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VOL. IV

APRIL 1, 1910

No. 2

UNIVERSITY OF NEVADA
REGISTER



TWENTY-SECOND ANNUAL NUMBER

PUBLISHED QUARTERLY BY THE UNIVERSITY OF NEVADA
RENO, NEVADA

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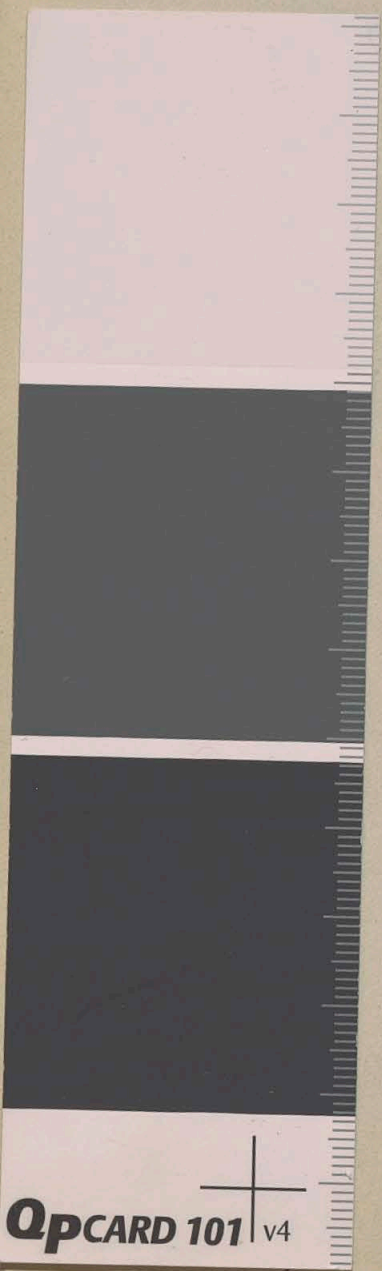
UNIVERSITY OF NEVADA

For the Year 1909-1910

WITH ANNOUNCEMENTS FOR THE YEAR 1910-1911

TWENTY-SECOND ANNUAL NUMBER

PUBLISHED QUARTERLY
BY THE
UNIVERSITY OF NEVADA
RENO, NEVADA



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OFFICE OF THE
BOARD OF REGENTS, UNIVERSITY OF NEVADA,
RENO, NEVADA, April 1, 1910.

To His Excellency, DENVER S. DICKERSON, *Acting Governor of the
State of Nevada.*

SIR: The Regents of the University of Nevada have the honor to submit herewith the Annual Register of the University for the year 1909-1910, containing the courses of study, general information, the membership of the Faculty, and the enrollment of the students, as required by the Act of the Legislature approved March 6, 1901.

By the Board of Regents: JOHN SUNDERLAND,
Chairman.
GEORGE H. TAYLOR, *Secretary.*

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

ADMINISTRATIVE COMMITTEES

Student Affairs for Men.....	LEWERS, BROWN, TRUE, McCLURE, CARPENTER
Student Affairs for Women.....	Miss BARDENWERPER, Miss MEIGHAN, Mrs. KAYE
Athletics.....	KENNEDY, SCRUGHAM, McCLURE
Public Exercises.....	DOTEN, BOARDMAN, LAYMAN, Miss LEWERS, Mrs. WOOD
Literary Contests.....	Miss WIER, HASEMAN, PAINE
Public Health.....	MACK, Mrs. KAYE, JOHNSTONE
Delinquent Scholarship.....	YOUNG ¹ , FRANDSEN ¹ , M. ADAMS, MARTIN, ORDAHL
Military Affairs.....	McCLURE, KNIGHT, JONES

ACADEMIC COMMITTEES

Group Electives.....	Miss DE LAGUNA, CHURCH, HASEMAN
Admission and Advanced Standing.....	HILL, SMITH, HARTMAN
Registration.....	FRANDSEN ¹ , YOUNG ¹ , M. ADAMS, MARTIN, ORDAHL
Graduation and Thesis.....	SCRUGHAM, ORDAHL, THOMPSON
Schedule and Examinations.....	BOARDMAN, HOWE, THOMPSON
University Publications.....	CHURCH, HILL, JACOBSON
Library.....	LAYMAN, CHURCH, Miss WIER, JACOBSON, ORDAHL
Graduate Courses.....	R. ADAMS, CHURCH, HARTMAN
Tutorial Committee.....	MARTIN, BOARDMAN, HASEMAN, JONES, GOUGH, CHATFIELD, PAINE, KNIGHT, CARPENTER, ROSS

¹Absent in Europe on leave.

The President is "ex officio" member of all Standing Committees.

UNIVERSITY FACULTY

OFFICERS OF INSTRUCTION AND ADMINISTRATION

With the exception of the President, the names of all professors and officers in the first group whose appointments antedate April, 1907, are arranged in order of appointment to rank above that of instructor. The names of all other professors, associate professors, assistant professors, instructors, assistants, and officers are arranged in their respective groups according to order of appointment to present rank.

JOSEPH EDWARD STUBBS

President of the University, Professor of Elementary and International Law

Instructor in Greek and Latin, Ohio Wesleyan University, 1872-75; B.A., Ohio Wesleyan University, 1873; M.A., 1876; Superintendent of Schools, Ashland, Ohio, 1880-86; President Baldwin University, Ohio, 1886-94; Honorary D.D., German Wallace College, 1890; President Ohio College Association, 1891-92; President of the University of Nevada, 1894-; Professor of Psychology and Ethics, 1894-95; Professor of Political Science and Ethics, 1895-1904; Professor of Elementary and International Law and Greek, 1904-; President Association of American Agricultural Colleges and Experiment Stations, 1899-1900; LL.D., Ohio Wesleyan University, 1905.

ROBERT LEWERS

Vice-President, Professor of Political Economy, and Teacher of Commercial Subjects

Teacher, Public School, Mill Station, Nevada, 1882-83; Sutro, Nevada, 1884-85; Dayton, Nevada, 1886-89; Registrar, 1890-1906; Professor of Political Economy and Principal of the Commercial School, University of Nevada, 1890-.

RICHARD BROWN

Superintendent of Buildings and Grounds and Master of Lincoln Hall

Cutter in United States Mint, Carson City, 1889-1891; Superintendent of Department of Mechanical Engineering, University of Nevada, 1891-1899; Superintendent of Buildings and Grounds, University of Nevada, 1891-; Superintendent of University Dining Hall, University of Nevada, 1895-; Master of Lincoln Hall, University of Nevada, 1896-1905; Master of Lincoln Hall, University of Nevada, 1906-.

THOMAS W. COWGILL

Emeritus Professor of the English Language and Literature

A.B., Harvard University, 1883; Professor of English, Mt. Union College, Ohio, 1884-85; Professor of Greek and English, Kansas Wesleyan University, 1886-1890; Fellow in English, Vanderbilt University, 1887-88; A.M., Vanderbilt University, 1888; Teacher of Greek and Latin, St. John's School, Salina,

Kansas, 1890-91; Professor of History, Rhetoric, and English Literature, University of Nevada, 1891-97; Professor of the English Language and Literature, 1897-99; Professor Emeritus, 1899-.

HENRY THURTELL

Professor of Mathematics and Mechanics

B.S., Michigan Agricultural College, 1888; Instructor in Mathematics, Michigan Agricultural College, 1888-1890; Graduate Student in Mathematics, University of Michigan, winters of 1888-1891; Assistant Professor of Mathematics, Michigan Agricultural College, 1890-91; Professor of Mechanics and Mechanical Drawing, University of Nevada, 1891-97; Graduate Student in Mathematics, University of Chicago, summer quarter, 1895; Professor of Mathematics and Mechanics, University of Nevada, 1897-; Dean of the Faculty, 1900-05; State Engineer of Nevada, 1905-07; Member State Railroad Commission, 1907-.

JAMES EDWARD CHURCH, JR.

Professor of the Latin Language and Literature

Teacher District Schools, Ogemaw County, Michigan, 1885-86; Principal, Public School, Birch Run, Michigan, 1887-88; A.B., University of Michigan, 1892; Instructor in Latin and German, University of Nevada, 1892-94; Head of the Department of Latin, 1892-; Assistant Professor of Latin, 1894-95; Associate Professor of Latin, 1895-96; Professor of Latin, 1896- (absent on leave, 1898-1901); Graduate Student, Comparative Philology, University of Michigan, 1898-99; Ph.D. (Classical Philology, Archæology, and Education), Munich, 1901; Student, Archæology and Art, Italy and Greece, 1901.

LAURA DE LAGUNA

Professor of Modern Languages

Instructor in English, Mills Seminary, California, 1888-89; Instructor in French and English, Oakland Seminary, California, 1890-91; B.A., Leland Stanford Junior University, 1894; Student Romance Languages, New York, 1894-95; Student Romance Languages, Rome, Paris, 1895-96; Instructor in Modern Languages, University of Nevada, 1896-99; Assistant Professor of Modern Languages, 1899-1901; Associate Professor of Modern Languages, 1901-1906; Professor of Modern Languages, 1907-.

JEANNE ELIZABETH WIER

Professor of History

Teacher, Public Schools, Rockwell, Iowa, 1889-1892; B.Di., Iowa State Normal School, 1893; Assistant Principal, High School, Heppner, Oregon, 1893-95; Student, Leland Stanford Junior University, 1896; Acting Assistant Professor of History, University of Nevada, 1899-1901; B.A. (History), Leland Stanford Junior University, 1901; Associate Professor of History, University of Nevada, 1901-06; Secretary Nevada Historical Society, 1904-; Professor of History, 1907-.

PETER FRANDBSEN

Professor of Biology

B.A., University of Nevada, 1895; Teacher, Public School, Silver Creek, Nevada, 1895-96; A.B., Harvard University, 1898; A.M., 1899; Tutor and

Assistant in Zoology, Harvard University, 1898-99; Graduate Student, Harvard University, 1899-1900; Assistant in Zoology, Harvard University and Radcliffe College, 1899-1900; Assistant Professor of Zoology and Bacteriology, University of Nevada, 1900-02; Associate Professor of Zoology and Bacteriology, 1902-03; Professor of Zoology and Bacteriology, 1903-06; Professor of Biology, 1906-.

PATRICK BEVERIDGE KENNEDY

Professor of Botany, Horticulture, and Forestry

Associate, Ontario Agricultural College, 1892; B.S.A., Toronto University, 1894; Assistant Chemist, Ontario Agricultural College, 1895; Ph.D., Cornell University, 1899; Laborer, Division of Agrostology, United States Department of Agriculture, Washington, D. C., 1899; Assistant in Agrostology, Division of Agrostology, 1899; Expert and Agent in charge of Experimental Work, Division of Agrostology, 1900; Botanist and Horticulturist, Nevada Agricultural Experiment Station, 1900-; Associate Professor of Botany and Horticulture, University of Nevada, 1900-02; Professor of Botany, Horticulture, and Forestry, 1902-.

GEORGE J. YOUNG

Professor of Mining and Metallurgy

B.S., College of Mining, University of California, 1899; Analytical Assistant, Mining Department, University of California, 1899-1900; Student of Economic Deposits, and Mining and Metallurgical Practice in the Field during summer months, 1900, Bodie District, California; 1901, in Utah, Colorado, California; 1902, in Utah and Montana; 1903-04, in Nevada and California; Assistant Professor of Metallurgy, University of Nevada, 1900-02; in charge of Nevada State Mining Laboratory, 1900-; Member of American Institute of Mining Engineers, 1900-; Professor of Mining and Metallurgy, University of Nevada, 1902-.

SAMUEL BRADFORD DOTEN

Professor of Entomology

B.A., University of Nevada, 1898; Instructor in History and Mathematics, University of Nevada, 1898-1900; Entomologist and Meteorologist, Nevada Agricultural Experiment Station, 1900-05; Instructor in Mathematics and Entomology, 1900-02; Assistant Professor of Mathematics and Entomology, 1902-03; Assistant Professor of Entomology, Meteorology, and Mathematics, 1903-05; Principal of the University High School and Teacher of Mathematics, Consulting Entomologist, and Meteorologist, Nevada Agricultural Experiment Station, 1905-06; Entomologist, Experiment Station, and Professor of Entomology, 1906-.

ROMANZO ADAMS

Professor of Education and Sociology

Teacher, Public School, Bloomingdale, Wisconsin, 1886-87; Marshalltown, Iowa, 1887-88; B.Di., Iowa State Normal School, 1891; M.Di., Iowa State Normal School, 1892; Principal, Public School, Ireton, Iowa, 1892-94; Ph.B., University of Michigan, 1897; Ph.M., University of Michigan, 1897; Professor of Economics and Sociology and Principal of the Normal Department, Western College, Iowa, 1898-1900; Graduate Student, University of Chicago,

1900-02; Fellow in Sociology, University of Chicago, 1901-02; Ph.D. (Sociology and Philosophy), University of Chicago, 1904; President, Nevada State Teachers' Association, 1905-; Director, N. E. A., 1908; Professor of Education and Sociology, University of Nevada, 1902-.

GORDON HAINES TRUE

Professor of Agriculture and Animal Husbandry

B.S., University of Wisconsin, 1894; Instructor in Dairy Husbandry, Michigan Agricultural College, 1894-99; Professor of Animal Husbandry, University of Arizona, 1899-1903; Chairman Executive Committee, Arizona Agricultural Association, 1901-03; Professor of Agriculture and Animal Husbandry, University of Nevada, 1903-.

JAMES GRAVES SCRUGHAM

Professor of Mechanical Engineering

B.M.E., Kentucky State College, 1900; with Creaghead Engineering Company, Cincinnati, Ohio, 1900; Instructor in Physics and Drawing, High School, Fort Smith, Arkansas, 1901; Graduate Student, University of Michigan, summer, 1901; Director of Manual Training, High School, Highland Park, Chicago, 1901-03; with Metropolitan Elevated Railway, Chicago, 1902; Instructor in Mechanical Engineering, Kentucky State College, Summer School, 1903; Assistant Professor of Mechanical Engineering, University of Nevada, 1903-05; Member of International Electrical Congress, 1904; with Abner Doble Company, San Francisco, summer, 1905-06; Associate Professor of Mechanical Engineering, University of Nevada, 1905-06; M.E., Kentucky State University, 1906; Instructor in Mechanical Engineering, Summer School, University of Wisconsin, 1907; Inspector of Tests, Oregon Short Line Railroad, summer, 1908-09; Professor of Mechanical Engineering, University of Nevada, 1906-.

WILLIAM SIDNEY TANGIER SMITH

Professor of Geology and Mineralogy

B.L., University of California, 1890; Graduate Student, Johns Hopkins University, 1890-91, Ph.D., University of California, 1896; Professor of Mathematics and Natural Science, Occidental College, Los Angeles, 1894-95; Fellow in Mineralogy, University of California, 1895-97; Professor of Mathematics, State Normal School, Chico, California, 1897-98; Assistant in Chemistry, University of California, 1898; Assistant in Mineralogy, University of California, 1899-1900; Assistant Geologist, U. S. Geological Survey, 1900-07; Associate Professor of Geology and Mineralogy, University of Nevada, 1906-; Fellow, Geological Society of America; Fellow, American Association for the Advancement of Science; Professor of Geology and Mineralogy, University of Nevada, 1907-.

MAXWELL ADAMS

Professor of Chemistry

Graduate, State Normal School of West Virginia, 1888; Student in the State University of West Virginia, 1890-91; A.B. (Chemistry), Stanford University, 1895; A.M., 1896; Ph.D., University of Chicago, 1904; Assistant in Chemistry, Leland Stanford Junior University, 1895-97; Instructor in Chemistry, Leland Stanford Junior University, Summer School, 1897; Teacher of

Chemistry and Physics, State Normal School, Chico, California, 1897-1900; Instructor in Chemistry, University of Chicago, Extension Department, 1900-01; Director of Physical Science and Acting Vice-President, State Normal School, Chico, California, 1900-06; Consulting Chemist to Diamond Match Company, 1901-06; Fellow, American Association for the Advancement of Science; Professor of Chemistry, University of Nevada, 1906-.

HAYWARD H. HOWE

Professor, and Principal of the High School

Graduate of the Mount Pleasant (Iowa) High School and Normal Institute; Principal of the Auburn (California) High School, 1863-65; Principal of the Sacramento Grammar School, 1865-69; Principal, Gold Hill (Nevada) High School, 1869-1871; Principal of the Sacramento High School, 1871-72; Principal, Carson City High School, 1872-1906; Professor, and Principal of the High School, University of Nevada, 1906-.

WINFRED BERDELL MACK

Professor of Bacteriology and Veterinary Science

D.V.M., New York State Veterinary College, Cornell University, 1904; Fellow in Pathology and Bacteriology, Cornell University, 1904-1905; Assistant in Pathology and Bacteriology, Cornell University, 1905-06; Veterinarian and Bacteriologist, Nevada Agricultural Experiment Station, and Professor of Bacteriology and Veterinary Science, University of Nevada, 1907-; Director of State Hygienic Laboratory, 1909-.

HERBERT WYNFORD HILL

Professor of the English Language and Literature

B.L., University of California, 1900; Instructor in English, Utah State Agricultural College, 1900-03; Graduate Student and Reader, University of Chicago, June, 1903-June, 1904; Ph.M., University of Chicago, March, 1904; Fellow in English, University of Chicago, June, 1904-September, 1904; Instructor in English, University of Texas, 1904-06; Graduate Student, University of Chicago, June, 1905-September, 1905; Fellow in English, University of Chicago, June, 1906-September, 1907; Professor of the English Language and Literature, University of Nevada, 1907-.

JOSEPH DIEFFENBACH LAYMAN

Librarian

Teacher in Public Schools of California, 1881-83; B.L., University of California, 1888; First Assistant Librarian, University of California, 1888-1907; Librarian, University of Nevada, 1907-.

HORACE PRENTISS BOARDMAN

Professor of Civil Engineering

Rodman, U. S. Military Post, Fort Sheridan, Illinois, November, 1888-August, 1889; with Field Engineer Corps, World's Columbian Exposition, June, 1891-January, 1892; Instrumentman, Memphis Artesian Water Company, January-September, 1892; B.S. (Civil Engineer), University of Wisconsin, 1894; with Engineering Department Sanitary District of Chicago, June, 1894; on Topographic Surveys and in charge of Cement Testing Laboratory, June, 1894-December, 1896; miscellaneous engineering work, Chicago,

January-August, 1897; Assistant Engineer, Chicago and Alton Railway (Acting Bridge Engineer), August, 1897-August, 1901; Assistant Engineer, Bridge and Building Department, Chicago, Milwaukee and St. Paul Railway, August, 1901-March, 1904; Superintendent, Savage Construction Company (bridge substructure), 1904; Draftsman and Checker (bridge substructure design), Chicago, Milwaukee and St. Paul Railway Bridge and Building Department, January-August, 1905; Superintendent, Fitzsimmons & Connell Company (bridge substructure), August-December, 1905; Engineer and Superintendent, Savage Construction Company (concrete arches), 1906; Engineer in charge branch canal projects, Sanitary District of Chicago, January-August, 1907; Professor of Civil Engineering, University of Nevada, 1907-.

ERNEST WHITNEY MARTIN

Acting Professor of Latin and Greek

A.B., University of Chicago, 1900; A.M., Leland Stanford Junior University, 1902; Special Student in Latin, Buchtel College, 1891-95; Instructor in Latin and Greek, Clarinda Academy, Clarinda, Iowa, 1895-96; Principal of High School and Teacher of Classics, Clarinda, Iowa, 1896-98; U. S. A., Company M, I. V. I., serving in Philippine Islands, 1898-99; Student, University of Chicago, summer, 1896; summer, 1897; fall, winter, 1899-1900; Graduate Student, University of Chicago, spring, 1900; summer, 1904; Graduate Student, University of Berlin and American School of Classical Archaeology, Rome, 1900-01; Fellow in Latin, Leland Stanford Junior University, 1901-02; Instructor and Graduate Student in Latin and Greek, 1902-05; Assistant Professor of Latin, 1905-; Acting Professor of Latin and Greek, University of Nevada, 1908-.

LOWE ABEEL McCLURE

Professor of Military Science and Tactics; Director Physical Training for Men

Graduate, United States Military Academy, 1904; commissioned Second Lieutenant of Infantry, June 15, 1904; served with the 15th Infantry for two years in the Island of Mindanao, P. I., and three years with the same regiment in the United States; Professor of Military Science and Tactics, University of Nevada, 1909-.

LEON WILSON HARTMAN

Professor of Physics

B.S., Cornell University, 1898; A.M., 1899; Graduate Scholar in Physics, 1899; Assistant in Physics, 1900-01; Professor of Physics, Kansas Agricultural College, 1901-02; Frazer Fellow in Physics, University of Pennsylvania, 1902-03; Ph.D., 1903; Tyndale Fellow in Physics of the University of Pennsylvania, Göttingen, 1903-04; Instructor in Physics, Cornell University, 1904-05; Assistant Professor of Physics, University of Utah, 1905-06; Associate Professor of Physics, 1906-09; Professor of Physics, 1909; Fellow A. A. A. S., Am. Phys. Soc., Utah Academy of Science; Professor of Physics, University of Nevada, 1909-.

CARL ALFRED JACOBSON

Professor of Agricultural Chemistry

Teacher, Public Schools of Wisconsin, 1894-96; Carleton Academy, 1896-98; B.S., Carleton College, Northfield, Minnesota, 1903; Graduate Student, Johns

Hopkins University, Baltimore, Maryland, 1903-04; Europe, 1901-02; Instructor in Chemistry, York City High School, York, Pennsylvania, 1904-07; M.S. (*in absentia*), Carleton College, 1907; Ph.D., Johns Hopkins University, 1908 (Chemistry, Physical Chemistry and Physics); Fellow and Research Chemist, Rockefeller Institute for Medical Research, New York, 1908-09; Professor of Agricultural Chemistry, University of Nevada, and Chief Chemist, Nevada Agricultural Experiment Station, 1909-.

DWIGHT BRUNEL HUNTLEY

Acting Professor in Mining and Metallurgy

Ph.B., University of California, 1875; University of California, Graduate Student in Mining and Metallurgy, 1878; U. S. Geological Survey work, 1881-82; Mill Superintendent, Grand Central Mining Company, Tombstone, Arizona, 1883-86; Mine Superintendent, Carlisle Mining Company, New Mexico, 1886-87; Mine Superintendent, United States of Colombia, South America, 1888; Mine Manager, Iron Silver Mining Company, Leadville, Colorado, 1891; Manager, Morning Mining Company, Cœur d'Alene, Idaho, 1892-95; Manager, Tom Boy Mining Company, Telluride, Colorado, 1895-96; Manager, Delamar Mining Company Limited, Idaho, 1896-1901; Consulting Engineer, Matabele Reefs and Estates Company Limited, Rhodesia, South Africa, 1902-04; Acting Professor of Mining and Metallurgy, University of Nevada, 1909-.

ALBERT W. C. T. HERRE

Acting Professor of Biology

A.B., Stanford University, December, 1903; A.M., Stanford University, 1905; Imperial Museum, Vienna, Austria, 1907; Ph.D., Stanford University, 1909; Assistant Superintendent of Schools, Springfield, Illinois, 1890-1900; Assistant, U. S. Bureau of Fisheries, and Zoological Museum, Stanford University, 1903-04; Instructor in Biology, High School, San José, California, 1904; Acting Professor of Biology, University of Nevada, 1909-.

CHARLES HASEMAN

Associate Professor of Mathematics

A.B., Mathematics, Indiana University, 1903; Instructor of Mathematics, and Physics, High School, Elwood, Indiana, 1903-05; A.M., Mathematics, Indiana University, 1906; Assistant in Mathematics, Indiana University, 1905-06; Ph.D., Mathematics, University of Göttingen, 1907; Instructor in Mathematics, Indiana University, 1907-08; Assistant Professor of Mathematics, Indiana University, 1908-09; Associate Professor of Mathematics, University of Nevada, 1909-.

OSCAR P. JOHNSTONE

Associate Professor of Physiology and Hygiene, and Assistant in the State Hygienic Laboratory

Ph.B., College at Grinnell, Iowa, 1897; M.S., University of Iowa, 1902; M.D., Rush Medical College, 1905; Fellow in Chemistry, University of Iowa, 1900-01; Assistant in Physiology, Cornell University, 1901-03; Assistant in Physiology, Cornell University Summer School, 1903; Assistant in Pathology, Rush Medical College, 1903-04; Fellow in Pathology, Rush

Medical College, 1904-06; Professor of Pathology, University of Colorado, 1905-07; Substitute in Pathology, Rush Medical College, for Professor Ricketts, summer of 1907; for Professor LeCount, spring of 1908; Pathologist, Mercy Hospital, Pittsburg, Pennsylvania, 1908-09; Associate Professor of Physiology and Hygiene, University of Nevada, 1909-.

KATE BARDENWERPER

Assistant Professor of Domestic Science

Graduate, State Normal School, San José, California, 1880; Teacher, Public Schools, Carson City, Nevada, 1880-86; First Assistant, High School, Carson City, 1886-94; Critic Teacher in Training School, University of Nevada, 1894-99; Student, Leland Stanford Junior University, 1898-99; Student, University of California, 1900-01; B.S. (Domestic Arts), Armour Institute of Technology, Chicago, 1900; B.S. (Domestic Science), 1901; Instructor in Domestic Science, University of Nevada, 1904-05; Student, Summer School, University of California, 1902 and 1903; Assistant Professor of Domestic Science, University of Nevada, 1905-.

SANFORD CROSBY DINSMORE

Assistant Professor of Agricultural Chemistry, and in Charge Food and Drug Control

B.S., University of Maine, 1903; Assistant Chemist, Maine Agricultural Experiment Station, 1903-05; Chemist, Nevada Agricultural Experiment Station, 1905-; Assistant Professor of Agricultural Chemistry, University of Nevada, 1906-.

KATHERINE LEWERS

Assistant Professor of Freehand Drawing

Student, St. George's Art School, Glasgow, 1893-94; Supervisor of Drawing and Penmanship, Public Schools, Reno, 1894-97; Student with Howard Helmick, Washington, D. C., 1897-99; received prize scholarship New York School of Design, 1900; Graduate of New York School of Applied Design, 1902; Instructor in Freehand Drawing, University of Nevada, 1905-; Photographer, Nevada Agricultural Experiment Station, 1905-; Assistant Professor of Freehand Drawing, 1907-.

GEORGE ORDAHL

Assistant Professor of Psychology and Education

Principal, Public Schools, Merrillville, Indiana, 1900-01; Corvallis, Montana, 1901-03; A.B., University of Oregon, 1905; A.M., 1906; Fellow, Clark University, Worcester, Massachusetts, 1906-08; Ph.D., Clark University, 1908; Professor of Psychology and Education, Geneva College, Beaver Falls, Pennsylvania, 1908; Assistant Professor of Psychology and Education, University of Nevada, 1909-.

JAY ARNOLD CARPENTER

Assistant Professor of Mining and Metallurgy

B.S., Mining Engineering, University of Nevada, 1907; with the Nevada Douglas Copper Company, Yerington, Nevada, and the Tonopah Belmont Development Company, Tonopah, Nevada, 1907-08; Instructor in Mining

and Metallurgy, University of Nevada, 1908-10; Assistant Professor of Mining and Metallurgy, University of Nevada, 1910-.

J. CLAUDE JONES

Assistant Professor of Geology and Mineralogy; Curator of the Museum

A.B., University of Illinois, 1902; Instructor of Physics and Manual Training, Champaign High School, 1902-03; Instructor of Manual Training, Whiting High School, 1903-04; Assistant in Geology, University of Illinois, 1904-05; Instructor in Geology, University of Illinois, 1905-06; Graduate Student, University of Chicago, 1906-09; Research Assistant in Geology, University of Chicago, 1907-09; Instructor in Physiography, University of Kansas, summer term, 1907; Instructor in Physiography, University of Chicago, summer term, 1908; Member of the State Geological Survey of Illinois, 1906-09; Instructor in Geology and Mineralogy, University of Nevada, 1909-10; Curator of the Museum, University of Nevada, 1909-; Assistant Professor of Geology and Mineralogy, University of Nevada, 1910-.

CHARLES S. KNIGHT

Assistant Professor of Agronomy

B.S., Agriculture, University of Wisconsin, 1907; Assistant in Feed and Fertilizer Inspection, University of Wisconsin, July, 1907-January, 1908; Assistant in Agronomy, Kansas State Agricultural College, January, 1908-1909; Instructor in Agronomy, University of Nevada, 1909-10; Assistant Professor of Agronomy, University of Nevada, 1910-.

ALICE EUNICE ARMSTRONG

Assistant Librarian

Assistant Librarian, Fresno Free Public Library, June, 1896; Librarian, October, 1899-June, 1905; Acting Librarian, University of Nevada, 1905-07; Assistant Librarian, 1907-.

ACHILLES CALLOWAY GOUGH

Instructor in Mechanical Engineering

B.M.E., Kentucky State College, 1906; with H. F. Gough & Sons, Machine and Carriage Builders, Benton, Kentucky, 1893-1900 and 1902-04; with Fairbanks-Morse Company, Beloit, Wisconsin, summer, 1906-07; Instructor, Mechanical Engineering, Iowa State College, 1906-07; Instructor in Mechanical Engineering, University of Nevada, 1907-.

MRS. KATE CONGDON WOOD

Instructor in Vocal Music

Student, Northwestern Conservatory, Minnesota, 1891-92; studied voice with A. W. Porter at Minneapolis, 1892-95; solo work and private teaching, 1895-1904; Graduate, National School of Public School Music Methods, 1904; Supervisor of Music in High School and Grammar Schools of Elko, Nevada, 1904-06; Instructor in Vocal Music, University of Nevada, 1907-.

REUBEN CYRIL THOMPSON

Instructor in Latin

B.A., McMinnville College, 1899; B.A., Harvard University, 1901; M.A., Harvard, 1902; Instructor in Latin and History, High School, Boise City,

Idaho, 1902-05; Professor in Latin, State Normal School, Albion, Idaho, 1905-08; Instructor in History and Civics, Idaho State Summer Normals, 1907-08; Instructor in Latin and Greek, University of Nevada, 1908-.

AMOS ARTHUR HELLER

Instructor in Botany, Horticulture and Forestry

A.B., Franklin and Marshall College, 1892; A.M., 1897; Field Agent, U. S. Department of Agriculture, 1892; botanical explorations in Virginia, North Carolina, Texas, Hawaiian Islands, Idaho, 1893-96; Instructor in Botany, University of Minnesota, 1896-98; Chief of Vanderbilt Expedition of New York Botanical Garden to Porto Rico, 1898-99; in publishing business, Lancaster, Pennsylvania, 1900-01; botanical explorations in California, 1902-07; author of Catalogue of North American Plants, 3 editions; editor of *Mühlenbergia*, 1900-; author of 100 botanical papers; member of the Torrey Botanical Club of New York City, and of the Linnaean Society of Lancaster, Pennsylvania; Instructor in Botany, Horticulture, and Forestry, University of Nevada, 1908-.

