

UNIVERSITY OF NEVADA BULLETIN

VOL. XVI

MAY 1, 1922

No. 2

THE  
UNIVERSITY OF NEVADA  
CATALOGUE  
1922-1923

With Record for 1921-1922

THIRTY-FOURTH ANNUAL NUMBER

PUBLISHED QUARTERLY  
BY THE  
UNIVERSITY OF NEVADA  
RENO, NEVADA

UNIVERSITY OF NEVADA BULLETIN

THE UNIVERSITY OF NEVADA CATALOGUE



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1922 CALENDAR 1922

JAN	FEB	MARCH	APRIL
MAY	JUNE	JULY	AUG
SEP	OCT	NOV	DEC

OFFICE OF THE  
BOARD OF REGENTS, UNIVERSITY OF NEVADA,  
RENO, NEVADA, May 1, 1922.

To His Excellency, EMMET D. BOYLE,  
Governor of the State of Nevada.

SIR: The Regents of the University of Nevada have the honor to submit herewith the Annual Catalogue of the University for the year 1921-1922, 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: B. F. CURLER,  
CAROLYN M. BECKWITH, Secretary. Chairman.

1922 - CALENDAR - 1922

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1923 - CALENDAR - 1923

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UNIVERSITY CALENDAR

1922	FIRST SEMESTER
September 4.....	Monday.....Dormitories open to receive student residents
September 5-6.....	Tuesday-Wednesday.....Examinations for admission
September 5-6.....	Tuesday-Wednesday.....Reexaminations to remove conditions
September 5-6.....	Tuesday-Wednesday.....Matriculation and registration
September 7.....	Thursday.....Recitations and lectures begin in all departments
September 27.....	Wednesday.....Registration closes
Nov. 30-Dec. 3.....	Thursday-Sunday.....Thanksgiving recess
December 16-22.....	Saturday-Friday, 5 p.m.....Semester examinations
December 22.....	Friday, 5 p.m.....Holiday vacation begins
December 26.....	Tuesday, 12 m.....Final grades must be on file in Registrar's office
1923	SECOND SEMESTER
January 3-4.....	Wednesday-Thursday.....Reexaminations to remove conditions
January 3-4.....	Wednesday-Thursday.....Registration
January 5.....	Friday.....Recitations and lectures begin in all departments
January 15.....	Monday.....Prospectors' Short Course begins
January 25.....	Thursday.....Registration closes
February 9.....	Friday.....Home-Makers' Short Course begins
February 22.....	Thursday.....Washington's Birthday
April 14.....	Saturday.....Mackay Day
Mar. 29-Apr. 2.....	Thursday-Monday, inc.....Easter recess
April 30-May 5.....	Monday-Saturday, inc.....Senior examinations
May 7-12.....	Monday-Saturday, 12 m.....Semester examinations
May 9.....	Wednesday.....Senior standings must be on file in Registrar's office
May 13.....	Sunday.....Baccalaureate sermon
May 14.....	Monday, 12 m.....Final grades must be on file in Registrar's office
May 15.....	Tuesday.....Phi Kappa Phi address
May 16.....	Wednesday.....COMMENCEMENT DAY
May 16.....	Wednesday p.m.....Alumni Day
June 18-July 27.....	Six weeks.....Summer School

## OFFICERS OF THE UNIVERSITY

## THE BOARD OF REGENTS

HON. B. F. CURLER (1923)	Elko
HON. WALTER E. PRATT (1925)	Goldfield
HON. MRS. W. H. HOOD (1927)	Reno
HON. MILES E. NORTH (1929)	Reno
HON. GEORGE F. TALBOT (1931)	Elko

## OFFICERS OF THE BOARD

HON. B. F. CURLER, Chairman	Reno
MR. GEORGE H. TAYLOR, Secretary Emeritus	Reno
MISS CAROLYN M. BECKWITH, Secretary	Reno
MR. CHARLES H. GORMAN, Comptroller	Reno

## COMMITTEES OF THE BOARD

<i>Executive Committee</i> —B. F. CURLER, MILES E. NORTH, WALTER E. PRATT.
<i>Finance Committee</i> —MILES E. NORTH, MRS. W. H. HOOD, WALTER E. PRATT, B. F. CURLER.
<i>Property Committee</i> —GEORGE F. TALBOT.
<i>Instruction Committee</i> —MRS. W. H. HOOD.
<i>Library Committee</i> —WALTER E. PRATT.
<i>Student-Welfare Committee</i> —MILES E. NORTH.

