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OF THE
University of New Mexico

WHOLE NO. 74

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MAY, 1914

VOLUME 27

CATALOGUE
1913-1914

ANNOUNCEMENTS
1914-1915

ALBUQUERQUE, NEW MEXICO

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OF THE

University of New Mexico

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ALBUQUERQUE, NEW MEXICO



Job Department
The Morning Journal

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Board of Regents

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Ex-Officio.

THE STATE SUPERINTENDENT OF PUBLIC INSTRUCTION,
Ex-Officio.

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CALENDAR FOR 1914

JANUARY							APRIL							JULY							OCTOBER						
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CALENDAR FOR 1915

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21	22	23	24	25	26	27	20	21	22	23	24	25	26	19	20	21	22	23	24	25	19	20	21	22	23	24	25
28	29	30	31	.	.	.	27	28	29	30	.	.	.	26	27	28	29	30	.	.	26	27	28	29	30	31	.

University Calendar

—1914—

August 17, Monday—Registration Day.

August 21, Friday—Latest date for entrance examinations.

October 16, Friday—Mid-semester.

November 26, Thursday—Thanksgiving Day.

December 18, Friday—Close of first semester.

—1915—

January 4, Monday—Opening of second semester.

March 5, Friday—Mid-semester.

May 9, Sunday—Baccalaureate sermon.

May 12, Wednesday—Commencement Day.

Faculty of the University

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University Hill.

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University Hill.

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207 North High Street.

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Occidental Building.

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*JOHN D. CLARK, Ph. D.

Professor of Chemistry.

University Hill.

*On leave of absence, 1913-14.

E. W. Gruer in charge.

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*Professor of Political Economy and Sociology.
In charge of University Extension Work.*

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*Librarian and Associate Professor of Library
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University Hill.

CHERANGE ROBERTS, B. A.
Assistant Librarian.

223 West Granite Ave.

ARNO K. LEUPOLD, B. S.
Assistant in Engineering.

University Hill.

I. N. PRICKETT,
Superintendent of Buildings and Grounds.

Committee Appointments for 1913-1914.

Student Standing: E. A. Hickey, L. B. Mitchell, ~~R. M. Barton~~. ^{J. D. Mitchell} Clark
Schedule and Curriculum: C. T. Kirk, ~~J. D. Clark~~, C. E. Bonnett. ^{Sherwin}
Catalogue: E. A. Hickey, C. T. Kirk, ~~C. E. Bonnett~~.
Printing and Publications: C. E. Hodgkin, E. A. Hickey, ~~V. A. Suydam~~. ^{Sherwin}
Commencement: J. D. Clark, ~~N. Dean~~, C. E. Hodgkin. ^{Ward}
Athletics and Eligibility: ~~L. B. Mitchell~~, ^{Gale} S. G. Morley, R. F. Hutchinson. ^{Boyd}
Non-Athletic Student Organizations: ~~C. E. Bonnett~~, J. S. Parsons, ~~S. G. Morley~~. ^{Nelson}
Faculty Representatives on Athletic Council: A. O. Weese, ~~V. A. Suydam~~. ^{Clark}
Library: D. J. Sisler.
Entertainments: ~~M. McFie~~. ^{Min} Gleason, ^{Seder}

Introduction

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 government 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 sev-

eral 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 in character.

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, 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. Ramsey; 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 till 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 accommodation 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 added, 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 the College 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 their offices; this concerned 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 years 1912-13 and 1913-14, great progress has been made in the college work in the University. The most notable improvements have been the addition of the Department of Economics, Political Science and Sociology, and of the Extension Division which aims to give instruction to those, who, for various reasons, cannot attend the University.

Location and Equipment

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 admitting 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 lights, 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 may compare favorably with those 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 organization with which their families are connected.

A daily 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 to 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 requisites 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, 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 of the University are found in Science Hall. They consist in general of 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 and 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 qualita-

tive 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 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 paraffine bath, electrically heated incubators, an autoclav, several sterilizers of different types, and a complete stock of media, chemicals and stains. There is 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 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 in this line.

The Leuckert-Chun and Pfurtscheller series of Zoological charts, the Kny Botanical charts, several anatomical and embryological models by Ziegler and others, and Botanical models by Deyrolle furnish illus-

trative material for additional lecture and laboratory use.

The departmental 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 a 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 recently shipped us 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 Brit-

ish 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 12,000 volumes, exclusive of unbound pamphlets and duplicates. This includes both the main library and the depart-

mental 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 reference books are received from this source. These 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 9:00 a. m. to 5:00 p. m.; on Saturday from 9:00 a. m. 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 education

American educational review

American journal of anatomy

American journal of philology

American journal of science

American journal of sociology

American library association booklist

American magazine

American mathematical monthly

American mathematical society—Bulletin

American naturalist

American review of reviews
Anatomical record
Astrophysical journal
Atlantic monthly
Biblical world
Book news monthly
Book review digest
Bookman
Botanical gazette
Bulletin of bibliography
Century
Chemical abstracts
Choses et autres
Classical journal
Classical review
Collier's weekly
Cumulative book index
Current opinion
Dial
Economic geology
Editor
Electrical world
Engineering magazine
Fliegende Blätter
Forum
Harper's monthly
Industrial engineering
Journal of American history
Journal of economic entomology
Journal of experimental zoology
Journal of geology
Journal of industrial and engineering chemistry

Library journal
Literary digest
McClure's magazine
Machinery, shop edition
Modern language notes
Musical courier
Musician
Nation
New Mexico journal of education
North American review
Out west
Outlook
Philosophical magazine
Physical review
Plant world
Political science quarterly
Popular educator
Popular science monthly
Power
Primary education
Public libraries
Publishers' weekly
Quarterly journal of economics
Le Radium
Reader's guide to periodical literature
Records of the past
La Revue Hispanique
Science
Science abstracts—Physics
Scientific American
Scientific American supplement
Survey

Technical world magazine
 Ueber Land und Meer
 Wisconsin library bulletin
 World's work

Organization.

The University embraces—

The College of Letters and Science
 The School of Applied Science
 The School of Education
 The Extension Division
 The Preparatory Department

The College of Letters and Science embraces courses
 in—

English	Mathematics
History	Biology
Latin	Chemistry
Greek	Geology
French	Physics
German	Music
Spanish	Library Training
Economics	Physical Training
Sociology	
Philosophy	

The School of Applied Science embraces full courses
 in—

Civil Engineering
 Electrical Engineering
 Chemical Engineering
 and the first three years of the courses in—
 Mechanical Engineering
 Mining Engineering
 Sanitary Engineering

The School of Education embraces courses in—

Education

Philosophy

Electives in the College of Letters and Science.

The Extension Division embraces courses in—

Education

Psychology

Economics

Political Science

Sociology

History

English

Spanish

Greek

Latin

Biology

Chemistry

Geology

Physics

Engineering

Mathematics

The Preparatory Department consists of the last two years of the regular high school curriculum, and offers courses in—

English

Mathematics

History

Spanish

French

German

Latin

Physics

Zoology

Botany

Physiology

Physical Geography

Shop Work

Mechanical Drawing

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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.

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; the Athletic Association; and the Oratorical and Debating Associations. In addition to these organizations governed by the Student Body, there is in the Music Department a Glee Club; in the Engineering Department the New Mexico Society of Engineers, and in the History Department a History Club that at fortnightly meetings considers current issues.

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.

SCHOLARSHIPS.

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. C. burn Cook.

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

Time of Entrance.

Students ordinarily enter the University during the opening week of the first semester; although they may

enter at any time during the year students entering later than one week after the opening of school, are fined \$1.00 for late registration, and those entering later than four weeks are not only liable to the fine but also to only partial credit in the courses which they may enter, as stated in Regulations Governing Registration.

Entrance Requirements.

The requirements for admission are stated in terms of units. The term "unit" means the equivalent of five recitations a week for one year in one branch of study.

Fifteen units are required for admission, of which $9\frac{1}{2}$ are prescribed and $5\frac{1}{2}$ are elective.

I. The following subjects are required of all:

English	3 units
Mathematics	$2\frac{1}{2}$ units
Language	2 units
Laboratory Science	1 unit
History	1 unit

II. In addition to the $9\frac{1}{2}$ units required under I, $5\frac{1}{2}$ units shall be chosen from the following subjects:

English	1 unit
Mathematics	$\frac{1}{2}$, 1 unit
Language	1, 2, 3, 4 units
Latin	
Greek	
French	
German	
Spanish	

History.....	1/2, 1, 2, 3 units
Ancient	
Mediaeval and Modern	
English	
American	
Civics	1/2 unit
Economics	1/2 unit
Science.....	1/2, 1, 2, 3 units
Botany	
Zoology	
Chemistry	
Physics	
Physiology	
Physical Geography	
Vocational Subjects...	1, 2, 3, 4 units
Agriculture	
Commercial Work	
Domestic Science	
Manual Arts	
Optional Subject	1 unit

Limitations.—Not more than four of the required fifteen units will be accepted in any one subject. No foreign language course of less than two units will be accepted from students presenting only one foreign language.

Vocational Subjects.—Not more than a total of four units in vocational subjects may be presented.

Optional Subjects.—An optional subject is any subject of the student's high school course not specified in the list of elective subjects. One optional subject of one unit, or two of one-half units each, may be offered, but not with four units of vocational subjects.

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.

Students From Other Colleges and Universities.

Students from other institutions who have pursued 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 November 1st of the year in which he expects to graduate.

Admission of Adult Special Students.

Students over twenty-one years of age who are not working for a degree may carry special courses without fulfilling the entrance requirements, provided they give evidence that they can do the work for which they apply.

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

Laboratory fees, per semester hour.....	\$1.00
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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 meals25
Luncheon, per portion05

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 sitting room. 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 Dean of Women.

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. Luncheon is also provided at the lunch counter, at the mid-day meal, the charge being five cents per portion.

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.

DEGREES, DIPLOMAS AND CERTIFICATES.

College of Letters and Science. Upon the recommendation of the President and Faculty, the degree of Bachelor of Arts or of Bachelor of Science is conferred by the University upon those undergraduate students who have completed at this institution not less than the last year of a four years' College course in accordance with the requirements and regulations of the University.