GUSTAVUS SWIFT PAINE

Instructor in English

Ph.B., University of Chicago, August, 1908; Ph.M., University of Chicago, June, 1909; Instructor in English, University of Nevada, 1909-.

HELEN ANN MEIGHAN

Director Physical Training for Women

Graduate of High School, Mankato, Minnesota, 1893; Special Student, State Normal School, Mankato, Minnesota, 1894-97; Teacher in Public Schools with special work in Calisthenics, Duluth, Minnesota, 1898-1903; Principal of School and special work in Calisthenics, Missoula, Montana, 1903-05; special work in Physical Training under Max Aletzhaeuser of Leipzig, Germany; private pupil of Miss Anna Buttner, of Dr. Sargent's School, Harvard University; specialized in Physical Training, University of Minnesota; Special Teacher in Physical Training, Public Schools, Goldfield, Nevada, 1907-09; Director of Physical Training for Women, University of Nevada, 1909-.

NORMAN CHATFIELD

Instructor in Mechanical Engineering

Engineer with Market Street Railway Company, 1901-02; Engineer with Contra Costa Water Company, 1902-04; Instructor Mechanical Engineering, University of Nevada, 1909-.

ELIZA HENRIETTA OVERMAN

Assistant in Biology

B.S., General Science, University of Nevada, 1908; Graduate Student, 1908-09; Assistant in Biology, 1908-.

SILAS EARL ROSS

Assistant in Chemistry

B.S., Mining Engineering, University of Nevada, 1909; Assistant in Chemistry, University of Nevada, 1909-.

RALPH LYON HARTLEY

Assistant in Physics

A.B., University of Utah, 1909; Student Assistant in Physics, University of Utah, 1906-08; Student Instructor in Mathematics, University of Utah, 1908-09; Instructor in Physics, University of Nevada, 1909-.

DOROTHY ELIZABETH SINGER

Student Assistant in Latin

B.A., Liberal Arts, University of Nevada, 1909; Graduate Student, 1909-10; Student Assistant in Latin, 1909-.

MILES BRYCE KENNEDY

Assistant in Chemistry and in Food and Drug Control

B.S., Mining Engineering, University of Nevada, 1907; Assistant in Metallurgy, 1907-08; Assistant in Chemistry, 1908-.

LOUISE MARY SISSA

Assistant Registrar

House Mother and Intermediate Teacher, Bishop Whitaker's School for Girls, 1884-1892; Principal's Assistant and Secretary, Annie Wright Seminary, Tacoma, Washington, 1893-1901; House Mother, Rowland Hall, Salt Lake City, 1901-05; House Mother, Miss Head's School, Berkeley, California, 1905-06; Assistant Registrar, University of Nevada, 1906-.

CAROLYN M. BECKWITH

Secretary to the President

Assistant Office Secretary, 1902-03; Secretary to the President, 1904-.

MRS. A. E. KAYE

Mistress of Manzanita Hall

Mistress of Manzanita Hall, 1904-.

MRS. M. E. PORTER

Matron of University Hospital

Matron of University Hospital, 1907-.

AFFILIATED ORGANIZATIONS

THE STATE MINING LABORATORY

STAFF

JOSEPH EDWARD STUBBS.....	President
GEORGE J. YOUNG.....	In Charge
W. S. TANGIER SMITH.....	Geologist and Mineralogist
JAY ARNOLD CARPENTER.....	Assistant
J. CLAUDE JONES.....	Assistant
CAROLYN M. BECKWITH.....	Stenographer

Under an Act passed by the State Legislature, March 16, 1895, citizens of the State of Nevada may send ores and minerals to the State University and have them analyzed and assayed without cost. (Secs. 1402-1405, incl., Compiled Laws of Nevada.) The attention of the public is called to the fact that the law expressly states that only citizens of the State of Nevada may so send ores and minerals and that these must have been taken "from within the boundaries of the State of Nevada." This provision is observed as far as is practicable. When persons are known not to be citizens, or the material comes from without the confines of the State, such material is not examined, but is held subject to the wishes of the sender. The law further provides that the result of the analysis shall be given to the sender, together "with as near as possible an explanation of their (ores and minerals) uses and value in market, and there shall be kept at the State University a book of record, open for inspection, under such rules as may be made by the Regents, of all minerals, ores or other matters sent, together with the history of such minerals and other matters, stating the name of the person or persons from whom received, the district and county from which it came and all other matters that may be beneficial touching the same." In compliance with the above section, reports have been rendered, and a record book kept. In order to make reports as accurate as possible, it is suggested that citizens supply all information, as indicated in the above extract, that may have any influence in determining the value of an ore or mineral. Lack of sufficient data necessitates almost always general statements concerning value.

THE AGRICULTURAL EXPERIMENT STATION

THE BOARD OF CONTROL

The HON. JOHN SUNDERLAND (1907-1911) Chairman.....	Reno
The HON. CHAS. B. HENDERSON (1907-1911).....	Elko
The HON. A. A. CODD (1909-1913).....	Goldfield
The HON. J. J. SULLIVAN (1909-1911).....	Virginia City
The HON. FRANK WILLIAMS (1909-1913).....	Good Springs
Mr. GEORGE H. TAYLOR, Secretary.....	Reno

STAFF

JOSEPH EDWARD STUBBS, LL.D.....	Director
P. BEVERIDGE KENNEDY, Ph.D.....	Botanist, Horticulturist, Forester
GORDON HAINES TRUE, B.S.....	Agronomist
SAMUEL BRADFORD DOTEN, B.A.....	Entomologist
SANFORD CROSBY DINSMORE, B.S.....	State Inspector Foods and Drugs
WINFRED BERDELL MACK, D.V.M.....	Bacteriologist and Veterinarian
JAMES EDWARD CHURCH, JR., Ph.D.....	Cooperative Observer in Cli- matology and Meteorology
CARL JACOBSON, Ph.D.....	Station Chemist
CHARLES KNIGHT, B.S.....	Assistant Agronomist
AMOS ARTHUR HELLER, A.M.....	Assistant Botanist and Horticulturist
MILES BRYCE KENNEDY, B.A.....	Asst. State Inspector Foods and Drugs
THEODORE CLARK.....	Farm Superintendent
Mrs. THOMAS COWGILL.....	Librarian
CAROLYN M. BECKWITH.....	Stenographer

The Agricultural Experiment Station was organized in December, 1887, under the provisions of the "Hatch Act," approved March 2, 1887, whereby the General Government appropriated \$15,000 annually for the support of an Agricultural Experiment Station in each State and Territory of the Union.

The primary object of the Station is the promotion of agriculture along scientific lines by conducting researches on the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter and cheese, through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the

prevention of the rise of alkali; the economic relation of entomology to agriculture; in fact the solving of all problems pertaining to agriculture which are or may be of importance to this State.

The results of the work of the Station are made public through bulletins and reports, which are sent free to all residents of the State who desire them.

THE STATE HYGIENIC LABORATORY

WINFRED B. MACK..... Director
 OSCAR P. JOHNSTONE..... Pathologist and Bacteriologist

The State Hygienic Laboratory was organized during 1909, under the provisions of an Act of the Legislature approved March 25, 1909. The object of the laboratory is to provide facilities for the diagnosis of the infectious diseases and for research into the nature, cause, and methods for the control of such diseases. The services of the laboratory staff are available to the physicians, health officers, and health boards of the State for the diagnosis of certain communicable diseases. Advice and assistance will, on request, be rendered the sanitary officials in the control of outbreaks of infection and in securing sanitary supplies of milk and water.

The results of the work of the laboratory are made public from time to time through bulletins, circulars and annual reports, and will be sent free on request to residents of the State who desire them.

ASSOCIATION OF UNIVERSITY ALUMNI

President.....JOHN W. WRIGHT, '05
 Vice-President.....JAY A. CARPENTER, '07
 Secretary-Treasurer.....Mrs. FLORENCE HUMPHREY CHURCH, '02

Executive Committee

THE OFFICERS SCOTT JAMISON, '00

ASSOCIATION OF NORMAL ALUMNI

President.....Mrs. MARY SNOW THURTELL, '90
 Vice-President.....IRENE V. BROWN, '09
 Secretary-Treasurer.....Mrs. ESTELLA RHODES PIERSON, '93

UNIVERSITY ADDRESSES

SECOND SEMESTER, 1908-1909

May 21, 1909. Brief talks on the Public School Work of the State by Miss Grace L. Moon, Fallon; Mr. James V. Comerford, Virginia City; Mr. F. E. Howard, Elko; Mr. D. B. Billingshurst, Reno.

COMMENCEMENT, 1909

Annual Baccalaureate Sermon, Sunday, June 6, 1909, by Bishop Edwin Holt Hughes, Bishop of the Methodist Episcopal Church.

Annual Commencement Address, Wednesday, June 9, 1909, by Honorable Horace F. Bartine, Chairman of the Railroad Commission.

FIRST SEMESTER, 1909-1910

September 3, 1909. President Joseph E. Stubbs, Address of Welcome to Students and Faculty.

September 10, 1909. Miss Gabriella T. Stickney: "Our Responsibility."

September 17, 1909. Dr. J. E. Church: "A Quarter Century of Polar Exploration; Its Whence and Whither."

MACKAY DAY

OCTOBER 22, 1909

Remarks by Dr. P. B. Kennedy for the Special Athletic Committee.

Remarks by John W. Wright, President of the Alumni Association.

Remarks by Walter W. Anderson, President of the Associated Students.

Address, presenting the Athletic Field, the Training Quarters, the Grand Stand, and the Colonnade to the Regents of the University of Nevada, by Clarence Hungerford Mackay of New York.

Address of Acceptance by John Sunderland, Chairman of the Board of Regents.

Address on behalf of the Board of Regents by Charles B. Henderson.

Address by Professor C. L. Cory of the University of California.

Address on behalf of the Honorary Board of Visitors by Frank H. Norcross, Chief Justice of the Supreme Court.

Address for the State by Senator Francis G. Newlands.

Address by Professor E. Whitney Martin of Stanford University.

Address by Colonel George H. Harvey of New York.

GENERAL ASSEMBLIES

October 27, 28, 29, November 2, 3, 1909. Reverend Jenkin Lloyd Jones of Chicago: Subjects: "Browning," "Burns," "Dickens," "Victor Hugo," "Tolstoy"

December 3, 1909. Reverend F. M. Willis: "A District School Seventy-five Years Ago."

SECOND SEMESTER, 1909-1910

January 16, 1910. Convocation Sermon by Bishop Henry D. Robinson: Text, "Get thee up unto the top of Pisgah and lift thine eyes westward, and northward and southward and eastward and behold it with thine eyes, for thou shalt not go over this Jordan."

March 4, 1910. Dr. A. C. Herre: "Vienna and Stiermark"

March 11, 1910. President Joseph E. Stubbs: "A Week in Arizona."

March 18, 1910. Dr. George Ordahl: "The Passing of Culture."

ORGANIZATION AND ADMINISTRATION

FOUNDATION

The University of Nevada is the head of the educational system of the State of Nevada. It is the only institution of university or college grade and equipment within the State. The Constitution of Nevada declares that "the Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural, and moral improvement," and shall provide for "the establishment of a State University which shall embrace departments for agriculture, mechanic arts and mining." The University was first located at Elko by a law approved March 7, 1873, but was removed to Reno by an Act of the Legislature approved March 7, 1885, and was formally reopened March 31, 1886. Only a preparatory school was maintained at Elko. The University began with the academic year 1886-87.

The State Normal School was authorized by an Act of the Legislature approved February 7, 1887, and was established and opened for students in September, 1887.

COLLEGES AND SCHOOLS

The University maintains the following Colleges and Schools, which aim to meet the best ideals of modern University life and training:

- I. THE COLLEGE OF ARTS AND SCIENCE:
 1. The School of Liberal Arts.
 2. The School of General Science.
- II. THE COLLEGE OF AGRICULTURE:
 1. The School of Agriculture.
 2. The School of Domestic Science.
- III. THE COLLEGE OF ENGINEERING:
 1. The Mackay School of Mines.
 2. The School of Mechanical Engineering.
 3. The School of Civil Engineering.
- IV. THE STATE NORMAL SCHOOL.
- V. THE UNIVERSITY HIGH SCHOOL.

REGENTS

The general management and control of the University is vested in a Board of Regents. The five members constituting this board are elected by the people.

THE PRESIDENT

The President is the executive officer of the Board of Regents and of the Faculty of the University.

He shall be Chairman of the Academic Council and of the Executive Committee of the Academic Council, and ex officio member of all standing committees.

He shall be ex officio head of the faculty or faculties of any schools which may be organized by the Board of Regents.

He shall be the official medium of communication between the teaching force of the University and the Board of Regents, and between the students of the University and the Board of Regents.

He shall, subject to the approval of the Academic Council and Board of Regents, appoint the Executive and other standing committees designated as administrative and as academic and shall name the chairmen of such committees.

THE VICE-PRESIDENT

The Vice-President shall perform the functions of the President in his absence and such other duties of the University as may be assigned by the President and receive the approval of the Board of Regents, and shall be a member, ex officio, of all committees.

THE REGISTRAR

The Registrar shall be responsible for the care of the records of the students.

He shall be the official medium of communication between the students and the administrative and academic committees.

He shall prepare, subject to the approval of the President and the Executive Committee, all official publications of the University such as the Register, Bulletins, Directory, etc.

He shall have control of such clerical assistants as are provided for the preparation and care of the records of the academic work of the University, and shall conduct such a bureau of information as is necessary for the academic work of the University.

He shall be secretary of the Council and shall keep a record of its proceedings.

THE ACADEMIC COUNCIL

The Academic Council consists of the President of the University, all professors and associate professors, the Registrar, the Librarian, such assistant professors as have been upon the rolls of the Faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Regents, determine.

The Academic Council is vested with all of the powers and duties usually vested in the faculties of similar institutions.

All general University regulations, statutes, and rules as to the matters within the province of the Faculty, shall be initiated in and passed by the Academic Council, and shall be in force, subject to the power of disapproval in the Board of Regents and in the President of the University. However, no regulation, statute, or rule involving a change in the educational policy of the University in respect to the requirements of admission, the course of study, or the conditions of graduation, shall take effect as above until it shall have been submitted to the Board of Regents for their approval.

The Academic Council shall formulate the duties and control the policy of the several committees, excepting that appeals from the decisions of the several committees shall be made to the Executive Committee.

The Council shall recommend to the President of the University, and he to the Board of Regents, the candidates for graduation.

A majority of its members shall constitute a quorum of the Academic Council.

COMMITTEES

THE EXECUTIVE COMMITTEE

The Executive Committee shall consist of the President, the Vice-President, and five members of the Academic Council of the rank of Professor or Associate Professor. These members shall be appointed by the President of the University and approved by the Academic Council and the Board of Regents.

All executive acts of general importance, such as recommendations for appointments, promotions, and dismissals, for the creation of new departments or chairs, and for the abolition of departments or chairs, shall be submitted by the President to the Executive Committee for approval before they may be submitted to the Board of Regents for its action.

In all cases, in presenting such matters to the Board of

Regents, the President shall state whether or not they have the approval of the Executive Committee.

The Executive Committee shall advise the President concerning any other matters which he may choose to refer to it.

OTHER STANDING COMMITTEES

The other standing committees shall be grouped as follows:

Administrative—

1. Student Affairs.
 - a. For men.
 - b. For women.
2. Athletics.
3. Public Exercises.
4. Literary Contests.
5. Public Health.
6. Delinquent Scholarship.
7. Military Affairs.

Academic—

1. Group Electives.
2. Admission and Advanced Standing.
3. Registration.
4. Graduation and Theses.
5. Schedule of Recitations and Examinations.
6. University Publications.
7. Library.
8. Graduate Courses.
9. Tutorial Committee.

Standing committees shall be appointed annually by the President, subject to the approval of the Executive Committee and the Board of Regents, and shall enter upon their duties the first of January of each year.

SPECIAL COMMITTEES

Special committees may be appointed by the President of the University, to which the Academic Council may assign the consideration of any matter within its jurisdiction.

THE COLLEGE FACULTIES

The College Faculties shall have the directing of the educational policies in their respective colleges, and shall recommend to the Academic Council changes in the requirements of admission, the course of study, and the conditions of graduation.

ADVANTAGES AND EQUIPMENT

ADVANTAGES OF SITUATION

Reno, the seat of the University, is a thriving community of fifteen thousand inhabitants. It is situated in the beautiful Truckee Valley, at the junction of three railroads, namely, the Southern Pacific Railroad, a trunk line between the East and the West; the Virginia and Truckee Railway, and the Nevada-California-Oregon Railway. The imposing mountains which encircle the valley, the pure air and sunshine, give the town an enviable reputation for health and beauty. The numerous churches are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instruction and in their plans of work. The proximity of Reno to the famous Comstock Lode, the mines of Tonopah and Goldfield, and the copper mines of eastern Nevada, enables the School of Mines to offer a large amount of practical training in mining operations.

FUNDS

The endowments and appropriations on which the University has been founded and maintained are the following:

1. The donation of 21.15 acres of land by the Central Pacific Railroad, and the erection of a building in 1873-74 by the citizens of Elko at a cost of more than eighteen thousand dollars.
2. When the University was removed to Reno by an Act of the Legislature in 1885, the Board of County Commissioners of Washoe County paid to Elko County \$20,000, and to the Board of Regents \$5,000 to be expended in purchasing a site at Reno.
3. The fund derived from the Congressional Land Grant of July 2, 1862, the interest of which is included in the biennial appropriation.
4. Various appropriations by the State Legislature for buildings and other specified purposes.
5. The biennial appropriation by the State Legislature for the support of the University.
6. The Agricultural Experiment Station Funds, for research only, of \$26,000 a year—the Hatch Fund, \$15,000; the Adams Fund, for \$11,000.
7. The Morrill College Fund of \$40,000 a year for agricul-

ture and Mechanic Arts, apportioned to the College of Agriculture and the College of Engineering.

8. The gift of the farm to the University by the citizens of Washoe County for the benefit of the Agricultural Experiment Station. This farm consists of sixty acres of good land near the University and is entitled to ninety inches of water annually. It is worth now at least \$40,000.

BUILDINGS AND GROUNDS

The University Campus has an area of forty-nine acres. It is beautifully located on an eminence overlooking the city. There are fourteen buildings now in use.

Morrill Hall is a three-story brick building with a large basement. The Library occupies the entire basement. The administrative offices of the President of the University and the Department of Mathematics occupy the first floor. The Departments of Ancient Languages and History occupy the second floor. The Commercial Department and the Department of Drawing occupy the third floor.

Stewart Hall is also a three-story and basement structure. In the basement are the rooms of the Department of Domestic Science and the office of the Superintendent of Buildings and Grounds. The first floor is occupied by the Educational, Modern Language, and English Departments. The second floor is devoted to the use of the University High School. The third floor is occupied by the Station Laboratory of the Botanical Department, and by the Department of Civil Engineering.

Hatch Station is set aside almost wholly for the use of the Experiment Station, which is supported by the General Government for the purpose of original investigation in the various subjects related to scientific and practical agriculture. The first floor of Hatch Station is occupied by the Departments of Agriculture, Entomology, and Meteorology. The second floor is given to the Departments of Biology, Veterinary Science, Bacteriology, and the Hygienic Laboratory. The third floor is occupied as a general Biological Laboratory.

The Mackay Mining Building, the recent gift of Clarence H. Mackay, houses the Departments of Mining and Metallurgy, and of Geology and Mineralogy. It is a commodious two-story structure of the colonial style with two single-story wings in the rear. A court and a library occupy the space between the wings. The first floor contains the geological lecture room, office, and laboratory; the chemical laboratory, weighing rooms, library, and drafting room; the geological museum, assaying

laboratory, and metallurgical and mining laboratory. The second floor contains the mineralogical and research laboratories, mining lecture room and offices.

The ground floor of the Mechanical Building contains the machine shop, the blacksmith shop, and the boiler room. The machine shop is furnished with screw-cutting lathes, a polishing lathe, a shaper, a universal milling machine, a universal cutter grinder, bench vises, wet and dry emery wheels, alternating and direct-current dynamos, and a tool room equipped with small machine tools and experimental apparatus for the use of mechanical engineering students. The blacksmith shop has forges and the necessary tools. The second floor accommodates the wood-working shop. This shop is fitted up with a power jig saw, a band saw, a universal wood-working machine, wood lathes, and a universal trimmer. There are twenty-four benches and an equal number of lockers. Each locker contains a set of hand tools.

The Department of Physics occupies a substantial two-story brick building. The first floor contains the laboratories, balance room, darkrooms, storeroom and shop. The second floor contains the lecture room, the apparatus room, and the offices.

The Chemistry Building is a two-story, gray stone building, standing on the west side of the quadrangle. On the first floor are found the inorganic, qualitative and quantitative laboratories, a balance room, stock room, and the professor's private laboratory, which is equipped for electro-chemical work. The qualitative laboratory accommodates sixty-five students, and the quantitative, which is also used as an organic laboratory, accommodates thirty-six students. Both laboratories are supplied with hoods, gas, water, steam-evaporating pans, compressed air, and direct-current electricity. The chemical laboratory of the Agricultural Experiment Station occupies the south half of the second floor. This laboratory has been wholly remodeled and equipped for organic research. It contains four working desks supplied with gas, water, and steam, commodious hoods, motor-driven centrifuge, vacuum and compressed-air systems, electric ovens, etc. Adjoining this laboratory is an office for the research chemist, and one for the food and drug chemist. The second floor also contains a lecture room accommodating seventy persons, a grinding room, two stock rooms, a darkroom for photographic and polarimetric work, an office, and a department library. The basement is divided into two compartments, one being used as a furnace and combustion room, the other as an acid room. There is

need of an organic laboratory, a mechanical room and a distillation room. All the laboratories are heated by the central hot-water system.

The State Legislature, recognizing the importance of placing the benefits of the University within the reach of all the deserving young men and women of the State, authorized the building of two student halls, after the plan of such halls in use by students of the larger Eastern colleges, and appropriated thirty-five thousand dollars for the purpose. The first of these two buildings is known as Lincoln Hall. It is a tasteful and comfortable home for one hundred young men. The plans of Lincoln Hall were drawn after a careful study of the best modern college halls, and meet every requirement of a cultivated taste.

The second building, known as Manzanita Hall, is a large brick building with granite facings. Within the past year, the building has been doubled in size and many improvements made, with the result that today it is one of the finest college dormitories in the West. In the new part the rooms are arranged in suites of two—a study and a bedroom. The bedroom contains two single beds, two attractive dressers of oak or birdseye maple, a small table, and chairs. Each bedroom has two large closets. The study has a bookcase, a big leather-covered study table, and comfortable chairs. There are a few suites of three rooms, with two big bedrooms for four girls, and some with one large and one small room for three girls. The woodwork in all the rooms is stained dark-brown, and the walls are a lighter, but subdued, shade of the same color, toning in softly with the wood, making an admirable background for pictures and college pennants. There is a large recreation room, where the girls read and talk, play games, dance and sing, and a well-appointed drawing room, where the guests are received. The floors throughout the building are of maple. The building is well lighted, and comfortably heated from the central hot-water heating plant.

The Gymnasium is a modern structure 60 feet wide and 120 feet long. It is equipped both as an armory for the use of the Military Department and as a gymnasium for athletic training. The equipment is modern and ample for all college purposes. Convenient toilet rooms with hot and cold water and lockers for the use of all students are provided. The Gymnasium, on account of its convenience and size, is used as a hall for General Assembly and the more important University functions.

The home of the President is situated on the southeast corner

of the Campus. It is colonial in the general style of its architecture and is a fine, commodious home, an ornament to the University. It was built at a cost of \$9,418.70. The ground upon which the house is built was leased by the Regents of the University, but when the Legislature appropriates the money to pay for the cost of building the house becomes the property of the University.

Between the Gymnasium and Lincoln Hall is situated the University Hospital. This is a one-story brick building and contains six rooms. There are four wards—two upon the west for young men and two upon the east for young women. There is a convenient kitchen where the food for the patients is prepared. Students may have any physician whom they prefer.

THE MACKAY FIELD

The natural amphitheater on the Campus, which had been leased to the University for a number of years by the late Regent Evans, was purchased for the University by Mr. Clarence H. Mackay and provision made for its improvement. In order to make room for other branches of athletics, such as basket-ball and tennis, the Nevada Legislature of 1909 made provision for the purchase of additional land to the south of the old field, so that now about ten acres of land is being used for athletic purposes. The improvements donated by Mr. Mackay include a Training Quarters Building, situated on the east side of the field. This building has showers, baths, locker and dressing rooms, a committee room, and a lounging room. Directly opposite to this on the west bank are the bleachers and colonnade. The natural slope of the bank has been utilized so that the field closely resembles the stadium used at the ancient Olympian games. There are seventeen tiers of concrete, with a colonnade for a covered grandstand in the rear. The seating capacity is about two thousand.

Situated between these structures is a full-sized Rugby football field, surrounded by a quarter-mile track which has an arm extended to make provision for the 220-yard dash.

LIBRARIES AND LABORATORIES

The University Library is located in the basement of Morrill Hall. It contains seventeen thousand bound volumes, and several thousand pamphlets. The books have been selected with particular reference to the needs of the several departments of study; but, besides the works needed by special departments, there are many general works and reference vol-

umes of various kinds. The books are catalogued according to the Dewey Decimal Classification System. The reading room is supplied with daily and weekly papers, and with many of the best scientific and literary periodicals. The library is open from 7:50 a. m. to 4:50 p. m. on lecture days, and from 8 a. m. to 12 m. on Saturdays. Special provision is made for students doing thesis work. To the general public is extended the use of the library under such restrictions of the time for which a book may be withdrawn as are necessary to prevent interference with the work of the students.

The Agricultural Experiment Station Library, of nearly eighteen hundred bound volumes and a large number of pamphlets, is in the northern wing of Hatch Station. These volumes and pamphlets may be classified broadly as follows: Bulletins and Reports of the Experiment Stations of the various States, publications of the United States Department of Agriculture, general works on agriculture and related sciences, and on irrigation, and herd books of livestock associations. Many current agricultural periodicals are on the tables in the reading room. The library is catalogued and classified, and suited for ready reference. It is open daily, and, while intended primarily for the use of the Station Staff, it is also accessible to the public.

Mining Library—All reference books, text-books, technical journals, and works pertaining to geology and mineralogy, mining, metallurgy, and engineering are concentrated in one large study room which is conveniently located upon the ground floor of the building. This library is open at all times during the sessions.

Physical Laboratory—The work of the Physical Laboratory is carried on along four distinct lines, each with its separate rooms and its own special equipment. The general laboratory contains a laboratory for High-School Physics, with an equipment permitting a section of forty-eight students to work simultaneously on the same exercise; a Freshman and a Sophomore Laboratory for work in sound, light, magnetism, and electricity; and a shop. The equipment of the Freshman and Sophomore Laboratories, which is entirely new, consists of modern apparatus of approved design and substantial construction, suited for accurate physical measurements. The apparatus for the most important exercises has been duplicated, so that at present individual laboratory work is insisted upon for at least half of the

work. Aside from the main laboratories there is a separate room for experiments in heat; a weighing room, containing four Becker balances for general use; a darkroom; and a department library and reading room, which is also available for student use while writing up the laboratory exercises. The department shop contains a motor-driven lathe, with taper attachment, change gears for cutting metric threads, and all other accessories, hand tools for wood and metal work, including metric taps and dies, a small circular and linear dividing engine, and a direct-current dynamo with two armatures, furnishing current at various voltages. All of the laboratories are supplied with water, gas, and electricity.

Laboratory for Quantitative Analysis—This laboratory accommodates thirty-six students. It is equipped with gas, water, fume closets, steam closets, steam evaporators, drying ovens, etc. In connection with this is a balance room containing six sets of balances, and a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

Laboratory for Qualitative Analysis—This laboratory will accommodate sixty-five students, each one being provided with a locker and drawer for keeping apparatus. The laboratory is completely fitted with water, gas, and fume closets.

Experiment Station Laboratory—In this laboratory those students who are interested in agricultural work have an opportunity to pursue this work according to the methods adopted by the Association of American Agricultural Chemists.

General Biological Laboratory—During the past summer the biological laboratory was remodeled, enlarged and refurnished. There are thirty-five laboratory tables, each of which is provided with a microscope, reagent lockers, and six drawers fitted with combination locks. The tables have plate-glass tops, resting on rubber mats, so that they cannot be injured by stains or other chemicals. In addition to these there are a few operating tables with zinc tops, designed for operating demonstrations and dissections. The general equipment and supplies are kept in wall cases and cabinets, made of quarter-sawed oak and similar to the tables in design. The department now has thirty-seven first-class combined microscopes, four of which are equipped with high-power lenses and all other accessories for the most delicate and precise microscopical work. Among the larger and more expensive instruments are an electric

incubator, a Lillie paraffine oven, an electric centrifuge, and sterilizer. An important adjunct to both the class and the laboratory work is a combined microscope and lantern-projection apparatus, which enables the instructor to project microscopic objects as well as photographic illustrations, magnifying up to 3,000 diameters, upon the screen, where it can be observed by the whole class at one time.

Histological and Embryological Laboratory—This laboratory is equipped with all the necessary apparatus for doing general or research work in these subjects.

Bacteriological Laboratory—This laboratory has also been recently fitted up with new apparatus for research in Pathology and Bacteriology. It is used chiefly for Experiment Station work, and for the work of the State Hygienic Laboratory, but is available for demonstration purposes for students taking elementary Bacteriology, and can accommodate a few students who desire to do more advanced work.

Station Botanical Laboratory—This laboratory is also used by advanced classes in Botany and Horticulture.

Entomological Laboratory—This is for the use of the Station Entomologist and agricultural students or others doing special work in Entomology. It contains also the Photographic Laboratory of the Experiment Station.

Geological and Mineralogical Laboratories—The Department of Geology and Mineralogy is provided with reference collections illustrating the minerals, rocks, and fossils, and with class collections for study and determination. The Mineralogical Laboratory is arranged, for the present, for the accommodation of single sections of forty students. There is, in addition, a laboratory fitted up for microscopic work, equipped with petrographical microscopes and the necessary accessories. It has also a set of mineral thin sections cut in definite direction, and a collection of rock sections with many representatives of each of the chief types, together with many sections illustrating special types. A separate grinding room is provided with apparatus for making thin sections of rocks and minerals. Blowpipe and other chemical work is also provided for.

A lantern with a growing collection of slides furnishes additional illustrative material for lecture work.

Chemical Laboratory of the Mackay School of Mines—The Chemical Laboratory is fully equipped with the usual desks, hoods, hot-plates, and air-baths. Each desk is provided with

gas, compressed air, and electricity. Steam connections are provided for drying coils and still. Electric air-baths and drying pans are provided for overnight work. A small electric-driven, five-jar, Abbe mill is in use for fine grinding tests. Four four-gallon slime agitators, driven by small electric motor, are used for slime tests. A direct connected, electric-driven exhaust fan draws the air from the hood in the parting room and from this laboratory. Next semester it is proposed to install a complete electrolytic outfit for lead, copper, and other determinations. The laboratory will accommodate sixteen students.