## HONORARY BOARD OF VISITORS

HON. J. A. SANDERS, Chairman	Carson City
HON. T. C. HART	Fallon, Churchill County
HON. J. I. EARL	Bunkerville, Clark County
MRS. H. F. DANBERG	Minden, Douglas County
HON. JOHN HENDERSON	Elko, Elko County
HON. J. EMMETT WALSH	Goldfield, Esmeralda County
HON. WALTER J. HANDLEY	Eureka, Eureka County
HON. J. A. LANGWITH	Winnemucca, Humboldt County
HON. GEORGE A. MYLES	Austin, Lander County
MRS. EARL T. GODBE	Pioche, Lincoln County
MRS. J. I. WILSON	Yerington, Lyon County
HON. J. H. MILLER	Hawthorne, Mineral County
HON. H. H. ATKINSON	Tonopah, Nye County
MISS ADA TORREYSON	Carson City, Ormsby County
HON. W. C. PITT	Lovelock, Pershing County
HON. JAMES LEONARD	Virginia City, Storey County
MISS DELLE B. BOYD	Reno, Washoe County
HON. C. S. CHANDLER	Ely, White Pine County

\*Since election, these two members have changed their residence to Reno.

## ADMINISTRATIVE OFFICERS

- WALTER E. CLARK, Ph.D., LL.D., President.  
 \*ROBERT LEWERS, Vice-President.  
 CHARLES H. GORMAN, Comptroller.  
 LOUISE M. SISSA, Registrar.  
 MARGARET E. MACK, A.M., Dean of Women.  
 HELENA SHADE, B.A., Assistant Dean of Women.  
 ARCHIBALD EDWARDS TURNER, A.B., Master of Lincoln Hall.  
 JOSEPH D. LAYMAN, B.L., Librarian.  
 ELSIE E. JOHNSON, Assistant Librarian.  
 JOSEPH B. LYNCH, Superintendent of Buildings and Grounds.

## Colleges and Schools—

- MAXWELL ADAMS, Ph.D., Dean of the College of Arts and Science.  
 FREDERICK H. SIBLEY, M.E., Dean of the College of Engineering.  
 ROBERT STEWART, Ph.D., Dean of the College of Agriculture.  
 JOHN W. HALL, M.A., Dean of the School of Education and Director of the Summer Session.  
 FRANCIS CHURCH LINCOLN, Ph.D., Director of the Mackay School of Mines.  
 HORACE P. BOARDMAN, C.E., Director of the Engineering Experiment Station.  
 SAMUEL C. LIND, Ph.D., Superintendent, United States Bureau of Mines Experiment Station.

## Public Service Division—

- FRANCIS CHURCH LINCOLN, Ph.D., Director of the State Mining Laboratory.  
 \*HENRY ALBERT, M.D., Director of the Hygienic Laboratory.  
 \*ALICE L. THOMPSON, M.D., Acting Director of the Hygienic Laboratory.  
 EDWARD RECORDS, V.M.D., Director of Veterinary Control Service.  
 SANFORD CROSBY DINSMORE, B.S., Commissioner, Food and Drugs Control and Weights and Measures.  
 SAMUEL BRADFORD DOTEN, M.A., Director of the Agricultural Experiment Station.  
 CECIL W. CREEL, B.S., Director of Agricultural Extension.

## Central Clerical Staff—

- CAROLYN M. BECKWITH, Secretary to the President.  
 KATHRYN SABLE, Departmental Stenographer.  
 LUCILE ROSEN BROCK, Clerk, Comptroller's Office.  
 MRS. FRED A. METCALF, Clerk, Comptroller's Office.  
 MRS. MARY B. HICKS, A.B., Assistant to the Registrar.

\*Died, January 12, 1922.

\*Dr. Albert takes up his duties July 1, 1922; until that time Dr. Thompson is Acting Director.

OFFICERS OF INSTRUCTION<sup>1</sup>University Faculty<sup>2</sup>

WALTER ERNEST CLARK, Ph.D., LL.D., President of the University.