School of Applied Science. Subject to similar conditions, the degree of Bachelor of Science in Engineer-

ing is conferred by the University upon the recommendation of the President and Faculty.

Educational Degree, Diploma, Etc. The following are granted upon the recommendation of the President of the University and the Head of the School of Education:

I. The Degree of Bachelor of Pedagogy. Conferred upon those undergraduate students who hold a diploma for a complete course in the art and practice of teaching, entitling the holder to a professional certificate from a State Board of Education, and who have completed at this institution not less than the last year of a three years' college course in accordance with the requirements and regulations of the University.

II. The Teacher's Diploma. Conferred upon students of the School of Education who have completed the curriculum of the School in accordance with the requirements and regulations of the University.

III. Collegiate Certificates. Granted to holders of Teachers' Diplomas who are taking regular college courses. The certificates are of two grades, first and second, and are granted after the completion of the freshman and sophomore years respectively.

College Preparatory Department. Students enrolled in the Sub-Freshman classes who complete the prescribed course of work, will be provided, if they so desire, with certificates for work satisfactorily performed.

College of Letters and Science

David Ross Boyd, Acting Dean.

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 major instructor or adviser, who will issue class cards admitting the student to respective classes.

All enrollment cards must be returned to the Registrar's office by the end of the week of the student's registration, or a fine of \$1.00 will be imposed.

An extra fee of \$1.00 is charged for registration after the first week of each semester.

Maximum Schedule.

No candidate for a B. A. degree from the University shall be allowed to carry more than sixteen hours of work per week unless his general standing for the previous semester be B or above, and then only by presenting a written request to the Student Standing Committee who shall grant permission at their discretion.

Minimum Schedule

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

Late Class Entrance.

No student, in order to be in regular standing, may enter a course later than four weeks from the beginning of the course except by permission of the President and with the approval of the instructor. The instructor shall determine what credit, if any, the student may receive for the course.

Withdrawal From Class.

No student shall drop a subject after two weeks from the beginning of the course without the consent of his major instructor or adviser and of the instructor in charge.

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.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS.*Hours Required.*

All candidates for the degree of Bachelor of Arts must complete the full undergraduate course of eight semesters of eighteen weeks each, or of 120 hours of A work, 128 hours of B work, or 136 hours of C work. In addition they must take four hours of Physical Education.

Semester Hours.

A semester hour consists of one period, or conventional recitation "hour" of not less than 53 minutes or its equivalent of two "hours" of laboratory, field or shop work.

Grading.

Students are graded according to their class standing and by examination. A is equivalent to 90-100; B, 80-90; C, 70-80; and D below 70. Students making B grades will have one hour added to the graduation requirements (120 hours of A work) for each fifteen hours of B credit; and those making C grades will have one hour added for each seven hours of C credit. All students not maintaining a passing grade of C in any course shall be regarded as having failed in that course, the term "failed" denoting that no credit for a degree is given in a course so marked and that the student is obliged to take the course over again in class unless excused by his major instructor.

Major Work.

At the beginning of the second year the student shall select a major subject and make out his course of study under the supervision of the head of the department in which the major is chosen. The student may take for his major work not more than one-half of his entire course nor less than one-fourth.

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.

Baccalaureate Thesis.

All candidates for the B. A. degree may be required to prepare a graduating thesis upon a subject chosen

by the head of the department in which the major work is being taken. The typographical form of the thesis may be obtained from the University Librarian.

Prescribed Work.

All candidates for the degree of Bachelor of Arts must complete before graduation the following prescribed work:

English	12 hours
History and Political Science.....	12 hours.
Language	16 hours
Science, including Mathematics.....	10 hours

Of these credits 22 must be taken during the Freshman year, as follows:

English	6 hours
History and Political Science.....	6 hours
Language	10 hours

School of Applied Science

Vernon A. Suydam, Director,

Professor of Physics and Electrical Engineering.

INTRODUCTION.

Organization and Purpose.

The School of Applied Science was organized in 1906, and comprises physics and all engineering courses offered by the University. The purpose of this Department is to train students in physics and the various engineering branches, giving them a four years' college course leading to the degree of B. S. in physics or engineering. The aim is to make entrance requirements and requirements for graduation up to the standard of the leading engineering schools throughout the country. 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 the theory and practice of engineering work, but may at the same time enlarge his mental horizon and develop the ability to express himself with ease, clearness and effectiveness. It is the endeavor of the Department 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, shop and laboratory courses continue progressively throughout the four years in each course. Sufficient foreign language is introduced to enable its graduates to read professional German or French. In the fourth year of each course some special

subject for investigation will be taken up which shall constitute 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 physics 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, frequency meters, power-factor meters 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, forge work, 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.

REGULATIONS GOVERNING REGISTRATION.

Method.

The student upon entering the University must pay the matriculation, tuition and laboratory 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 major instructor or adviser, who will issue cards admitting the student to respective classes.

All enrollment cards must be returned to the Registrar's office by the end of the week of the student's registration, or a fine of \$1.00 will be imposed.

An extra fee of \$1.00 is charged for registration after the first week of each semester.

Maximum Schedule.

No candidate for a B. S. degree from the University

shall be allowed to carry more than nineteen hours of work per week unless his general standing for the previous semester be B or above, and then only by presenting a written request to the Student Standing Committee who shall grant permission at their discretion.

Minimum Schedule.

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

Late Class Entrance.

No student in order to be in regular standing may enter a course later than four weeks from the beginning of the course, except by permission of the President and with the approval of the instructor. The instructor shall determine what credit, if any, the student may receive for the course.

Withdrawal From Class.

No student may drop a subject after two weeks from the beginning of the course without the consent of his major instructor or adviser and of the instructor in charge.

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.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF
SCIENCE.

Hours Required.

All candidates for the degree of Bachelor of Science must complete 120 hours of A work; 128 hours of B

work, or 136 hours of C work for students majoring in physics, chemistry, geology, and biology. In addition they must take four hours of Physical Education. All engineering students must complete more than the above schedule of hours for graduation in order to bring the work up to an equivalent of the best engineering schools throughout the country.

Semester Hours.

A semester hour consists of one period, or conventional recitation "hour," of not less than 53 minutes or its equivalent of two "hours" of laboratory, field or shop work.

Grading.

Students are graded according to their class standing and by examination. A is equivalent to 90-100; B, 80-90; C, 70-80; and D, below 70. Students making B grades will have one hour added to the graduation requirements (120 hours of A work) for each fifteen hours of B credit; and those making C grades will have one hour added for each seven hours of C credit. All students not maintaining a passing grade of C in any course shall be regarded as having failed in that course, the term "failed" denoting that no credit for a degree is given in a course so marked and that the student is obliged to take the course over again in class unless excused by his major instructor.

Major Work.

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

Baccalaureate Thesis.

All candidates for the B. S. degree are required to prepare a graduating thesis upon some special subject for investigation which is taken up in the fourth year of each course. The typographical form of the thesis may be obtained from the University Librarian.

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. 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 shops than could possibly be gained in the shops 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 student to become familiar with shop practice.

OUTLINE OF ENGINEERING COURSES

Electrical Engineering Course Leading to the B. S. Degree.

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

Freshman Year.

<i>First Semester</i>	Credits
English 1 English Composition	3
German 1 Freshman German }	5
French 1 Freshman French }	
Mathematics 1 College Algebra	5
Chemistry 1 Inorganic Chemistry	3
Civil Eng. 1 Mechanical Drawing	2
Shop Work Pattern Making	1
Total	19

Second Semester

English 2 English Composition	3
German 2 Freshman German }	5
French 2 Freshman French }	
Mathematics 12 ... Analytical Geometry	3
Mathematics 1 Plane Trigonometry	2
Chemistry 2 Inorganic Chemistry	5
Shop Work Pattern Making	1
Total	19

Sophomore Year.

<i>First Semester</i>	Credits
Mathematics 3 Differential and Integral Calculus	5
Physics 1 General Physics and Labora- tory Practice	5
Electrical Eng. 14.. Machine Design	3
Shop Work Lathe Work in Wood.....	3
Civil Eng. 2 Descriptive Geometry	2
Total	18

Second Semester

Mathematics 4 Differential and Integral Calculus	5
Physics 2 General Physics and Labora- tory Practice	5
Physics 9 Analytical Mechanics	5
Shop Work Lathe Work in Iron.....	3
Total	18

*Junior Year.**First Semester*

Mathematics 5 Differential Equations	3
Electrical Eng. 1... Direct Current Machinery..	3
Electrical Eng. 3... Direct Current Laboratory..	2
Physics 3 Electricity and Magnetism..	3
Physics 4 Electrical Measurements ...	2
Civil Eng. 3 Surveying	3
Civil Eng. 9 Strength of Materials.....	3
Total	19

Second Semester

Credits

Mathematics 14 ...	Vector Analysis	3
Electrical Eng. 2...	Direct Current Machinery..	3
Electrical Eng. 4...	Direct Current Laboratory..	2
Physics 11	Thermodynamics	3
Physics 6	Electrical Measurements ...	2
Civil Eng. 10.....	Hydraulics	3
Elective		2
Total		18

*Senior Year.**First Semester*

Electrical Eng. 5....	Alternating Current Machinery	3
Electrical Eng. 6....	Alternating Current Laboratory	2
Electrical Eng. 9....	Dynamo Design	1
Civil Eng. 23.....	Contracts and Specifications.	2
Electrical Eng. 12...	Electrical Applications	5
Electrical Eng. 11...	Electrical Installation	3
Elective		2
Total		18

Second Semester

Electrical Eng. 6....	Alternating Current Machinery	3
Electrical Eng. 8....	Alternating Current Laboratory	2
Electrical Eng. 10...	Dynamo Design	1
Electrical Eng. 15...	Thesis	5

	Credits
Electrical Eng. 13...Electrical Applications	5
Political Economy 4...Business Organization and Management	3
Total	19

CHEMICAL ENGINEERING COURSE

Leading to the B. S. Degree.

Freshman Year.