Weighing Room—Connected with both the Chemical Laboratory and the parting room is the weighing room. Substantial piers carry the balances. Both chemical and bead balances for assaying work are placed in this room. The equipment consists of two analytical balances and seven bead balances. Different makes of balances are in use, such as the Becker, the Ainsworth, the Keller, the Oertling, and the Staudinger.

Parting Room—The cleaning of beads, parting, and ignitions are provided for in a separate room, convenient to the weighing room and Assaying Laboratory. The room is equipped with cement tables, a hood, and a set of bullion rolls.

Assaying Laboratory—The preparation of crucible charges and all furnace work is done in the Assaying Laboratory. This laboratory is equipped with six Thompson pulp scales, three double-muffle, soft-coal furnaces, three large oil fusion furnaces, four small oil-fired muffles, two coke muffle furnaces, and one coke fusion furnace. Crude oil and distillate are used for the oil furnaces, compressed air being used to spray the oil. The laboratory will accommodate twenty students.

Metallurgical and Mining Laboratory—The metallurgical equipment includes the following machinery, all of commercial size: a three-stamp battery and feeder, amalgamating plates on steel table, a four-foot Union concentrator, a Wilfley concentrating table, a two-compartment jig, classifiers, and sizing cones, a 4x8 rock-breaker of the Sturtevant type, 10x14 crushing rolls, a 2x6 Columbian separator, an automatic sampler, belt elevators, a cyanide plant of one-ton capacity, a 3x8 roasting furnace, an eighteen-inch amalgamating pan, a sample crusher, and sample grinder.

The mining machinery equipment consists of an Ingersoll-Sergeant drill and air compressor with a complete tool-sharpening kit and set of drills.

The equipment of the laboratory is so arranged as to admit of the following processes being carried out on a working scale: dry crushing and automatic sampling of an ore to any mesh coarser than a 40 screen; coarse and fine concentration of an ore after crushing with either stamp battery or rolls; wet crushing, plate amalgamation and concentration of gold ores; cyanide treatment of either gold or silver ores after stamping or from the rolls—the roasting furnace enabling ores to be given a chloridizing or an oxidizing roasting before treatment in the vats—and, finally, pan amalgamation of silver ores. All the machines are so arranged as to admit of independent working or working in conjunction. A 15-h.p. and a 5-h.p. induction motor drive all the machinery through separate line shafts.

Steam and Gas Laboratory—The equipment includes two steam engines, one gas engine, three steam-engine indicators, one gas-engine indicator, Alden dynamometer, planimeters, speed indicators, gages, Crosby gage-tester, calorimeter, gas analysis outfit, pyrometer, and other pieces of apparatus essential in making tests on steam and gas machinery.

Electrical Laboratory—The equipment consists of one direct and one alternating-current generator, one direct and three alternating-current motors, three transformers, one Queen portable testing set, four voltmeters, six ammeters, three wattmeters, three multipliers, rheostats, and numerous other smaller pieces of apparatus.

Civil Engineering Laboratory—During 1909 a 200,000-pound capacity Riehle testing machine was purchased and installed for the testing of materials and to illustrate to the students of engineering the principles of the strength and elasticity of materials used in engineering work. This machine is automatic and autographic and up-to-date in every respect.

SCIENTIFIC COLLECTIONS

The northwest wing of the Mackay Building is devoted to a museum, in which the collections of the departments connected with the School of Mines are housed and exhibited. Besides general material, these include collections illustrating the mineral resources of the State of Nevada, the geology of several of its mining camps, and systematic collections of rocks, minerals, and ores. In addition the nucleus of collections illustrating the different types of mining machinery and appliances and the treatments of ores have been installed. The collections are being built up and enlarged as rapidly as possible, and

are being arranged and labeled so as to furnish all information possible to the general public as well as to the students. During the year the museum has received much additional material, especially from the Mining Congress at Goldfield, the Cole collection presented by Mr. Mackay, and the loan collection of the rocks and ores of Goldfield loaned by the United States Geological Survey.

GIFTS TO THE UNIVERSITY

The gift by Clarence H. Mackay of six acres at a cost of three thousand dollars, and the fitting up of this land, at a cost of fifteen thousand dollars, into a first-class athletic field.

The building of a training quarters and a grandstand and colonnade by Mr. Mackay, at a cost of thirty thousand dollars.

The gift of one thousand dollars by the Student Body for the fitting up of two out-of-door basket-ball courts.

The subscription by the Alumni of one thousand dollars for two tennis courts.

NEEDS OF THE UNIVERSITY

1. Among other University needs is a library and administration building to cost with furnishings \$250,000. The present space allotted to the Library, the basement of Morrill Hall, is inadequate. New books are rapidly accumulating, and during the last two years seven new book-stacks have been required. It is difficult to see where any more stacks can be placed in the present stackroom to meet the needs of the constant growth. Hence a new and larger abode for the Library is needed. Moreover, there should be a building especially designed and adapted to the needs of a library, prominent among which is a sufficient amount of light, which is not obtained in the basement. The book-stacks are necessarily large, and hence shut off the light from the windows, the Librarian frequently being obliged to use the light of a match in order to find a book. The new Library building should provide for the admission of light from above, through skylights, which would insure the diffusion of a good light throughout the Library. Another fact contributing to the need of a new building is the danger of fire in the present library. If the books were burned, some of them could not be replaced.

2. A biological building and museum for the use of the Department of Biology, the museum wing of this building to be used for the scientific collections in natural history so that they can be made available to students and to the public.

3. Scholarships. The friends of education, and particularly the friends of the University, are urged to consider the founding of scholarships. There are many unusually competent young men and young women in the State whose subsequent life would be made eminently useful to their generation by means of the discipline of a university course, but whose financial resources are inadequate to obtain it for them. The University is straining every nerve to provide for such cases, but its ability to do so is far less than the worthy demands made upon it. No means of perpetuating a healthful and elevating influence is at all comparable to that which provides a permanent fund, the proceeds of which shall be devoted to educating the young through the growing centuries.

4. An endowment of professorships in the University. The sum of \$50,000 will provide an adequate endowment for a chair in the University, the interest of this endowment fund going to pay the salary of the professor of the special department.

LECTURES AND FACULTY ASSOCIATIONS

PUBLIC LECTURES

A general assembly of all the students of the University and all the members of the Faculty is held every Friday. This is the lecture service of the week, and is under the special direction of the President of the University. These weekly lectures are given by members of the Faculty and by men and women of special eminence in particular fields of study, travel, and business enterprise.

Lectures on various subjects by members of the Faculty of the University and Staff of the Agricultural Experiment Station will be given at different points in the State as arrangements can be made between the local communities and the University.

THE UNIVERSITY SCIENTIFIC ASSOCIATION

The University Scientific Association is an organization of those members of the Faculty who are interested in scientific research. The purpose of the organization is to broaden the outlook and to come in touch with scientific progress outside of one's own sphere of activity. Biweekly meetings are held in the lecture room of the Mackay Building. Two reports are presented and discussed at each meeting. The subjects of the reports are either the results of individual research, or articles of general interest that have recently appeared in the scientific journals. The meetings are open for visitors. Advanced students find the meetings of considerable value.

STUDENT AFFAIRS

GOVERNMENT OF THE STUDENTS

In the government of the University the largest liberty consistent with good work, good order, and good character is given the students. There is no formulated code of laws governing their conduct. Their habits of life are expected to be such as to promote daily cultivation of high moral character. They are expected in all their relations to each other and to the University to observe the usages of good society without requiring special regulations for that purpose. They are expected to be punctual and regular in their attendance upon all University exercises. The State provides its bounty for the earnest and industrious student. The indolent or the unworthy will not be retained in the University. Young men and young women who do not intend to give themselves up to the very highest demand of University life are advised to remain at home or go elsewhere.

STUDENT ORGANIZATIONS AND PERIODICALS

The students have established fraternities, literary societies, the Crucible Club for engineering students, a Young Women's Christian Association, and the Associated Students, who direct athletics and debating and promote concert of action on the part of the students.

The students publish a weekly newspaper known as the *Student Record*. Each Junior class publishes an edition of the Junior annual known as the *Artemisia*.

ATHLETICS

The University is provided with an excellent gymnasium, and two directors, one for the men and the other for the women, are in charge of the Department of Physical Training.

Excellent facilities are provided on the Mackay Athletic Field for all branches of athletics. Rugby football, baseball, track, basket-ball, and tennis are the games of special prominence at the present time. The policy of the University is to foster the spirit of honor and gentlemanliness in athletics, to suppress evil tendencies, and to see to it that athletic sports shall not encroach upon the claims of scholarship.

To represent the University of Nevada in any public contest, a student must conform to the following rules:

SECTION I

RULE 1. He must be an amateur.

RULE 2. If a candidate for a degree, he must attend regularly all the exercises of his class.

RULE 3. If a special student, he must give evidence of good faith regarding his intention to remain a full year in the University. He must also take courses amounting to not less than fifteen hours a week and attend regularly the exercises in such courses.

RULE 4. Like other students, he must maintain satisfactory standing in his class. A student who does not maintain a satisfactory standing in one school of the University cannot, by entering another, alter his status as regards these rules.

RULE 5. He must not receive any pecuniary benefit whatsoever from his connection with any athletic team.

RULE 6. He must pass a physical examination satisfactory to the Committee on Athletics.

SECTION II

RULE 1. Schedules for all games must be submitted to the Faculty Committee on Athletics and approved by them.

RULE 2. A similar approval is required in the case of every individual intending to represent the University of Nevada in any single contest.

MILITARY SCIENCE AND TACTICS

1. Appreciation of the advantages of military drill and training in the education of the youth is now well-nigh universal. The regular out-of-door drill constitutes one of the best systems of physical training, and instils habits of obedience to lawful authority. A general knowledge of the system of national defense, of the organization of the Army and of the Navy, and their relation to the civil power, is considered essential to intelligent suffrage.
2. The department is in charge of an officer of the United States Army, detailed by the War Department as Professor of Military Science and Tactics, and as Commandant of Cadets.
3. Students receiving military instruction are designated "Cadets," and are organized into a battalion of infantry, officially designated as "The University of Nevada Battalion of Cadets."
4. The Battalion of Cadets is composed of all male students of the University, including those in the Preparatory, Commercial, Normal, and Special classes, with the following exceptions:
 - a. Students physically disqualified permanently. Those temporarily disqualified may be given light duty in the Signal Corps Detachment.
 - b. Students twenty-seven years of age or over.
 - c. Students who previously have had the military training required by the War Department.
 - d. The Battalion has its band. The students serving in this band are excused from other military duties. Ordinarily no cadet will be assigned to the band until he has satisfactorily completed the "schools of the squad, soldier, and company."
5. Cadets are required, upon entrance, to provide themselves with a uniform of prescribed design, consisting of blouse, trousers, cap, black shoes, white gloves, together with the insignia appropriate thereto.
6. Cadets will wear the uniform at all times while receiving military instruction.
7. The wearing of composite uniform is prohibited, except that a civilian overcoat may be worn over the uniform when the weather demands. Neatness in dress and appearance is at all times insisted upon.

8. Appointments in the Battalion shall be determined by:
- a. Military ability, which shall be decided from a careful consideration of the following points:
 1. Character.
 2. Attendance.
 3. Military conduct.
 4. Zeal.
 5. Soldierly bearing.
 6. Aptitude for command.
 7. Knowledge of drill and other duties as determined by examination and practical application.
 8. Recommendation of superior officers.
 9. Standing in Department of Physical Culture.
 - b. Class standing.
 - c. Length of service in the Battalion.

Generally the commissioned officers are taken from the Senior class, the sergeants from the Junior class, the corporals from the Sophomore class.

9. The commissioned officers will receive their commissions from the Governor of the State. These commissions will entitle the Governor to the services of the officers in case of insurrection or rebellion. After graduation, commissioned officers will be ranked as retired officers of the University of Nevada Battalion of Cadets, unless they choose to resign at the time of their graduation.

10. Every cadet who is a candidate for graduation from any of the schools of the University will be required to complete the prescribed course of military instruction, aggregating 14 units. Other cadets will receive an amount of military training proportionate to the length of their attendance at the University.

11. The course of instruction is in accordance with rules prescribed by the President of the United States, and is both practical and theoretical, special prominence being given to the former.

12. Each year the names of such students belonging to the graduating class as have shown special aptitude for military service will be forwarded to the War Department and to the Adjutant-General of the State.

13. The punishment to which cadets are liable, are:
- a. Suspension of privileges. Private reprimand.
 - b. Suspension from the University. Reduction to ranks.
 - c. Reprimand in public or in orders. Dismissal from the University.

Punishments of the first class may be inflicted by the Com-

mandant; those of the second class by the Commandant with the approval of the Committee on Military Affairs; those of the third class by the Committee on Military Affairs with the approval of the President.

14. No military body can attain a high grade of efficiency unless thorough discipline is maintained. Discipline is that quality which insures prompt, unhesitating, intelligent obedience to legitimate orders. In order to command, one must learn to obey.

15. Courtesy among military men is indispensable to discipline. Military authority will be exercised at all times, with firmness, kindness, and justice; superiors are forbidden to injure those under their authority by tyrannical or capricious conduct or by abusive language.

16. Applications for redress of grievances, if made by individuals in a proper manner, will always receive due attention.

17. Upon registration, each cadet will immediately take steps to familiarize himself with the Regulations for the Department of Military Science and Tactics.

18. All cadets are required to perform the prescribed military duties unless excused in advance by the President or the Commandant. In case of absence without previous excuse, a written explanation will be submitted upon resuming duty. In case of sickness or injury, such explanation must be authenticated by the signature of a parent or of a physician.

19. Neglect of a recitation or an examination will be punished in accordance with the rules existing in the other departments of the University.

20. Cadets will be held strictly accountable for the care and proper use of the public property in their possession. They will use only such arms and equipments as are officially assigned (by number to each cadet) and must return them to their proper places on the racks immediately after drill.

ADMISSION

EXAMINATIONS AND CREDENTIALS

1. Entrance to all of the University schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High Schools of other States, if accredited by a State University or other University or College, will be recognized at this University in so far as the work done is equivalent to the work required. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; provided, they are at least twenty years of age. The Committee on Admission and Advanced Standing, in consultation with the adviser, may grant exceptions to this rule for adequate reasons. Advanced standing will be granted by the Committee on Entrance and Advanced Standing in consultation with the departments concerned.

ACCREDITING OF SCHOOLS

Any school in the State may be accredited in such subjects of high-school grade as it is able to complete satisfactorily.

When accrediting is desired by any high school, the University will examine the school by such method as may be needful in order to determine the amount of work satisfactorily accomplished. When practicable such examination will be by means of a visit of inspection by the University examiner, but such inspection may be supplemented by means of sample examination papers and note-books. If the result of the examination is satisfactory to the Committee on Admission

and Advanced Standing, in consultation with the departments concerned, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required. The University record of its graduates will largely determine a school's fitness to remain on the accredited list.

High schools having but one teacher doing high-school work are advised not to attempt more than the first two years' work of the high school. Those pupils who have been prepared in all of the subjects of the first two years will, as a rule, be able to continue their studies far more advantageously than if they are prepared in three years' work of any one or more subjects.

A conference of high-school teachers and members of the Faculty concerned with accrediting will be held each year on the day preceding the Academic meet.

ADMISSION REQUIREMENTS

Subjects with Credits¹

1. English (a)	1
English (b)	1
English (c)	1
English (d)	1
2. Algebra, Elementary (a)	1
Plane Geometry (b)	1
Advanced Algebra (c)	1
Solid Geometry (d)	1
Plane Trigonometry (e)	$\frac{1}{2}$
3. Physics	$\frac{1}{2}$
4. English History (a)	1
Ancient History (b)	1
Medieval and Modern History (c)	1
American History and Civics (d)	1
5. Latin (a)	1
Latin (b)	1
Latin (c)	1
Latin (d)	1
6. Greek (a)	1
Greek (b)	1
7. German (a)	1
German (b)	1
8. French (a)	1
French (b)	1

¹A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

9. Spanish (a).....	1
Spanish (b).....	1
10. Chemistry.....	1
11. Physical Geography.....	$\frac{1}{2}$ or 1
12. Botany.....	$\frac{1}{2}$ or 1
13. Zoology.....	$\frac{1}{2}$ or 1
14. Physiology.....	1
15. Bookkeeping.....	$\frac{1}{2}$
16. Shopwork.....	1
17. Drawing.....	1

For entrance to all colleges the candidates must present English a and b; Mathematics a and b; (Language other than English, 2 units¹); American History and Civics, 1 unit; Science, 1 unit; and 9 additional units², to be distributed in the various colleges as follows:

1. In the College of Liberal Arts: 4 units of Latin; English c; 1 additional unit of History; and 3 other units, chosen as the candidate may desire.

2. For the College of General Science: 1 additional unit in Science (advanced); 2 units in Language other than English; and 6 other units, to be chosen as the candidate may desire.

3. For the College of Agriculture: 1 additional unit in any science; and 8 other units, chosen as the candidate may desire.

4. For the Engineering Schools: Mathematics c, d and e; 1 additional unit in Science (advanced); and 6 other units, to be chosen as the candidate may desire.

5. In the State Normal School: 2 units of Language other than English; 1 additional unit in History; and 3 units, to be chosen as the candidate may desire.

All candidates must offer at least 4 units of advanced work; that is, work regularly offered in the last two years of the High-School course. Those intending to enter the Engineering Schools are advised to prepare in Physics and Chemistry. All High-School students who intend to enter the University should plan their courses with reference to the University requirements for the Junior certificate.

DESCRIPTION OF ADMISSION REQUIREMENTS

1. ENGLISH (4 units)

The requirement in English includes both the study of the literature listed in Groups I-V and the work in grammar, composition, and rhetoric outlined below.

¹This requirement will go into effect August 1, 1914.

²August 1, 1914, these units will be reduced to 7.

LITERATURE

I. *Ivanhoe*, *Silas Marner*, and the *Vicar of Wakefield*, or *Henry Esmond*; and, for outside reading, any six of the following: *The Talisman*, *The Three Musketeers*, *Treasure Island*, *The Last of the Mohicans*, *The Jungle Book*, *Quentin Durward*, *Rob Roy*, *The House of the Seven Gables*, *The Tale of Two Cities*, *Lorna Doone*, *Emma*, *Oliver Twist*, *The Christmas Carol*, *Pilgrim's Progress*, *With Fire and Sword*, *The Cloister and the Hearth*, *The Newcomes*, *Les Miserables*, *The Crisis*, *The Virginian*.

II. *The Merchant of Venice*, *Julius Cæsar*, *Macbeth*.

III. *The Vision of Sir Launfal*, *The Chambered Nautilus*, *Thanatopsis*, *The Deserted Village*, *The Cotter's Saturday Night*, *Gray's Elegy*, *The Ancient Mariner*, *L'Allegro*, *Il Penseroso*, *Gareth and Lynette*, or *the Passing of Arthur*, *The Princess*, and any two of the following: *Michael*, *The Rape of the Lock*, *Childe Harold*, *Canto IV*, *Chaucer's Prologue*, *Lays of Ancient Rome*; selections from *Wordsworth*, *Shelley*, *Keats*, and *Arnold*.

IV. *The Alhambra*, *The Great Stone Face*, *The Ambitious Guest*, *The Gold Bug*, *The Purloined Letter*; and, for outside reading, any two of the following: *Hamlin Garland's Main Traveled Roads*; *Bret Harte's The Luck of Roaring Camp*; *London's The Call of the Wild*; *Kipling's The Day's Work*; *Maupassant's The Coward*, *The Piece of String*, *The Necklace*; *The Book of Ruth*.

V. *Franklin's Autobiography*, or *Thoreau's Wild Apples*; *Addison's Sir Roger de Coverly*, or *Carlyle's Essay on Burns*, or *Holmes's Autocrat of the Breakfast Table*; *Burke's Speech on Conciliation*, or *Webster's Bunker Hill Oration*.

GRAMMAR, COMPOSITION, AND RHETORIC

The aim of the course should be to train in correct expression and effective presentation of simple exercises in description, narration, and exposition. A simple text-book in rhetoric should be used. An amount of grammar should be required sufficient to insure correct expression.

2. MATHEMATICS (4 units)

(a) *Algebra* (1 unit). To quadratic equations. Thorough mastery of the fundamental processes of addition, subtraction, multiplication, and division. Equations of the first degree, simple and simultaneous, factoring, common divisors and multiples, fractions, fractional equations, theory of exponents and radicals.

(b) Plane Geometry (1 unit). The material offered in the first five books of Beman and Smith's Plane and Solid Geometry, or its equivalent. The solution of original exercises, including applications to mensuration.

(c) Advanced Algebra (1 unit). The theory of quadratic equations, in simultaneous quadratic equations, elements of ratio and proportion, the progressions and other simple series, logarithmic computation and determinants of second and third order with their applications to the solutions of equations.

(d) Solid Geometry ($\frac{1}{2}$ unit). The topics included are: Relations of lines and planes to space; the properties of prisms, pyramids, cylinders, and cones; the sphere and spherical triangle; also the mensuration of solids and original propositions.

(e) Plane Trigonometry ($\frac{1}{2}$ unit). The development of the general formulæ of plane trigonometry, with applications to the solution of the plane triangles and measurement of heights and distances.

3. PHYSICS (1 unit)

The requirement represents at least a daily exercise during one school year, which falls within the last two years of preparation for college. The course should cover the amount of material offered in any of the best modern text-books of Elementary Physics, such as Carhart and Chute's High School Physics, or the First Course in Physics by Millikan and Gale. The instruction should be based upon laboratory work by the student, performed under the teacher's supervision, and classroom demonstration by the teacher. The student's laboratory note-book should be presented to the Department of Physics at time of entrance.

4. HISTORY (3 units)

(a) English History (1 unit). A knowledge of the important epochs is required. Larned's History of England indicates approximately the ground to be covered. The main purpose of the requirement is to prepare for the intelligent study of English literature, therefore constant reference should be made to the literary development of the English people.

(b) Ancient History (1 unit). This includes: The Beginnings of Civilization, or the early Oriental Theocracies; Greece and Macedonia; Rome to the time of Charlemagne. The amount required is indicated by West's Ancient History, or Wolfson's Essentials of Ancient History.

(c) American History and Civics (1 unit). A knowledge of the outline of American History, and of the nature of fed-

eral, state, and local government. The requirement represents three things: the amount of material offered in a text-book in history, such as Channing's Student's History of the United States, a text-book in government such as Hinsdale's American Government, or Bryce's American Commonwealth (abr. ed.), or their equivalent, and systematic reading of assigned references, which should be summarized in a note-book.

5. LATIN (4 units)

a (1 unit). Collar and Daniell's First Latin Book, with the exception of the Colloquia, Collar's New Gradatim, and D'Ooge's Colloquia Latina, pp. 1-31, the exercises in the latter to be read only at sight, represent the nature and amount of preparation required.

b (1 unit). Greenough, D'Ooge, and Daniell's Second Year Latin, pp. 1-220, with prose composition, or an equivalent.

c (1 unit). Kelsey's Selections from Ovid, and Gayley's Classic Myths. In place of all, or any part, of Ovid may be offered an equivalent amount of Cicero's Orations and Letters. The requirement in Gayley's Classic Myths will, however, be maintained.

d Vergil (1 unit). Vergil's *Aeneid*, Books I-VI. Emphasis should be laid upon the development of student's power to understand Latin prose and poetry in the original, and upon the thought of the authors read rather than upon the syntax. The writing in Latin of connected English sentences. In this prose work the emphasis should be laid upon the order of words, the simpler features of sentence structure and means of connecting sentences in paragraphs.

6. GREEK (2 units)

a (1 unit). Greek Grammar, including accents, the ordinary inflectional forms, the simpler rules of syntax, and the translation of easy English sentences into Attic Greek. White's First Greek Book represents the amount of preparation required.

b (1 unit). Xenophon's *Anabasis*, Books I-IV, with questions on the forms, syntax, and subject-matter. The translation into Attic Greek of simple passages of connected narrative based on the *Anabasis*. (Parts I and II of Pearson's Greek Prose Composition represent the nature and amount of preparation required.)

7. GERMAN (2 units)

a (1 unit). A thorough knowledge of the principles of German grammar. This includes the conjugation of weak

and strong verbs, and of the modal and time auxiliaries; the declension of nouns, pronouns, articles, and possessive pronouns; the three declensions of adjectives; rules as far as possible governing the gender of nouns, and the formation of plurals; the uses of the modal auxiliaries, of separable and inseparable verbs, and of the subjunctive.

Collar's Shorter Eysenbach may be used at first, with Joynes-Meissner's Grammar later. Waldnovellen, Germelshausen, or some preparatory German reader, should be mastered in the first year.

b (1 unit). Reading and translation of the following texts or equivalents: Schiller's Maria Stuart, Modern Prose and Poetry.

The work in German composition should be continued through the second year. Harris' German Composition is recommended.

8. FRENCH (2 units)

a (1 unit). The ability to read at sight easy French prose, to translate correctly simple English sentences into French, familiarity with all the common idioms of the language, a thorough and accurate knowledge of the principles of French grammar. Rollins's or Super's French Reader indicates the amount of material to be read. The requirements in grammar involve: (1) The mastery of the three regular conjugations as well as of the irregular verbs, and the uses of the various auxiliaries; (2) Familiarity with the rules for forming the feminines of adjectives, the plurals of nouns and adjectives, and those governing the position of the adjective, of the object pronoun, of the negative, and of the adverb; (3) An understanding of the uses of the definite articles (together with those cases where it is omitted), the classification of the pronouns and their inflections according to their several uses, the partitive constructions, the agreement of participles, and the various uses of the subjunctive. For elementary work the student may use Chardenal's Complete French Course; later, Fraser and Squair's Grammar is recommended.

b (1 unit). The translation into English of the following texts or their equivalents: *Le Voyage de M. Perrichon*, by Labiche and Martin; *About's Le Roi des Montagnes*; *Daudet's Le Petit Chose*; *de Banville's Gringoire*; *Meilhac and Halevy's L'Ete de Saint Martin*; *Coppee's Le Luthier de Cremone*; *Le Tresor*.

9. SPANISH (2 units)

a (1 unit). For the first year in Spanish, Ramsay's, Hill's and Ford's, Knapp's, or Garner's Spanish Grammar may be

used. Selections from Matzke's Spanish Reader, from Knapp's or from an equivalent text, are to be read.

b (1 unit). For the second year Galdos's *Marianella*, *Partin a Tiempo*, *Electra*, *El Pajaro Verde*, and selections from *Don Quixote*, or equivalent texts, should be read.

10. CHEMISTRY (1 unit)

The elements of Chemistry as contained in books of such grade as Newell's *Descriptive Chemistry*, or Hessler and Smith's *Essentials of Chemistry*, and an amount of laboratory work equivalent to that outlined in the Manuals which accompany these texts, should be completed. Emphasis should be placed upon the elementary fundamental laws. The laboratory work should include some quantitative experiments dealing with combining atomic and molecular weights.

11. PHYSICAL GEOGRAPHY ($\frac{1}{2}$ or 1 unit)

Such text-books as those by Davis, Dryer, Fairbanks, or Tarr represent the amount and grade of the work required. It is suggested that wherever feasible the course be continued throughout the year, and laboratory and field work be introduced.

12. BOTANY (1 unit)

One-half unit will be allowed to any high-school student who has an intelligent knowledge of Andrews's *Botany All the Year Round*, from page 1 to 233. (American Book Company.) \$1.

For one unit the entire book should be covered and a laboratory note-book of carefully executed drawings presented. The candidate will also be required to have read at least two of the references given for each chapter in the Appendix on pp. 289 to 293.

13. ZOOLOGY (1 unit)

Five hours a week for a whole year should be given to this subject. Of these five hours three should be devoted to laboratory work, and the other two to lectures and recitations. The laboratory work should be of such a nature as that outlined in Davenport's *Introduction to Zoology* (The MacMillan Company, New York). Merrill's *Studies in Zoology* (American Book Company, San Francisco). All notes and drawings should be submitted to the Department of Zoology at the time of entrance.

14. PHYSIOLOGY (1 unit)

Five hours a week for one year should be given to this subject, of which two hours should be devoted to laboratory work.

A microscope and prepared slides of human or animal tissues are necessities. Martin's Human Body (Briefer Course), Hewe's High School Physiology, and Macy and Norris's Physiology for High Schools, are recommended as texts. The text-book should be supplemented by readings on matters pertaining more particularly to hygiene. Pyle's Personal Hygiene and Abbott on Hygiene of Transmissible Diseases are recommended as such supplementary texts. The laboratory work should follow the outlines given in the text, and all drawings and notes should be submitted to the Department of Physiology at the time of entrance.

15. BOOKKEEPING ($\frac{1}{2}$ unit)

The bookkeeping required for admission to the University corresponds in amount and character of work to that outlined in the Sadler-Rowe budgets 101 and 102 up to March 15th. This includes simple double-entry books, the making of balance sheets, the use of invoice, sales, and cash books, etc., and should include thorough understanding of checks, notes, drafts, billing, and, generally, all of the papers used in modern business.

16. SHOPWORK (1 unit)

Mature students with practical experience in shops or any branch of engineering may, upon recommendation of the department concerned, receive credit to the extent of not more than five units for such work.

17. DRAWING ($\frac{1}{2}$ unit)

Type solids. Still life. Water color from nature. Designing. This represents not less than three years' work, one hour a week.

GENERAL INFORMATION

EXPENSES OF STUDENTS

The railways of the State are generously cooperating with the Regents of the University by giving reduced rates to students when traveling to and from the University. The Southern Pacific Company, the Nevada Northern, the Las Vegas and Tonopah, the Nevada Central, and the Eureka and Palisade railroads will sell tickets to students at one-half the usual local rate. To obtain the benefit of the half rates the student must accompany his application for a ticket with a certificate from the President of the University. These certificates may be obtained by writing to the "President of the University of Nevada, Reno, Nevada." Students coming to the University from points outside the State must pay full fare to Reno.

All text-books used in the University may be purchased at any one of the bookstores in Reno at a price which covers the actual cost of purchasing and a profit to the dealer of from ten to fifteen per cent for handling.