A.B., Ohio Wesleyan University, 1896; A.M., Ohio Wesleyan University, 1898; Ph.D., Columbia University, 1903; LL.D., Ohio Wesleyan University, 1918; Instructor in Mathematics, Ohio Wesleyan University, 1896-1899; Tutor in Philosophy, College of the City of New York, 1901-1902; Instructor in Philosophy, *ibid.*, 1902-1906; Assistant Professor of Philosophy, *ibid.*, 1906-1907; Associate Professor and Acting Head of the Department of Political Science, *ibid.*, 1907-1910; Professor and Head of the Department of Political Science, 1910-1918; Extension Lecturer in Economics, Columbia University, 1916-1918; President, University of Nevada, September, 1917-.

\*ROBERT LEWERS, Vice-President of the University; Professor of Business Administration.

Registrar, University of Nevada, 1890-1906; Professor of Political Economy, 1890-1911; Vice-President of the University of Nevada, 1906-; Professor of Elementary and International Law, and Teacher of Commercial Subjects, 1911-1913; Professor of Elementary and International Law and Accounting, 1913-1919; Acting President, 1912, 1914, 1917; Professor of Business Administration, 1919-.

\*JAMES EDWARD CHURCH, JR., Ph.D., Professor of the Classics.

A.B., University of Michigan, 1892; Ph.D., University of Munich, 1901; Instructor in Latin and German, University of Nevada, 1892-1894; Assistant Professor of the Latin Language and Literature, 1894-1895; Associate Professor of the Latin Language and Literature, 1895-1896; Professor of the Latin Language and Literature, 1896-1918; Professor of the Classics, 1918-.

JEANNE ELIZABETH WIER, B.A., Professor of History.

B.Ed., Iowa State Teachers' College, 1893; B.A., Leland Stanford Junior University, 1901; Acting Assistant Professor of History, University of Nevada, 1899-1901; Associate Professor of History, 1901-1906; Professor of History and Political Science, 1906-1917; Professor of History, 1917-.

PETER FRANDSEN, A.M., Professor of Biology.

A.B., University of Nevada, 1895; A.B., Harvard University, 1898; A.M., *ibid.*, 1899; Assistant Professor of Zoology and Bacteriology, University of Nevada, 1900-1902; Associate Professor of Zoology and Bacteriology, 1902-1903; Professor of Zoology and Bacteriology, 1903-1906; Professor of Biology, 1906-.

MAXWELL ADAMS, Ph.D., Professor of Chemistry and Dean of the College of Arts and Science.

A.B., Leland Stanford Junior University, 1895; A.M., *ibid.*, 1896; Ph.D., University of Chicago, 1904; Instructor in Chemistry, Leland Stanford Junior University, 1896; Teacher of Science, Chico State Normal School, 1897-1900; Vice-President of the Chico State Normal School, 1901-1906; Professor of Chemistry, University of Nevada, 1906-; Acting Dean of the College of Arts and Science, 1917-1918; Dean of the College of Arts and Science, 1918-.

HERBERT WYNFORD HILL, Ph.D., Professor of English.

B.L., University of California, 1900; Ph.M., University of Chicago, 1904; Ph.D., *ibid.*, 1911; Instructor in English, Utah State Agricultural College, 1900-1903; Instructor in English, University of Texas, 1904-1906; Professor of English, University of Nevada, 1907-.

<sup>1</sup>The record of teaching experience does not include work in high schools or academies, except for members of the School of Education, nor University instruction as fellows or student assistants. Summer-school and extension instruction is also excluded.

<sup>2</sup>The President, Vice-President, Deans, Librarian, Registrar, and all persons with the rank of instructor or above, who give instruction in any of the regular college departments of the University, constitute the University Faculty.

\*Died, January 12, 1922.

\*The order beginning here is seniority.