<i>First Semester</i>	Credits
English 1English Composition	3
German 1Freshman German }	5
French 2Freshman French }	
Mathematics 1College Algebra	5
Chemistry 1Inorganic Chemistry	3
Civil Eng. 1Mechanical Drawing	2
Shop WorkPattern Making	1
Total	19

<i>Second Semester</i>	
English 2English Composition	3
German 1Freshman German }	5
French 2Freshman French }	
Mathematics 12 ...Analytical Geometry	3
Mathematics 1Plane Trigonometry	2
Chemistry 2Inorganic Chemistry	5
Shop WorkPattern Making	1
Total	19

Sophomore Year.

<i>First Semester</i>	Credits
Chemistry 3 Qualitative Analysis	5
Mathematics 3 Differential and Integral Calculus	5
Physics 1 General Physics and Labora- tory Practice	5
Shop Work Lathe Work in Wood.....	3
Total	18

<i>Second Semester</i>	
Chemistry 8 Organic Chemistry	3
Mathematics 4 Differential and Integral Calculus	5
Physics 2 General Physics and Labora- tory Practice	5
Physics 9 Analytical Mechanics	5
Shop Work Lathe Work in Metal.....	1
Total	19

Junior Year.

<i>First Semester</i>	
Chemistry 5 Qualitative Analysis	5
Chemistry 9 Organic Chemistry Labora- tory	3
Chemistry 13 Industrial Chemistry	2
Civil Eng. 9 Strength of Materials.....	3
Electrical Eng. 14.. Machine Design	3
Elective	2
Total	18

Second Semester

Credits

Chemistry 6	Qualitative Analysis	5
Chemistry 10	Physical Chemistry	3
Civil Eng. 10	Hydraulics	3
Physics 11	Thermodynamics	3
Elective		3
		—
Total		17

*Senior Year.**First Semester*

Chemistry 7	Qualitative Analysis	5
Electrical Eng. 1	Direct Current Machinery	3
Electrical Eng. 3	Direct Current Laboratory	2
Civil Eng. 23	Contracts and Specifications	2
Chemistry 16	Thesis	3
Elective		2
		—
Total		17

Second Semester

Electrical Eng. 2	Direct Current Machinery	3
Electrical Eng. 4	Direct Current Laboratory	2
Chemistry 12	Metallurgy	2
Electrical Eng. 16	Applied Electrochemistry	3
Political Economy 4	Business Organization and Management	3
Chemistry 16	Thesis	5
		—
Total		18

CIVIL ENGINEERING COURSE

Leading to the B. S. Degree.

Freshman Year.

<i>First Semester</i>		Credits
English 1	English Composition	3
German 1	Freshman German	5
French 2	Freshman French	
Mathematics 1	College Algebra	5
Chemistry 1	Inorganic Chemistry	3
Civil Eng. 1	Mechanical Drawing	2
Shop Work	Pattern Making	1
Total		19

Second Semester

English 2	English Composition	3
German 1	Freshman German	5
French 2	Freshman French	
Mathematics 12	Analytical Geometry	3
Mathematics 1	Plane Trigonometry	2
Chemistry 2	Inorganic Chemistry	5
Shop Work	Pattern Making	1
Total		19

*Sophomore Year.**First Semester*

Mathematics 3	Differential and Integral Calculus	5
Physics 1	General Physics and Labora- tory Practice	5
Civil Eng. 2	Descriptive Geometry	2

	Credits
Civil Eng. 5.....Construction	2
Civil Eng. 7.....Stereotomy	3
Elective	2
	<hr/>
Total	19

Second Semester

Mathematics 4	Differential and Integral Calculus	5
Physics 2	General Physics and Labora- tory Practice	5
Physics 9	Analytical Mechanics	5
Civil Eng. 4.....	Land and Topographical Surveying	3
		<hr/>
Total		18

*Junior Year.**First Semester*

Civil Eng. 9.....	Strength of Materials.....	3
Civil Eng. 11.....	Graphic Statics	2
Civil Eng. 13.....	Roads and Pavements.....	2
Geology 9	Engineering Geology	5
Electrical Eng. 1...	Direct Current Machinery..	3
Electrical Eng. 3...	Direct Current Laboratory..	2
Elective		2
		<hr/>
Total		19

Second Semester

Civil Eng. 10.....	Hydraulics	3
Civil Eng. 12.....	Roofs and Bridges.....	3
Civil Eng. 14.....	Railroad Surveying	3

	Credits
Geology 6 Mineralogy	5
Physics 11 Thermodynamics	3
Elective	2
	<hr/>
Total	19

*Senior Year.**First Semester*

Civil Eng. 15.....	Bridge Design	3
Civil Eng. 17.....	Hydraulic Engineering	3
Civil Eng. 19.....	Railroads	2
Civil Eng. 21.....	Steel Buildings	2
Civil Eng. 23.....	Engineering Contracts and Specifications	2
Astronomy 1	General Astronomy	3
Elective		3
		<hr/>
Total		18

Second Semester

Civil Eng. 16.....	Bridges and Dams	3
Civil Eng. 18.....	Sanitary Engineering	3
Civil Eng. 20.....	Railroads	2
Civil Eng. 22.....	Cement and Concrete.....	2
Civil Eng. 24.....	Thesis	5
Biology 13	Sanitary Biology	2
		<hr/>
Total		17

DEPARTMENTS OF INSTRUCTION.

Odd numbered courses are offered during the first and even numbered during the second semester.

Department of English.

Associate Professor Ethel A. Hickey.

1. *English Composition.* 3 hours
Written and oral themes and exercises in the four forms of literary discourse with a study of the general principles of rhetoric. Required of all Freshmen. Special section for Engineers.
2. *English Composition.* 3 hours
A continuation of Course 1. Required of all Freshmen. Special section for Engineers.
3. *Chaucer and Spencer.* 3 hours
4. *Shakespeare and His Contemporaries.* 3 hours
A study of the dramatists of the Elizabethan age.
5. *Seventeenth Century Literature.* 3 hours
A study of the Puritan Period and of the Restoration.
6. *Eighteenth Century Literature.* 3 hours
A study of the Classic Age and of the Transition.
7. *The Poetry of the Nineteenth Century.* 3 hours
Historical and critical survey of English poetry from Wordsworth to Browning.

8. *History of the Novel.* 3 hours
Historical and critical survey of the English novel from Defoe to Meredith.
9. *Advanced English Composition.* 3 hours
A study of modern periodicals with practice in essay writing. Open only to students who have completed Courses 1 and 2.
10. *Advanced English Composition.* 3 hours
A study of modern narrative writing. Open only to students who have completed Courses 1 and 2.
11. *Browning.* 2 hours
12. *The Modern Drama.* 2 hours
A study of the drama from Goldsmith and Sheridan to the present day.
13. *History of Art.* 3 hours
A general course of the history of architecture, sculpture and painting.
14. *History of Art.* 3 hours
A continuation of Course 13.
15. *General Survey.* 3 hours
General summarizing survey of the field of English Literature and a comparison with the literature of other nations.

Department of History.

Associate Professor Nellie Dean.

1. *History of Greece.* 3 hours
The development, character, and expansion of Greek civilization. [Omitted 1913-14.]

2. *History of Rome.* 3 hours
The Roman State. The growth of the Roman Imperial world. [Omitted 1913-1914.]
3. *History of England.* 3 hours
From the Anglo-Saxon Invasion to the close of the Tudor period.
4. *England.* 3 hours
From the accession of James I. to the present day.
5. *Medieval History I.* 2 hours
From the barbarian invasions to the close of the Eleventh Century.
6. *Medieval History II.* 2 hours
From the Crusades to the opening of modern history.
7. *Modern European History I.* 3 hours
A general course covering the history of Europe from the close of the Fifteenth Century to 1715.
8. *Modern European History II.* 3 hours
From 1715 to the present day.
9. *American Colonial History.* 3 hours
The Colonial period through the Revolution.
10. *Economic History of the United States.* 3 hours

Department of Economics, Political Science and Sociology.

Professor C. E. Bonnett

1. *American Government and Politics.* 3 hours
This course offers a thorough-going study of our

governmental institutions as to origin, and methods used in making and administering laws, and in 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.

2. *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.
3. *Principles of Economics.* 5 hours
Economic principles are studied intensively 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.
4. *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.
5. *Principles of Sociology.* 3 hours
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 dealt with briefly.

6. *Immigration.* 3 hours

This course will consider immigration in both its bad and good aspects, the problems that the immigrant has brought us and his contribution to our institutions.

7. *Political Parties.* 3 hours

This course will investigate 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.

8. *Government of New Mexico.* 3 hours

Students in this course will be given an opportunity to compare the government of New Mexico with typical other states, in regard to constitutions, law-making, and administration of laws.

9. *Public Finance.* 3 hours

Methods of raising funds by the various sorts of taxation, and the manner in which these funds are expended, form the subject-matter of this course. Attention will be given to the system in operation in New Mexico.

10. *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.

11. *Modern Social Conditions.*

The purpose of this course is to place before the student the conditions that do much to cause our great social problems, the underlying causes, the good and bad features, and the tendencies of the times.

12. *Modern Social Reform Programs.* 3 hours

This course deals with the programs proposed to meet the conditions studied in the course in *Modern Social Conditions*.

Note: For the second semester, provisions may be made for a debating team with credit allowed for systematic work.

*Department of Philosophy.*1. *Ethics.* 3 hours

Introduction. In this course a study is made of moral origins, followed by a consideration of the moral consciousness. Some present-day problems of social morality are considered. Dewey and Tufts Ethics is the basis of class discussion.

2. *Logic.* 3 hours

History of Logic, nature, terms, propositions, deductive and inductive methods, logical analysis and criticism of fallacies. Text, "Elements of Logic," Jevons-Hill.

*Department of Psychology.*1. *Psychology.* 3 hours

Introduction. In this course are considered the

general facts and fundamental laws of the mind, by means of lectures, recitations and experiments. It is prerequisite to all other courses in psychology, and should not be taken before the sophomore year. Texts: Angell's Psychology and Seashore's Elementary Experiments in Psychology.

2. *Experimental Psychology.* 3 hours

This course is intended to give students some insight into the methods and results of experimental psychology, by means of lectures, assigned readings and individual experimental work. Prerequisite Course 1.