The maintenance of its large and valuable laboratories is a constant and heavy expense to the University. It is impossible for the Regents to provide material in these laboratories free of all expense to the students. For this reason the Regents have established the following moderate charges for the material actually used:

For General Chemistry, per semester.....	\$2.50
For Qualitative Chemistry, per semester.....	2.50
For Quantitative Chemistry, per semester.....	2.50
For Agricultural Chemistry, per semester.....	2.50
For Mineralogy, per semester.....	2.50
For Junior Assaying, first semester.....	5.00
For Junior Assaying, second semester.....	7.50
For Senior Metallurgy, per semester.....	10.00
For Typewriting, per semester.....	1.00
For Zoology 1, 3, 6, 7, each, per semester.....	1.00
For Botany 1, 2, 3, 4, 5, 6, each, per semester.....	1.00
For Zoology 2, 4, 20, each, per semester.....	2.00
For Hygiene 1 and 2, each, per semester.....	2.00

For Botany 20, per semester.....	\$2.00
For Sewing, per semester.....	1.00
For Cooking, per semester.....	1.00
For Shopwork, per semester.....	2.00
For Physics 1 (Freshman), per semester.....	1.00
For Physics 3 (Sophomore), per semester.....	2.00
For Physics 20 (each Laboratory period per week), per semester.....	1.00
For History Syllabus, University, per semester.....	1.00
For History Syllabus, High School, per semester.....	.50

The following deposit fees will be required of students in the department to which the subject belongs, but will be returned to the student at the end of the semester, less the amount of breakage of or damage to material given:

For General Chemistry, per semester ..	\$5.00
For Optical Mineralogy, per semester.....	5.00
For Geology 4, per semester.....	5.00
For Mineralogy 5, per semester.....	5.00
For Surveying (C. E. 1), per semester.....	5.00
For Railroad Surveying (C. E. 5), first semester.....	5.00
For Physics 1, per semester.....	5.00
For Physics 3, per semester.....	5.00
For Biology, one-half or more courses.....	2.00

A fee of \$4 per semester is levied upon every student by the Associated Student Body. This fee is for the purpose of carrying on athletic sports, such as football, basket-ball, baseball, and track athletics, and debating. In return for the payment of this fee the student receives free admission to all games and events which take place during the year, and the right to a vote at the meetings of the Associated Student Body.

MANZANITA HALL is the University home for young women. Mrs. A. E. Kaye, a lady of large experience and wisdom, is Mistress of Manzanita Hall. The ventilation, heating, lighting, and the furnishing of the rooms, are of the very best. Young ladies coming to Manzanita Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, $2\frac{1}{4}$ yards by $1\frac{1}{2}$ yards; 4 pillow cases, 20 inches by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6 feet, to put on mattress; 6 good towels; 2 large aprons for work in shop and

in laboratory; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of \$2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

LINCOLN HALL is the College home for young men. The building has accommodations for one hundred young men, and is equal to the best of modern college halls. The head master of Lincoln Hall is Mr. Richard Brown. Young men coming to Lincoln Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, $2\frac{1}{4}$ yards by $1\frac{1}{2}$ yards; 4 pillow slips, 20 by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of \$2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

Rooms in private houses can be rented for \$10 to \$15 per month.

TABLE BOARD—For the accommodation of the students, the President of the University maintains a dining hall in commodious quarters built especially for it between Manzanita Hall and Lincoln Hall. The dining-hall equipment and service have been recently reorganized with a view to securing board and table service of the most acceptable character. The price of table board for the coming year will be \$16 a month, payable in advance. If the board is not paid until after the fifteenth of the month an additional charge will be made of twenty-five cents a day until the account is settled. If the bill is not paid by the last day of the month, the privileges of the dining hall will be denied until the bill has been paid. *No deviation will be made from the above regulations.* After the expenses of the dining hall have been fully met, any surplus is paid over to the Board of Regents to pay for service rendered in maintaining Manzanita and Lincoln Halls.

Table board can be obtained elsewhere at from \$25 to \$30 per month.

TABULAR ESTIMATE OF NECESSARY EXPENSES OF STUDENTS, EXCLUSIVE OF CLOTHING AND TRAVELING EXPENSES

	<i>Low</i>	<i>Moderate</i>	<i>Liberal</i>
Tuition.....	None	None	None
Board, 36 weeks.....	\$144	\$144	\$250
Room, light, and fuel.....	18	18	72
Washing and sundries.....	20	30	40
Text-books and stationery.....	6	12	18
Laboratory and athletic fees.....	8	10	12
Totals.....	\$196	\$214	\$392

AID TO STUDENTS

It is the purpose of the officers of the University to aid meritorious students of limited means so far as it lies in their power. Much of the work in and about the University buildings and grounds is done by young men. Young women are favored whenever possible with such work as typewriting, copying, housework, and dining-hall service. It is to be remembered that the power to favor students with self-help is limited by circumstances, and *therefore students cannot expect to earn enough to pay all their expenses while pursuing their studies.*

A few annual scholarships have been given for the purpose of assisting deserving students. Mr. and Mrs. Fred O. Norton will give fifty dollars a year for four years to the most deserving student in the School of Mines. The Delta Rho Sorority will give fifty dollars to the most deserving student in the University. The Regents' Scholarships—two of fifty dollars and one of twenty-five dollars—will go to students who show the all-around qualities which go to make successful young men and young women. The President will give fifty dollars to the most deserving student in the University, and the same amount to the most deserving student in the State Normal School. In addition, there is the Philo C. Bennett prize of sixty-four dollars for the best essay on the principles of free government.

MATRICULATION

1. The application for admission blank, properly filled out and signed by the principal, should be in the hands of the Committee on Admission and Advanced Standing three days before the time set for the entrance examination. In case the credentials are satisfactory, the applicant need not appear until the day set for registration.

2. All candidates for admission to the University by examination shall obtain from the Registrar a signed card admitting them to the examinations desired. All other applicants for admission shall be sent a card for such examinations as they may be required to take.

3. When a student has been admitted by credential or examination he is given an admission card by the Registrar. This card must be presented to the Librarian before any books can be withdrawn, and to such other officers of the University as may call for it.

4. All candidates admitted to the University shall be on probation for the first semester.

REGISTRATION

METHOD OF REGISTERING

1. On registration day the student secures from the Registrar a student registration blank, upon which his studies for the semester are to be entered and the card otherwise filled out in accordance with the directions printed thereon.

2. In registering, the rules regarding conditions and failures, maximum limit of hours, and status should be carefully observed.

3. Juniors and Seniors in the College of Arts and Science should register in accordance with their Group Elective Schedule, of which they should keep a copy for reference. The card should be signed by the major professor as adviser, and approved by the chairman of the Committee on Group Electives and Graduation Schedules.

4. The signature of each instructor must be obtained for the courses registered in and the card must be signed by the adviser before being deposited with the Registrar.

5. After paying his fees the student is given a certificate of registration, stamped by the Registrar. This certificate must be presented to each instructor at the time of enrollment and to such other officers of the University as may call for it.

CLASSIFICATION OF STUDENTS

In registering, a student shall give his status as *Regular*, *Limited*, *Partial*, or *Special*, according to the rules following:

1. For "Regular" Freshman standing, a student must be accredited in all the required Preparatory work; or his entrance deficiencies must not exceed one high-school unit, and such deficiencies must be made good by the end of the Sophomore year.

2. For "Regular" Sophomore, Junior, or Senior standing, the student must satisfactorily complete all of the required work of the preceding year; or his deficiencies must not exceed three College units in any one semester, and he must be taking at least the full number of hours prescribed by his course.

3. A student having two units of entrance deficiencies may register as a "Limited" Freshman, but these deficiencies must take precedence over all other work registered for. Unless a student is taking a majority of his work in the University, he shall be classified as a University High School student.

4. A "Limited" Sophomore, Junior, or Senior student is one with deficiencies of more than 3 and less than 9 College units in any one semester (or not more than 3 semester courses) and who is otherwise taking the full number of hours prescribed by his course. A student having deficiencies of 9 or more College units, for any one semester at the beginning of the Academic year, shall register in the lower class.

5. A "Partial" Freshman, Sophomore, Junior, or Senior student is one who is either permitted or required to register for a smaller number of hours than is regularly prescribed by his course. He shall be designated as a member of that class to which the majority of his hours belong.

6. A "Special" student is one not a candidate for a degree who is pursuing a special course with Faculty and departmental permission.

ENROLLMENT

In general, students are recommended to follow the regular course of study as nearly as possible, taking each year the number of hours prescribed for that year. Students may, however, at their discretion, elect courses aggregating three hours in excess of the prescribed number, exclusive of military drill and physical culture. The three extra hours now allowed above the regular number of hours required in any one semester are made the absolute maximum limit of hours for all schools. Students with one or more conditions shall be deprived of the privilege of taking any extra hours until such condition has been removed.

1. At the first meeting of each class the student fills out an enrollment card. The Registrar's duplicate should be sent by instructors to the Registrar not later than two weeks after enrollment.

2. After enrollment a course may be dropped or a new course added only by permission of the adviser and of the department concerned.

3. All courses finally enrolled in shall be completed. In case a course is elective, however, with the permission of the Registration Committee and the department concerned, a student may drop the course any time during the first twelve weeks of the semester, and the course will be canceled from his record.

4. The student is held responsible for the knowledge of his standing and the requirements for graduation.

5. Any failure in properly registering or enrolling may result in failure to graduate.

CONDITIONS AND FAILURES

The requirements for punctual and regular attendance upon all recitations, lectures, and other prescribed college exercises are exact and firm. Professors may excuse students on account of necessary absence from their classes, if the reasons seem valid. All unexcused absences are reported to the Registrar's office and may subject the student to admonition, suspension, or dismissal. A student whose work is unsatisfactory may be placed on probation, and may be required to withdraw at any time thereafter if satisfactory improvement is not shown. Students who find it necessary to leave before the close of the year and who expect to return, and students desiring to be absent for a period of time, should obtain leave of absence from the Committee on Scholarship.

Each instructor will determine the final grade of students by any method that he may consider best adapted to his courses.

1. Any student who, in any course, receives a final grade of less than 70, and over 50, shall be passed conditionally.

2. Any student thus conditioned may remove such condition by satisfying the requirements of the department.

3. Only one reexamination may be given for the removal of any condition. The regular time for such reexamination shall be the beginning of the college year.

4. Any condition not removed by the time the course is next repeated becomes a failure and is subject to the rules for failures; but, in case of special students, the Committee on Registration may grant exemption from this rule.

5. Any student who receives a final grade of 50 or less shall be considered as having failed in such course. Any student who passes conditionally in any course and fails to remove the

NOTE—All, except new students, who apply for registration on days other than those named in the calendar, will be charged a fee of two dollars, and all students entering late must obtain consent of instructor before enrolling in any course.

condition within the prescribed time shall be considered as having failed.

6. Any student who fails in any course shall be required to repeat the course regularly in the next succeeding class, unless the Academic Council shall by vote permit an extension of time or the substitution of another course.

7. Students having failed in over one-half of the preceding semester's work, or having received conditions in more than two-thirds of the work of the preceding semester, will be allowed to register only on presenting the written permission of the Registration Committee.

THE JUNIOR CERTIFICATE

In all, except the Engineering Schools, the Junior certificate is granted to students who have satisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit in English 1, in 38 other units of the work required in their college; and in 20 additional units. We advise that 8 of these electives be taken in the Freshman year, and 12 in the Sophomore year.

In the Engineering Schools the Junior certificate will be given to those who have satisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit for the first two years' work required in their respective colleges. To all students receiving this certificate will be given the title of Associate.

GRADUATION

For graduation from the University of Nevada, an attendance of at least one year and the completion of the course of study of some University school are required. Credit is given for work done in other institutions of similar rank and character.

To students with an average of 90 per cent, or over, in all of the work required for graduation the degree "With Honor" will be given.

THESIS REQUIREMENTS

A satisfactory thesis, prepared in accordance with the following rules, must be presented by each candidate for graduation as an essential condition for graduation from any school of the University.

The thesis is intended to give the student an opportunity to make a comparatively independent effort in some chosen field

while still under the guidance of some department, and to test his ability for such independent work in a way that cannot well be done in connection with ordinary class work.

It is expected, therefore, that the thesis will show the following characteristics, viz: scientific and literary knowledge, and good arrangement, and presentation of subject.

In order to insure time for the satisfactory preparation of his thesis, the student will elect and pursue thesis work in some department as he would any regular elective course.

Both subject and department should be reported to the Committee on Graduation and Theses not later than the first Monday in November, and all theses should be completed and presented to the Committee on Theses on or before the first day of the final examinations in May.

The thesis should be typewritten upon $8\frac{1}{2} \times 11$ paper and bound in a $9 \times 11\frac{1}{4}$ flexible-backed cover. All maps and drawings or other illustrations should be so arranged that they can be bound within the same cover.

Two copies of each thesis, accepted for graduation must be placed in the University library.

The title page should conform to the style of the following sample title page:

UNIVERSITY OF NEVADA

The Origin of the English Gilds

A THESIS

SUBMITTED TO THE FACULTY OF THE COLLEGE OF ARTS AND
SCIENCE IN CANDIDACY FOR THE DEGREE
OF BACHELOR OF ARTS

(Department of History)

By

JOHN EDWARD SMITH

Reno, Nevada

1908

DIPLOMAS AND BACCALAUREATE DEGREES

1. The Degree of Bachelor of Arts is conferred upon students who have completed in a satisfactory manner the four years' work of the School of Liberal Arts.
2. The Degree of Bachelor of Science is conferred upon students who have completed in a satisfactory manner the four years' work of the School of General Science, the School of

Mining Engineering, the School of Mechanical Engineering, the School of Civil Engineering, or the School of Agriculture.

3. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of High-School Grade, is awarded to students who have completed in a satisfactory manner the four years' work of the Advanced Normal Course.

4. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of Grammar Grade, is awarded to students who have completed in a satisfactory manner the work of the Elementary Normal Course.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Studies the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College courses, four units counting as three, or where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required for the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except within the approval of the major professor or professors and the Committee on Graduate Study.

A thesis will constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Committee on Graduate Study for their final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing, but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other

examiners as the Committee on Graduate Studies may appoint. In case semester examinations are taken, the grade received will be averaged with the oral examination and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science, upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

DEGREES OF MINING, MECHANICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, or Civil Engineer is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(a) Three years of experience in responsible engineering positions, or

(b) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Studies and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

COLLEGE OF ARTS AND SCIENCE

1. SCHOOL OF LIBERAL ARTS
2. SCHOOL OF GENERAL SCIENCE

COLLEGE OF ARTS AND SCIENCE

FACULTY

JOSEPH EDWARD STUBBS.....	President
ROBERT LEWERS.....	Vice-President, Professor of Political Economy
HENRY THURTELL.....	Professor of Mathematics and Mechanics
JAMES EDWARD CHURCH, JR. ¹	Professor of the Latin Language and Literature
LAURA DE LAGUNA.....	Professor of the Modern Languages
JEANNE ELIZABETH WIER.....	Professor of History
PETER FRANSDEN ¹	Professor of Biology
PATRICK BEVERIDGE KENNEDY.....	Professor of Botany and Horticulture
ROMANZO ADAMS.....	Professor of Education and Sociology
LOWE ABEEL MCCLURE.....	Professor of Military Science and Tactics
W. S. TANGIER SMITH.....	Professor of Geology and Mineralogy
MAXWELL ADAMS.....	Professor of Chemistry
HERBERT WYNFORD HILL.....	Professor of the English Language and Literature
ERNEST WHITNEY MARTIN.....	Acting Professor of Latin and Greek
LEON WILSON HARTMAN.....	Professor of Physics
CARL ALFRED JACOBSON.....	Professor of Agricultural Chemistry
ALBERT W. C. T. HERRE.....	Acting Professor of Biology
CHARLES HASEMAN.....	Associate Professor of Mathematics
KATE BARDENWERPER.....	Assistant Professor of Domestic Science
KATHERINE LEWERS.....	Assistant Professor of Drawing
GEORGE ORDAHL.....	Assistant Professor of Psychology and Education
J. CLAUDE JONES.....	Assistant Professor of Geology and Mineralogy
REUBEN CYRIL THOMPSON.....	Instructor in Latin and Greek
GUSTAVUS SWIFT PAINE.....	Instructor in English
HELEN ANN MEIGHAN.....	Director of Physical Training for Women
ELIZA HENRIETTA OVERMAN.....	Assistant in Biology
SILAS EARL ROSS.....	Assistant in Chemistry
RALPH LYON HARTLEY.....	Assistant in Physics

AIM

The aim of the College of Arts and Science is two-fold:

1. To lay a foundation for the professions, both learned and technical, and
2. To increase knowledge in and sympathy toward the broader and cultural aspects of life.

¹Absent on leave.

CONDITIONS OF ADMISSION

1. Entrance to the College of Arts and Science shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

ADMISSION REQUIREMENTS

Subjects with Credits¹

1. English (a)	1
English (b)	1
English (c)	1
English (d)	1
2. Algebra, Elementary (a)	1
Plane Geometry (b)	1
Advanced Algebra (c)	1
Solid Geometry (d)	$\frac{1}{2}$
Plane Trigonometry (e)	$\frac{1}{2}$

¹A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

3. Physics.....	1
4. English History (a).....	1
Ancient History (b).....	1
Medieval and Modern History (c).....	1
American History and Civics (d).....	1
5. Latin (a).....	1
Latin (b).....	1
Latin (c).....	1
Latin (d).....	1
6. Greek (a).....	1
Greek (b).....	1
7. German (a).....	1
German (b).....	1
8. French (a).....	1
French (b).....	1
9. Spanish (a).....	1
Spanish (b).....	1
10. Chemistry.....	1
11. Physical Geography.....	$\frac{1}{2}$ or 1
12. Botany.....	$\frac{1}{2}$ or 1
13. Zoology.....	$\frac{1}{2}$ or 1
14. Physiology.....	1
15. Bookkeeping.....	$\frac{1}{2}$
16. Shopwork.....	1
17. Drawing.....	1

For entrance to all colleges, the candidates must present English a and b; Mathematics a and b; (Language, other than English, 2 units¹); American History and Civics, 1 unit; Science, 1 unit; and 9 additional units, to be distributed in the various colleges as follows:

1. In the College of Liberal Arts: Latin, 4 units; English c; 1 additional unit of History; and 3 other units, to be chosen as the candidate may desire.

2. For the College of General Science: 1 additional unit in Science (advanced); 2 units in Language other than English; and 6 other units, to be chosen as the candidate may desire.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE

The Degree of Bachelor of Arts is conferred upon students in the School of Liberal Arts, and the Degree of Bachelor of Science upon students in the School of General Science who have satisfactorily completed work aggregating 124 units credit. By an hour, or a unit credit, is meant the equivalent of work demanded by a lecture course meeting for one hour a week for one semester, or a laboratory course requiring two

¹This requirement will go into effect August 1, 1914.

and one-half hours a week for one semester. The work of the first two years is in the main prescribed; that of the last two years is wholly elective, subject, however, to the rules of group and free electives. Students in the General Science course are required to take seven extra hours of Natural Science, as an equivalent of the Latin prescribed for students in the School of Liberal Arts. The work of the Freshman and Sophomore years is prescribed as follows:

SCHOOL OF LIBERAL ARTS

FRESHMAN YEAR

Subjects and Credits Required

	<i>1st Sem.</i>	<i>2d Sem.</i>
English 1.....	3	3
Latin 1, 2, 3.....	4	4
Mathematics 1a, and 2 and 3.....	3	3
French 1, Greek 1, 2, 3, or German 1.....	4	4
History 1.....	2	2
Military 1 and 2, or Physical Culture.		

SOPHOMORE YEAR

English 4.....	3	3
Latin 2 and 3.....	3	3
History 2.....	3	3
Natural Science (for choice of subjects see below).....	4	4
French 2, Greek 2, or German 2 and 3.....	3	3
Military 1 and 2, or Physical Culture.		

SCHOOL OF GENERAL SCIENCE

FRESHMAN YEAR

English 1.....	3	3
French 1, Greek 1, or German 1.....	4	4
Mathematics 1a, and 2 and 3.....	3	3
Physics 1.....	2	2
Chemistry 3 and 4.....	4	4
Military 1 and 2, or Physical Culture.		

SOPHOMORE YEAR

English 4.....	3	3
French 2, Greek 2, or German 2 and 3.....	3	3
History 2.....	3	3
Natural Science (for choice of subjects see below).....	7	7
Military 1 and 2, or Physical Culture.		

While the student should as nearly as possible follow the outline of hours and subjects as here prescribed, he may, with the sanction of his adviser, defer some of his prescribed work until the Junior or Senior year.

The Natural Science prescribed for the Sophomore year shall be elected from the following courses:

Chemistry 3 and 4, Physics 2 and 3, Geology 1 and 2, Mineralogy 2 and 3, Zoology 1 and 8, Hygiene 1, and Botany 1. More advanced courses may be elected if the student has had the prerequisites. Students in the School of Liberal Arts intending to take a major in some science department in their Junior and Senior years should elect an elementary course in that department in the Sophomore year. Some of the above-named courses give less than the four units credit required, but the deficiency may be satisfied by the election of additional hours either in the group or free electives. All students intending to follow a science group will find it to their advantage to consult their major professor as to the best courses in science to elect in their Sophomore year.

JUNIOR AND SENIOR YEARS

Provided all the work of the Freshman and Sophomore years has been complete as prescribed, courses aggregating 60 units, or an average of 15 units in each semester, should be completed during the Junior and Senior years. Of these 60 units, 40—the group electives—must be chosen within certain correlated groups and with the advice and consent of the major or major and minor departments concerned. The remaining 20 units—the free electives—may be freely elected from any courses offered in the College of Arts and Science, provided that the requirements of the departments in which the work is elected are satisfied.

GROUP ELECTIVES

Each student in the College of Arts and Science shall, at the beginning of his Junior year, elect a department in which he wishes to do a considerable amount of work as his major department. In case any student so choose, he may elect a minor department also. If a student elects a major and not a minor department, he shall be required to elect forty hours' work in the two years, with the advice and approval of the head of his major department. The work of the major department shall be the correlating subject of the forty hours group electives. In case a student elects both a major and a minor department, the combined work of the two departments must represent a unity of aim, and the heads of the two departments shall constitute an advisory committee, of which the major professor shall be chairman. In this case, the elective group of forty hours must be selected with the advice and approval of the advisory committee.

Students in the School of Liberal Arts may select a major, or

a major and minor, from any of the following departments: Greek, Latin, French, German, English, Spanish, History, Law, Economics, Sociology, Education, Zoology, Botany, Geology, Mineralogy, Chemistry, Physics, Mathematics.

Students in the School of General Science may select a major, or major and minor, from any of the following departments: Zoology, Botany, Geology, Mineralogy, Chemistry, Physics, Mathematics, Education.

The particular grouping will depend on the particular aim of the student. The following correlated groupings will serve as a general guide:

1	2
<i>Language-Literature Group</i>	<i>Social Science Group</i>
Greek, Latin, French, German, English.	History, Law, Economics, Sociology.
-3	4
<i>Biological Science Group</i>	<i>Physical Science Group</i>
Zoology, Botany, Chemistry, Geology.	Chemistry, Physics, Mathematics, Geology, Mineralogy.

The student electing a major in any one of the foregoing groups will be expected in the main to select his correlated work within that group. Good correlations, however, may sometimes be made by choosing from two groups. For example, a student making some one language his major may find it desirable to also elect a considerable amount of History. A student planning to study medicine should elect a major from Group 3, but may find it desirable to take more work in Physics. Those intending to study law should elect a major in Group 2, but may find it desirable to take advanced work in English. In some cases it may be necessary also to utilize some of the free electives in courses correlated with the group. For example, students taking a Science major will often find it profitable to have a good reading knowledge of both French and German.

Any student, after electing his major and minor departments, may, with the consent of the department concerned and with the consent of the Committee on Group Electives and Graduation Schedules, change his course, choosing another major department or major and minor departments, as the case may be, provided he comply with all the conditions in the case of the new major and minor departments.

Each student shall make a written statement of the work he has accomplished during the Freshman and Sophomore

years and of the work he proposes to do under the direction of his major and minor professors during his Junior and Senior years. He shall also make a statement of the coordinating aim which gives unity to the proposed group. This statement shall be placed in the hands of the Committee on Group Electives and Graduation Schedules not later than the first week of the University year.

It shall be the duty of the Committee on Group Electives and Graduation Schedules to examine these statements carefully, and, if needs be, to interview the student presenting them and to determine whether such schedules conform to the rules governing the same. If they do thus conform they shall be approved, otherwise the discrepancy shall be pointed out and the student shall be directed again to consult with his major professor.

When any such group of electives has been approved by the Committee on Group Electives and Graduation Schedules it shall be considered as the work prescribed for graduation. Any student who shall complete the work of any such group, together with work aggregating twenty hours' credit—the free electives—to be chosen freely within the prescribed groups of departments, shall be entitled to graduate. It shall be the duty of the committee to determine for each candidate for graduation whether he has completed such work. The committee shall act as a committee, the individual members having no authority outside of the committee.

FREE ELECTIVES

Twenty hours, or an average of five hours in any one semester, may be freely elected from any of the foregoing courses offered in the College of Arts and Science, provided only that the requirements of the departments concerned are satisfied. In addition to these courses, the student may elect from subjects offered by the Department of Domestic Arts and Science in the College of Agriculture courses which may be counted toward the Degrees of B.A. or B.S., to an amount not to exceed one hour in any one semester nor four hours in all.

Each Junior student in the College of Arts and Science shall file with the Committee on Registration, not later than two days before registration, a form containing the group elective and free elective studies desired for the Junior and Senior years, with the signature of the major professor, or signatures of major and minor professors. It is advisable that students should plan their work for the Junior and Senior years as

early as the beginning of the Sophomore year, in order that the studies elected then may fit in with their later work.

THESES

A thesis must also be prepared in consultation with the major professor, and must show comparative originality and individual effort, scientific or literary knowledge, careful preparation, and good arrangement and presentation of subject.

THE ADVANCED NORMAL COURSE

Students in the College of Arts and Science may be registered in the Normal School, Advanced Course, during their Junior and Senior years by electing courses in Education aggregating ten hours. Such students shall, in addition to the courses in Education, have a group of thirty hours.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit in English 1, in 38 other units of the work required in their college, and in 20 additional units. It is advised that 8 of these electives be taken in the Freshman year, and 12 in the Sophomore year. To all students receiving this certificate will be given the title of Associate.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application, including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Studies the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College courses, four units counting as three, or where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required for the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except with the approval of the major professor or professors and the Committee on Graduate Study.

A thesis will constitute a part of the prescribed course of

study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis and shall be presented to the Committee on Graduate Study for their final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing; but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other examiners as the Committee on Graduate Study may appoint. In case semester examinations are taken the grade received will be averaged with the oral examinations and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

COURSES OF INSTRUCTION

I. Greek	XIV. Psychology
II. Latin	XV. Zoology
III. French	XVI. Hygiene
IV. Spanish	XVII. Botany
V. German	XXV. Domestic Science
VI. English	XXVI. Geology
VII. Music	XXVII. Mineralogy
VIII. Art	XXVIII. Chemistry
IX. History	XXIX. Physics
X. Law	XXX. Mathematics
XI. Economics	XXXVI. Drawing
XII. Sociology	XXXVII. Military Science
XIII. Education	and Tactics

I. GREEK LANGUAGE AND LITERATURE

PROFESSOR MARTIN, MR. THOMPSON

Primarily for the Junior Colleges

a. ELEMENTARY. An introduction to the Greek language, based largely upon the Greek element in English and leading to the rapid reading of the New Testament. This course may be taken by itself, and is open to all students. *First semester. Hours to be arranged. Four credits.* Professor Martin.

b. ELEMENTARY (continued). Rapid review of Greek Grammar, leading to the reading of Xenophon's Anabasis. Open to those who have taken Greek *a* and to others who satisfy the department of their fitness. *Second semester. Hours to be arranged. Four credits.* Professor Martin.

1. PLATO AND LYSIAS. Plato's Apology and Crito, and Lysias's Orations Against Eratosthenes, Against the Grain Dealers and For the Cripple. Open to those who have had Greek *a* and *b*, and to those who have satisfied the full entrance requirements in Greek. *First semester. Hours to be arranged. Three credits.* Professor Martin.

2. HOMER'S ODYSSEY. Introduction to the grammar, prosody, and criticism of Homer. After a more intensive study of the earlier books, the class will read, very rapidly, selected passages of such length as will give some appreciation of the Odyssey as a whole. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

3. GREEK PROSE COMPOSITION (first course). Review of Greek Grammar and the writing of simple connected narrative. Required of all Greek majors, and open to those taking Greek 1 and 2. *Both semesters. Hour to be arranged. One credit each semester.* Professor Martin.

Courses 1, 2, and 3 constitute the full year's work in Freshman Greek.

4. HOMER'S ILLIAD. Rapid reading, and lectures and papers on problems of Homeric criticism. *First semester. Hours to be arranged. Three credits.* Professor Martin.

5. EURIPIDES. Introduction to Greek Tragedy. The Alcestis, Medea, and Iphigineia among the Taurians will be read and interpreted. Lectures on the scenic antiquities of the Greek drama and on the artistic form and structure of Greek tragedy. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

6. GREEK PROSE COMPOSITION (second course). The writing of longer connected passages based upon the Historians and Plato, with constant comparison of Greek and English idiom. Required of Greek majors and open to those who have taken Greek 3. *Both semesters. Hour to be arranged. One credit each semester.* Professor Martin.

Courses 4, 5, and 6 constitute the full year's work in Sophomore Greek.

Primarily for the Senior Colleges

7. SOPHOCLES AND ÆSCHYLUS. Greek Tragedy continued. The Antigone or Œdipus Tyrannus of Sophocles and the Agamemnon of Æschylus will be read and interpreted in class. *First semester. Hours to be arranged. Three credits.* Professor Martin.

8. THUCYDIDES. Selections from Books VI and VII, the Sicilian Expedition, will be read. Lectures, papers, and discussions on the rise, ascendancy, and decline of the power of Athens. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

9. ARISTOPHANES. The Birds and Frogs. Lectures on the origin and growth of Greek comedy. *First semester. Hours to be arranged. Two credits.* Professor Martin.

10. HERODOTUS. Rapid reading of large portions of Books II and VIII. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

11. PLATO. The reading and interpretation of the Phædo. Lectures, papers, and discussions on the Greek schools and systems of philosophy. *First semester. Hours to be arranged. Three credits.* Professor Martin.

12. DEMOSTHENES. Oration on the Crown. Informal lectures and assigned readings on the Attic Orators and the life and times of Demosthenes. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

13. GREEK NEW TESTAMENT. A study of the Gospel of Mark. Lectures on the grammar, lexicography, canon, and manuscripts of the New Testament. *First semester. Hours to be arranged. Two credits.* Professor Martin.

14. THEOCRITUS. Selected Idyls will be read and interpreted. Lectures on the characteristics and tendencies of Alexandrine poetry. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

Courses 7, 8, 9, and 10 are open to both Juniors and Seniors and will alternate with courses 11, 12, 13, and 14.

20. PRO-SEMINAR FOR UNDERGRADUATES. Introduction to the interpretation and criticism of classical authors. Lectures on paleography and the transmission of manuscripts. In 1909-1910 Theocritus will be the author for special study. Open to Seniors only. *Both semesters. Hour to be arranged. One credit.* Professor Martin.