- JOSEPH DIEFFENBACH LAYMAN, B.L., Lecturer and Librarian.  
B.L., University of California, 1888; First Assistant Librarian, University of California, 1888-1907; Lecturer and Librarian, University of Nevada, 1907-.
- HORACE PRENTISS BOARDMAN, C.E., Professor of Civil Engineering and Director of the Engineering Experiment Station.  
B.S., University of Wisconsin, 1894; C.E., *ibid.*, 1911; Professor of Civil Engineering, University of Nevada, 1907-; Director of the Engineering Experiment Station, 1921-.
- LEON WILSON HARTMAN, Ph.D., Professor of Physics.  
B.S., Cornell University, 1898; A.M., *ibid.*, 1899; Ph.D., University of Pennsylvania, 1903; Assistant Instructor in Physics, Cornell University, 1900-1901; Professor of Physics, Kansas Agricultural College, 1901-1902; Instructor in Physics, Cornell University, 1904-1905; Assistant Professor of Physics, University of Utah, 1905-1906; Associate Professor of Physics, 1906-1909; Professor of Physics, University of Nevada, 1909-.
- CHARLES HASEMAN, Ph.D., Professor of Mathematics and Mechanics.  
A.B., Indiana University, 1903; A.M., *ibid.*, 1906; Ph.D., Göttingen University, 1907; Instructor in Mathematics, Indiana University, 1907-1908; Assistant Professor of Mathematics, 1908-1909; Associate Professor of Mathematics and Mechanics, University of Nevada, 1909-1910; Professor of Mathematics and Mechanics, 1910-.
- FRANCIS CHURCH LINCOLN, Ph.D., Professor of Mining and Director of the Mackay School of Mines.  
B.S., Massachusetts Institute of Technology, 1900; E.M., New Mexico School of Mines, 1904; A.M., Columbia University, 1906; Ph.D., *ibid.*, 1911; Professor of Geology, New Mexico School of Mines, 1901-1902; Professor of Metallurgy, 1902-1904; Professor of Geology, Montana State School of Mines, 1907-1910; Associate in Mining Engineering, University of Illinois, 1911-1912; Assistant Professor of Mining Engineering, 1912-1913; Professor of Mining and Metallurgy, University of Nevada, 1914-1916; Director of the Mackay School of Mines, 1914-; Professor of Mining, 1916-.
- FREDERICK WESTON WILSON, M.S., Professor of Animal Husbandry.  
B.S., Kansas State Agricultural College, 1905; M.S., University of Illinois, 1913; Professor of Animal Husbandry, University of Arizona, 1913-1914; Professor of Animal Husbandry, University of Nevada, 1914-.
- REUBEN CYRIL THOMPSON, M.A., Professor of Philosophy.  
B.A., McMinnville College, 1899; B.A., Harvard University, 1901; M.A., *ibid.*, 1902; Teacher in Latin, Albion State Normal School, Idaho, 1905-1908; Instructor in Latin and Greek, University of Nevada, 1908-1909; Assistant Professor of Latin and Greek, 1909-1910; Associate Professor of Latin and Greek, 1910-1914; Professor of Latin and Greek, 1914-1915; Professor of Philosophy, 1915-.
- J CLAUDE JONES, A.B., Professor of Geology and Mineralogy.  
A.B., University of Illinois, 1902; Assistant in Geology, University of Illinois, 1904-1905; Instructor in Mineralogy and Geology, University of Nevada, 1909-1910; Assistant Professor of Geology and Mineralogy, 1910-1914; Professor of Geology and Mineralogy, University of Nevada, 1914-.
- WALTER S. PALMER, E.M., Professor of Metallurgy.  
B.S., University of Nevada, 1905; E.M., Columbia School of Mines, 1907; Instructor in Mining and Metallurgy, University of Nevada, 1910-1913; Assistant Professor of Mining and Metallurgy, 1913-1916; Professor of Metallurgy, 1916-.
- ALBERT ELLSWORTH HILL, A.B., Professor of English.  
A.B., University of Chicago, 1899; Assistant in English, University of Chicago, 1905-1907; Associate in English, 1907-1909; Instructor in English, 1909-1913; Assistant Professor of English, University of Nevada, 1913-1914; Associate Professor of English, 1914-1916; Professor of English, 1917-.
- JAMES REED YOUNG, Ph.D., Professor of Psychology.  
B.L., Berea University, 1907; A.B., Leland Stanford Junior University, 1909; A.M., *ibid.*, 1910; Ph.D., University of Chicago, 1916; Teacher San Diego Normal Training School, 1910-1912; Instructor in History of Education, University of Chicago, 1913-1915; Associate Professor of Education, University of Nevada, 1915-1917; Professor of Education, 1917-1920; Professor of Psychology, 1920-.