3. *Social Psychology.* 3 hours

A study of mind in its relation to individual and social activities. The spread of ideas. The relation of language to thought. The psychology of invention. A comparison of development between the individual and the race.

4. *Educational Psychology.* 2 hours

For description of this course see Education 8.

Department of Latin.

Professor Lynn B. Mitchell.

1. *Beginning Latin.* 6 hours

This course is for students who have not previously studied Latin. Grammar and Composition. The common forms, idioms, and constructions. A beginning Latin book and a Latin reader will be studied.

2. *Caesar and Latin Prose Composition.* 6 hours
A further study of grammar and syntax. Translation of detached sentences into Latin. Selections from Cæsar to the amount of four books or the equivalent in other authors.
3. *Cicero and Composition.* 3 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. (Given in alternate years. Given in 1914-1915.)
4. *Continuation of 3.* 3 hours
5. *Vergil.* 3 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. (Alternates with 3 and 4. Not given in 1914-1915.)
6. *Vergil. Continuation of 5.* 3 hours
7. *Freshman or Sophomore 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. (Not given in 1914-1915.)

8. *Freshman or Sophomore Latin.* 3 hours
Livy, continued. Horace, Odes and Epodes. Outside readings, especially in the Latin Lyric Poets. (Not given in 1914-1915.)
9. *Latin Composition.* 1 hour
Translation into Latin of detached sentences and connected narrative. Grammar and Syntax. Intended to accompany Latin 7.
10. *Latin Composition. Continuation of Latin 9.* 1 hour
11. *Sophomore or Freshman Latin.* 3 hours
Cicero's Essay on Friendship and Selections from Catullus, Propertius, and Tibullus. History of Roman Literature through the Republic and assigned readings.
12. *Sophomore or Freshman Latin.* 3 hours
Two comedies of Plautus and one of Terence. A study of the Latin Drama. Outside reading in the remaining comedies of Plautus and in the Tragedies of Seneca.
13. *Advanced Latin.* 3 hours
Tacitus, Germania and Agricola and Letters of Pliny the Younger. Outside readings bearing on the condition of the Roman people during the first century of the Empire. Open to Juniors and Seniors who have taken Latin 7, 8, 11, and 12.
14. *Advanced Latin.* 3 hours
Silver and Late Latin. Apuleius, or Petronius and Latin Hymns. A study of the development of the Roman novel and romance. Assigned read-

ings on kindred topics. Prerequisite, same as for Latin 13.

15. *Advanced Latin.* 3 hours
Selected readings from the philosophical writings of Cicero, Lucretius, and Seneca. Assigned readings and reports on the philosophical systems of the Greeks and Romans. Prerequisites same as for Latin 13. (Not given in 1914-1915.)
16. *Advanced Latin.* 3 hours
Selections from Lucilius, Horace, Persius, and Juvenal. A study will be made of the development of Latin Satire and the works of the Satirists will be read either in the original or in translation. Prerequisite, same as for Latin 13.
17. *Advanced Latin Composition.* 2 hours
Open to Seniors, Juniors, and by permission to Sophomores.
18. *Continuation of Latin 17.* 2 hours
19. *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 will be 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. Open to all students except Freshmen. A knowledge of Latin is helpful but not essential. (Not given in 1914-1915.)

20. *Continuation of Latin 19.* 2 hours
21. *Roman Antiquities and Private Life.* 2 hours
A study of the Antiquities of 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. Open to all students except Freshmen. A knowledge of Latin is helpful but not essential. (May be given in 1914-1915.)
22. *Continuation of Latin 21.* 2 hours
23. *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 that confront a teacher of Latin. A special study of the Subjunctive Mood and the essentials of Classical Philology. Open to advanced students by permission of the instructor. (Not given in 1914-1915.)

Department of Greek.

Professor Lynn B. Mitchell.

1. *Elementary Greek.* 5 hours
Grammar and Composition. The common forms, idioms, and constructions, and the grammatical principles of Attic Greek prose. Open to those who have not taken Greek as a preparatory subject.

2. *Elementary Greek Continued.* 5 hours
Grammar and Composition continued. Reading of Xenophon's *Anabasis*, Books I-III.
3. *Attic Greek Prose.* 3 hours
Xenophon's *Memorabilia* of Socrates. A study of Socrates and his teachings. Assigned reading in English of some of Plato's dialogues. Open to those who have had Greek 1 and 2 or their equivalent. (Not given in 1914-1915.)
4. *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. Prerequisite, Greek 1 and 2, or their equivalent. (Not given in 1914-1915.)
5. *Greek Prose Composition.* 1 hour
Translation into Greek of detached sentences and continuous prose. Grammatical review. Intended to accompany Greek 3. (Not given in 1914-1915.)
6. *Continuation of Greek 5.* 1 hour
7. *Attic Oratory.* 3 hours
Several orations of Lysias will be read. Assigned readings in English of the works of other Greek orators. (Not given in 1914-1915.)
8. *Epic Greek Poetry.* 3 hours
Selections from the *Iliad* of Homer. 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* will be read in translation. (Not given in 1914-1915.)

9. *Greek Drama.* 3 hours
One play of Sophocles and one of Euripides, will be studied. A study of the development of the drama as a species of literature. Assigned readings on kindred topics. Prerequisite, Greek 7 and 8. (Not given in 1914-1915.)
10. *Thucydides.* 3 hours
Besides translation, attention will be given to the history of Greece for the period involved. History of Greek literature. (Not given in 1914-1915.)
11. *Advanced Greek Composition.* 2 hours
12. *Continuation of Greek 11.* 2 hours
13. *Greek Architecture and Art.* 2 hours
Lectures, quizzes, assigned readings, and reports. Open to all students. No knowledge of Greek required. (Not given in 1914-1915.)
14. *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. Open to all students. No knowledge of Greek required. (Not given in 1914-1915.)
15. *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, quizzes, assigned readings, and reports. Open to all students. No knowledge of Greek required. (Not given in 1914-1915.)

16. *Greek in English Translation, Continued.* 2 hours
A study will be made of the contribution of the Greeks to other species of literature outside of the drama, especially in the realms of epic and lyric poetry, history, philosophy, and the romance. Open to all students. No knowledge of Greek required.

Department of French.

Associate Professor Josephine S. Parsons.

1. *Elementary French.* 5 hours
Beginners' Course. Principles of Grammar, Fraser & Squair, Part 1. Oral and written exercises and systematic training in pronunciation, based on Matzke's Primer of French pronunciation.
French Readings, Aldrich & Foster's French Reader, Part 1.
From the very beginning the student is required to turn English into French, and to grasp the meaning of the French without putting it into English.
2. *Elementary French.* 3 hours
Continuation of Course 1. Principles of Grammar, completed, Fraser & Squair, Part 1. Special drill on more common irregular verbs.
Dictation.

Simple conversation.

French Readings, Aldrich & Foster's French Reader, Part II.

Labiche & Martin, *Le Voyage de Monsieur Perichon*. Where the progress of the class justifies such action, a play of the character of the one mentioned will be presented in appropriate costume. Upon completion of courses 1 and 2, the student should be able to express himself in French.

As a prerequisite to the study of Second Year French, the student must present one year of college French, or its equivalent.

3. *Second-Year French*. 3 hours
Grammatical Exercises, Fraser & Squair's Grammar completed (Part II). Dictation. Composition, Idioms.
4. *Second-Year French*. 3 hours
Continuation of Course 3. Syntax, Composition, Idioms.
French Readings, Selected Modern Texts.
Students required to give in French, and orally, synopses of works read.
Especial stress laid on the translation of English into French. Selections from standard authors chosen with this end in view.
5. *Third-Year French*. 3 hours
Advanced French Prose Composition. Translation into French of selected English texts.
A study of principal authors of the Classical Period.
Representative texts from the works of Corneille,

Racine, Moliere, Voltaire, Le Sage, La Fontaine, Boileau.

6. *Third-Year French.* 3 hours
Continuation of Course 5. Study of writers of the Romantic School. Discussion of literary and colloquial forms and critical points in grammar.
7. *Fourth-Year French.* 2 hours
History of French Literature, with readings from principal authors. From the Renaissance to the end of the Seventeenth Century.
8. *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 Spanish.

Professor S. G. Morley.

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, "Zaragueta," Taboada's "Cuentos alegres." Conversation.

3. *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 Valdés' "La hermana San Sulpicio".
4. *Second-Year Spanish.* 3 hours
Continuation of Course 3. Plays by Echegaray, Moratín, etc.; Morley's "Spanish Ballads".
5. *Spanish Drama of the 17th Century.* 2 hours
Prerequisite, Courses 1, 2, 3, and 4, or the equivalent. Lope de Vega's "La moza de cántaro" and "La estrella de Sevilla"; Tirso de Molina's "La prudencia en la mujer" and "El burlador de Sevilla"; Alarcón's "La verdad sospechosa"; Moreto's "El desdén con el desdén"; Calderón's "La vida es sueño" and "El mágico prodigioso". In addition extracts will be assigned from Fitzmaurice-Kelly's "History of Spanish Literature" and Havelock Ellis' "The Soul of Spain".
6. *Spanish Literature of the 19th Century.* 2 hours
Prerequisite, Courses 1, 2, 3 and 4, or the equivalent. Study of the important drama, novel and lyric poetry of recent Spanish writers. Zorrilla's "Don Juan Tenorio", Ayala's "Consuelo," Galdós' "Electra"; Hills and Morley's "Modern Spanish Lyrics". Outside reading in Fitzmaurice-Kelly's "History of Spanish Literature" and other works; two Spanish novels to be read outside.

7. *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.

8. *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.

Department of German.

Professor S. G. Morley.

1. *Elementary German.* 5 hours

Grammar and translation. Conversation begun. Memorizing simple German verse. Text, Bierwirth, "Beginning German," Hewett's "German Reader."

2. *Elementary German.* 5 hours

Grammar completed. Reading of about 200 pages of easy translation, "Germelshausen". Memorizing of simple German ballads.