21. THE GREEK EPIC IN ENGLISH. Lectures on the structure, growth, and criticism of the Homeric poems, with some consideration of the society and art of the earliest Greek civilization. This course is intended for students of literature in general, and is open to all. *First semester. Hours to be arranged. Two credits.* Professor Martin.

22. GREEK TRAGEDY IN ENGLISH. Lectures on the structure and interpretation of selected tragedies of Æschylus, Sophocles, and Euripides, with some consideration of the problems of the Greek theater and the manner of presentation of the antique drama. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

23. PRIVATE LIFE OF THE GREEKS. Lectures, with illustrations by stereopticon and photographs, aiming to give a systematic conception of Ancient Greek Life. Open to all students. *First semester. Hours to be arranged. Two credits.* Professor Martin.

24. GREEK ART. Lectures, illustrated with stereopticon and photographs, on the topography and monuments of Athens, and on the art and architecture of Ancient Greece. Papers and discussions on assigned topics in Greek religion and mythology. Open to all students. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

Courses 21 and 22 (or Latin 21) will alternate with courses 23 and 24 (or Latin 23).

II. LATIN LANGUAGE AND LITERATURE

PROFESSOR CHURCH, MR. THOMPSON

Primarily for the Junior Colleges

1. CICERO AND LIVY. The *De Senectute* of Cicero and Book I of Livy will be read with close attention to forms and syntax. Collateral reading on the history and literature of Rome down to the Age of Augustus. *First semester, 10-11, M. W. F. Three credits. 201 Morrill Hall.* Professor Church.

2. HORACE. The greater part of the Odes and Epodes will be read and interpreted. Special attention will be given to the prosody and to the metrical reading of Horace. Informal discussions upon the literary history and social conditions of the Age of Augustus. *Second semester, 10-11, M. W. F. 201 Morrill Hall.* Professor Church.

3. LATIN PROSE COMPOSITION (first course). Review of Latin Grammar and the writing of simple connected narra-

tive with collateral reading in *Nepos* and the *De Amicitia* of Cicero. Required of all Latin majors and open to those taking Latin 1 and 2. *Both semesters. Hour to be arranged. One credit each semester. 201 Morrill Hall. Professor Church.*

4. **PLAUTUS AND TERENCE.** The *Mostellaria* of Plautus will be studied with special regard to the language and prosody. The *Rudens* of Plautus and the *Andria* of Terence will then be read rapidly with more emphasis upon the origin, development, and general characteristics of Roman comedy. *First semester, 9-10, M. W. F. Three credits. 201 Morrill Hall. Professor Church.*

5. **TACITUS.** Selections from the *Annals* will be read, with some consideration of the history and literary tendencies of the Early Empire. *Second semester, 9-10, M. W. F. Three credits. 201 Morrill Hall. Professor Church.*

6. **LATIN PROSE COMPOSITION (second course).**¹ The writing of longer connected passages based upon *Livy*. Constant comparison of Latin and English idiom accompanied by collateral reading in *Livy*, Books XXI and XXII. *Both semesters. Hour to be arranged. One credit each semester. 201 Morrill Hall. Professor Church.*

Primarily for the Senior Colleges

7. **ROMAN SATIRE.** Horace and Juvenal will be read in part. Lectures on the origin and development of satire among the Romans. *First semester. Hours to be arranged. Three credits. 201 Morrill Hall. Professor Church.*

8. **ROMAN ELEGIAC POETRY.** Selections from *Catullus*, *Tibullus*, *Propertius* and *Ovid*. Lectures on lyric and elegiac poetry among the Romans. *Second semester. Hours to be arranged. Three credits. 201 Morrill Hall. Professor Church.*

9. **THE ROMAN NOVEL.** Rapid reading of the *Cena Trimalchionis* of *Petronius* and the *Cupid and Psyche* of *Apuleius*. Lectures on the growth of the prose romance in Greek and Roman literature. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall. Professor Church.*

10. **PLINY'S LETTERS.** Selected letters of *Pliny* will be read with constant regard to the times and state of society portrayed. Lectures on the epistolary art of the Ancients. *Second semester. Hours to be arranged. Two credits.- 201 Morrill Hall. Professor Church.*

11. **CICERO AND SENECA.** Selections from the philosophical

¹ Given especially for prospective candidates for the Rhodes Scholarship.

writings of Cicero and Seneca. Lectures and papers on the various schools of philosophy among the Romans. *First semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

12. PATRISTIC AND LATE LATIN. The Octavius of Minucius Felix and the Sanctæ Silviæ Perigrinatio. Lectures on the characteristics of later Latin literature with some consideration of the relation of late Latin to the Romance languages. *Second semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

13. INTRODUCTION TO LATIN EPIGRAPHY. A large number of inscriptions of interest for form or content will be read. Lectures on the forms, linguistic peculiarities and classification of Latin inscriptions. This course will aim to give students a working knowledge of the Corpus Inscriptionum Latinarum. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

14. TEACHERS' COURSE. Lectures on the methods and problems involved in teaching Latin in secondary schools. Discussion and comparison of the texts in general use, with practice teaching under the supervision of the instructor. *Second semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

20. PRO-SEMINAR FOR UNDERGRADUATES. In 1909-10 the Eclogues of Vergil and the later pastoral poetry among the Romans will be taken for special study. Open to Seniors only. *Both semesters. Hour to be arranged. One credit. 201 Morrill Hall.* Professor Church.

Courses 7, 8, 9, 10 alternate with courses 11, 12, 13, 14.

21. COMPARATIVE EPIC. The Æneid of Vergil and the Divine Comedy of Dante will be read in translation. Lectures on the characteristics of epic poetry among the Romans and on the life and times of Dante, with informal discussion of the problems connected with the interpretation of the two poems. If possible, this course should be taken in connection with Greek 21. Open to all. *Second semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

23. ROMAN PRIVATE LIFE. Lectures on the private life of the Romans, illustrated with the stereopticon and photographs. Papers and assigned readings on the topography, monuments, and art remains of Rome and Pompeii. This course alternates with Greek 23. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

III. FRENCH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Primarily for the Junior Colleges

1. BEGINNING FRENCH. Drill in grammar and in translating simple English into French, and French into English. *Both semesters, 8-9, M. T. Th. F. 104 Stewart Hall.* Professor de Laguna.

2. SECOND-YEAR FRENCH. Translation of Daudet's Selected Stories, Dumas's Les Trois Mousquetaires, Fontaine's Douze Contes Nouveaux, La Fontaine's Fables, Fortier's Napoleon, Extraits de Memoires et d'Histoires, and Herdler's Scientific French Reader. Advanced grammar and composition. *Prerequisite:* French 1, or two years of high-school French. *Both semesters, 9-10, M. W. F. 104 Stewart Hall.* Professor de Laguna.

Primarily for the Senior Colleges

3. THE FRENCH DRAMATISTS. Selected plays of Moliere, Racine, and Corneille, Hugo's Ruy Blas, Rostand's Cyrano de Bergerac and L'Aiglon. A synopsis or critique of each play read is required. Advanced prose composition. *104 Stewart Hall.* Professor de Laguna.

4. MODERN FRENCH. Poetry and prose, advanced prose composition. Essays in French on the works studied are required. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. M. W. F. Not given 1909-10. 104 Stewart Hall.* Professor de Laguna.

5. RAPID READING. *Prerequisite:* 1 and 2. *Both semesters. Hours to be arranged. One credit. 104 Stewart Hall.* Professor de Laguna.

20. SEMINAR FOR UNDERGRADUATES. Old French: Grammar, phonetics, morphology, syntax. Reading: Chanson de Roland, Chretien de Troyes, Chevalier au Lion. *Both semesters. Hours to be arranged. One credit. 104 Stewart Hall.* Professor de Laguna.

IV. SPANISH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Primarily for the Junior Colleges

1. BEGINNING SPANISH. The course in Spanish has been laid out for those students who have had at least two years' work in French and two or more in Latin, thus making rapid progress possible. As much time as can be spared from textbook work is devoted to Spanish conversation. *Elective. Pre-*

Prerequisites: Two years of Latin and two of French or an equivalent. *Both semesters. Hours to be arranged. Two credits. 104 Stewart Hall. Professor de Laguna.*

2. ADVANCED SPANISH. Modern Spanish novels and plays by standard authors. Selections from Le Sage's *Gil Blas* and Cervantes's *Don Quixote*. *Prerequisite:* Spanish 1. *Both semesters. Hours to be arranged. T. Th. Two credits. 104 Stewart Hall. Professor de Laguna.*

V. GERMAN LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Primarily for the Junior Colleges

1. ELEMENTARY GERMAN. Drill in grammar, reading of easy texts, and exercises in composition. *Both semesters, 8-9, daily. Four credits. Miss Riegelhuth.*

2. SECOND-YEAR GERMAN. Rapid reading of Leander's *Traumereien*, Bernhardt's *Auf der Sonnenseite*, and other simple stories and plays. Schiller's *Maria Stuart*, or *Die Jungfrau von Orleans*. Prose composition. *Prerequisite:* German 1 or two years of high-school German. *Both semesters, 9-10, M. W. F.; 1-2, T. Three credits. Miss Riegelhuth.*

Primarily for the Senior Colleges

4. GOETHE. Torquato Tasso and Faust, I. Two papers in German are required: a synopsis of Torquato Tasso and a characterization of Faust. History of German literature. Advanced prose composition. *Prerequisites:* German 1 and 2. *Both semesters. Hours to be arranged. M. W. F. Not given 1909-10. 104 Stewart Hall. Professor de Laguna.*

5. HISTORY OF GERMAN LITERATURE. German Lyrics and German Novels of the Nineteenth Century. Critical papers in German are required. Advanced prose composition. *Prerequisites:* German 1 and 2.

20. SEMINAR FOR UNDERGRADUATES. The interpretation of the *Nibelungenlied* or *Walther von der Vogelweide*. *Both semesters. Hours to be arranged. One credit. Professor de Laguna.*

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Primarily for the Junior Colleges

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily

and weekly themes. *Both semesters, M. W. F. Section 1, 9-10, Section 2, 10-11. Three credits. Stewart Hall. Mr. Paine.*

2a. ADVANCED COMPOSITION. The study and practice of exposition, description, and narration. *Prerequisite: English 1. First semester. Hours to be arranged. Two credits. Stewart Hall. Professor Hill.*

2b. ADVANCED COMPOSITION. The study and practice of one of the forms of discourse. *Prerequisites: English 1 and 2a. Second semester. Hours to be arranged. Two credits. Stewart Hall. Professor Hill.*

3. ARGUMENTATION. The preparation of briefs and the presentation of arguments. *Both semesters. Hours to be arranged. Two credits. Stewart Hall. Mr. Paine.*

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite: English 1. Both semesters, 9-10, M. W. F. Stewart Hall. Mr. Paine.*

Primarily for the Senior Colleges

5. LITERATURE OF THE NINETEENTH CENTURY. (1) General survey of the period. (2) Tennyson and Browning. *Prerequisites: English 1 and 4. Both semesters, 10-11, M. W. F. Mackay Mining Building. Professor Hill.*

6. SHAKESPEARE. The interpretation of six plays. *Prerequisites: English 1 and 4. (This course alternates with 5.) Not given 1910-11.*

7. CHAUCER. The Canterbury Tales. *Prerequisites: English 1 and 4. (This course alternates with 9.) Not given 1910-11.*

8. MILTON. Minor Poems and Paradise Lost. *Prerequisites: English 1 and 4. (This course alternates with 9.) Not given 1910-11.*

9. OLD ENGLISH. Grammar and the reading of simple prose and verse. *Prerequisites: English 1 and 4. First semester, 11-12, M. W. F. Mackay Mining Building. Professor Hill.*

10. BEOWULF. *Prerequisites: English 1, 4, and 9. Second semester, 11-12, M. W. F. Mackay Mining Building. Professor Hill.*

11. THE MODERN DRAMA. Ibsen, Maeterlinck, Pinero, Shaw. *(This course alternates with 12.) Not given 1910-11.*

12. THE NOVEL. A rapid survey of the history and development of the novel, followed by a more thorough study of the Nineteenth Century novels. *Both semesters, 11-12, T. Th. Mackay Mining Building.* Professor Hill.

20. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged with individual students. One credit per semester. Library.* Professor Hill.

VII. MUSIC

MRS. WOOD

Primarily for the Junior Colleges

1. NOTATION AND SIGHT SINGING. The elements of vocal music. *Both semesters. Hours to be arranged. One credit.* In the second semester, one recitation will be choral practice with the University Chorus. *6 Morrill Hall.* Mrs. Wood.

2. MUSICAL APPRECIATION. Lectures in the history of Music, biography, and musical form, with frequent illustrative recitals. *Both semesters. Hours to be arranged. One credit. 6 Morrill Hall.* Mrs. Wood.

3. THEORY. Written and analytical work in elementary harmony. *Prerequisite:* Some knowledge of piano-forte, band, or orchestral instrument. *Both semesters. Hours to be arranged. Two credits. 6 Morrill Hall.* Mrs. Wood.

4. APPLIED MUSIC. Students of voice, piano, or solo instruments will be given credit for specified work under instructors approved by the head of the department. *Both semesters. Hours and credits to be arranged.*

5. THE UNIVERSITY CHORUS. Systematic study of choral music with special reference to University needs. Mrs. Wood.

VIII. ART

ASSISTANT PROFESSOR LEWERS

Primarily for the Junior Colleges

1. DRAWING. Antique life and still life. *Hours and credits to be arranged.* Assistant Professor Lewers.

2. PAINTING. From nature in oil and water colors. *Hours and credits to be arranged.* Assistant Professor Lewers.

3. ORNAMENT. Historic ornament and conventionalization. *Hours and credits to be arranged.* Assistant Professor Lewers.

4. CLAY MODELING. *Hours and credits to be arranged.* Assistant Professor Lewers.

For description of other courses, see Art, State Normal School.

IX. HISTORY AND POLITICAL SCIENCE

PROFESSOR WIER

Primarily for the Junior Colleges

1. MEDIEVAL HISTORY FROM THE FOURTH TO THE THIRTEENTH CENTURY. Beginning with the history of the Barbarian invasions the course traces the development of primitive Germanic institutions, the rise of the medieval church and the Papacy, the expansion of the Frankish Empire, and the establishment of feudalism. *Both semesters, 10-11, T. Th. 202 Morrill Hall.* Professor Wier.

2. THE HISTORY OF EUROPE FROM THE FOURTEENTH TO THE EIGHTEENTH CENTURY. The formation of modern States, important features of the Renaissance, political and social development, as well as international relations, since the Peace of Westphalia. Special attention is given to the rise of Russia and Prussia, and to the change in Western Europe from the absolutism of the Old Régime to the democracy and individualism of the Nineteenth Century. *Both semesters, 1-2, M. W. F. 202 Morrill Hall.* Professor Wier.

3. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND TO 1485. This course is important as a preparation for the study of law. *Prerequisite:* The character of the work will render desirable previous training in History on the part of the student. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall.* Professor Wier.

4. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND SINCE 1485. The political history is traced merely as a background for the study of the growth of the English Parliament and the Cabinet system. Comparisons are made between the existing forms of government and administration in the various countries of Europe and America. Important as a preparation for the study of law. *Not given 1909-1910.*

Primarily for the Senior Colleges

5. THE CONSTITUTIONAL AND POLITICAL HISTORY OF THE UNITED STATES. A detailed study of the political and constitutional questions arising during the period of the formation of the Union. *Both semesters. Hours to be arranged. Three credits. 202 Morrill Hall. Given on request.* Professor Wier.

9. THE FRENCH REVOLUTION. Its causes and constitutional experiments. Studied from the European and American standpoints rather than as a French local crisis. *Both*

semesters. Hours to be arranged. Two credits. 202 Morrill Hall. Not given 1909-1910. Professor Wier.

10. THE HISTORY OF THE PACIFIC SLOPE THROUGH THE EARLY AMERICAN PERIOD. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall. Not given 1909-1910. Professor Wier.*

11. NINETEENTH AND TWENTIETH CENTURY HISTORY. A comparative study of the main events of recent history.

20. HISTORY SEMINAR. *Both semesters. Hours to be arranged. One credit. 202 Morrill Hall. Professor Wier.*

X. LAW

PROFESSOR LEWERS

1. ELEMENTARY LAW AND JURISPRUDENCE. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *First semester, M. W. F. Hours to be arranged. 301 Morrill Hall. Professor Lewers.*

2. INTERNATIONAL LAW. The principles of International Law as seen by the leading text-writers of America, England, and the Continent. *Second semester. Hours to be arranged. M. W. F. 301 Morrill Hall. Professor Lewers.*

3. ADVANCED LAW. The object of the course is to give the citizen a broader view than that outlined in the above courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins: Law of Property. McKelvey: Evidence. Prerequisite: Law 1 and 2. Both semesters, M. W. F. Hours to be arranged. 301 Morrill Hall. Professor Lewers.*

XI. ECONOMICS

PROFESSOR LEWERS

1. POLITICAL ECONOMY. The Elements of Political Economy. Recitations on the text, lectures and assigned readings. Political Economy or some equivalent. *Both semesters, 10-11, M. W. F. 301 Morrill Hall. Professor Lewers.*

2. FINANCIAL HISTORY OF THE UNITED STATES. A detailed study of the experiences and legislation of the United States touching currency, coinage, and banking. The study will be founded, as far as possible, on examination of original sources. *Prerequisite: Course 1. Both semesters. Hours to be arranged. M. W. F. President's Office. President Stubbs.*

XII. SOCIOLOGY

PROFESSOR ADAMS

Primarily for the Senior Colleges-

1. INTRODUCTION TO THE STUDY OF SOCIETY. The purpose of this course is to present the social process as a unity. The demand is not so much for detailed knowledge as for a correct point of view. Society is regarded as organic and evolutionary. The fundamental social institutions and their functions are studied, and their development through savagery, barbarism, and civilization is considered. *First semester. Hours to be arranged. Three credits. 101 Stewart Hall. Professor Adams.*

2. SOCIAL PROBLEMS. The aim of this course is to present a number of present-day problems from the point of view of Course 1. Among the problems are the labor problem, socialism, race problems, problems of the city, problems of rural communities, crime, pauperism. Not all of these subjects will receive attention during any one semester, but the course will include one or more of them selected according to the interest of the class. *Prerequisite: Course 1. Second semester. Hours to be arranged. Three credits. 101 Stewart Hall. Professor Adams.*

3. INDUSTRIAL INSTITUTIONS. A student of the evolution of modern industrial institutions with special reference to England and America. Social and educational problems growing out of industrial changes. *First semester. Hours to be arranged. Two credits. 101 Stewart Hall. Professor Adams.*

4. DOMESTIC INSTITUTIONS. A study of the human family. Primitive systems of marriage and relationship with reference to origin and function. Types of family in historic times—the Hebrew, the Greek, the Roman, the English, the American. Present problems of the home with special reference to American conditions. *Prerequisite: Course 1. Second semester. Hours to be arranged. Two credits. 101 Stewart Hall. Professor Adams.*

20. RESEARCH COURSE. Students choosing Sociology for a major subject will choose a thesis subject near the beginning of the Senior year, and carry on reading and research work during both semesters. Arrangements will be made in each case for consultations and reports during the year. *Hours and credits to be arranged. Professor Adams.*

XIII. EDUCATION

PROFESSORS ADAMS AND ORDAHL

Courses 1, 2, and 3 in Psychology are prerequisites to all courses in Education. During 1910-11 Juniors who have not had Psychology may take Education 5 while taking Psychology. Students planning to take work in Education should take Hygiene 1 in the Freshman year and Psychology 1 and 2 in the Sophomore year.

Primarily for the Senior Colleges

4. PRACTICE TEACHING. Opportunities for observation and practice are afforded by the Reno Public Schools. The work is done under the supervision of the Department of Education. *Both semesters. Senior year. Hours to be arranged.* Professors Adams and Ordahl.

5. LOGIC. *First semester. Hours to be arranged. Two credits. 101 Stewart Hall.* Professor Adams.

7. HISTORY OF EDUCATION. The course is introduced by a few lectures on ancient and medieval education. Chief attention is given to the evolution of the more significant educational principles and institutions in the modern period. The aim is to orient the student in relation to the present educational questions. *9-10, M. W. F. 101 Stewart Hall.* Professor Adams.

8. AIMS AND VALUES IN EDUCATION. General and special aims in elementary and secondary education considered from the social and from the individual point of view. Values of vocational and of non-vocational subjects. The question of formal discipline and special disciplines. Values as depending upon mental type and upon method of instruction and study. *Second semester, 9-10, M. W. F. 101 Stewart Hall.* Professor Adams.

XIV. PSYCHOLOGY

ASSISTANT PROFESSOR ORDAHL

Primarily for the Junior Colleges

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes and the emotional life. *Prerequisites: Hygiene 1, or its equivalent. First semester, 8-9, M. W. F. Three credits.* Assistant Professor Ordahl.

2. COMPARATIVE PSYCHOLOGY. The parallels between animal and human behavior, the learning process, the fundamental animal and human instincts in relation to individual and racial

development. *Second semester, 8-9, M. W. F. Three credits.* Assistant Professor Ordahl.

Primarily for the Senior Colleges

3. CHILD AND ADOLESCENT PSYCHOLOGY. Development of the nervous system and growth of the body are traced in connection with mental development. Types of child and adolescent mind are considered in relation to problems of social adjustment. Intellectual and emotional difficulties peculiar to child and youth are treated in their relation to clear thinking and moral efficiency. *Second semester, 8-9, T. Th. Two credits.* Assistant Professor Ordahl.

4. ABNORMAL PSYCHOLOGY. The pathological aspects of consciousness; arrested mental development in children. The various forms of insanity and their causes. Hallucinations and illusions. *First semester. Hours to be arranged. Two credits.* Assistant Professor Ordahl.

5. PSYCHOLOGY OF SUGGESTION. Normal and abnormal suggestion; symptoms and conditions of hypnosis; phenomena of dual personality; educational uses of suggestion. Examination of mind and faith cures. *Two credits. Hours to be arranged.*

6. ESTHETICS. Development of the ideas of beauty. The psychological foundations of esthetic appreciation. *Three credits. Second semester. Hours to be arranged.* Assistant Professor Ordahl.

Courses 4, 5, and 6 given on application of four or more students.

XV. ZOOLOGY

PROFESSOR FRANDSEN,¹ ACTING PROFESSOR HERRE, MISS OVERMAN

Primarily for the Junior Colleges

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8-9, T. Th. 101 Stewart Hall. Laboratory, 2-4:40, M. W. Four credits. 202 Hatch Hall.* Professor Frandsen,¹ Acting Professor Herre, and Miss Overman.

2. COMPARATIVE ANATOMY AND PHYSIOLOGY OF VERTEBRATES. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. It is also intended for those who plan to teach zoology or human anat-

¹Absent on leave.

omy in the high school and as a preparation for research work in anatomy. *Prerequisites:* Zoology 1 and Hygiene 1. *Both semesters, 10-11, M. W. F. Laboratory, 1-4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen¹ and Acting Professor Herre.

Primarily for the Senior Colleges

3. HISTOLOGY. The methods of killing, fixing, sectioning, staining, and mounting objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human, histology; but the course may be varied in different years. In the laboratory the student may choose either some invertebrate or vertebrate form for study. *Prerequisites:* Zoology 1 and 2, Hygiene 1. *First semester, 10-11, M. W. F. Laboratory, 1-4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen¹ and Acting Professor Herre.

4. EMBRYOLOGY. Lectures on comparative embryology. The laboratory work consists mainly of the preparation and study of sections of the frog, chick and pig at successive stages of development. *Prerequisites:* Zoology 1, 2, 3, and Hygiene 1. *Second semester, 10-11, M. W. F. Laboratory 1-4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen¹ and Acting Professor Herre. Courses 3 and 4 alternate with course 2.

8. EVOLUTION. Lectures illustrated by lantern slides on the evidences of organic evolution and its bearing upon science and life in general. *Second semester. Hours to be arranged. Two credits.* Professor Frandsen¹ and Acting Professor Herre.

20. RESEARCH COURSE. Students electing Zoology as a major will be required to select a thesis subject in the early part of the Senior year. A number of subjects selected from the different lines of zoological research, anatomy, physiology, histology, and embryology will be submitted to the choice of the student. If desired a student may elect thesis work in excess of the minimum one credit required. *Both semesters. Hours and credits to be arranged with individual student. 202 Hatch Hall.* Professor Frandsen¹ and Acting Professor Herre.

For description of other courses, see Zoology, College of Agriculture.

XVI. HYGIENE

PROFESSOR FRANDSEN,¹ ACTING PROFESSOR HERRE, MISS OVERMAN

Primarily for the Junior Colleges

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene,

¹Absent on leave.

the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8-9, T. Th. Laboratory, 2-4:30, T. F. Four credits. 101 Stewart Hall.* Professor Frandsen,¹ Acting Professor Herre, and Miss Overman.

2. GENERAL BACTERIOLOGY. Morphology and classification of bacteria. Methods of making cultures and studying the life processes of bacteria. Fermentation, putrefaction, etc., and their importance in the economy of nature. Pathogenic bacteria. *Second semester. Hours to be arranged. Four credits. 202 Hatch Hall.* Professor Frandsen¹ and Acting Professor Herre.

XVII. BOTANY

PROFESSOR FRANDSEN,¹ ACTING PROFESSOR HERRE, MISS OVERMAN

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8-9, T. W. 101 Stewart Hall. Laboratory, 2-4:30, M. W. Four credits. 301 Hatch Hall.* Professor Frandsen¹ and Acting Professor Herre.

2. CRYPTOGAMIC BOTANY. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. *Prerequisite: Botany 1. First semester. Lectures, 9-10, T. Th. Laboratory, 2-4:20, T. Th. Four credits. 202 Hatch Hall.* Professor Frandsen¹ and Acting Professor Herre.

3. COMPARATIVE HISTOLOGY OF PLANTS. The student will be introduced to methods of investigation, including the use of the microtome and the preparation of microscopic slides. *Prerequisites: Botany 1 and 2. First semester. Lectures, 9-10, M. W. Laboratory, 2-4:30, T. Th. 202 Hatch Hall.* Professor Frandsen¹ and Acting Professor Herre.

Primarily for the Senior Colleges

4. TAXONOMY AND PHYLOGENY OF THE ANGIOSPERMS. A study of the genetic relationship of the phanerogamous orders with practical studies in the laboratory relative to the flora of

¹Absent on leave.

Nevada. *Prerequisite:* Botany 1 or its equivalent. *Both semesters. Hours to be arranged. Three credits. 105 Hatch Hall.* Professor Kennedy.

5. **PHYSIOLOGICAL BOTANY.** A course of experiments similar to that outlined in McDougal's Plant Physiology. *Prerequisites:* Botany 1, 2, and 3. *Second semester. Hours to be arranged.* Professor Frandsen.¹

20. **RESEARCH COURSE.** This State offers a new and inviting field for investigation in botanical and horticultural science, and in forestry. The flora of the State is but little known, leaving ample opportunity for original research work during the summer months in collecting material for taxonomic or histological study in the laboratory. *Prerequisites:* Botany 1, 2, 3, or 4. *Both semesters. Hours to be arranged. Two credits. 105 Hatch Hall.* Professor Kennedy.

For description of other courses, see Botany, College of Agriculture.

XXV. DOMESTIC SCIENCE

ASSISTANT PROFESSOR BARDENWERPER

1a. **TEXTILES.** Hygienic and historic dress. Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

2a. **FOOD VALUES.** Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

3a. **HISTORY OF COOKERY.** Food adulterations. Invalid cookery. Chafing-dish course. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

One credit only is given each semester for work in the Department of Domestic Science.

XXVI. GEOLOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

For the Junior and Senior Colleges

1a. **DYNAMIC AND STRUCTURAL GEOLOGY.** A general discussion of geologic forces and their results. Lectures and recita-

¹Absent on leave.

tions. *First semester, 10-11, M. W. F. Three credits.* Required of all mining students; elective for all others. *Mackay Mining Building.* Professor Smith.

1b. HISTORICAL GEOLOGY. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships, and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *Prerequisite:* Geology 1a. *Second semester, 10-11, M. F. Two credits.* *Mackay Mining Building.* Professor Smith.

2. ELEMENTARY PETROLOGY. Lectures on the classification, characters and origin of rocks. *Prerequisites:* Geology 1a, Mineralogy 1a and 1b, 3. *Second semester, 1-2, M. T. Two credits.* *Mackay Mining Building.* Professor Smith.

2a. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens. *Prerequisite:* Geology 1a and 2. (The latter should be taken concurrently.) *Second semester, 1-4, W. One credit.* *Mackay Mining Building.* Professor Smith.

3. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens, and in thin sections with the microscope. *Prerequisites:* Mineralogy 4 and 5, Geology 1a and 2. (The latter should be taken concurrently.) *Second semester, 1-4, W. One credit.* *Mackay Mining Building.* Professor Smith.

Primarily for the Senior Colleges

4a. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the mapping of some area in the vicinity of the University. *Prerequisite:* Geology 1a. *Second semester. Hours to be arranged. One credit.*

4b. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably a mining camp, where both the surface and underground geology may be investigated. The field for 1909 was in the vicinity of Nevada City, California. A concise report of the work, together with well-kept field notes, a finished geological map and cross-sections, will be required of each member of the class. *Prerequisites:* Geology 1a and 1b, 2, and 4a. *Four credits. Hours to be arranged.*

4c. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspects of the work will

be given. *Prerequisite:* Geology 4b. *First semester. Hours to be arranged. One credit.* Professor Smith and Assistant Professor Jones.

5a. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and distribution of the principal ores, non-metallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Geology 1a and b, 2, and either 2a or 3. *First semester. Three credits.* Mackay Mining Building. Professor Smith.

5b. ECONOMIC GEOLOGY. An advanced course treating the modes of occurrence, origin, and distribution of metalliferous deposits, with a study of the important mining camps of North America. *Prerequisite:* Geology 5a. *Second semester. Hours to be arranged. Three credits.* Mackay Mining Building. Professor Smith.

20. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Smith.

21. GRADUATE COURSE. The original investigation of geologic problems, with seminar or discussion of current geological literature and special topics. *Hours to be arranged.* Mackay Mining Building. Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Primarily for the Junior Colleges

1a. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2-4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

1b. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 3 and 4. *Second semester, 2-4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical

specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Two credits. Mackay Mining Building. Assistant Professor Jones.*

Primarily for the Senior Colleges

2. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10-11, T. Laboratory, 2-4:30, W. Two credits. Mackay Mining Building. Professor Smith.*

4. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisites:* Mineralogy 1a and b, or 2; Physics 2 and 3. *First semester, 1-2, M. T. Two credits. Mackay Mining Building. Professor Smith.*

5. OPTICAL PROPERTIES OF MINERALS. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. *Prerequisite:* Mineralogy 4. (May be taken concurrently). *First semester, 1-4, F. One credit. Mackay Mining Building. Professor Smith.*

6. GRADUATE COURSE. To students suitably prepared opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged. Mackay Mining Building. Professor Smith, Assistant Professor Jones.*

XXVIII. CHEMISTRY

PROFESSORS ADAMS AND JACOBSON, ASSISTANT PROFESSOR DINSMORE, INSTRUCTOR HARTLEY, ASSISTANTS KENNEDY AND ROSS.