- JOHN PAUL RYAN, Colonel U.S.A., Professor of Military Science and Tactics.  
U. S. Military Academy, 1888; Professor of Military Science and Tactics, University of Nevada, 1917-; Commanding Officer, S. A. T. C. October, 1918-January, 1919.
- STANLEY GUSTAVUS PALMER, M.E., Professor of Electrical Engineering.  
B.S., University of Nevada, 1909; M.E., Cornell University, 1910; Instructor in Electrical Engineering, University of Nevada, 1915-1916; Assistant Professor of Electrical Engineering, 1917-1918; Professor of Electrical Engineering, September, 1918-.
- VERNER E. SCOTT, B.S., Professor of Dairying.  
B.S., University of Wisconsin, 1911; Instructor in Dairying, University of Nevada, 1912-1915; Acting Instructor in Animal Husbandry, 1913-1914; Professor of Dairying, 1919-.
- JOHN WILLIAM HALL, M.A., Professor of Education and Dean of the School of Education.  
Principal Normal Practice School, 1890-1892; Principal Franklin School, Observation School of the University of Buffalo, 1895-1897; Superintendent Training Department, Colorado Teachers College, 1898-1900; B.S., Teachers College, Columbia University, 1901; M.A., Columbia University, 1902; Teacher of Psychology and History of Education, New York Training School for Teachers, 1901-1905; Professor Elementary Education, University of Cincinnati, 1905-1920; Dean of the School of Education and Professor of Education, University of Nevada, 1920-.
- FREDERICK H. SIBLEY, M.E., Professor of Mechanical Engineering and Dean of the College of Engineering.  
Ph.B., Brown University, 1898; M.E., Case School of Applied Science, 1905; Professor of Mechanical Engineering, University of Alabama, 1907-1912; Professor of Mechanical Engineering, University of Kansas, 1912-1920; Professor of Mechanical Engineering, University of Nevada, 1920-; Dean of the College of Engineering, 1921-.
- ROBERT STEWART, Ph.D., Professor of Agronomy and Dean of the College of Agriculture.  
B.S., Utah Agricultural College, 1902; Ph.D., in Agronomy, University of Illinois, 1909; Assistant Chemist, Utah Experiment Station, 1902-1905; Assistant Professor of Chemistry, Utah Agricultural College, 1905-1908; Professor of Chemistry and Station Chemist, Utah Agricultural College, 1908-1915; Professor of Soil Fertility, University of Illinois, 1915-1920; Dean of the College of Agriculture and Professor of Agronomy, University of Nevada, 1920-.
- SARAH LOUISE LEWIS, B.S., Professor of Home Economics.  
B.S., Columbia, 1919; Instructor at Oregon Agricultural College, 1912-1915; Assistant Professor, Oregon Agricultural College, 1915-1917; Professor of Household Science and Head of Department, O. A. C., 1919-1920; Professor of Home Economics, University of Nevada, 1920-.
- BENJAMIN FRANKLIN SCHAPPELLE, Ph.D., Professor of Modern Languages.  
A.B., Dickinson College, 1908; A.M., *ibid.*, 1911; Diplome de L'Alliance Francaise University of Poitiers, 1914; Ph.D., University of Pennsylvania, 1917; Acting Head of the German Department, Dickinson College, 1910-1911; Instructor in French, Pennsylvania College, 1911-1912; Head of the Department of Romanic Languages, 1912-1916; Assistant Instructor in Romanic Languages, University of Pennsylvania, 1916-1917; Assistant Professor of Romanic Languages and Literatures, University of Nevada, 1917-1918; Assistant Professor of Romanics, University of Pennsylvania, 1918-1921; Professor of Romanic Languages, University of Nevada, 1921-1922; Professor of Modern Languages, 1922-.

RAYMOND ORLANDO COURTRIGHT, B.A., Professor of Physical Education for Men.

A.B., Oklahoma University, 1914; Head Physical Director and Coach at Oklahoma University Preparatory School, 1914-1915; Certificate in all Major Sports, University of Illinois, 1915; Head Coach at Kansas State Manual-Training Normal School, 1915-1919; Associate Professor of Physical Education for Men, University of Nevada, 1919-1921; Professor of Physical Education for Men, 1921-.

ARCHIBALD EDWARDS TURNER, B.A., Professor of Oral English.

A.B., Nebraska Wesleyan University, 1895; Instructor, Columbia College of Expression, 1897-1899; Professor of Public Speaking, Nebraska Wesleyan University, 1899-1910; Instructor in Public Speaking, University of Nevada, 1913-1915; Assistant Professor of Public Speaking, 1915-1918; Associate Professor of Oral English, 1918-1922; Professor of Oral English, 1922-.

SAMUEL BRADFORD DOTEN, M.A., Professor of Agricultural Research.