3. *Second-Year German.* 3 hours

Prerequisite, German 1 and 2, or two years of German in high school. "Wilhelm Tell," "Minna von Barnhelm". Conversation. Reports on current events in German, and oral narration based on short stories. A few lyrics and ballads memorized. Composition, Thomas' "German Grammar".

4. *Second-Year German.* 3 hours
"Die Journalisten," "Zwischen Himmel and Erde" or "Wilhelm Tell". Prose reading, conversation, reports, and composition continued.
5. *Schiller's Life and Works.*
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.
6. *Goethe's Life and Works.* 2 hours
Conducted in German. Reading of Goetz, Iphigenie, Tasso, selections from Dichtung and Wahrheit, etc. Original composition.
7. *History of German Literature.* 2 hours
German literature of the 18th 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.
8. *History of German Literature.* 2 hours
German literature of the 19th century. Requirements and methods the same as in Course 13.

Department of Mathematics and Astronomy.

Professor Ralph M. Barton.

Mathematics.

1. *College Algebra and Plane Trigonometry.* 5 hours
In College, a rapid review of elementary algebra

followed by more careful treatment of the solution of simultaneous linear equations by determinants and by means of graphical representation, the quadratic equation, Ratio, Proportion, Variation, the progressions, Binomial Formula, Mathematical Induction, Theory of Equations, Logarithms, Permutations and Combinations, Limits, Convergence of Series, Undetermined Coefficients and Partial Fractions, Determinants.

In Plane Trigonometry the fundamental ratios and their relations, Trigonometric Analysis and applications to the right and oblique triangles, calculated by means of Logarithms.

Mathematics 1 is a prerequisite to all further courses in mathematics, to all courses in physics, engineering, astronomy.

2. *Spherical Trigonometry and Analytic Geometry.* 5 hours

Prerequisites for all higher courses in Mathematics, for all courses in physics, engineering, and astronomy.

3. *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, physics above 1 and 2, astronomy above 1.

4. *Differential and Integral Calculus.* 5 hours

5. *Differential Equations.* 3 hours

A first course in Differential Equations based upon

Murray's Differential Equations or some text of the same grade.

Prerequisites are Courses 1 to 4.

6. *Definite Integrals.* 3 hours

A lecture course making a careful study of the principles of definite integrals, fundamental notion of a function, its continuity, the definite integral a function of its limits, differentiation of definite integral, double integrals, methods of approximation.

Prerequisites are courses 1 to 4.

7. *Advanced Calculus.* 3 hours

A continuation of Courses 3 and 4 with an introduction to the Theory of Functions. Courses 5, 6, 7 continue the work of Courses 3 and 4, giving a more complete treatment made possible by maturity of student and added time.

Prerequisites are Courses 1 to 4.

8. *Elliptic Integrals.* 3 hours

A careful study of the fundamental principles of Elliptic Integrals with applications.

Prerequisites are Courses 1 to 4.

9. *Theory of Equations.*

An extension of the course in Mathematics 1, with a study of determinants. Lectures, readings, and text.

Prerequisites are Courses 1 to 4.

10. *Advanced Algebra.* 3 hours

Based on Bocher's Higher Algebra and lectures.

Prerequisites are Courses 1 to 4 and 9.

11. *Projective Geometry.* 3 hours
A first course based on the works of Cremona, Von Staudt, and others. Readings, lectures.
12. *Analytic Geometry of Three Dimensions.* 3 hours
A course based on Salmon, and reference in readings to other texts.
13. *Higher Plane Curves.* 3 hours
Salmon, readings, lectures.
14. *Vector Analysis.* 3 hours
Gibbs-Wilson with lectures.
15. *Differential Geometry.* 3 hours
16. *Differential Geometry.* 3 hours
Continuation of Course 15.
17. *Theory of Functions of Complex Variable.* 3 hours
Lectures with readings in, Osgood, Goursat, Picard, Jordan, Harkness and Morley and other courses in Analysis.
18. *Algebraic Functions.* 3 hours
A continuation of Course 17 with reference to Appell et Goursat, Fonctions Algebriques. Lectures and readings.
19. *Elliptic Functions.* 3 hours
Lectures and readings.
20. *Definition and Representation of Functions.* 3 hours
A course showing the methods of defining functions such as the Trigonometric, exponential and logarithmic functions on the basis of Function Theory and a study of the necessary and sufficient conditions for the representation of functions by power series, Fourier Series, etc.

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| 21. | <i>Analytic Differential Equations.</i> | 3 hours |
| 22. | <i>Analytic Differential Equations.</i>
Continuation of Course 21. | 3 hours |
| 23. | <i>Series.</i> | 3 hours |
| 24. | <i>Fourier Series and Integrals.</i>
Development and applications. | 3 hours |
| 25. | <i>Theory of Numbers.</i>
Lectures and readings. | 3 hours |
| 26. | <i>Theory of Numbers.</i>
Continuation of Course 25. | 3 hours |
| 27. | <i>Partial Differential Equations.</i> | 3 hours |

Astronomy.

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| 1. | <i>Descriptive Astronomy.</i> | 3 hours. |
| | Prerequisites are Mathematics 1 and 2. Mathematics 3 and 4 are desirable. Physics 1 and 2. Elementary courses in chemistry and geology are helpful. Text, Moulton. | |
| 2. | <i>Spherical and Practical Astronomy.</i> | 3 hours |
| | Use of instruments and necessary formulae of computation. | |
| 3. | <i>Celestial Mechanics.</i> | 3 hours |
| | Elementary Principles, Two Body Problem. Prerequisites are Mathematics 1 to 5 and a careful knowledge of the principles of elementary physics. Analytic Mechanics. | |
| 4. | <i>Celestial Mechanics.</i> | 3 hours |
| | Continuation of Course 3. Three Body Problem. Computation of orbits. Perturbations. | |

Department of Biology.

Associate Professor A. O. Weese.

1. *Zoology.* 5 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 more types in each phylum and a more superficial examination of closely related organisms. A study of typical metazoan tissues and a survey of the embryology of the chick are included. Laboratory work 3h.
2. *Botany.* 5 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.
3. *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. Special attention is given to recent developments in ontogeny.
Prerequisite, Course 1 or its equivalent. Laboratory work, 2h.
4. *Vertebrate Embryology.* 5 hours
A continuation of Course 3, in which especial attention is given to the embryology of the chick. Practical work in the preparation of slides for study. Reconstruction methods, etc. Laboratory work 3h.

5. *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.
Prerequisite, Course 1 or its equivalent. Laboratory work 3h.
6. *Histology.* 5 hours
A continuation of Course 5.
7. *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. Prerequisite, Course 1 or its equivalent. Laboratory work 3h.
8. *Entomology.* 5 hours
A continuation of Course 7.
9. *General Ecology.* 5 hours
A study of the factors which make up the home of the organism. Response of the organism to its home. Adaptation and the origin of new forms. Regional relations of plant and animal life. Prerequisite, Courses 1 and 2 or their equivalent. Field work 2h. Laboratory work 1h.
10. *Comparative Anatomy.* 5 hours
The detailed study of the anatomy of the cat, the study of the brain of the sheep, and the comparative study of other animals including man. Prerequisite, Course 1. Laboratory work 3h.

11. *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. Prerequisite, Chemistry 1. Laboratory work 1h.
12. *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. Prerequisite, Courses 1 and 2 or their equivalent.
13. *Sanitary Biology.* 2 hours
Required of all senior civil engineers. Water supply algae and bacteria; sedimentation, filtration and other methods of water purification in relation to these organisms. Sanitary examination of water; the bacterial flora of sewage. Problems in sanitary housing, etc. Laboratory work 1h.
14. *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.
15. *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. Prerequisite, Courses 1, 2, or 14.

16 and 17. *Advanced work* along the lines indicated by the above introductory courses may be elected by students having the proper preparation. Details must be arranged in consultation with the professor in charge.

18 and 19. *Thesis* for students whose major has been elected in this department, or research in biology for graduates.

Department of Chemistry.

Professor John D. 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, 1h.
2. *Inorganic Chemistry.* 5 hours
Course 2 is a continuation of Course 1, but the time will be mainly spent on the metallic elements, their metallurgy, salts, etc. Prerequisite, Chemistry 1. Laboratory work, 2h.
3. *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

- 14 and 15. *Advanced Work for Individual Students.*
16 and 17. *Thesis.* 5 hours

Department of Geology.

Professor Charles T. 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.

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. *Physiography.* 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, land-masses. 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.

4. *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 5. Elementary chemistry is required, but may be taken along with the course.

5. *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. Prerequisite, Course 4.

6. *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. An understanding of chemistry is necessary as the work proceeds.

7. *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. Elementary chemistry and mineralogy, as well as either geology 1-2, or 9 are prerequisites.

8. *Economic Geology.* 5 hours
Continuation of Course 7.

9. *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. Prerequisite, elementary chemistry. Physics is also desirable.

10. *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 9.

11. *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 9.

12. *Petrology.*

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. Prerequisite, Geology 4-5, or 6.

13. *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 features and drawing all reasonable inferences therefrom. 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 9.

14. *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. Prerequisite, elementary chemistry. Physics is also desirable.

15. *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.

16. *Geologic Seminaire.* 2 to 5 hours

The departmental library is a depository for Federal Geological 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 14. For majors in geology, and juniors and seniors from other departments.

17. *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 Physics.

Professor Vernon A. Suydam.

1. *General Physics.* 5 hours

Mechanics, heat and sound, with lecture demonstrations, text book and laboratory work. Open to all students. Laboratory work, two hours.

2. *General Physics.* 5 hours

Electricity and magnetism, light and radioactivity, with lecture demonstrations, text book and laboratory work. Open to all students. Laboratory work, two hours.

3. *Electricity and Magnetism.* 3 hours

An advanced course of lectures for students in physics and electrical engineering. Prerequisites: Physics 1 and 2, Mathematics 5 and 6.

4. *Electrical Measurements.* 2 hours

A laboratory course in exact electrical measurements designed to accompany course 3. Prerequisites: Physics 1 and 2, Mathematics 5 and 6.

5. *Electrical Measurements.* 3 hours

A continuation of Course 4. This course takes up

the measurement of the more complex electrical and magnetic quantities. Elective for all students who have completed Courses 3 and 4.