Primarily for the Junior Colleges

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Open to students in the Colleges of Liberal Arts, Science, and Agriculture who have not presented matriculation chemistry. *Both semesters. Hours to be arranged. Two credits. Mr. Hartley.*

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2-4:30, M. T. 101 Chemistry Building. Two credits. Professor Adams and Mr. Ross.*

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9-10, T. Th. Two credits. Professor Adams.*

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. *Both semesters, 2-4:30, W. Th. Two credits. Mr. Ross.*

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. Open to students who have completed Chemistry 3 and 4. *Either semester, 2-4:30. Three credits. 102 Chemistry Building.* Professor Adams.

6. QUANTITATIVE ANALYSIS. Special determinations in Analytical Chemistry will be assigned to meet the demands of the individual student and the department in which the degree is sought. Open to students who have completed Chemistry 5. *Either semester, 2-4:30. Three credits. 102 Chemistry Building.* Professor Adams.

Primarily for the Senior Colleges

7. ORGANIC CHEMISTRY. Lectures on the carbon compounds. Open to students who have completed Chemistry 3 and 4. (Given in alternate years with Chemistry 16 and 17.) *Both semesters, 10-11, T. Th. Two credits. 206 Chemistry Building.* Professor Adams.

8. ORGANIC CHEMISTRY. A laboratory course given in connection with Chemistry 7. (Given in alternate years with Chemistry 11.) *Both semesters, 2-4:30, M. T. Two credits. 202 Chemistry Building.* Professor Adams.

11. INORGANIC PREPARATIONS. A laboratory course giving practice in the preparation and purification of inorganic chemical compounds. *Prerequisite: Chemistry 5.* (Given in alternate years with Chemistry 8.) *Second semester, 2-4:30, M. T. Two credits. 102 Chemistry Building.* Professor Adams.

20a. THESIS COURSE FOR UNDERGRADUATES. Laboratory and library work on special topics to be chosen by the student in consultation with the instructors. Open to students who have completed Courses 6, 7, 8, and 11. *Second semester. Hours and credits to be arranged.* Professors Adams, Jacobson, and Dinsmore.

12. INDUSTRIAL CHEMISTRY. A lecture course on the application of chemical principles to the industrial arts. The course includes the manufacture of acids, alkalis, cements, glass, battery, explosives, dyes, sugars, soaps, paints, varnishes, and numerous other commercial products. *Both semesters. Two credits. Hours to be arranged.* Professor Dinsmore.

13. TECHNICAL ANALYSIS. A laboratory course to accompany Chemistry 12. The analysis of certain commercial products that will suit the requirements of the individual student. *First semester. Two credits. Hours to be arranged.* Professor Dinsmore.

Primarily for Graduate Students

14. PHYSICAL CHEMISTRY. A lecture course correlating facts and theories concerning chemical reactions, solution, vapor-tension, osmotic pressure, viscosity, polarimetry, electrical-conductivity, thermo-chemistry, chemical dynamics, and equilibrium, and related phenomena. *Both semesters. Hours to be arranged. Two credits. Prerequisites:* Chemistry 7, 8, and Physics 3. Professor Jacobson.

15. PHYSICAL CHEMISTRY. A laboratory course to accompany Chemistry 14. *Second semester. Two credits. Hours to be arranged.* Professor Jacobson.

16. HISTORY OF CHEMISTRY. A lecture course on the history and development of the science of chemistry. (Given in alternate years with Chemistry 7.) *First semester, 9-10, W. Th. F. 206 Chemistry Building. Two credits.* Professor Adams.

17. ADVANCED ORGANIC CHEMISTRY. A lecture course on special chapters in organic chemistry. *Prerequisites:* Chemistry 7, 8, and German 2. (Given in alternate years with Chemistry 7.) Professor Adams.

18. RADIOACTIVITY. A lecture course on the radioactivity of ores and elements. Methods of testing and properties of the Alpha, Beta, Gamma and X rays. Radium emanation and its bearing upon the degradation of the elements. Open to students who have completed Chemistry 14 and Physics 5. *First semester, 10-11, F. One credit.* Professor Jacobson.

20b. THESIS COURSE FOR UNDERGRADUATES. Laboratory and library work on special topics to be chosen by the student in consultation with the instructors. *Both semesters. Prerequisites:* Courses 6, 7, 8, 9 and 10. Professors Jacobson and Dinsmore.

21. THESIS COURSE FOR GRADUATE STUDENTS. Special problems for research, chosen in consultation with some member of the department, and carried out under his direction. No student will be admitted to this course who has not completed three years' work in Chemistry. *Hours to be arranged.* Professors Adams, Jacobson, and Dinsmore.

XXIX. PHYSICS

PROFESSOR HARTMAN

Primarily for the Junior Colleges

1. GENERAL PHYSICS. A course in General Physics giving University credit to students entering the University without condition but with a deficiency in this subject. The class-room

and laboratory work of this course will include that performed by students in Physics a, with one additional lecture or recitation per week. Plane Geometry is a prerequisite. *Both semesters. Hours to be arranged. Three credits.*

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisites: Mathematics 1b and 7; Physics a or Physics 1. Both semesters, 9-10, daily. Five credits. 5, 6 and 11 Physics Building.*

3. PHYSICAL MEASUREMENTS. Experimental work in heat and mechanics, sound and light, electricity and magnetism of distinctly quantitative character is done. The methods selected involve fundamental physical principles, and illustrate their most important applications. *Prerequisites: Mathematics 1b and 7; Physics 1. Both semesters, 2-4:30, W. Th. One credit. 5 Physics Building. Professor Hartman and Mr.*

Primarily for the Senior Colleges

4. ELECTRICAL MEASUREMENTS. Precise measurements of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisites: Physics 1, 2, and 3. Second semester, 2-4:30, T. W. One or two credits. Professor Hartman and Mr.*

5. HEAT AND THERMODYNAMICS. Lectures and recitations accompanied by experimental work of a quantitative character. This course, together with Physics 6, is introductory to Mathematical Physics. Many of the more difficult subjects that were merely touched upon in Physics 1 will be fully treated. *Prerequisites: Physics 1, 2, 3, and Mathematics 7, 8, 9. Both semesters, 8-9, T. Th. Two credits. 11 Physics Building. Professor Hartman.*

6. LIGHT AND PHYSICAL OPTICS. Lectures with experimental illustration on selected topics in light, including discussion of wave theory, diffraction, interference, resolving power of optical instruments, dispersion and absorption, spectrum analysis, double refraction and polarization. *Prerequisites: Physics 2, 3; Mathematics 7, 8, and 9. Both semesters, 8-9, T. Th. (Not given in 1910-1911.) Professor Hartman.*

7. PHYSICAL OPTICS. Laboratory exercises in connection

with Course 6. *First semester, 2-4:30, M. W. Two credits.* (Not given in 1910-1911.) Professor Hartman.

8. HISTORY OF PHYSICS. Lectures and recitations. Preparation of reports and discussion of assigned topics by members of the class. *Prerequisites:* Physics 1, 2, 3. *Both semesters, 10-11, Th. One credit. 11 Physics Building.* Professor Hartman.

9. DISCHARGE OF ELECTRICITY THROUGH GASES. *Prerequisite:* Physics 2. *First semester, 8-9, T. Th. Two credits.* Professor Hartman.

20. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* Professor Hartman.

XXX. MATHEMATICS

ASSOCIATE PROFESSOR HASEMAN

Primarily for the Junior Colleges

1a. ALGEBRA. Special emphasis is placed upon the following subjects: ratio, proportion, variation, progressions, undetermined coefficients, the binominal theorem, logarithms, series, and the theory of equations. *First semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

2. SOLID GEOMETRY. The geometry of the plane, the cone, the prism, the pyramid, and the sphere. *Second semester, six weeks. One credit. 107 Morrill Hall.* Associate Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of triangles. *Second semester, twelve weeks. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

4. DESCRIPTIVE ASTRONOMY. A treatment of the facts and laws of astronomy with a study of the solar system, the stars, comets, etc. *First semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

5. SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY. The solution of spherical triangles and the application of trigonometry to certain problems of practical astronomy. The theory and the use of the transit instrument. The determination of time, latitude and longitude. *Second semester. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

7. ANALYTIC GEOMETRY. A study of the point, straight line, transformation of coordinates, conic sections and the general equation of the second degree. A short time will be

devoted to analytic geometry of three dimensions. *Second semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminate forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester. Five credits. 107 Morrill Hall.* Associate Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of curves, areas of surfaces, volumes, moments of inertia and centers of gravity. *Second semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

15. HISTORY OF MATHEMATICS. Lectures and assigned reading on the history of the mathematical science. *First semester. Hours to be arranged. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

For students who desire to major in Mathematics the following more advanced courses can be arranged at any time: Solid analytic geometry, theory of equations, advanced calculus, differential equations, theory of numbers, theory of functions of complex variable, etc.; also, course in the application of mathematics to physics.

XXXVII. MILITARY SCIENCE AND TACTICS

LIEUTENANT McCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*¹ *Eight semesters, 11-12, M. T. Th. One credit.* Lieutenant McClure.

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*¹ *Four semesters, 11-12, W. One credit.* Cadet Officers.

3. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*¹ *Four semesters, 11-12, W. One-half credit.* Lieutenant McClure.

¹For exceptions, see Organization of Battalion of Cadets, page 44.

XXXVIII. PHYSICAL TRAINING FOR WOMEN

MISS MEIGHAN

PHYSICAL CULTURE. This course is offered to all young women of the University, and required in the Freshman and Sophomore years, as part of the regular work. Two hours of work each week are required of all students taking the course. Upon entering the class all students are carefully examined by a physician, with particular attention to the lungs and heart action, and information concerning the general health and inherited tendencies is solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong and symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium, make it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse waist and bloomers, with regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

COLLEGE OF AGRICULTURE

1. SCHOOL OF AGRICULTURE

2. SCHOOL OF DOMESTIC SCIENCE¹

¹The School of Domestic Science is as yet only partially organized, a complete organization awaiting the accumulation of a sufficient reserve.

COLLEGE OF AGRICULTURE

FACULTY

JOSEPH EDWARD STUBBS	President
HENRY THURTELL	Professor of Mathematics and Mechanics
PETER FRANDSEN ¹	Professor of Biology
P. BEVERIDGE KENNEDY	Professor of Botany, Horticulture, and Forestry
SAMUEL BRADFORD DOTEN	Professor of Entomology
GORDON HAINES TRUE	Professor of Agriculture and Animal Husbandry
W. S. TANGIER SMITH	Professor of Geology and Mineralogy
MAXWELL ADAMS	Professor of Chemistry
WINFRED BERDELL MACK	Professor of Bacteriology and Veterinary Science
HERBERT WYNFORD HILL	Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN	Professor of Civil Engineering
LOWE ABEEL MCCLURE	Professor of Military Science and Tactics
CARL ALFRED JACOBSON	Professor of Agricultural Chemistry
ALBERT C. HERRE	Acting Professor of Biology
CHARLES HASEMAN	Associate Professor of Mathematics
CHARLES S. KNIGHT	Assistant Professor of Agronomy
J. CLAUDE JONES	Assistant Professor of Geology and Mineralogy
KATE BARDENWERPER	Assistant Professor in Domestic Science
SANFORD CROSBY DINSMORE	Assistant Professor of Agricul- tural Chemistry
ACHILLES CALLOWAY GOUGH	Instructor in Mechanical Engineering
NORMAN CHATFIELD	Instructor in Mechanical Engineering
GUSTAVUS SWIFT PAINE	Instructor in English
AMOS ARTHUR HELLER	Instructor in Botany and Horticulture
HELEN ANN MEIGHAN	Director of Physical Training for Women
ELIZA HENRIETTA OVERMAN	Assistant in Biology
SILAS EARL ROSS	Assistant in Chemistry

AIM

The aim of the School of Agriculture is to give not only an adequate training in those branches which find their application in the practice of agriculture, or the operations of farming, gardening, and stock raising, but also to give such training in

¹Absent on leave.

English, mathematics, and the sciences as will furnish a well-rounded education.

EQUIPMENT

The Experiment Station Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, and where representatives of different breeds of pure-bred farm animals are available for class work, furnishes a valuable equipment for the study of those subjects directly related to practical agriculture.

CONDITIONS OF ADMISSION

SCHOOL OF AGRICULTURE

1. Entrance to the School of Agriculture shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the School of Agriculture must pass an examination in English composition, whether from the accredited school or not. The examination will be held in September of each year.

4. All new students of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits¹

1. English (a)	1
English (b)	1
English (c)	1
English (d)	1
2. Algebra, Elementary (a)	1
Plane Geometry (b)	1
Advanced Algebra (c)	1
Solid Geometry (d)	$\frac{1}{2}$
Plane Trigonometry (e)	$\frac{1}{2}$
3. Physics	1
4. English History (a)	1

¹A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

4. Ancient History (b)	1
Medieval and Modern History (c)	1
American History and Civics (d)	1
5. Latin (a)	1
Latin (b)	1
Latin (c)	1
Latin (d)	1
6. Greek (a)	1
Greek (b)	1
7. German (a)	1
German (b)	1
8. French (a)	1
French (b)	1
9. Spanish (a)	1
Spanish (b)	1
10. Chemistry	1
11. Physical Geography	$\frac{1}{2}$ or 1
12. Botany	$\frac{1}{2}$ or 1
13. Zoology	$\frac{1}{2}$ or 1
14. Physiology	1
15. Bookkeeping	$\frac{1}{2}$
16. Shopwork	1
17. Drawing	1

For entrance to the College of Agriculture, the candidates must present English a and b; Mathematics a and b; American History and Civics, 1 unit; Science, 2 units; 8 other units, to be chosen as the candidate may desire.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing in consultation with the adviser may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the departments concerned.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit in English 1, in 38 other units of the work required in their college; and in 20 additional units. It is advised that 8 of these electives be taken in the Freshman year, and 12 in the Sophomore year. All students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

The Degree of Bachelor of Science in Agriculture is conferred upon students who have satisfactorily completed the full course of study in the School of Agriculture as given below. The term of credit denotes the amount of work required by a lecture course meeting one hour a week for one semester, or a laboratory course requiring two and one-half hours a week during one semester.

SCHOOL OF AGRICULTURE

COURSE OF STUDY

FRESHMAN			
<i>First Semester</i>	<i>Lab. Lec.</i>	<i>Second Semester</i>	<i>Lab. Lec.</i>
English 1.....	3	English 1.....	3
Mathematics 1a.....	3	Mathematics 2a, 3a.....	3
Zoology 1.....	2	Botany 1.....	2
Agronomy 1.....	4	Animal Husbandry 1.....	4
Mechanic Arts 1.....	1	Mechanic Arts 2.....	1
Elective.....	3	Elective.....	3
Total.....	18	Total.....	18
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
English 4.....	3	English 4.....	3
Chemistry 1, 2 or 3, 4.....	2	Chemistry 1, 2 or 3, 4.....	2
Animal Husbandry 4.....	2	Horticulture 1.....	2
Agronomy 5.....	4	Agronomy 2.....	4
Elective.....	3	Elective.....	3
Total.....	18	Total.....	18
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
Agronomy 3, or Horticulture 2, 4.....	4	Animal Husbandry 3, 5, or Horticulture 3, 5.....	4
Economic Botany.....	1	Economic Entomology.....	1
Chemistry 9, 10.....	2	Chemistry 9, 10.....	2
C. E. 1 (Surveying).....	2	C. E. 11 (Irrigation).....	2
Elective.....	3	Elective.....	3
Total.....	18	Total.....	18

<i>First Semester</i>	SENIOR		<i>Second Semester</i>	
Agronomy 7.....	2	3	Veterinary Science 3.....	3
Thesis.....		2	Thesis.....	2
Electives.....		11	Electives.....	11
Total.....		18	Total.....	18

SCHOOL OF DOMESTIC SCIENCE

The courses in Domestic Science have thus far necessarily been restricted to practical laboratory work. In the past year, however, there have been added to the Library many books along the lines of sanitation, dietetics, hygiene and food chemistry, thus enabling the student to do independent library work. It is planned that the Library will be still further increased and that related courses in Chemistry and Hygiene will be added.

From the beginning the young women of our State have shown strong interest in the various phases of this work. The department aims to raise the ideals of home-making and home-keeping, and to improve the general well-being of the student.

COURSES OF INSTRUCTION

VI. English	XXIV. Entomology
XVI. Hygiene	XXV. Domestic Science
XVII. Botany	XXVII. Mineralogy
XVIII. Horticulture	XXVIII. Chemistry
XIX. Forestry	XXX. Mathematics
XX. Agronomy	XXXIV. Mechanic Arts
XXI. Animal Husbandry	XXXV. Civil Engineering
XXII. Veterinary Science	XXXVII. Military Science
XXIII. Dairying	XXXVIII. Physical Culture

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Primarily for the Junior Colleges

1. COMPOSITION AND RHETORIC. The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 9-10, Section 2, 10-11, daily. Three credits. Stewart Hall. Mr. Paine.*

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite: English 1. Both semesters, M.W.F. Stewart Hall. Mr. Paine.*

XVI. HYGIENE

PROFESSOR FRANDSEN,¹ ACTING PROFESSOR HERRE, MISS OVERMAN

Primarily for the Junior Colleges

1. PHYSIOLOGY AND HYGIENE. Special attention will be given in the second semester to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8-9, T. Th. 301 Hatch Hall. Laboratory, 2-4:30, F. Three credits. 101 Stewart Hall. Professor Frandsen¹ and Miss Overman.*
For description of other courses, see Hygiene, College of Arts and Science.

XVII. BOTANY

PROFESSOR KENNEDY, PROFESSOR FRANDSEN,¹ ACTING PROFESSOR HERRE,
MISS OVERMAN

Primarily for the Junior Colleges

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptation of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester. Lectures, 8-9, T. Th. 301 Hatch Hall. Laboratory, 2-4:30, I. W. Four credits. Professor Frandsen¹ and Acting Professor Herre.*

2. CRYPTOGAMIC BOTANY. Lectures and laboratory. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. Illustrated by lantern slides. *Prerequisite: Botany 1. First semester. Lectures, 9-10, T. Th. Laboratory, 2-4:30, T. Th. Four credits. 202 Hatch Hall. Professor Frandsen¹ and Acting Herre.*

6. ECONOMIC BOTANY. The nature and treatment of pathological and physiological diseases of plants, weeds, poisonous plants, grasses, and forage plants. *Prerequisites: Botany 1 and 2. First semester. Hours to be arranged. Five credits. 303 Stewart Hall. Professor Kennedy and Mr. Heller.*

For description of other courses, see Botany, College of Arts and Science.

¹Absent on leave

XVIII. HORTICULTURE

PROFESSOR KENNEDY, MR. HELLER

Primarily for the Junior Colleges

1. GENERAL HORTICULTURE. Fruit growing, vegetable gardening, the propagation of plants, pruning, grafting, budding, pollination, the making of lawns, ornamental shrubs and the beautifying of home and farm grounds. *Second semester. Hours to be arranged. Lectures and Laboratory. Four credits. 303 Stewart Hall.* Professor Kennedy and Mr. Heller.

Primarily for the Senior Colleges

2. FLORICULTURE. The growing of flowers for home decoration and for market. Greenhouse management and construction. *First semester. Two credits. Hours to be arranged.* Professor Kennedy.

3. VEGETABLE GARDENING. The general principles underlying the growing of vegetables for the home and market, both under glass and in the open. *Green: Vegetable Gardening. Second semester. Hours to be arranged. Two credits. 303 Stewart Hall.* Professor Kennedy.

4. THE EVOLUTION OF CULTIVATED PLANTS. The discussion of organic evolution as applied to the modification of plants, particularly those in cultivation. *Prerequisites: Botany 1 and Horticulture 1. First semester. Hours to be arranged. Two credits.* Mr. Heller.

5. LANDSCAPE GARDENING. The general principles governing outdoor art, with sundry suggestions for their application in the commoner problems of gardening. *Waugh: Landscape Gardening. Second semester. Hours to be arranged. Two credits. 303 Stewart Hall.* Professor Kennedy.

6. PLANT BREEDING. The fundamental principles governing the amelioration of plants and the methods of producing new varieties of fruits and ornamental plants. *De Vries: Plant Breeding. Bailey: Plant Breeding. Prerequisites: Horticulture 1 and Botany 1. First semester. Hours to be arranged. Five credits. 303 Stewart Hall.* Professor Kennedy.

XIX. FORESTRY

PROFESSOR KENNEDY

Primarily for the Junior Colleges

1. ELEMENTARY FORESTRY. The effects of deforestation on the water supply, forest protection, and regeneration; the use

and durability of the different woods, and forest economics.
Prerequisite: Botany 1. *Second semester.* *Hours to be arranged.*
Five credits. 303 Stewart Hall. Professor Kennedy.

XX. AGRONOMY

PROFESSOR TRUE, ASSISTANT PROFESSOR KNIGHT

Primarily for the Junior Colleges

1. AGRICULTURE. This is a study of elementary agriculture and serves in part as an introduction to the several courses in Agriculture—Animal Husbandry, Horticulture, Agronomy and Dairying. It includes a study of the soil, its formation, texture, plant-food requirements, moisture, tillage and fertility; the plant—its relation to soil and climate, its propagation, growth and cultivation, and the kind of crops and their culture; the animal—its life, feeding and breeding. *First semester.* *Hours to be arranged.* *Four credits.* Assistant Professor Knight.

2. FARM ENGINEERING. This is a study of the laws and principles which control the practice of Agriculture, including the following subjects: Farm machinery, invention, history and development; principles of construction and operation, with a comparison of the different makes or types of machines of different classes according to their adaptation for special conditions and uses; friction and lubricants; construction and ventilation of farm buildings; strength of materials; construction and maintenance of country roads; farm wells, windmills and pumps; principles of draft. *King:* Physics of Agriculture. *Davidson and Chase:* Farm Machinery and Farm Motors. *Second semester.* *Hours to be arranged.* *Four credits.* Assistant Professor Knight.

3. FARM CROPS I. This is a study of the principal cereal crops—corn, wheat, oats, barley, rye, rice, sorghum, etc.—and includes a complete study of each crop. *Hunt:* Cereals of America. Laboratory—The work in the laboratory consists in the study of the matured plants of the different varieties of grain, grasses, and alfalfa; the judging of grain and hay according to the commercial standards of perfection for pure-bred varieties; and the judging of alfalfa seeds. *Knight:* Judging and Commercial Grading of Small Grains and Hay. *First semester.* *Hours to be arranged.* *Five credits.* Assistant Professor Knight.

4. FARM CROPS II. This includes a study of forage crops, legumes and grasses, and will embrace the following subjects:

the special uses of these crops, as hay, soiling, silage, pasture, green manure, cover crops, etc.; the care and management of pastures; plan for the rotation of soiling crops; adaptation of grasses and other crops for growing under different climatic and soil conditions. Laboratory—The laboratory work will include the examination of samples of the standard varieties of grasses, clovers and other forage plants; the study of grass, clover and alfalfa seeds with reference to quality, purity and freedom from adulterants and weed seeds; the identification of seeds of noxious weeds which may be found in grass, clover or alfalfa seed. *First semester. Hours to be arranged. Five credits.* Assistant Professor Knight.

5. SOILS. This course includes a study of the nature, functions, origin, texture, composition, and kinds of soil; the relations of soil and water; air and sunlight; the treatment of soils to maintain fertility; and their cultivation in connection with the growing of crops. *First semester. Hours to be arranged. Four credits.* Assistant Professor Knight.

Primarily for the Senior Colleges

6. FARM MACHINERY. This course will consist largely of laboratory work and will include the taking down and setting up of different types of field machinery; it includes the practical application of the mechanical theories and principles taught in the class room, which will give the student a broader conception of these truths, and make them easier to grasp and retain, and more beneficial to the student. Lectures, outside reading and topic work. *Second semester. Hours to be arranged. Five credits.* Assistant Professor Knight.

7. FARM MANAGEMENT. This course will include a discussion of farm problems, such as those relating to the selection of a farm, types of farming, the laying out and equipment of farms, and the business affairs connected with farming. Professor True.

8. IRRIGATION. A brief review of the history of irrigation, the development of irrigation law, and the doctrine of appropriation. A study of the relation of rainfall, evaporation and seepage to irrigation; measurement of water upon the farm, the effect of irrigation upon the land and how to apply the growing crops. This is a study of irrigation problems from the water-user's point of view rather than that of the engineer. *Five times a week. First semester.* Professor True.

XXI. ANIMAL HUSBANDRY

PROFESSOR TRUE

Primarily for the Junior Colleges

1. BREEDS OF LIVE STOCK. A study of the origin, development, characteristics, and uses of the pure breeds of farm animals. For illustration the animals of the University Farm and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various breeds. *Plumb: Types and Breeds of Farm Animals. First semester. Hours to be arranged. Four credits. 101 Hatch Hall. Professor True.*

2. ANIMAL BREEDING. A discussion of the principles underlying the art of breeding, the aim of which is to develop, maintain, and improve the various breeds and types of farm animals and farm crops, studied with special reference to their application to breeding of farm animals. *First semester. Hours to be arranged. Five credits. 101 Hatch Hall. Professor True.*

3. FEEDING ANIMALS. A study of the principles underlying, and problems connected with, the feeding of farm animals. *Smith: Profitable Stock Feeding. First semester. Hours to be arranged. Two credits. 101 Hatch Hall. Professor True.*

Primarily for the Senior Colleges

4. STOCK JUDGING. Practice in judging live stock, the aim of which shall be to make the student familiar with the points of excellence in the various breeds of farm animals. *Craig: Judging Live Stock. First semester. Hours to be arranged. Five credits. 101 Hatch Hall. Professor True.*

5. LIVESTOCK REGISTRATION. A course intended to familiarize the student with the details of registering pure-bred animals, including a study of the history of the recognized registry associations and the rules governing them, a study of pedigrees, and how to keep herd records. *Second semester. Hours to be arranged. Two credits. 101 Hatch Hall. Professor True.*

6. ADVANCED STOCK FEEDING. Lectures and laboratory, laboratory to consist of conducting actual feeding experiments with farm animals. *Second semester. Three credits. Professor True.*

7. ADVANCED STOCK JUDGING. A course to include the judging of animals in classes as at fairs and stock shows. Laboratory twice a week. *Prerequisites: Animal Husbandry 1 and 4. Professor True.*

XXII. VETERINARY SCIENCE

PROFESSOR MACK

1. VETERINARY SCIENCE. This course is designed to give the student some familiarity with the more common ailments of domesticated animals, and such knowledge of the nature of disease as to enable him to maintain sanitary conditions, and to intelligently combat infection. *Second semester. Hours to be arranged. Daily. 204 Hatch Hall. Professor Mack.*

XXIII. DAIRYING

BUTTER MAKING. Practical butter making, including the use of the hand separator, the ripening of cream, churning, working and the putting up of butter for market, and the use of the Babcock tester. Lectures on the formation and composition of milk; ferments and their action; testing for purity and value; methods of manufacturing butter and cheese.

XXIV. ENTOMOLOGY

PROFESSOR DOTEN

1. ECONOMIC ENTOMOLOGY. Lectures with field work on destructive insect pests. Discussion of their life histories, and the best means of combating them. *First semester. Hours to be arranged. Four credits. Professor Doten.*

XXV. DOMESTIC SCIENCE

ASSISTANT PROFESSOR BARDENWERPER

1b. TEXTILES. The history and the hygiene of dress. Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall. Assistant Professor Bardenwerper.*

2b. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall. Assistant Professor Bardenwerper.*

3b. HISTORY OF COOKERY. Food adulterations. Dietetic errors. Invalid cookery. Chafing-dish course. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall. Assistant Professor Bardenwerper.*

XXVI. GEOLOGY

PROFESSOR SMITH

1c. ELEMENTARY GEOLOGY. A brief elementary course in Geology. Open to agricultural students only. *Second semester.*

courses to be arranged. Two credits. (To be taken concurrently with Mineralogy 1c.) Mackay Mining Building. Professor Smith.

For description of other courses, see under Geology, College of Engineering.

XXVII. MINERALOGY

ASSISTANT PROFESSOR JONES

1c. ELEMENTARY MINERALOGY AND PETROLOGY. A brief course in the determination of the common minerals and rocks. Open to agricultural students only. (To be taken concurrently with Geology 1c.) Second semester, 2-4:30, M. One credit. Mackay Mining Building. Assistant Professor Jones.

For description of other courses, see under Mineralogy, College of Engineering.

XXVIII. CHEMISTRY

PROFESSORS ADAMS AND JACOBSON, ASSISTANT PROFESSOR DINSMORE, INSTRUCTOR HARTLEY, AND ASSISTANTS KENNEDY AND ROSS

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Open to students in the Colleges of Liberal Arts, Science and Agriculture, who have not presented matriculation chemistry. Both semesters. Two credits. Mr. Hartley.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. Both semesters, 2-4:30, M. T. 101 Chemistry Building. Two credits. Professor Adams and Mr. Ross.

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students, who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. Both semesters, 9-10, T. Th. Two credits. Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. Both semesters, 2-4:30, W. Th. Two credits. Mr. Ross.

9. AGRICULTURAL CHEMISTRY. A lecture course on the application of chemical principles to farm economy. The following topics will be dealt with: Composition of plants, soil and fertilizers; soil fertility and soil toxicity; metabolic changes in animal and plant nutrition; the use of instruments and methods in agricultural analysis. Two hours per week. Both semesters. Prerequisites: Chemistry 1 and 2. Four credits. Professor Jacobson.

10. AGRICULTURAL ANALYSIS. A laboratory course to accompany Chemistry 9. This course includes the analysis of farm and dairy products, soils, fertilizers, stock foods and irrigation waters. *Both semesters, 2-4:30, T. W. Four credits.* Professor Jacobson and Mr. Kennedy.

XXX. MATHEMATICS

ASSOCIATE PROFESSOR HASEMAN

Primarily for the Junior Colleges

1a. ALGEBRA. Special emphasis is placed on the following subjects: Ratio, proportion, variation, progressions, undetermined coefficients, the binomial theorem, logarithms, series, and the theory of equations. *First semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

2. SOLID GEOMETRY. The geometry of the plane, the cone, the prism, the pyramid, and the sphere. *Second semester. Six weeks. One credit. 107 Morrill Hall.* Associate Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of triangles. *Second semester, 12 weeks. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

For other courses in Mathematics, see College of Arts and Science.

XXXIV. MECHANIC ARTS

MR. GOUGH, MR. CHATFIELD

1. BENCH WORK AND WOOD TURNING. *Both semesters. Hours to be arranged. Two credits. 201 Mechanical Building.* Mr. Gough and Mr. Chatfield.