B.A., University of Nevada, 1898; M.A., *ibid.*, 1912; Instructor in History and Mathematics, University of Nevada, 1890-1900; Instructor in Mathematics and Entomology, 1900-1902; Assistant Professor of Mathematics and Entomology, 1902-1903; Assistant Professor of Entomology, Meteorology, and Mathematics, 1903-1905; Professor of Entomology, 1906-; Entomologist and Director, Nevada Agricultural Experiment Station, 1913-; Professor of Agricultural Research, 1922-.

EDWARD RECORDS, V.M.D., Research Professor of Veterinary Science.

V.M.D., University of Pennsylvania, 1909; General practice, 1909-1910; First Assistant, State Livestock Sanitary Board, Pennsylvania, 1910-1911; Veterinarian with H. K. Mulford Co., 1911-1914; Veterinarian, Nevada Agricultural Experiment Station, 1914-1917; Head of Department of Veterinary Science, 1918-; Research Professor of Veterinary Science, 1922-.

CHARLES ELLIOT FLEMING, B.S.A., Research Professor of Range Management.

B.S., Utah Agricultural College, 1909; B.S.A., Cornell University, 1910; Plant Ecologist, U. S. Forest Service, 1910; Grazing Examiner, U. S. Forest Service, 1911-1912; In Charge of Grazing Studies, Montana, 1913-1914; In charge Grazing Reserves in New Mexico and Arizona, 1915-1916; Head of Department of Range Management, Nevada Agricultural Experiment Station, 1916-; Research Professor of Range Management, 1922-.

CECIL WILLIS CREEL, B.S., Professor of Agricultural Extension.

B.S., University of Nevada, 1911; Agent, Bureau of Entomology, U.S.D.A., 1911-1919; County Agent Leader, Agricultural Extension Division, University of Nevada, 1919-; Director, Agricultural Extension Division and Professor of Agricultural Extension, University of Nevada, 1921-.

#### Associate Professors<sup>1</sup>

KATHERINE LEWERS, Associate Professor of Freehand Drawing.

Instructor in Freehand Drawing, University of Nevada, 1905-1907; Assistant Professor of Freehand Drawing, 1907-1914; Associate Professor of Freehand Drawing, 1914-.

KATHARINE RIEGELHUTH, M.A., Associate Professor of English.

B.A., University of Nevada, 1897; M.A., Columbia University, 1913; Instructor in German, University of Nevada, 1905-1916; Assistant Professor of German, 1916-1917; Associate Professor of German, 1917-1922; Associate Professor of English, 1922-.

ELSIE SAMETH, B.S., Associate Professor of Physical Education for Women.

A.B., Cornell University 1911; B.S., Columbia University, 1911; Instructor in Physical Education for Women, University of Nevada, 1913-1915; Assistant Professor of Physical Education for Women, 1915-1918; Associate Professor, 1918-.

<sup>1</sup>Order of seniority.

STEPHEN LOCKETT, V.M.D., Associate Professor of Veterinary Science. V.M.D., University of Pennsylvania, 1906; Instructor in Veterinary Anatomy, University of Pennsylvania, 1907-1908; Assistant Professor in Veterinary Medicine, University of Pennsylvania, 1909-1910; Field Agent in Animal Diseases, Agricultural Extension Division and State Veterinary Control Service, University of Nevada, 1915-; Associate Professor in Veterinary Science, 1920-.

JAMES ANDREW NYSWANDER, B.S., Associate Professor of Mathematics and Mechanics.

B.S., University of California, 1913; Instructor in Mathematics and Mechanics, University of Nevada, 1915-1917; Assistant Professor of Mathematics and Mechanics, 1917-1918; Associate Professor, 1918-.

GEORGE WALLACE SEARS, Ph.D., Associate Professor of Chemistry.

B.S., Drury College, 1908; M.S., University of Illinois, 1911; Ph.D., University of Illinois, 1914; Instructor in Chemistry, University of Illinois, 1914-1917; Instructor in Chemistry, University of Nevada, 1917-1918; Associate Professor of Chemistry, 1918-.

FRED W. TRAINER, M.A., Associate Professor of Education.

A.B., Beloit College, 1908; M.A., University of California, 1920; Instructor in Education, University of Nevada, 1915-1918; Assistant Professor of Education, 1918-1920; Associate Professor of Education, 1920-.

SIDNEY WARREN WILCOX, B.L., Associate Professor of Economics and Sociology.