6. *Heat.* 3 hours
An advanced course for students of physics and engineering. Prerequisites: Physics 1 and 2.
7. *Light.* 3 hours
An advanced course for students majoring in physics. Prerequisites: Physics 1 and 2.
8. *High Temperature Measurements.* 2 hours
A course designed to cover recent developments in the theory and practice of high temperature measurements, with special emphasis on practical applications in the industries. Prerequisites: Physics 1 and 2.
9. *Analytical Mechanics.* 5 hours
This course is intended to meet the needs of students in all engineering courses. Prerequisites: Physics 1 and 2. Mathematics 5 and 6.
10. *Theoretical Mechanics.* 3 hours
An advanced course of lectures taking up the mathematical treatment of the subject. Generalized coordinates, Hamilton's principle, principle of least action, Lagrange's equations, etc. Prerequisites: Physics 1 and 2. Mathematics 5 and 6.
11. *Thermodynamics.* 3 hours
A special course in the theory and principles underlying steam engines and gas engines of various types. Designed for students in physics and engineering. Prerequisites: Physics 1 and 2. Mathematics 5 and 6.

12. *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. This work will continue throughout the year and shall constitute a thesis for graduation.

Department of Civil Engineering.

Professor Ralph M. Barton.

1. *Freehand Drawing and Elements of Mechanical Drawing.* 2 hours

Drawing from objects, shading and construction; also reference to perspective. First six weeks. Use of drawing instruments and lettering. Drawing from objects. Simple projection.

2. *Descriptive Geometry.* 2 hours

The descriptive geometry of projections, intersection and developments. Prerequisite: 1.

4. *Land and Topographic Surveying.* 3 hours

The theory and practice of land surveying, including the computation of areas, dividing land and determining heights and distances and in making surveys of farms. Map drawing from student's field notes. Prerequisite: 1 and Mathematics 3.

5. *Construction.* 2 hours

Lectures covering the history of engineering the development of building construction, architectural history and a study of the materials of construction.

6. *Construction.* 2 hours

Lectures planned to give the student a general view of the various branches of civil engineering. The lectures cover the subjects of masonry construction in stone and brick foundations for bridges and buildings, water supply and sewage disposal, development and transmission of water power and the history of bridge construction.

7. *Stereotomy.* 3 hours

Problems in stone cutting, including plans for piers, culverts and arches. Isometric drawings and linear perspective. Prerequisite: 1 and 2.

8. *Engineering Inspection.* 2 hours

During vacation between Sophomore and Junior years each student in Civil Engineering is required to inspect some engineering work and prepare a report thereon. A brief description of the work or structure that the student desires to inspect must be presented to the Professor of Civil Engineering before July 15, and after approval the report thereon must be submitted on or before September 15. These reports will contain such drawings, photographs and computations as each case may demand, and their length will usually be from twenty to thirty pages of letter paper.

9. *Strength of Materials.* 3 hours

The elasticity and strength of timber, brick, stone and metals. Theory of beams, columns and shafts, with the solution of many practical prob-

lems. Prerequisite: Physics 11 and 12, Mathematics 5 and 6.

10. *Hydraulics.* 3 hours
Hydrostatics and theoretical hydraulics. The flow of water through orifices, weirs, tubes, pipes and channels. Prerequisite: Physics 1 and 2, Mathematics 5 and 6.
11. *Graphic Statics.* 2 hours
Analysis of stresses in roof trusses by the force polygon. Application of the equilibrium polygon in beams and girders. Prerequisite: Physics 11 and 12.
12. *Roofs and Bridges.* 3 hours
The theory and computation of stresses in roof and bridge trusses under dead, live and wind loads. Locomotive-wheel loads on plate girders and bridge trusses. Prerequisite: 11.
13. *Roads and Pavements.* 2 hours
The location, construction and maintenance of roads and pavements. Prerequisite: 5 and 6.
14. *Railroad Surveying.* 3 hours
Reconnaissance, preliminary and local methods, with theory of curves and turnouts. Location of a line with preparation of profiles and maps. Computation of earth work and estimates of cost. Prerequisite: 2, 3 and 4.
15. *Bridge Design.* 3 hours
Lectures and drawing exercises. The design of girders and trusses. Prerequisite: 9 and 12.

16. *Bridges and Dams.* 3 hours
Higher structures, including continuous draw, cantilever and suspension bridges, also metallic arches. The theory and design of masonry walls, dams and arches. Prerequisite: 15.
17. *Hydraulic Engineering.* 3 hours
Systems of water supply, including purification systems, reservoirs, pipe lines, pumping plants. The design of a water supply distribution system. Water power. Irrigation. Prerequisite: 10.
18. *Sanitary Engineering.* 3 hours
Systems of sewerage and method of sewage treatment and disposal. House drainage. Prerequisite: 17.
19. *Railroads.* 2 hours
The construction of the road bed, including ballast, cross-ties, rails, switches, culverts and other details. Maintenance of way, and the elements of railroad operations. Visits of inspection with written reports. Prerequisite: 14.
20. *Railroads.* 2 hours
Lectures on the economics of railroad location, the arrangement of yards, stations and terminals, train resistance, the application of electricity to the operation of railroads.
21. *Steel Buildings.* 2 hours
Design of roof trusses and three hinged arches. Mill building construction. Prerequisite: 9 and 12.

22. *Cement and Concrete.* 2 hours

The manufacture, properties, and testing of hydraulic cement, mortar and concrete. Reinforced concrete buildings, arches and other structures; theory of reinforced concrete. Prerequisite: 9 and 15.

23. *Engineering Contracts and Specifications.* 2 hours

The law of contracts as applied to engineering work, including the preparation of engineering specifications.

24. *Thesis for Degree of B. S. in Civil Engineering.* 5 hours

Candidates for the degree of B. S. in Civil Engineering select the subject of their thesis in the first semester of the Senior year. Advice is given in regard to the plan of the work, and references to literature are indicated. Reports concerning the progress of the investigations are made at intervals during the second semester. The thesis is regarded as a part of the final examinations of the course.

Department of Electrical Engineering.

Professor Vernon A. Suydam.

1. *Direct Current Machinery.* 3 hours

A study of the laws of the electric and magnetic circuits. The design, construction and operation of direct current machinery.

2. *Direct Current Machinery.* 3 hours
A continuation of Course 1.
3. *Direct Current Laboratory.* 2 hours
A laboratory course to accompany Course 1. It comprises the calibration and use of direct current measuring instruments, tests of dynamos, motors and accessory apparatus.
4. *Direct Current Laboratory.* 2 hours
A continuation of Course 1.
5. *Alternating Current Machinery.* 3 hours
The design, construction and operation of single-phase alternating current generators, motors and accessory apparatus.
6. *Alternating Current Machinery.* 3 hours
The design, construction and operation of poly-phase generators, motors, rotary-converters, and control apparatus. A study of the transformer, and the various systems of connecting transformers, generators and motors. Three-wire, three-phase systems; three-wire, two-phase systems, etc.
7. *Alternating Current Laboratory.* 2 hours
The calibration and use of alternating current measuring instruments. Testing and operating alternating current generators, motors, transformers and accessory apparatus.
8. *Alternating Current Laboratory.* 2 hours
Determination of efficiencies and losses in alternating current machinery. Operation of poly-phase generators and motors. Tests on systems of phase connections.

9. *Dynamo Design.* 1 hour
This course calls for the calculation and design of a direct current generator or motor.
10. *Dynamo Design.* 1 hour
A continuation of Course 9.
11. *Electrical Installation.* 3 hours
The design of electrical power plants for city public service, isolated plants, and electric railways. Complete reports with calculations and drawings.
12. *Electrical Applications.* 5 hours
A study of illumination and photometry with laboratory work. Electrochemistry: primary and storage batteries, electrolysis and electroplating, electric furnaces, with laboratory exercises. Methods of insulation with tests.
13. *Electrical Applications.* 5 hours
A continuation of Course 12. Transmission and distribution of electrical energy. Location of faults. Design and construction of switchboards.
14. *Machine Design.* 3 hours
The relative motions of machine parts, belting, gears, cams, chains, etc.
15. *Electrochemistry.* 3 hours
16. *Thesis.* 5 hours
A thesis is required for graduation and must be started at the beginning of the second semester of the senior year. It may be research, a design of an electrical machine, or a test of electrical apparatus.

Shop Work.

Mr. A. K. Leupold.

1. *Elementary Shop Work.* 3 hours
Bench and lathe work in wood.
2. *Lathe Work in Metals.* 2 hours
Turning, boring and thread cutting.
3. *Elementary Forge Work.* 2 hours
Forging, welding, tempering and brazing.
4. *Advanced Pattern Making and Foundry Practice.* 2 hours
Building up patterns and core boxes.

Department of Library Science.

Associate Professor Della J. 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.

3. *Advanced Course.* 2 hours

Open to students who have completed Library 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.

Department of Music.

VOCAL.

Miss McFie.

Preparatory Course.

Principles of breathing, tone production, study of vowels and simple intervals; formation of scales; training of ear and sight reading; theory of music; elementary harmony; general exercises for tone placing. Abt's *Singing Tutor*, Book 1, and easy songs.

Vocal 1. 1 hour

Advanced combination of scales and general exercises; vocal studies selected from Abt's *Singing Tutor*, Book 2; Bondoldi, Concones' *Fifty Lessons*; duets and solos.

Vocal 2. 1 hour

Continuation of Vocal 1.

Vocal 3. 2 hours

Vocal studies continued, based on Spicker's *Masterpieces of Vocalization*, Books 1, 2, and 3; Concones' forty lessons; solos and duets of medium difficulty by standard composers.

Vocal 4. 2 hours
Continuation of Vocal 3.

Vocal 5. 3 hours
General exercises for fluency and tone coloring and vocal studies continued; Sieber's Advanced Exercises, Book 1 and 2; Concert Songs; German Lieder, studying the works of Fesca, Lassen, Jensen, Grieg and others the easier oratorio and operatic arias.