For description of other courses, see Mechanic Arts, College of Engineering.

XXXV. CIVIL ENGINEERING

PROFESSOR BOARDMAN

1. SURVEYING. The use and adjustments of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting room in land surveying, topographic, hydrographic, mining, and city surveying. *First semester only. Recitations or lectures, 1-2. Field or Drafting, 2-4:30, Th. F. Four credits.* Professor Boardman.

RURAL ENGINEERING. A course including road building and maintenance, the construction of irrigation and drainage works for the farm, the construction of farm buildings, the use of

concrete in farm construction, the use of motors, engines, and other farm machinery.

XXXVII. MILITARY SCIENCE AND TACTICS

LIEUTENANT MCCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*¹ *Eight semesters, 11-12, M. T. V. Th. F. One credit.* Lieutenant McClure.

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*¹ *Four semesters, 11-12, W. One credit.* Cadet Officers.

3. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*¹ *Four semesters, 11-12, W. One-half credit.* Lieutenant McClure.

XXXVIII. PHYSICAL TRAINING FOR WOMEN

MISS MEIGHAN

PHYSICAL CULTURE. This course is offered to all young women of the University, and required in the Freshman and Sophomore years, as part of the regular work. Two hours of work each week are required of all students taking the course. Upon entering the class all students are carefully examined by a physician, with particular attention to the lungs and heart action, and information concerning the general health and inherited tendencies are solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong and symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium, make it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse-waist and bloomers, with regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

¹For exceptions, see Organization of Battalion of Cadets, page 44.

COLLEGE OF ENGINEERING

1. THE MACKAY SCHOOL OF MINES
2. THE SCHOOL OF MECHANICAL ENGINEERING
3. THE SCHOOL OF CIVIL ENGINEERING

COLLEGE OF ENGINEERING

FACULTY

JOSEPH EDWARD STUBBS.....	President
HENRY THURTELL.....	Professor of Mathematics and Mechanics
GEORGE J. YOUNG ¹	Professor of Mining and Metallurgy
JAMES GRAVES SCRUGHAM.....	Professor of Mechanical Engineering
LOWE ABEEL MCCLURE.....	Professor of Military Science and Tactics
W. S. TANGIER SMITH.....	Professor of Geology and Mineralogy
MAXWELL ADAMS.....	Professor of Chemistry
HERBERT WYNFORD HILL.....	Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN.....	Professor of Civil Engineering
LEON WILSON HARTMAN.....	Professor of Physics
DWIGHT BRUNEL HUNTLEY.....	Acting Professor of Mining and Metallurgy
CHARLES HASEMAN.....	Associate Professor of Mathematics
KATHERINE LEWERS.....	Assistant Professor of Drawing
JAY ARNOLD CARPENTER.....	Assistant Professor of Metallurgy
J. CLAUDE JONES.....	Assistant Professor of Geology and Mineralogy
ACHILLES CALLOWAY GOUGH.....	Instructor in Mechanical Engineering
GUSTAVUS SWIFT PAINE.....	Instructor in English
NORMAN CHATFIELD.....	Instructor in Mechanical Engineering
SILAS EARL ROSS.....	Assistant in Chemistry

AIM

The aim of the College of Engineering is to equip the young men who wish to share actively in the industrial development of the State and the Nation with such knowledge of mining, mechanical and civil engineering as is essential for entrance into these professions.

EQUIPMENT

In a College of Engineering the material equipment is of great importance and the University has made a special effort to properly provide the necessary laboratories, workshops, etc. For a general description of these see under the titles Mackay Mining Building, Mechanical Building, Chemistry Building, Laboratories for Geology and Mineralogy, Laboratories of the Mining Department, and the Chemical Laboratories, in the earlier part of this Register.

¹Absent on leave.

CONDITIONS OF ADMISSION

1. Entrance to the Engineering Schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work done here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits¹

1. English (a)	1
English (b)	1
English (c)	1
English (d)	1
2. Algebra, Elementary (a)	1
Plane Geometry (b)	1
Advanced Algebra (c)	1
Solid Geometry (d)	$\frac{1}{2}$
Plane Trigonometry (e)	$\frac{1}{2}$
3. Physics	1
4. English History (a)	1
Ancient History (b)	1
Medieval and Modern History (c)	1
American History and Civics (d)	1
5. Latin (a)	1
Latin (b)	1
Latin (c)	1
Latin (d)	1
6. Greek (a)	1
Greek (b)	1
7. German (a)	1
German (b)	1
8. French (a)	1
French (b)	1
9. Spanish (a)	1
Spanish (b)	1
10. Chemistry	1

¹A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

11. Physical Geography.....	$\frac{1}{2}$ or 1
12. Botany.....	$\frac{1}{2}$ or 1
13. Zoology.....	$\frac{1}{2}$ or 1
14. Physiology.....	1
15. Bookkeeping.....	$\frac{1}{2}$
16. Shopwork.....	1
17. Drawing.....	1

For entrance to the Engineering Schools, the candidates must present English a and b; Mathematics a, b, c, d, and e; American History and Civics, 1 unit; Science, 2 units, one of which must be advanced; 6 other units, to be chosen as the candidate may desire.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination, on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the department concerned.

THE JUNIOR CERTIFICATE

In the Engineering Schools, the Junior Certificate will be given to those who have satisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit for the first two years' work required in their respective colleges. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

THE BACCALAUREATE DEGREE

(1) The Degree of Bachelor of Science in Mining Engineering is conferred upon students who have satisfactorily completed the full course of study in the School of Mining Engineering; (2) the Degree of Bachelor of Science in Mechanical Engineering, upon students who have satisfactorily com-

pleted the full course of study in the School of Mechanical Engineering; (3) the Degree of Bachelor of Science in Civil Engineering, upon students who have satisfactorily completed the course of study in the School of Civil Engineering.

DEGREES OF MINING, MECHANICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, or Civil Engineer, is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty preceded by

(a) Three years of experience in responsible engineering positions, or

(b) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Studies and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

COLLEGE OF ENGINEERING

COURSE OF STUDY

FRESHMAN—ALL SCHOOLS

<i>First Semester</i>		<i>Second Semester</i>	
	<i>Lab. Lec.</i>		<i>Lab. Lec.</i>
English 1.....	3	English 1.....	3
Chemistry 3 and 4.....	2 2	Chemistry 3 and 4.....	2 2
Mathematics 1b.....	3	Mathematics 7.....	3
Drawing 1 and 2.....	3	Drawing 3.....	3
Mechanic Arts 1.....	2	Mechanic Arts 2.....	2
Elective.....	3	Elective.....	3
Total.....	18	Total.....	18

SCHOOL OF MINES

<i>First Semester</i>		<i>Second Semester</i>	
Mineralogy 1a.....	2	Mineralogy 1b.....	2
Chemistry 5.....	3	Chemistry 6.....	3
Mathematics 8.....	5	Mathematics 9.....	3
Physics 2 and 3.....	1 5	Physics 2 and 3.....	1 5
Elective.....	2	Elective.....	2
Total.....	18	Total.....	18

<i>First Semester</i>	JUNIOR	<i>Second Semester</i>	
Mining 11 and 12.....	2	Mining 7.....	2
Geology 1a.....	3	Mining 12.....	2
Mathematics 10.....	3	Mathematics 10.....	3
Mathematics 11.....	2	Geology 1b.....	2
Civil Engineering 1.....	4	Geology 2.....	2
Elective.....	4	Geology 2a or 3.....	1
		Geology 4a.....	1
		Civil Engineering 1.....	4
		Elective.....	1
Total.....	18	Total.....	18

In the summer vacation, Geology 4b is required of all mining students. The work covers four weeks.

<i>First Semester</i>	SENIOR	<i>Second Semester</i>	
Mining 1.....	4	Mining 2.....	4
Mining 3.....	1	Mining 9.....	4
Mining 8.....	4	Mining 10.....	2
Mining 10.....	2	Thesis.....	2
Geology 4c.....	1	Elective.....	6
Geology 5a.....	3		
Elective.....	3		
Total.....	18	Total.....	18

SCHOOL OF MECHANICAL ENGINEERING

SOPHOMORE

<i>First Semester</i>	Lab. Lec.	<i>Second Semester</i>	Lab. Lec.
Mechanical Engineering 1.....	2	Mechanical Engineering 1.....	2
Mechanic Arts 3.....	2	Mechanical Engineering 2.....	2
Chemistry 5a.....	1	Mechanic Arts 3.....	2
Physics 2.....	1	Physics 2.....	1
Mathematics 8.....	5	Mathematics 9.....	3
Elective.....	2	Drawing 4.....	2
		Elective.....	1
Total.....	18	Total.....	18

<i>First Semester</i>	JUNIOR	<i>Second Semester</i>	
Electrical Engineering 1.....	3	Mechanical Engineering 1.....	2
Mathematics 10.....	3	Mechanical Engineering 3.....	2
Mathematics 11.....	2	Electrical Engineering 2.....	3
Drawing 5.....	3	Mathematics 10.....	3
Civil Engineering 1.....	4	Civil Engineering.....	4
Civil Engineering 9.....	2	Drawing 6.....	3
Elective.....	1	Elective.....	1
Total.....	18	Total.....	18

<i>First Semester</i>		SENIOR	<i>Second Semester</i>	
Mechanical Engineering 5	5	4	Mechanical Engineering 6	2
Mechanical Engineering 10	1	1	Mechanical Engineering 7	1
Electrical Engineering 3	3	3	Mechanical Engineering 8	1
Civil Engineering 8	3	3	Electrical Engineering 4	2
Drawing 7	3	3	Electrical Engineering 5	2
Elective	3	3	Drawing 7	4
			Thesis	2
			Elective	3
Total	18	Total	18	18

SCHOOL OF CIVIL ENGINEERING

SOPHOMORE

<i>First Semester</i>		Lab. Lec.	<i>Second Semester</i>		Lab. Lec.
Mineralogy 1a	2	2	Physics 2	1	5
Physics 2	1	5	Mathematics 9	3	3
Mathematics 8	5	5	Mechanical Engineering 1	2	2
Mechanical Engineering 1	2	2	Drawing 3a	1	1
Elective	3	3	Drawing 4	2	2
			Elective	4	4
Total	18	Total	18	18	18

<i>First Semester</i>		JUNIOR	<i>Second Semester</i>	
Civil Engineering 1	4	4	Civil Engineering 1	4
Civil Engineering 9	2	2	Civil Engineering 6	3
Mathematics 10	3	3	Civil Engineering 7	3
Mathematics 11	2	2	Mathematics 10	3
Electrical Engineering 1 or Geology 1a	3	3	Mathematics 11	2
Elective	4	4	Elective	3
Total	18	Total	18	18

<i>First Semester</i>		SENIOR	<i>Second Semester</i>	
Civil Engineering 3	5	5	Civil Engineering 4	5
Civil Engineering 5	3	2	Civil Engineering 10	2
Civil Engineering 8	3	3	Civil Engineering 11	2
Civil Engineering 13	2	2	Civil Engineering 13	2
Elective	3	3	Thesis	2
			Elective	5
Total	18	Total	18	18

COURSES OF INSTRUCTION

- | | |
|-------------------|---|
| VI. English | XXXII. Mechanical Engineering |
| XXVI. Geology | XXXIII. Electrical Engineering |
| XXVII. Mineralogy | XXXIV. Mechanic Arts |
| XXVIII. Chemistry | XXXV. Civil Engineering |
| XXIX. Physics | XXXVI. Drawing |
| XXX. Mathematics | XXXVII. Military Science
and Tactics |
| XXXI. Mining | |

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Primarily for the Junior Colleges

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters, Section 1, 9-10, Section 2, 10-11, daily. Three credits. 5 Stewart Hall. Mr. Paine.*

For description of other courses, see English, College of Arts and Science.

XXVI. GEOLOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

For the Junior and Senior Colleges

1a. DYNAMIC AND STRUCTURAL GEOLOGY. A general discussion of geological forces and their results. Lectures and recitations. *First semester, 10-11, M. W. F. Mackay Mining Building. Professor Smith.*

1b. HISTORICAL GEOLOGY. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *Prerequisite: Geology 1a. Second semester, 10-11, M. F. Mackay Mining Building. Professor Smith.*

2. ELEMENTARY PETROLOGY. Lectures on the classification, characters and origin of rocks. *Prerequisites: Geology 1a, Mineralogy 1a and b, 3. Second semester, 1-2. Two credits. Mackay Mining Building. Professor Smith.*

2a. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens. *Prerequisite: Geology 1a and 2. (The latter should be taken concurrently.) Second semester, 1-4, W. One credit. Mackay Mining Building. Professor Smith.*

3. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens, and in thin sections with the microscope. *Prerequisites: Mineralogy 4 and 5; Geology 1a and 2. (The latter should be taken concurrently.) Second semester, 1-4, W. One credit. Mackay Mining Building. Professor Smith.*

Primarily for the Senior Colleges

4a. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the map-

NOTE—Credits are reckoned on the semester basis. When not otherwise specified, the credits are equivalent to the number of recitations per week.

ping of some area in the vicinity of the University. *Prerequisite:* Geology 1a. *Second semester; hours to be arranged. One credit.*

4b. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably a mining camp, where both the surface and underground geology may be investigated. The field for 1909 was in the vicinity of Nevada City, California. A concise report of the work, together with well-kept field notes, a finished geological map and cross sections will be required of each member of the class. *Prerequisites:* Geology 1a and b, 2, and 4a. *Four credits; hours to be arranged.*

4c. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspects of the work will be given. *Prerequisite:* Geology 4b. *First semester; hours to be arranged. One credit.* Professor Smith and Assistant Professor Jones.

5a. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and distribution of the principal ores, non-metallic minerals, and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Geology 1a and b, 2, and either 2a or 3. *First semester. Three credits. Mackay Mining Building.* Professor Smith.

5b. ECONOMIC GEOLOGY. An advanced course treating the modes of concurrence, origin and distribution of metalliferous deposits, with a study of the important mining camps of North America. *Prerequisite:* Geology 5a. *Second semester; hours to be arranged. Three credits. Mackay Mining Building.* Professor Smith.

20. UNDERGRADUATE THESIS COURSE. *Second semester; hours to be arranged. Two credits. Mackay Mining Building.* Professor Smith.

21. GRADUATE COURSE. Original investigation of geologic problems with seminar for discussion of current geological literature and special topics. *Credits and hours to be arranged. Mackay Mining Building.* Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Primarily for the Junior Colleges

1a. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed

by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisites:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2-4:30, M. T. Two credits. Mackay Mining Building.* Assistant Professor Jones.

1b. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 3 and 4. *Second semester, 2-4:30, M. T. Two credits. Mackay Mining Building.* Assistant Professor Jones.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Two credits. Mackay Mining Building.* Assistant Professor Jones.

Primarily for the Senior Colleges

2. CRYSTALLOGRAPHY. Lectures, recitations and laboratory practice on the morphology of minerals. *First semester. Lecture 10-11, T. Laboratory, 2-4:30, W. Two credits. Mackay Mining Building.* Professor Smith.

4. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisites:* Mineralogy 1a and b, or 2 and 3. *First semester, 1-2, M. T. Two credits. Mackay Mining Building.* Professor Smith.

5. OPTICAL PROPERTIES OF MINERALS. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. *Prerequisite:* Mineralogy 4. (May be taken concurrently.) *First semester, 1-4, F. One credit. Mackay Mining Building.* Professor Smith.

6. GRADUATE COURSE. To students suitably prepared, opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Credits and hours to be arranged. Mackay Mining Building.* Professor Smith and Assistant Professor Jones.

XXVIII. CHEMISTRY

PROFESSORS ADAMS AND DINSMORE, MR. ROSS

Primarily for the Junior Colleges

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9-10, T. Th. Two credits.* Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accom-

pany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. *Both semesters, 2-4:30, W. Th. Two credits.* Mr. Ross.

5. QUANTITATIVE ANALYSIS. Training in general methods of manipulation will be given in both gravimetric and volumetric analysis. Open to students who have completed Chemistry 3 and 4. *Either semester, 2-4:30. Three credits. 102 Chemistry Building.* Professor Adams.

5a. A laboratory course in elementary fuel analysis for mechanical engineers. *First semester, 2-4:30, Th.* Professor Adams and Professor Dinsmore.

6. QUANTITATIVE ANALYSIS. Special determination in analytical chemistry will be assigned to meet the demands of the individual students and the department in which the degree is sought. Open to students who have completed Chemistry 5. *Either semester, 2-4:30. Three credits. 102 Chemistry Building.* Professor Adams.

XXIX. PHYSICS

PROFESSOR HARTMAN

Primarily for the Junior Colleges

1. GENERAL PHYSICS. A course in general physics giving University credit to students entering the University without condition but with a deficiency in this subject. The class-room and laboratory work of this course will include that performed by students in Physics a, with one additional lecture or recitation per week. Plane geometry is a prerequisite. *Both semesters. Hours to be arranged. Three credits.*

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisites: Mathematics 1b and 7; Physics a or Physics 1. Both semesters, 9-10, daily. Five credits. 5, 6, and 11 Physics Building.*

3. PHYSICAL MEASUREMENTS. Experimental work in heat and mechanics, sound and light, electricity and magnetism of distinctly quantitative character is done. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisites: Mathematics 1b and 7; Physics 1. Both semesters, 2-4:30, W. Th. One credit. 5 Physics Building.* Professor Hartman and Mr.

Primarily for the Senior Colleges

5. ELECTRICAL MEASUREMENTS. Precise measurement of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisites:* Physics 1, 2, and 3. *Second semester, 2-4:30, T. W. One or two credits.* Professor Hartman and Mr.

20. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* Professor Hartman.

XXX. MATHEMATICS

ASSOCIATE PROFESSOR HASEMAN

Primarily for the Junior Colleges

1b. ALGEBRA. This course covers progressions, the binomial theorem, permutations and combinations, the theory of equations, and the theory and application of determinants. *First semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

2b. SOLID GEOMETRY. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. *First semester. Four weeks, 8-9, daily. One credit. 107 Morrill Hall.* Associate Professor Haseman.

3b. PLANE TRIGONOMETRY. Prominence is given to the relation of functions, transformation of trigonometric expressions, the derivation of formulas, and the solution of triangles. *First semester. Six weeks, 8-9, daily. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

7. ANALYTIC GEOMETRY. A study of the point, the straight line, transformation of coordinates, conic sections and the general equation of the second degree. A short time will be devoted to analytic geometry of the dimensions. *Second semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminate forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester. Five credits. 107 Morrill Hall.* Associate Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to the

methods of integration. This is followed by the application of integration to areas of plane curves, areas of surfaces, volumes, moments of inertia and centers of gravity. *Second semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

Primarily for the Senior Colleges

10. ANALYTIC MECHANICS. Work in the resolution of forces, center of gravity, moment of inertia, laws of motion, friction and dynamics of machinery. Emphasis is placed on practical numerical examples to illustrate the theory. *Both semesters. Three credits each semester. 107 Morrill Hall.* Associate Professor Haseman.

11. MECHANICS OF MATERIALS. Application of the principles of statics to rigid bodies; elasticity and resistance of materials; discussion of beams and columns, forms of uniform strength, riveting, torsion of shafts. *Both semesters. Two credits each semester. 107 Morrill Hall.* Associate Professor Haseman.

For other courses in Mathematics, see College of Arts and Science.

XXXI. MINING AND METALLURGY

PROFESSOR YOUNG,¹ ACTING PROFESSOR HUNTLEY, AND ASSISTANT PROFESSOR CARPENTER

Primarily for the Senior Colleges

1. MINING (General). Excavation, explosives, tunneling, boring, shaft-sinking. *First semester. Lecture Room, Mackay Mining Building.* Professor Young¹ and Acting Professor Huntley.

2. MINING (General). Lectures and recitations. Ore deposits, prospecting, development, exploitation, examination, mine equipment and management, mining law. *Second semester. Lecture Room, Mackay Mining Building.* Professor Young¹ and Acting Professor Huntley.

3a. MINING (Laboratory). Problems in engineering and in the design of mining and metallurgical machinery; review and discussion of technical journals and books. *First semester. One credit. Lecture Room, Mackay Mining Building.* Professor Young,¹ Acting Professor Huntley, and Assistant Professor Carpenter.

3b. MINING (Laboratory). Continuation of Mining 3a. *Second semester. One credit. Lecture Room, Mackay Mining Building.* Professor Young,¹ Acting Professor Huntley, and Assistant Professor Carpenter.

4. MINING (Laboratory). The work in this course consists of practice in sharpening and tempering hand and machine drills, in the use of these, and in forging and welding. *First semester. Two credits. Mining Laboratory and Forge Shop.* Professor Young¹ and Acting Professor Huntley.

5. EXCURSIONS. During the year two trips are taken to Virginia City and vicinity. The first trip is taken during the latter part of the first term, and has for its object the study of an ore deposit. The surface and underground conditions and the relationship of the mine openings and underground work to the deposit are the special subjects of study. Mapping of the geological formation is also done in order to facilitate interpretation of the structure. The second trip, taken in the latter half of the second semester, has for its object the study of the mine surface plants, mine equipment, underground work, mills, cyanide, and reduction plants. Reports of observations, with sketches, are required of each student. (For Seniors, School of Mines.) Professor Young¹ and Acting Professor Huntley.

6. ENGINEERING CONTRACTS AND SPECIFICATIONS. *Second semester. Lecture room. Mackay Mining Building.* Professor Young¹ and Acting Professor Huntley.

7a. METALLURGY (General). Lectures and recitations. Physical properties of the more important metals and alloys; physical properties of the structural metals and alloy steels; the metallographical structure of steels. *Prerequisites:* Chemistry 1, 2, 3; Mineralogy 1. *Second semester. Lecture Room, Mackay Mining Building.* Professor Young¹ and Assistant Professor Carpenter.

7b. METALLURGY (General). Lectures and recitations. Metallurgy of iron and steel, fuels, heat measurements, metallurgical furnaces, processes, and products; crushing and sampling of ores. *Prerequisites:* Chemistry 1, 2, 3; Mineralogy 1. *Second semester. Lecture Room, Mackay Mining Building.* Professor Young¹ and Assistant Professor Carpenter.

8. METALLURGY (Gold and Silver). Lectures and recitations. A discussion of the ores, processes of separation, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 7. *First semester, 10-11, M. T. Th. F. Lecture Room, Mackay Mining Building.* Professor Young¹.

9. METALLURGY (Copper, Lead, Zinc.) Lectures and recitations. A discussion of the ores, methods of reduction, plants and machinery, management and economic conditions. *Pre-*

¹Absent on leave.

*requisite: Metallurgy 7. Second semester, 10-11, M. T. Th. F. Lecture Room, Mackay Mining Building. Professor Young.*¹

10. METALLURGY (Laboratory). A series of experiments is given which is designed to supplement, in part, the classroom work, and to illustrate the more important methods of ore treatment. Complete ore tests on a working scale are used to supplement the small-scale experiments. *Prerequisites: Metallurgy 7; Chemistry 5 and 6. First semester, 2-4:30, W. Th. Second semester, 2-4:30, Th. F. Two credits. Metallurgical Laboratory, Mackay Mining Building. Professor Young.*¹

11a. ASSAYING. Lectures and recitations. Methods of assaying, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying. *Prerequisites: Chemistry 1, 2, 3, 5, 6; Mineralogy 1. First semester. Lecture Room, Mackay Mining Building. Assistant Professor Carpenter.*

11b. ASSAYING. Lectures and recitations. Chemistry in assay slags and slag calculation. Full discussion of the assay of difficult ores and metallurgical products, the fire assay of lead, platinum, bismuth, tin, and mercury, the errors and losses in the fire assay. *Lecture Room, Mackay Mining Building. Assistant Professor Carpenter.*

12. ASSAYING. (Laboratory). Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miner's pan, horn, and batea. *Prerequisites: Chemistry 1, 2, 3, 5, 6; Mineralogy 1. First semester. One credit. Assaying Laboratory, Mackay Mining Building. Second semester. Two credits. Assaying Laboratory, Mackay Mining Building. Assistant Professor Carpenter.*

13. FIRST AID AND HYGIENE. A course of four lectures in second semester of Senior year. Required of all regular Senior mining students. *Hours to be arranged. Professor Frandsen.*¹

14. MINING LAW. A course of four lectures in second semester of Senior year. *Special lectures; hours to be arranged.*

15. SUMMER WORK IN MINING. Each mining student before graduation must present a report of some practical mining work in which he has been engaged. The work must cover at least one month's time. Students are advised to do this work in the Freshman or Sophomore vacations and to put at least one whole vacation period into practical work.

20. THESIS. Each Senior student is required to hand in a

¹Absent on leave.

thesis on some subject in mining or metallurgy or related branch of engineering. *Second semester; hours to be arranged. Two credits.* Professor Young.¹

XXXII. MECHANICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. GOUGH

Primarily for the Senior Colleges

1. POWER AND POWER TRANSMISSION. A study of the operation and construction of steam, gas, and oil engines, turbines, water wheels, motors, etc., and the methods of power transmission. The subject is treated in a practical manner and illustrated by tests of various prime movers. *Both semesters, 9-10, T. Th. 1 Mechanical Building. Two credits.* Professor Scrugham.

2. KINEMATICS. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, and the manner of designing trains of mechanism. *Second semester, 1-4:30, F. Two credits. 1 Mechanical Building.* Mr. Gough.

3. MACHINE DESIGN. The study of the application of the laws of velocity, force, and strength of materials to the design of machinery; tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. *Second semester, 9-10, M. F. 1 Mechanical Building. Two credits.* Mr. Gough.

4. THEORY OF STEAM BOILERS. The design and construction of the various types of commercial steam boilers, their care, the consumption of fuel, the determining of the horse-powers of boilers, and the study of modern boiler plants. Each student is required to design a boiler or battery of boilers and the necessary fittings, and to prepare specifications and complete working drawings for the boiler-maker and the erecting engineer. *Second semester, 10-11, M. T. 1 Mechanical Building. Two credits.* Professor Scrugham.

5. STEAM ENGINE. The principles involved in the design and construction of the steam engine, including theoretical indicator and crank-effort diagrams for various types of engines. This work is supplemented by experimental work in the laboratory. *First semester, 9-10, M. T. Th. F. 1 Mechanical Building. Four credits.* Mr. Gough.

6. GAS ENGINES AND GAS PRODUCERS. The principles involved in the design and construction of gas and oil engines and gas producers. The composition of the hydrocarbon gases

¹Absent on leave.

and oil is discussed, and comparative costs and efficiencies considered. *Second semester, 9-10, M.W. F. 1 Mechanical Building. Two credits. Professor Scrugham.*

7. POWER PLANTS. The mechanical engineering of power plants is here presented in a non-mathematical way, and the machinery appliances and economical auxiliaries employed have their practical and experimental side shown. *Second semester, 1-2, W. 1 Mechanical Building. One credit. Professor Scrugham.*

8. VALVE GEARING. A study of the various forms of engine valves, link motions, radial gears, and shaft regulation. Each student must design some form of standard engine-valve and governor, the data being taken from trade catalogues and engines actually in use. *Second semester, 1-4:30, Th. Two credits. 1 Mechanical Building. Mr. Gough.*

10. ENGINEERING LABORATORY PRACTICE. This course covers the various methods of conducting and working up tests, determining efficiencies, driving powers, etc., and is supplemented by practical tests on a number of pieces of apparatus. *First semester, 1-4:30, F. 1 Mechanical Building. Two credits. Professor Scrugham.*

11. FIELD TESTS. This course consists of an extended series of experimental tests on power plants, locomotives, train-lighting systems, etc. *Elective. Three credits. Hours to be arranged. Professor Scrugham.*

19. INSPECTION VISITS. The most important engineering establishments in the vicinity are visited in order that the student may make a study of modern structures and methods in manufacture. *Open to Juniors and Seniors, School of Mechanical Engineering. Professor Scrugham.*

20. THESIS COURSE. The designing of a machine or the original investigation of some subject congenial to the student's taste and included in the scope of the curriculum. *Second semester. Hours to be arranged. Two credits. Professor Scrugham.*

XXXIII. ELECTRICAL ENGINEERING

PROFESSOR SCRUGHAM

Primarily for the Senior Colleges

1. DIRECT-CURRENT MACHINERY. Fundamental principles, theory, characteristics, operation, and construction of dynamos, motors, storage batteries, etc. *Prerequisite: Physics 2. First*

semester, 10-11, M. W. F. Three credits. 1 Mechanical Building. Professor Scrugham.

2. ELECTRIC LIGHTING, WIRING, AND DISTRIBUTION. Prerequisite: E. E. 1. Second semester, 10-11, W. Th. F. 1 Mechanical Building. Professor Scrugham.

3. ALTERNATING-CURRENT MACHINERY. Theory and application of single-phase and polyphase currents, induction and synchronous motors, etc. Prerequisite: E. E. 1. First semester, 1-2, W. Th. F. 1 Mechanical Building. Professor Scrugham.

4. APPLIED ELECTRICITY. Application of electricity to machine tools, pumps, hoists, cranes, railways, etc. Second semester, 1-2, M. T. 1 Mechanical Building. Professor Scrugham.

5. ELECTRIC LABORATORY. The use and care of electrical instruments. Tests of generators, motors, transformers, etc. Second semester, 2-4:30, M. T. F. Two credits. 1 Mechanical Building. Professor Scrugham.

XXXIV. MECHANIC ARTS

MR. GOUGH, MR. CHATFIELD

Primarily for the Junior Colleges

1. WOOD WORK. The students are taught the use of hand and machine tools and the most approved processes and methods followed in engineering construction. The bench work includes the following operations: Plowing, sawing, rabbeting, planing, notching, splicing, mortising, tenoning, dovetailing, framing, paneling, and the general use of carpenter's tools. The wood-turning involves the various principles of lathe work in wood, and is carried on from a set of blue prints issued by the department for that purpose. Pattern-making is taken only by students in Mechanical Engineering. The students from the School of Mines devote a portion of the time to the principles of mine timbering. Both semesters, 2-4:30, M. T. Two credits. 1 Mechanical Building. Mr. Gough and Mr. Chatfield.

2. FORGING. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case hardening, and the making of a complete set of machine cutting-tools for the student's future use in the machine shop. Both semesters. Section 1, 2-4:30, M. T.; Section 2, 8-12, Sat. Two credits. 1 Mechanical Building. Mr. Gough.