B.L., University of California, 1905; B.D., Pacific School of Religion, 1910; Assistant Professor of Economics and Sociology, University of Nevada, January, 1920; Associate Professor of Economics and Sociology, 1921-.

AGARD H. BAILEY, Major U. S. A., Associate Professor of Military Science and Tactics.

U. S. Military Academy, 1908; Lieutenant-Colonel of Infantry, A. E. F., 1917-1919; Fort Logan, Colorado, 1919-1921; Assistant Professor of Military Science and Tactics, University of Nevada, 1921; Associate Professor of Military Science and Tactics, 1921-.

FREDERICK L. BIXBY, C.E., Associate Professor of Civil Engineering.

B.S., University of California, 1905; C.E., University of Nevada, 1918; Professor of Civil and Irrigation Engineering, University of New Mexico, 1910-1912; Associate Professor of Agronomy, University of Nevada, 1919-1920; Associate Professor of Civil Engineering, 1922-.

PHILIP A. LEHENBAUER, Ph.D., Associate Professor of Biology.

A.B., Westminster College, 1907; A.M., Millikin University, 1909; Ph.D., University of Illinois, 1914; Instructor in Botany and Horticulture, University of Nevada, 1914-1916; Assistant Professor of Botany and Horticulture, 1916-1917; Plant Physiologist, University of Illinois, 1917-1922; Associate Professor of Biology, University of Nevada, 1922-.

MARGARET ELIZABETH MACK, A.M., Associate Professor of Biology.

B.S., University of Nevada, 1910; A.M., Columbia University, 1913; Instructor in Biology, University of Nevada, 1913-1917; Assistant Professor of Biology, 1917-1922; Associate Professor of Biology, 1922-.

MEREDITH RAINES MILLER, B.S., Associate Research Professor of Agricultural Chemistry.

B.S., University of California, 1912; Assistant Chemist, Alameda Sugar Co., 1909-1912; Assistant Chemist, Insecticide and Fungicide Laboratory, University of California, 1912-1918; Chemist, Nevada Agricultural Experiment Station, 1918-; Associate Research Professor of Agricultural Chemistry, 1922-.

MARY E. STILWELL, B.S., Associate Professor of Agricultural Extension in the College of Agriculture.

B.S., St. Lawrence University, 1912; Home Economics Teacher, Swarthmore High School, 1912-1914; Home Economics Teacher, East Orange High School, 1914-1915; Home Economics Department Head, German-town High School, 1915-1917; Emergency Home Demonstration Agent, University of Minnesota, 1917; County Home Demonstration Agent, Minnesota, 1918-1921; State Leader, Home Demonstration Agents, Agricultural Extension Division, and Associate Professor of Agricultural Extension in the College of Agriculture, University of Nevada, 1922-.



Assistant Professors<sup>1</sup>

ALBERT WILLIAM PRESTON, Assistant Professor of Mechanical Engineering.

Instructor in Mechanical Engineering, University of Nevada, 1910-1914; Assistant Professor of Mechanical Engineering, 1914-.

SILAS CALVIN FEEMSTER, A.M., Assistant Professor of History.

A.B., Drury College, 1907; A.M., University of Nebraska, 1912; Professor of Latin and History, York College, 1907-1910; Assistant in History and Political Science, University of Nevada, 1913-1915; Instructor in History and Political Science, 1915-1916; Assistant Professor of History, 1917-.

<sup>2</sup>CLIFTON ROY HILL, C.E., Assistant Professor of Civil Engineering.

C.E., Polytechnic Institute of Brooklyn, 1917; Instructor in Civil Engineering, University of Nevada, September, 1917; Assistant Professor of Civil Engineering, 1918-1922.

GEORGE HARDMAN, M.S., Assistant Professor of Agronomy and Assistant Research Professor of Irrigation.

B.S., Oregon Agricultural College, 1915; M.S., *ibid.*, 1916. Field Agent, Bureau of Good Roads and Rural Engineering, U.S.D.A., 1915-1916; Soil and Irrigation Expert, Eastern Oregon Land Co., 1916-1917; Irrigation Engineer, Goose Lake Valley Irrigation Co., 1917-1918; Assistant Agronomist, Nevada Agricultural Experiment Station, 1918-1919; Assistant in Irrigation, 1919-; Assistant Professor of Agronomy, University of Nevada, 1919-; Assistant Research Professor of Irrigation, 1922-.