Vocal 6. 3 hours
Continuation of Vocal 5.
Exercises, Book 1 and 2; Concert Songs; German

Vocal 7. 3 hours
General exercises and vocal studies. Advanced German Lieder, studying the works of Schubert, Schumann, Beethoven, Brahms and others. Study of the operas and oratorios.

Vocal 8. 3 hours
Continuation of Vocal 7.

Choral Work.

A thorough course in choral work, including glee club, choir and church music is offered to the whole school and is required in the department of music.

Piano

E. Stanley Seder, B. A., Instructor

The following outline of courses will give an idea of the work covered in the Piano Department.

Each course requires usually a year's time, but pupils will be advanced as fast as their work warrants.

First Grade—

Instruction in correct position, and in use of fingers and hand for correct touch; exercise for independence of fingers; scales, major and minor in octaves; varying rhythms; parallel and contrary motion. Studies by Le-Couppé, Duvernoy, Gurlitt, Koehler, Berens, Czerny and easy pieces by standard composers.

Second Grade—

Exercises for correct wrist motion; scales in thirds and sixths; arpeggios; chord playing; octaves begun. Studies selected from Loeschorn, Op. 242; Heller, Op. 46 & 47; Czerny, Op. 636 & 299; Krause, Trill-Studies, and pieces by standard composers.

Third Grade—

Octaves continued; scales in double thirds; special technical exercises suited to the student. Studies selected from Czerny, Op. 740; Rogers, Octave Studies; Cramer, Etudes; Bach, small preludes and fugues, and two voiced inventions. Standard classic and modern pieces by Mozart, Mendelssohn and Schumann.

Additional technical work; greater velocity in scales and arpeggios. Studies selected from Bach, three voiced invention; Clementi, gradus and Parnassum; Solo pieces by Beethoven, Schumann, Chopin, Liszt, Mendelssohn and modern composers.

Violin.

A graded course in violin work is also offered to

those interested, and the details of this department will be announced later.

Thorough training in orchestra work is given to all students who are capable of playing any orchestral instrument well enough to fulfill the entrance requirements. This training is given free of charge and is open to all students of the University, the only obligation being regular attendance at rehearsals.

Plans are under way for the complete reorganization of the Department of Music and a special bulletin, giving full details of the work of the department, will be issued later.

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 is 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

exercise will best sustain and improve the health of the student, 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 Junior, are required to take the course in Physical Training. Two 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 Junior, 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:

Physical Training 1. For Men. 1 hour

Course for beginners. Elementary exercises to correct slight body defects, also exercises to promote muscular tone, vigor, vitality and endurance. Dumb bell and Indian club drills, also elementary work on the apparatus. M. W. 3:30.

Physical Training 2. For Men. 1 hour

Continuation of Course 1. Advanced work on the apparatus, and a course in elementary mat work. M. W. 3:30.

Physical Training 3. For Women. 1 hour

Beginning course for women. Elementary exercises to correct slight body defects and exercises to promote tone, vigor, vitality and endurance. Marching, dumb bell, Indian club and wand drills with elementary work on the apparatus. T. Th. 3:30.

Physical Training 4. For Women. 1 hour

Continuation of Course 3. Advanced work on the apparatus. T. Th. 3:30.

SCHOOL OF EDUCATION.

Professor Charles E. Hodgins, Dean.

INTRODUCTION.

The purpose of the Courses in Education is to provide thorough professional instruction for teachers. The academic work is carried on with the University classes, the students of Education thus having the advantage of scholastic work with specialists in the various departments, of ample apparatus and equipment; of the library, of lectures, of literary societies, and of all privileges incident to participation in University life.

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; from ethics, and from 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 a well-equipped and up-to-date High School. There is a

decided advantage in observing work where there are several teachers of each grade. Visits are made under the direction of the Instructor in charge.

Graduates of the Preparatory School and students who have otherwise satisfied the College Entrance Requirements of the University, may be admitted to the Courses in Education; and after satisfactorily completing them, will be granted a diploma. This will entitle the holder to the three years' professional certificate issued by the State Board of Education and renewable without examination, *provided* all the preparatory or high school work required by the State Board has been completed, no substitution being allowed for physiology and civics.

Those students who take the work in Education subsequent to one or more years of the college course will receive in addition to the professional diploma, a certificate from the University testifying to their collegiate standing. If the courses in Education are taken subsequent to the Junior college year, the degree of Bachelor of Pedagogy may be conferred upon the student on the recommendation of the Dean of the School of Education.

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 Dean of the School of Education and the Schedule and Curriculum Committee, a combined course of study designed to prepare them for the profession they have chosen, subject to the requirements of the College.

General Science Course. The first year's course will

be the same as the first year in the School of Science. The next two years must include Biology 1, 2, 3 and 5; Physics 1 and 2; Geology 1, 2 and 6; and a minimum of 17 hours selected with the approval of the Head of the School.

DESCRIPTION OF COURSES IN THE SCHOOL OF EDUCATION.

Education.

1. *History of Education.* 4 hours

Education in the Orient, the ancient classical nations, and in Europe before and after the Reformation, including discussions of great educational leaders. Special consideration given to the present school systems of England, Germany and France. Reference texts: Parker's "History of Modern Elementary Education," Monroe and Painter.

Education in the United States.

Educational conditions in colonial, revolutionary, and reorganization periods. Study of leading educational institutions, educational extension and state systems, including the school system of New Mexico. The Montessori schools. Dexter's History of Education in the United States, reference text.

2. *School Management.* 4 hours

The fundamental laws of the school. The law evolving the organism. The organism executing the law. Influence of social combinations. School

incentives. School economy. Changed conception of the school. The school as a social center. Relation of the school to the community. Text: Sutton's School Management.

3. *Orthoëpy*. 3 hours

The purpose of the work in orthoëpy is to give a scientific basis for teaching the sounds of the language, an intelligent use of the dictionary, and the cultivation of the voice. The subject is viewed under the following topics: Vocal physiology as the basis for voice production; phonology; analysis and classification of vocal elements; diacritical marking; imperfections of English orthography; noted attempts at perfect phonetic representation; orthoëpic 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."

4. *Special Methods*. 4 hours

Geography. The scheme of concentration with geography as the center. What it includes as a science. 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.

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 interpretation. History in the grades. Use of biography. Historical reading for grades and comparison of text-books in history.

Physiology and Hygiene. The need of practical work in this important subject will be presented. Relation of health to the work of life. Study of physical defects in school children. School room hygiene. The necessity for adequate ventilation of the school room, and for rest and recreation. Suggestions for right living in the home. Discussion of tuberculosis, cause and effects, prevention and cure. Study of the work of "fresh air" schools and the general playground movement.

Child Study. Attention is given to different

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. Lectures, readings, discussions.

5. *Principles of Education.* 4 hours

In the general view of the subject, consideration is given to the nature and principles of education; the teaching process; analysis and synthesis; induction and deduction; empirical and scientific method; concentration; the educational value of apperception; the doctrine of interest; correlation; theory of the culture epochs, and the best literature on the subject of General Method. Reference texts: White's "Elements of Pedagogy," Thorndike's "Principles of Teaching," McMurray's "General Method."

6. *Grammar Review (Teachers' Course).* 4 hours

A Review course in Grammar for teachers is given, to conform to the requirements of the State Board of Education for the three years' professional certificate.

7. *Special Methods.* 4 hours

In this course application of the general principles is made, and steps pointed out in teaching the various 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 reading. Supplementary reading.

Language. Theories of language origin. Means of communication preceding language development. Relation of language to thought. How the child learns his vernacular. Methods of presenting language in the grades. Technical grammar.

Spelling and Penmanship will receive attention from the standpoint of Method.

Numbers. 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. Practical presentation of the important subjects of fractions and percentage.

8. *Psychology in Education. (Teachers' Course.)*

4 hours

Continuation of first semester's work. Course 1. or equivalent required for admission to this course. General operations of the mind—acquisition, cultivation of the acquisitive faculties; assimilation—conception, reasoning, imagining, willing; repro-

duction, or the creation and expression of thought and feeling in the physical, intellectual and moral life to the application of its principles in education, sociology and other subjects. Lectures and readings on psychic phenomena, and the power of suggestion as showing the relation of mind over body. Roark's Psychology in Education and other reference texts.

9. *Arithmetic Review. (Teachers' Course.)* 4 hours

A review course in Arithmetic for teachers is given to conform to the requirements of the State Board of Education for the three years' professional certificate.

EXTENSION DIVISION.

Professor C. E. Bonnett, Director.

DEPARTMENTS AND ACTIVITIES OF THE EXTENSION
DIVISION.

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 DEPARTMENT.

Courses Offered.

History of Education; Education in the United States; Principles of Education; Principles of Psychology; Elements of Economics; Civil Government; Elements of Sociology; Principles of Economics; American Government and Politics; Principles of Sociology; Money; Banking; Labor Problems; Employers' Associations; Public Finance; Municipal Government; Political Parties; Economic History of the United States; Greek History; Roman History; English History; American History; Preparatory English Composition; History of the Novel; The Poetry of the Nineteenth Century; Spanish Drama of the Nineteenth Century; Advanced Spanish Composition and Grammar; Elementary Greek; Anabasis; Attic Greek Prose; The Drama in Greece and Rome; Greek Oratory; Greek Philosophy; The Illiad; Elementary Latin; Caesar; Cicero; Sallust; Vergil; Latin Prose Composition; Advanced Latin Composition; General Biology; Elementary Physiology; Zoology; Botany; Chemistry; Mineralogy; Physiography; Economic Geology; General Physics; Shop Sketching; Reinforced Concrete Construction; College Algebra; Analytical Geometry; Plane and Spherical Trigonometry; Differential and Integral Calculus; and others on arrangement with the Professor in charge.

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. A minimum of four high school units must be presented in any case. It is the intention of the University to classify all the high schools of the state as soon as the information can be obtained, placing those offering four years of acceptable work on the accredited list for entrance to the College. For the present a tentative list of high schools giving four years' work is made out; some of these institutions have been inspected and others have furnished information on request. 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.

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.

