soc. Sci. 61-62, M. W. F.	Soc. Sci. 3, M. W. F. Soc. Sci. 101, T. Th.	Soc. Sci. 73-74, M. W. F. Soc. Sci. 101, Th.	Soc. Sci. 121-122, M. W. F.		Soc. Sci. (Accounting), M. W. F.		

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