3. MACHINE WORK. Instruction in this work consists of vise work in iron, including surface chipping, squaring and fitting, round filing, sawing, scraping and polishing. Machine work in metals, including exercises in straight and taper turning, slotting, drilling, boring, planing, and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel, and file; the laying out of work, and the use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Both semesters, 2-4:30, M. T. Two credits. 102 Mechanical Building. Mr. Gough.*

XXXV. CIVIL ENGINEERING

PROFESSOR BOARDMAN

Primarily for the Junior Colleges

1. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. Instruction is given in class room, field, and drafting room in land surveying, topography, hydrography, mining, and city surveying. *Both semesters. For all engineering students. Recitations or Lectures, 1-2, Field or Drafting, 2-4:30, Th. F. Four credits. Professor Boardman.*

Primarily for the Senior Colleges

3. STRUCTURAL ANALYSIS. Computation of stresses in the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester, 10-11, daily. Professor Boardman.*

4. STRUCTURAL DESIGN. General features and details of design, estimates of weight and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester, 9-11, daily. Professor Boardman.*

5. RAILROAD ENGINEERING. Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of costs of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester, 1-2, M. T., 9-10, W. Field or Drafting, 2-4:30, M. T. Five credits. Professor Boardman.*

6. SEWERS. Sewerage and sewage disposal for towns and cities. *Second semester, 10-11, T. W. Th. Professor Boardman.*

7. MASONRY CONSTRUCTION. The nature and properties of materials used, and methods of construction and design of masonry structures. Each student makes an original design and drawing for some masonry structure and estimates its cost. *Second semester, 2-4:30, M. T. Three credits.* Professor Boardman.

7a. MASONRY CONSTRUCTION. Additional work, drafting or laboratory testing. *One to three credits, to depend on time put in and work done.* Professor Boardman.

8. HYDRAULICS. A study of the principles of hydrostatics and hydraulics, the pressure and buoyancy of water and the laws of its flow through openings and in channels of various kinds. *First semester, 8-9, T. W. Th.* Professor Boardman.

9. GRAPHIC STATICS. A study of the principles of graphic statics and their application in ascertaining the stresses in framed structures. *First semester, 8-10, M. F.* Professor Boardman.

9a. GRAPHIC STATICS. Additional work in graphics of bridge trusses. *One to three credits, to depend on time put in and work done.* Professor Boardman.

10. WATER SUPPLY. A study of public water supplies. Sanitary features. Design and construction of collection and distribution systems. Costs. *Second semester, 8-9, T. W.* Professor Boardman.

11. IRRIGATION ENGINEERING. A thorough study of the questions involved in the collection, storage, and distribution of water for irrigation purposes. *Second semester, 8-9, Th. F.* Professor Boardman.

12. MINE SURVEYING. At the close of the college year the Junior Class in Surveying takes a four weeks' trip to Virginia City. Here one of the mines is surveyed and mine maps constructed. All the ordinary surveying operations that the mining engineer may be called upon to perform are practiced. Professor Boardman.

13. REINFORCED CONCRETE. Its principles and applications. *First semester. Recitations and Lectures. Two credits. Second semester. DESIGN. Two credits. Hours to be arranged for each semester.* Professor Boardman.

14. WATER-POWER ENGINEERING. A study of the more important problems of water-power development from the civil engineering point of view. *Three credits.* Professor Boardman.

XXXVI. DRAWING

PROFESSOR SCRUGHAM, ASSISTANT PROFESSOR LEWERS, MR. GOUGH

Primarily for the Junior Colleges

1. FREEHAND DRAWING. Perspective sketches of machines. Sketches of projections of machines. *First semester, 2-4:30, F. One credit.* Assistant Professor Lewers.
2. MECHANICAL DRAWING. Plates, lettering, machine parts, etc. *Second semester. Section 1, 9-10, Section 2, 10-11, daily. Two credits.* Assistant Professor Lewers.
3. ELEMENTARY MACHINE DESIGN. Drawing and design of machine parts, modern shop arrangement, etc. *Second semester, 9-10, daily. Three credits. 9 Morrill Hall.* Mr. Gough.
- 3a. TOPOGRAPHICAL DRAWING AND MAPPING. *Second semester. One credit.* Professor Boardman.
4. DESCRIPTIVE GEOMETRY. *Second semester, 8-9, daily. Two credits. 9 Morrill Hall.* Mr. Gough.

Primarily for the Senior Colleges

5. MACHINE DESIGN. *First semester, 2-4:30, M. T. W. Three credits. 1 Mechanical Building.* Professor Scrugham.
6. STEAM-BOILER DESIGN. *Second semester, 2-4:30, M. T. W. Three credits. 1 Mechanical Building.* Professor Scrugham.
7. ADVANCED MACHINE DESIGN. *First semester, 2-4:30, W. Th. F. Second semester, 2-4:30. Four credits. 1 Mechanical Building.* Professor Scrugham.

XXXVII. MILITARY SCIENCE AND TACTICS

LIEUTENANT MCCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.¹ Eight semesters, 11-12, M. T. Th. F. One credit.* Lieutenant McClure.
2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.¹ Four semesters, 11-12, W. One credit.* Cadet Officers.
3. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.¹ Four semesters, 11-12, W. One-half credit.* Lieutenant McClure.

¹For exceptions, see Organization of Battalion of Cadets, page 44.

THE STATE NORMAL SCHOOL

THE STATE NORMAL SCHOOL

FACULTY

JOSEPH EDWARD STUBBS.....	President
PETER FRANDSEN ¹	Professor of Biology
ROMANZO ADAMS.....	Professor of Education
ALBERT W. C. T. HERRE.....	Acting Professor of Biology
KATHERINE LEWERS.....	Assistant Professor of Drawing
GEORGE ORDAHL.....	Assistant Professor of Psychology and Education
KATE CONGDON WOOD.....	Instructor in Vocal Music
GUSTAVUS SWIFT PAINE.....	Instructor in English
ELIZA HENRIETTA OVERMAN.....	Assistant in Biology
HELEN ANN MEIGHAN.....	Instructor in Physical Culture

FOUNDATION

The Legislature shall have power to establish normal schools, and such different grades of schools from the primary department to the university as in their discretion they may deem necessary. *State Constitution, Article XI, Section 5.*

In accordance with the Constitution of the State, the Legislature has made provision for a normal school as a coordinate department of the University.

In the State of Nevada the high school is an integral part of the public-school system, which includes the primary, grammar, and high schools.

The State Normal School offers courses of instruction, both professional and liberal, for students who wish to become teachers in the public schools of Nevada.

The State Normal School is organized to provide for the professional training of teachers. As a coordinate department of the University of Nevada it is possessed of the advantages offered by the well-equipped laboratories and the library of the University.

AIMS

The purposes of the State Normal School in providing instruction in education are as follows:

To educate students for positions in the public schools.

To promote the study of educational science.

¹Absent on leave.

To teach the history of education and of educational systems and doctrines.

To secure to teaching the rights and advantages of a profession.

To give unity to our State educational system.

PRACTICE TEACHING

Opportunities for observation and practice are afforded by the Reno public schools. The work is under the supervision of the Department of Education.

COURSES OF STUDY

Two courses of study are offered in the Normal School: (1) The Advanced Course, and (2) the Elementary Course.

The Advanced Course is identical with the Liberal Arts of the General Science Course in the College of Arts and Science, except that during the Junior and Senior years it includes certain courses in Education and Psychology. Students graduating from this course are entitled to a State teacher's certificate of high-school grade. For information, see pages 64 and 65 of this Register.

ELEMENTARY COURSE

CONDITIONS OF ADMISSION

1. Entrance to the Normal School will be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. Candidates for admission who are not graduates of accredited schools must present themselves for examination in the common-school subjects, and in such high-school subjects as they may wish credit for.

3. Any school of the State may be accredited in such subjects of high-school grade as it may be able to complete in a satisfactory manner.

4. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

5. All students entering the Normal School must pass an examination in English composition, whether from an accredited school or not.

6. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

SUBJECTS AND CREDITS

1. English (a, b, and c).....	3 units ¹
2. Mathematics (a, b, and c).....	3 units
3. Physics.....	1 unit
4. History (a, b, and c).....	2 units
5, 7, 8. Latin, French, or German (a and b).....	2 units
Elective.....	1 unit

The elective units may be selected from the subjects listed below:

5, 7, 8. Latin, French, or German.....	1 unit
11. Physical Geography.....	$\frac{1}{2}$ unit
12. Botany.....	$\frac{1}{2}$ or 1 unit
13. Zoology.....	1 unit
14. Physiology.....	1 unit
15. Bookkeeping.....	$\frac{1}{2}$ unit

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

GRADUATION

For graduation from the Nevada State Normal School an attendance of at least one year and the completion of the course of study is required. Credit is given for work done in other institutions of similar rank and character.

¹A unit, as the measure of the amount of high-school work done, is represented by five recitations a week throughout the year, each recitation being not less than forty minutes' duration.

COURSE OF STUDY

FIRST YEAR

Subjects and Credits Required

	<i>1st Sem.</i>	<i>2d Sem.</i>
Education 21.....	2	2
Hygiene 1.....	3	3
English 1.....	3	3
History 1.....	3	3
Elective 1.....	4	4
Total.....	15	15

SECOND YEAR

Psychology 1 and 2.....	3	3
Education 23.....	2
Psychology 3.....	2
Education 22.....	5	5
Elective.....	5	5
Total.....	15	15

Students preferring to do primary work should elect music and drawing. Other elections may be made from the courses described in the College of Arts and Science. All elections must be approved by the department in which the work is given and by the Department of Education.

COURSES OF INSTRUCTION

- | | |
|-----------------|---------------------------|
| VI. English | XIV. Psychology |
| VII. Music | XV. Zoology |
| VIII. Art | XVI. Hygiene |
| XII. Sociology | XVII. Botany |
| XIII. Education | XXXVIII. Physical Culture |

VI. ENGLISH LANGUAGE AND LITERATURE

MR. PAINE

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters; hours to be arranged. Three credits. Stewart Hall. Mr. Paine.*

VII. MUSIC

MRS. WOOD

1. NOTATION AND SIGHT SINGING. The elements of vocal music, one period each week being given to choral practice with the University Chorus. *Both semesters; hours to be arranged. Mrs. Wood.*

2. METHODS OF TEACHING. The teaching of public-school music, together with a brief course of musical history. *Senior year. Both semesters, 2-3, T. Th. Morrill Hall. Mrs. Wood.*

VIII. ART

ASSISTANT PROFESSOR LEWERS

5a. TEACHERS' COURSE. Attention is given to the observation, the delineation, and color of forms in nature, to ornamental design, to the conventionalizing of plant forms, and to harmony of color. *Both semesters; hours to be arranged. One credit. Physics Building. Miss Lewers.*

XII. SOCIOLOGY

PROFESSOR ADAMS

1. INTRODUCTION TO THE STUDY OF SOCIETY. The purpose of this course is to present the social process as a unity. The demand is not so much for detailed knowledge as for a correct point of view. Society is regarded as organic and evolutionary. The fundamental social institutions and their functions are studied, and their development through savagery, barbarism, and civilization is considered. *First semester; hours to be arranged. Three credits. 101 Stewart Hall. Professor Adams.*

2. SOCIAL PROBLEMS. The aim of this course is to present a number of present-day problems from the point of view of Course 1. Among the problems are the labor problem, socialism, race problems, problems of the city, problems of rural communities, crime, pauperism. Not all of these subjects will receive attention during any one semester, but the course will include one or more of them selected according to the interest of the class. *Prerequisite: Course 1. Second semester; hours to be arranged. Three credits. 101 Stewart Hall. Professor Adams.*

XIII. EDUCATION

PROFESSOR ADAMS, ASSISTANT PROFESSOR ORDAHL

21. SCIENCE OF EDUCATION. This is an introductory course to the general field of education. The purpose is to develop a mental attitude of sane inquiry and to gain a fair perspective of education as a whole. Some of the more elementary problems of life are considered at first hand, in relation to present school and social systems. Problems will be discovered and formulated for treatment in following courses. *First and second semesters; hours to be arranged. Four credits. Assistant Professor Ordahl.*

22. PRACTICE. Observation and practice in the Reno public

schools. The student teaches at least four of the more important subjects, such as reading, arithmetic, geography, and history. In preparing for this work the student is required to make a considerable study of each subject, the purpose being two-fold: First, more accurate and broader scholarship and more skill in the school arts; and, second, a clear understanding of the aims involved in the teaching of the subject and a knowledge of the method best designed to secure the desired results. *Both semesters; hours to be arranged. Five credits. Orvis Ring Building. Professors Adams and Ordahl.*

23. EDUCATIONAL PROBLEMS. The purpose of this course is to orient the student with reference to a number of educational problems. The problems are approached from the historical point of view. *First semester, 8-9, T. Th. 101 Stewart Hall. Professor Adams.*

XIV. PSYCHOLOGY

ASSISTANT PROFESSOR ORDAHL

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes and the emotional life. *First semester, 8-9, M. W. F. Three credits.*

2. COMPARATIVE PSYCHOLOGY. The parallels between animal and human behavior are traced, learning process is analyzed, and the fundamental animal and human instincts are considered in relation to individual and racial development. *Second semester, 8-9, M. W. F. Three credits.*

3. CHILD AND ADOLESCENT PSYCHOLOGY. Development of the nervous system and growth of the body are traced in connection with mental development. Types of child and adolescent mind are considered in the problems of social adjustment. Intellectual and emotional difficulties peculiar to child and youth are treated in their relation to clear thinking and moral efficiency. *Second semester, T. Th. Two credits.*

XV. ZOOLOGY

PROFESSOR FRANDSEN,¹ ACTING PROFESSOR HERRE, MISS OVERMAN

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8-9, T. Th. 101 Stewart Hall. Laboratory, 2-4:40, M. W. Four credits. 202 Hatch Hall. Professor Frandsen,¹ Acting Professor Herre, and Miss Overman.*

¹Absent on leave.

XVI. HYGIENE

PROFESSOR FRANDBSEN,¹ ACTING PROFESSOR HERRE, MISS OVERMAN

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8-9, T. Th. Laboratory, 2-4:30, T. F. Four credits. 101 Stewart Hall.* Professor Frandsen,¹ Acting Professor Herre, and Miss Overman.

XVII. BOTANY

PROFESSOR FRANDBSEN,¹ ACTING PROFESSOR HERRE, MISS OVERMAN

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8-9, T. W. 101 Stewart Hall. Laboratory, 2-4:30, M. W. Four credits. 301 Hatch Hall.* Professor Frandsen,¹ Acting Professor Herre, and Miss Overman.

XXXVIII. PHYSICAL TRAINING FOR WOMEN

MISS MEIGHAN

PHYSICAL CULTURE. This course is offered to all young women of the University, and is required in the Freshman and Sophomore years, as part of the regular work. Two hours a week are required of all students taking the course. Upon entering the class all students are carefully examined by a physician, with particular attention to the lungs and heart action, and information concerning the general health and inherited tendencies are solicited. Physical measurements are taken in the fall and again in the spring. The aim of the course is to develop a strong and symmetrical physique, with an easy and graceful poise of the body. Systematic exercise, with the aid of a well-equipped gymnasium, makes it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse-waist and bloomers, with regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

¹Absent on leave.

SPECIAL COURSES

Special courses in music, drawing and physical culture will be given for students who wish to prepare for such special work. Only persons who have natural aptitude for such work, and who have had some training along these lines, will be permitted to undertake special courses. Anyone desiring this work should communicate with the Department of Education in advance.

*

SPRING OF STUDENTS

September, 1911 - March, 1912

ROSTER OF STUDENTS

September, 1909—March, 1910

GRADUATES

Diplomas and Degrees were awarded on Commencement Day, June 9, 1909, as follows:

BACHELOR OF ARTS

Georgia Alice MacNair	Mabel Lucy Reed
Effie Mona Mack	May Marcella Schuler
Mary Gertrude O'Neill	Dorothy Elizabeth Singer
Thei Owaku	Reba Oliver Snare
Blanche Nevada Young	

BACHELOR OF SCIENCE

Isabel Millar

BACHELOR OF SCIENCE IN MINING ENGINEERING

Jules Raymond Gignoux	Silas Earl Ross
Charles Daniel Roeder	Homer Lloyd Williams
Robert Wilburn Young	

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Winfield Scott Lake	Stanley Gustavus Palmer
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NORMAL SCHOOL DIPLOMA

Advanced Course

Georgia Alice MacNair	May Marcella Schuler
Mary Gertrude O'Neill	Dorothy Elizabeth Singer
Mabel Lucy Reed	Reba Oliver Snare
Blanche Nevada Young	

Elementary Course

Irene Veronica Brown	Josephine Anna Hellwinkel
Maude Elva Conway	Emma Caroline Henningsen
Lillian Adeline Davey	Maren Kirstine Jensen
Frances Irene Dake	Marea Josephine Kelly
Astrid Cecilia Erixon	Mattie Belle Nesbitt
Clara Alicia Flannery	Katherine Florence O'Hara
Mabel Estelle Harrison	Anna Pauline Pion
Mary Agnes Ramsey	

ROSTER OF STUDENTS

GRADUATES

Kennedy, Miles Bryce.....	General Science.....	London, England
Overman, Eliza Henrietta.....	General Science.....	Elko
Ross, Silas Earl.....	General Science.....	Reno
Singer, Dorothy Elizabeth.....	Liberal Arts.....	Goldfield

SENIORS

Alexander, Wallace DuBois.....	Agriculture.....	Tonopah
Bell, Forrest Francis.....	Mines.....	Winnemucca
Bennett, Clayton Alfred.....	Mines.....	Nevada City, Cal.
Bird, Donald Miller.....	Mechanical Engineering.....	Reno
Brown, Mildred Inez.....	Liberal Arts.....	Reno
Brown, Charles LeRoy.....	General Science.....	Reno
Colyer, Lydia.....	Liberal Arts.....	Reno
Conkey, Irene Maude.....	Liberal Arts.....	Coalinga, Cal.
Curnow, George.....	Mechanical Engineering.....	Reno
Foss, Marion Henry.....	Mines.....	Waterville, N. H.
Fulton, Helen.....	Liberal Arts.....	Reno
Goldsworthy, William Henry.....	Mines.....	Gold Hill
Hurley, Lulu Bell.....	Liberal Arts.....	Reno
Heise, Henry Claud.....	Mines.....	Gardnerville
Homer, Dudley Dennison.....	Mines.....	Somersville, Mass.
Larcombe, Hazel Pearl.....	Liberal Arts.....	Reno
McKenzie, Clyde Stuart.....	Mines.....	San Francisco
Mack, Irene Myrtle.....	Liberal Arts.....	Reno
Mack, Ernest Deal.....	Mechanical Engineering.....	Reno
Mack, Margaret Elizabeth.....	General Science.....	Dayton
Miller, John Archibald.....	Civil Engineering.....	Gardnerville
O'Brien, Alice Woodward.....	Liberal Arts.....	Sparks
Ohmert, Audrey Winifred.....	Liberal Arts.....	Reno
Parker, Frances Dorothy.....	Liberal Arts.....	Ely
Rossi, Nicholas Louis.....	Civil Engineering.....	Johnsville, Cal.
Sears, John Ernest.....	Civil Engineering.....	San José, Cal.
Sawin, Maude Amanda.....	Liberal Arts.....	Reno
Wagoner, Louisa Catherine.....	Liberal Arts.....	Seattle, Wash.
Yamauchi, George.....	Liberal Arts.....	Nagasaki, Japan

JUNIORS

Bennett, Ellsworth R.....	Mines.....	Nevada City, Cal.
Bray, Florence Leslie.....	Liberal Arts.....	Reno
Cafferata, Frederick James.....	Mechanical Engineering.....	Reno
Cleator, Cora.....	Liberal Arts.....	Reno
CreeI, Cecil Willis.....	Agriculture.....	Wadsworth

Folsom, Ernest Gilman	Mechanical Engineering	Reno
Hanser, Hugo E.....	Civil Engineering	New York City
Harris, Walter Cameron.....	Mines	Reno
Hasch, Vera Ellen.....	Liberal Arts	Reno
Henderson, Virgil M.	Mines	Chico, Cal.
Hobbins, Frank.....	Mines	Reno
Jepson, Melvin Edward.....	Mechanical Engineering	Verdi
Layman, Randall Brooks.....	Mechanical Engineering	Reno
Leavitt, Louis Selwyn.....	Mechanical Engineering	Santa Cruz, Cal.
Linton, William Donald.....	Mechanical Engineering	Reno
Mead, Agnes Claire.....	Liberal Arts	Reno
Myers, Alfred.....	Mines	Berkeley, Cal.
Payne, Harvey M.....	Mines	Reno
Pike, Gertrude	Liberal Arts	Reno
Spark, Clinton Walter.....	Mines	Tonopah
Teel, Claude.....	Mines	Bishop, Cal.
White, Harriet Howell.....	Liberal Arts	Reno
Wilton, Stanley Mayhew.....	Liberal Arts	Goldfield

SOPHOMORES

Beebe, Cedric Harding	Liberal Arts	Reno
Barber, Elda Marion	Liberal Arts	Reno
Bruce, Daniel Eldred.....	Mines	Reno
Curler, Augusta Rhoda	General Science.....	Reno
Fletcher, Harold Augustus	General Science.....	Reno
Glass, Rowena Ethel	Liberal Arts	Reno
Griscom, William S., Jr.	Mines	Chattanooga, Tenn.
Hanson, Henry Scott.....	Mechanical Engineering	Reno
Harris, Arthur Ringland.....	General Science.....	Reno
Hobbins, Helen Ruthven.....	Liberal Arts	Reno
Holmes, August.....	Mines	Battle Creek, Mich.
Lenahan, Mabel.....	Liberal Arts	Reno
Ogden, Chester Muir.....	Mechanical Engineering.....	Nevada City, Cal.
Ohmert, Hazel Mary.....	Liberal Arts	Reno
Pearson, Edgar Ford.....	Mechanical Engineering	Reno
Reed, Florence Nightingale.....	Liberal Arts.....	Edgemont
Seaton, Roland Moore.....	Mines.....	Santa Rosa, Cal.
Selby, Lisle James	Mechanical Engineering	Monterey, Cal.
Smither, Thomas McCourt	General Science.....	Reno
Spencer, Raymond	Mechanical Engineering.....	Concord, Cal.
Thompson, Ethel Ray.....	Liberal Arts	Reno
Tibbals, Carl Lampe.....	Civil Engineering	Reno
Winter, Bessie Marguerite	Liberal Arts	Whiterock
Wright, Farnsworth	General Science.....	Reno

FRESHMEN

Boston, Ethel Mae	Liberal Arts	Silver City
Bray, Mildred Nevada	General Science.....	Reno
Brennen, Frank James.....	Liberal Arts.....	Blaine

Cagwin, Eunice Adelaide	Liberal Arts	Sparks
Campbell, Erroll Preston	Civil Engineering	Modesto, Cal.
Catlin, Gladys Jennie	Liberal Arts	Lone Mountain
Clayton, John Lucien	Agriculture	Berkeley, Cal.
Daly, William	Civil Engineering	Hollister, Cal.
Davey, Lillian	General Science	Grass Valley, Cal.
Donohue, Millie	Liberal Arts	Bodie, Cal.
Dorn, Norman Lester	Mechanical Engineering	Corning, Cal.
Finney, Lynn Kelso	Mechanical Engineering	Modesto, Cal.
Frisch, Emma Elizabeth	General Science	Reno
Gignoux, Frank C.	Mechanical Engineering	Reno
Gilcrease, Leonard L.	Mines	Lemoore, Cal.
Goldsworthy, James G.	Mines	Gold Hill
Grubb, Marion D.	Civil Engineering	Hollister, Cal.
Hamilton, Claude	Mechanical Engineering	Silver City
Hauck, Fred Bryant	Civil Engineering	Norwood, Ohio
Hauss, Lena	Liberal Arts	Yuba City, Cal.
Helphinstine, Charles W.	Mines	Chico, Cal.
Heward, Harlan Lester	Liberal Arts	Reno
Higgins, Helen Brelsford	Liberal Arts	Reno
Hilton, Charles R.	General Science	Modesto, Cal.
Jepsen, Mathilda	Liberal Arts	Gardnerville
Jones, Bertha Rachel	Liberal Arts	Sweetwater
Knemeyer, Edward	Mechanical Engineering	Yerington
Langwith, Margaret Angela	Liberal Arts	Golconda
Layman, Harold Lester	Civil Engineering	Reno
Lewis, Leola	Liberal Arts	Reno
Linton, Bessie Caroline	General Science	Reno
Menke, Benjamin Harrison	Mechanical Engineering	Kahoka, Mo.
Mitamura, Matakichi	General Science	Hiroshima, Japan
Mason, Arthur Steele	Mines	Edna, Cal.
Menardi, John Blair, Jr.	Mines	Reno
Milentz, Carl Albert	Mines	St. Louis, Mo.
Orr, Elda Ann	General Science	Reno
Patrick, Lloyd Brown	Agriculture	Reno
Pruett, Dale B.	Mines	Reno
Rowe, John Albert	Mines	Santa Barbara, Cal.
Rowlands, Irene	General Science	Sparks
Ross, Vera May	General Science	Reno
Settlemyer, William Herman	Civil Engineering	Gardnerville
Schuler, Isabelle Cyrilla	General Science	Reno
Smith, Wilhelmina L.	Liberal Arts	Bodie, Cal.
Tyler, Gilbert Martin	Mines	Palo Alto, Cal.
Warren, Erma Belle	General Science	Reno
Wallace, William Seward	General Science	New York City
White, Florence	Liberal Arts	Reno
Winter, Edith Emelyn	Liberal Arts	Whiterock
Williams, Thomas Grover	Civil Engineering	Wetmore, Kan.

Williams, Cecil L.....	Mines	Reno
Wilson, Joseph Willis.....	Agriculture	Nordyke
Wilson, Nathaniel.....	Mechanical Engineering	Reno

THE NORMAL SCHOOL

Bates, Edna Viola.....	Verdi	McNamara, Mary Norine.....	Goldfield
Cahill, Agnes Marie.....	Austin	Merialdo, Isabel A.....	Eureka
Cliff, Bertha Esther.....	Franktown	Porter, May Grace.....	Verdi
Duncan, Pearl.....	Reno	Rogantini, Mary Madeline.....	Eureka
Hancock, Edna Belle.....	Gold Hill	Taylor, Hazel Belle.....	Silver City
Hanley, Helen M.....	Virginia City	Tinney, Hazel Margaret.....	Silver City
Hills, Elizabeth.....	Virginia City	Vaillencour, Alma Bernice.....	Yerington
Kaiser, Gussie May.....	Virginia City	Wilhelm, Sophie Adelaide.....	Eureka
Monahan, Margaret E.....	Virginia City	Young, Margaret.....	Virginia City

SPECIAL STUDENTS

Allison, Mrs. Jean Kent.....	Liberal Arts	Reno
Ayers, Mrs. Albert D.....	Liberal Arts	Reno
Adams, Leland Drew.....	Mines	Oakland, Cal.
Anderson, Walter Williams.....	Mines	Reno
Anderson, Morris D.....	Civil Engineering	Palo Alto, Cal.
Aylsworth, Florence B.....	Music	Reno
Badger, Charles Kilgore.....	Civil Engineering	Bakersfield, Cal.
Barr, Charles Wesley.....	Liberal Arts.....	Prairie View, Kan.
Bower, Grover Nervand.....	Mechanical Engineering.....	Santa Rosa, Cal.
Brown, Mrs. Ella M.....	Physical Culture	Reno
Campbell, Eva S.....	Liberal Arts.....	Reno
Carville, Alyn R.....	Liberal Arts.....	Skelton
Chapman, Lloyd Gardiner.....	Mines	Wadsworth
Charles, William Mortimer.....	Agriculture	Reno
Chatfield, Mrs. Mabelle.....	Liberal Arts.....	Reno
Culpeper, Mrs. C. Zeruah.....	Domestic Science.....	Reno
Cunningham, Francis Jay.....	Liberal Arts	Sparks
Darewit, Elizabeth.....	Liberal Arts	Reno
Doten, Mrs. Alfred.....	Domestic Science	Reno
Doherty, William Francis.....	Mechanical Engineering	Reno
DeNure, Walter Byron.....	Mechanical Engineering	Reno
Dolan, Lawrence John.....	Civil Engineering.....	Los Angeles, Cal.
Ench, Frank B.....	Mines	Oakland, Cal.
Ellithorpe, William Melvin.....	Mines	Reno
Frisch, Edward Chester.....	Mines.....	Reno
Franz, Helen Annette.....	Liberal Arts.....	Reno
Guirado, Alonzo.....	Mines.....	Los Angeles, Cal.
Gosse, Marguerite H.....	Liberal Arts	Reno
Griffin, Emma.....	Domestic Science	Reno
Hamlin, George Spring.....	Mechanical Engineering.....	Sparks

Hibbard, Jeraldine Conger.....	Liberal Arts	Reno
Hardy, Royce Aller.....	Mines.....	Los Angeles, Cal.
Hess, Rush Miner.....	Mines.....	Evanston, Ill.
Hall, Edward F.....	Mines.....	Goldfield
Hall, Mrs. Edward F.....	Liberal Arts.....	Goldfield
Hart, Earle William.....	Mines.....	Goldfield
Holdeman, John W.....	Liberal Arts.....	Reno
Horn, John Stephen.....	General Science.....	Reno
Hubbard, George R.....	Mines.....	Tustin, Cal.
Johansen, Carl.....	Civil Engineering.....	Arroyo Grande, Cal.
Langwith, Eleanor Miriam.....	Liberal Arts.....	Golconda
Long, Leon Root.....	Mines.....	Amboy, Ill.
Lusk, Ward Webster.....	Mechanical Engineering.....	Reno
Lonkey, Lloyd Christian.....	Mechanical Engineering.....	Verdi
Menardi, Meda.....	Liberal Arts.....	Reno
McVicar, Neil William.....	Agriculture.....	Smith
Mackay, Eric Reay.....	Mines.....	Australia
Novacovich, Vera.....	Liberal Arts.....	Reno
Pierson, Helen.....	Domestic Science.....	Reno
Preston, Mrs. A. W.....	Liberal Arts.....	Sparks
Robb, Raymond F.....	Mechanical Engineering.....	Tonopah
Robinson, Mrs. H. D.....	Liberal Arts.....	Reno
Schraps, Paul C.....	Mines.....	Galilee, N. J.
Shepherd, Violet Eleanor.....	Liberal Arts.....	Golconda
Smith, Mrs. Charlotte W.....	Liberal Arts.....	Reno
Souchereau, Obeline L.....	Domestic Science.....	Verdi
Standerwick, Mrs. H. M.....	Liberal Arts.....	Reno
Schupers, Mrs. Patti.....	Liberal Arts.....	Reno
Talbott, Zula.....	Domestic Science.....	Reno
Talbott, Ione.....	Domestic Science.....	Reno
Thoma, Bonnie.....	Art.....	Reno
Watson, Mrs. Anna.....	Art.....	Boise, Idaho
Weeks, Mrs. Maude B.....	Liberal Arts.....	Reno
Weeks, Jessie M.....	Liberal Arts.....	Wells
Webster, Ethel.....	Liberal Arts.....	Reno
Winkless, Adell.....	Domestic Science.....	Reno
Wood, Marjorie.....	Liberal Arts.....	Reno
Ziegler, Frank Chester.....	Mechanical Engineering.....	Reno

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