High Schools in New Mexico offering a Four-Year Course:

Albuquerque.	Farmington.
Alamogordo.	E. Las Vegas.
Artesia.	Portales.
Aztec.	Raton.
Carlsbad.	Roswell.
Carrizozo.	Santa Fe.
Clayton.	Santa Rosa.
Clovis.	Tucumcari.
Deming.	

The requirements of the Preparatory Department of the University of New Mexico are 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 one semester each of any two of the following subjects: Chemistry, Physiology, Botany, Zoology, Physical Geography.

1 unit.

The $5\frac{1}{2}$ elective units may be chosen from the list of subjects offered in the Preparatory Department.

DESCRIPTION OF COURSES OFFERED IN THE PREPARATORY DEPARTMENT.

English.

Miss Alexander.

The completion of the College Entrance Requirements in English and a general survey of English Literature, binding together the classics read in the High School course.

1 unit. 5 hours

Mathematics.

Professor Barton.

A₁. *Beginners Course in Algebra.*

Covering the requirement of the College Entrance Board for the first course in Algebra. Slaughter & Lennes Elementary Course in Algebra.

$\frac{1}{2}$ unit. 5 hours.

A₂. *Continuation of Course A.*

Covering the requirement of the College Entrance Board for Advanced Algebra. Slaughter & Lennes Advanced Course in Algebra. $\frac{1}{2}$ unit. 3 hours

B₁. *Plane Geometry.*

Complete. Pettue—Plane Geometry.

$\frac{1}{2}$ unit. 5 hours

B₂. *Solid Geometry.*

Complete. Wells, Essentials of Solid Geometry.

$\frac{1}{2}$ unit. 2 hours

History.

Miss Dean, Professor Bonnett.

A. *History.*

Ancient History, throughout the year.

1 unit. 5 hours

B₁. *History.*

History of New Mexico.

$\frac{1}{2}$ unit. 5 hours

B₂. *History.*

Economic History of the United States.

$\frac{1}{2}$ unit. 5 hours

Latin.

Professor Mitchell.

A. *Beginning Latin and Caesar.*

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 constructions 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. 1 unit. 6 hours

B. *Cicero and Composition.*

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. 1 unit. 3 hours

C. *Vergil.*

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. 1 unit. 4 hours

German.

Professor Morley.

A. *Elementary German.*

Grammar and translation. Conversation begun. Memorizing simple German verse. Texts: Bierwirth's "Beginning German", Hewett's "German

Reader", and "Germelshausen". 1 unit. 5 hours

B. *Second Year German.*

Conversation. Reports on current events in German, and oral narration based on short stories. A few lyrics and ballads memorized. Composition, Thomas's "German Grammar" and "Wilhelm Tell" and "Minna von Barnhelm".

1 unit. 5 hours

Spanish.

Professor Morley.

A. *Elementary Spanish.*

Hill's and Ford's "Spanish Grammar"; Hill's "Spanish Tales for Beginners". "Zaragueta", Ta-boada's "Cuentos Alegres". Writing from dictation and practice in speaking. 1 unit. 5 hours

B. *Second Year Spanish.*

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 Suplicio", plays by Echeragay, Moratin, etc. Morley's "Spanish Ballads." 1 unit. 3 hours

French.

Miss Parsons.

A. *French.*

This course does not differ from the beginners' Course (1 and 2) described under the heading

"Elementary French" — see Department of French.
1 unit. 5 hours

B. *French.*

See Courses 3 and 4, Department of French.
Hours of credit as explained above. 1 unit. 5 hours

Physics.

Professor Suydam.

- A. 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.
1 unit. 5 hours

Biology.

Associate Professor Weese.

A₁. *Zoology.*

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.

$\frac{1}{2}$ unit. 5 hours

A₂. *Botany.*

An elementary consideration of the structure, evolution and classification of plants; the elementary relations of the plant to its surroundings. Laboratory work, 2 hours. $\frac{1}{2}$ unit. 5 hours

Geology.

Professor Kirk.

A. *Physical Geography.*

See Course 3 under department of geology.

1 unit. 5 hours

Shop Work.

Mr. Leupold.

A. *Shop Work.*

Five hours per week of bench work and work on the lathe in wood and iron. One hour lecture and four hours' work in the shop each week.

1 unit. 2½ hours

Mechanical Drawing.

Professor Barton.

A₁. *Mechanical Drawing.*

Five hours per week in the use of drawing instruments, lettering, geometrical and free hand drawing. One hour lecture and four hours drawing each week.

½ unit. 2½ hours

A₂. *Mechanical Drawing.*Continuation of Course A₁. ½ unit. 2½ hours

Students

THE COLLEGE.

Graduate Students.

Harsch, Rose M. Albuquerque

Seniors.

✓ Boldt, Ira V. Albuquerque
Bright, Mary W. Albuquerque
✓ Doran, Edmund W. Albuquerque
✓ Harkness, Leslie M. Superior, Wis.
✓ Higgins, Matthias Albuquerque
✓ Higgins, William J. Albuquerque
✓ James, Helen D. Las Cruces
✓ Leupold, Arno K. Deming
✓ Roberts, Cherange S. Albuquerque
✓ Seder, E. Stanley Albuquerque
✓ Seder, Florence M. Albuquerque
✓ Singleton, B. Clay Shelbyville, Mo.

Juniors.

✓ Alexander, Lucie B. Rushville, Ill.
✓ Calkins, Fred M. Albuquerque
✓ Cooper, Mary M. Roswell
✓ Eminons, John J. Albuquerque
✓ Menaul, Paul L. Albuquerque
✓ Nichols, James C. San Marcial

Sophomores.

✓ Arnot, Jean L. Albuquerque

✓ Balcomb, Kenneth C.	Albuquerque
✓ Bateman, Howard S.	Albuquerque
✓ Bright, Thornton F.	Albuquerque
✓ Dieckmann, Paul	Albuquerque
✓ Gaines, Princa C.	Georgetown, Ky.
✓ Gouin, Walter F.	Silver City
✓ Hall, Ernest W.	Albuquerque
✓ Hartman, Treasure	El Paso, Tex.
✓ Hunt, Albert S.	Albuquerque
✓ Lackey, Lawrence B.	Loving
✓ Lapraik, John A.	Albuquerque
✓ Littrell, Isaac P.	Dawson
✓ McFie, Amelia	Santa Fe
✓ McKowen, Ruth	Baton Rouge, La.
✓ Newman, Nelson F.	Manila, P. I.
✓ Probert, William H.	Albuquerque

Freshmen.

✓ Abrams, David B.	Aztec
✓ Armstrong, Anna L.	Roswell
✓ Arnot, William	Albuquerque
✓ Baker, Nealy F.	Ft. Sumner
✓ Baldwin, Mary E.	Elephant Butte
✓ Bixler, M. Allene	Albuquerque
✓ Brashear, William R.	St. Louis, Mo.
✓ Boldt, Irene A.	Albuquerque
✓ Butler, George L.	Farmington
✓ Claiborne, George R.	Indianapolis, Ind.
✓ Cox, Anne E.	Clovis
✓ Dunlap, Erastus T.	Portales
✓ Espinosa, Rosalina	Albuquerque
✓ Fortney, Daphne H.	Albuquerque
✓ Fortney, Thelma E.	Albuquerque

✓ Frank, Harry McLean	Albuquerque
✓ Fullerton, Howard A.	Philadelphia, Pa.
✓ Gass, Gordon F.	Albuquerque
✓ Greenfield, Cora	Dexter
✓ Hesselden, Louis G.	Albuquerque
✓ Higgins, Marie S.	Albuquerque
✓ Holland, Louise	Roswell
✓ Leach, Pearl	Portales
✓ Lee, Chester A.	Albuquerque
✓ Livingstone, Howard E.	Albuquerque
✓ McCanna, Joseph E.	Albuquerque
✓ McCanna, Ray	Albuquerque
✓ Murphy, Le Claire	Rushville, Ill.
✓ Olds, Earl P.	Georgetown, S. D.
✓ Pinney, George L.	Albuquerque
✓ Riley, Mortimer	Kansas City, Kans.
✓ Sellers, Harold	Albuquerque
✓ Sheets, G. Grace	Albuquerque
✓ Shields, Hastings M.	Dawson
✓ Smith, Irene	Portales
✓ Shufflebarger, Frank	Albuquerque
✓ Walker, Isabel	Santa Fe
✓ Thomas, Olive	Alamogordo

SPECIAL.

✓ Brown, Oscar B.	Albuquerque
✓ Butt, Paul	Albuquerque
✓ Carlisle, Hugh A.	Albuquerque
✓ Frazey, Joe	Albuquerque
✓ Leeds, Blair	Albuquerque
✓ Mahon, William L.	Jacksonville, Fla.
✓ Parke, Carolyn S.	El Paso, Tex.
✓ Swayne, S. Arthur	Albuquerque

✓ Walker, George Albuquerque.

DEPARTMENT OF EDUCATION.

✓ Craig, Jessie Roswell
 ✓ Harris, Barbara Albuquerque
 ✓ McCollum, Laura Albuquerque
 ✓ Mobley, Jean Albuquerque
 ✓ Reeves, Fern Las Cruces
 ✓ Safford, Dorothy Santa Fe
 ✓ Wilkinson, Laura Albuquerque

PREPARATORY DEPARTMENT.

✓ Bowers, Vernice Albuquerque
 ✓ Brown, Everitt F. Espanola
 ✓ Craig, Reginald S. St. Louis, Mo.
 ✓ Cushman, Robt. A. St. Louis, Mo.
 ✓ Eastham, Maraquita Dawson
 ✓ Eldodt, Joseph Espanola
 ✓ Gallagher, Edward J. Brooklyn, N. Y.
 ✓ Heald, Joseph Albuquerque
 ✓ Hfeld, Lester R. Albuquerque
 ✓ Kapple, Neil D. Albuquerque
 ✓ Lee, Floyd W. Albuquerque
 ✓ Loudon, Robt. E. Albuquerque
 ✓ Lowber, Louise Albuquerque
 ✓ McCallister, Leroy W. Deming
 ✓ Polk, James K. Cooks Springs, Ala.
 ✓ Shields, Adelaide Dawson
 ✓ Simms, Elizabeth Albuquerque
 ✓ Stowell, Marjorie Albuquerque

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