GILBERT BRUCE BLAIR, A.M., Assistant Professor of Physics.

A.B., Tabor College, 1902; A.M., Washburn College, 1904; Assistant in Physics and Astronomy, Washburn College, 1904-1905; Assistant in Alleghany Observatory, 1905-1906; Professor of Physics, Morningside College, 1907-1909; Instructor and Assistant Professor of Physics, Oregon Agricultural College, 1912-1919; Assistant Professor of Physics, University of Nevada, 1919-.

JESSIE P. POPE, B.S., Assistant Professor in Home Economics.

B.S., University of Nebraska, 1913; Instructor in Home Economics, University of Nevada, 1918-1920; Assistant Professor in Home Economics, University of Nevada, 1920-.

JOHN FREDERICK GROSS HICKS, Ph.D., Assistant Professor of Chemistry.

B.S., University of Pennsylvania, 1906; M.S., University of Illinois, 1916; Ph.D., *ibid.*, 1918; Instructor in Chemistry, Medico-Chirurgical College of Philadelphia, 1906-1907; Professor of Chemistry, Villanova College, 1907-1910; Chemist in Charge Naphthalene Plant, Philadelphia, 1910-1912; Chemist in Charge Laboratory at Fernwood, 1912-1914; Associate Professor of Chemistry, Oklahoma State College, 1914-1915; Assistant Professor of Inorganic Chemistry, Oregon Agricultural College, 1918-1919; Professor of Inorganic Chemistry, Oregon Agricultural College, 1919-1920; Acting Instructor in Inorganic Chemistry, Leland Stanford Junior University, 1920-1921; Assistant Professor of Chemistry, University of Nevada, 1921-.

WILL C. STEINBUHN, M.A., Assistant Professor in Romance Languages.

A.B., University of California, 1913; M.A., *ibid.*, 1914; Instructor of German, Stanford University, 1917-1918; Instructor of Romance Languages, University of Nevada, 1921; Assistant Professor of Romance Languages, University of Nevada, 1921-1922.

SYLVIA CAMPIGLIA, B.S., Assistant Professor and State Supervisor of Home Economics.

B.S., Columbia University, 1916; Supervisor Home Economics, City Schools, San Jose, Calif., 1913-1915; Instructor in Home Economics and Supervisor of Home Economics Practice School, State Manual-Training Normal, Pittsburg, Kansas, 1916-1918; Instructor Home Economics, University of Minnesota, 1918; one year shop experience in New York City, 1918-1919; State Supervisor Home Economics Education and Instructor of Teacher-Training Department Home Economics, University of Nevada, 1920-1921; Assistant Professor and State Supervisor of Home Economics, 1921-.

<sup>1</sup>Order of seniority.

<sup>2</sup>Resigned to take effect September 1, 1922.

WILLIAM JOHN HENRY RYAN, Captain U.S.A., Assistant Professor of Military Science and Tactics.

Mexican Border, 1916; Second Lieutenant of Infantry, 1917-1918; First Lieutenant of Infantry, 1918-1920; A.E.F. and Army of Occupation, 1918-1919; Captain of Infantry, 1920; Assistant Professor of Military Science and Tactics, University of Nevada, 1921-.

FRANCIS CLARK MURGOTTEN, A.M., Assistant Professor of Modern Languages.

A.B., Stanford University, 1901; A.M., *ibid.*, 1908; Professor of Hebrew, Church Divinity School of the Pacific, 1908-1918; Instructor in French, Tenth Division Schools of the British Army in Egypt, 1919; Assistant Professor of Modern Languages, University of Nevada, 1922-.

LYMAN R. VAWTER, D.V.M., Assistant Research Professor of Veterinary Science.

D.V.M., Kansas State Agricultural College, 1918; Meat Inspector, Bureau of Animal Industry, 1917-1918; Assistant in Pathology, Kansas State Agricultural College, 1918-1919; Instructor in Pathology, 1919-1920; Pathologist, Nevada Agricultural Experiment Station, 1920-; Assistant Research Professor of Veterinary Science, 1922-.

GEORGE W. BARR, M.S., Assistant Professor in Agricultural Education.

B.S., Colorado Agricultural College, 1919; Instructor in Stock-Judging, Colorado School of Agriculture, 1919; M.S., Cornell University, 1921; Nevada State Supervisor Agricultural Education and Assistant Professor in Agricultural Education, University of Nevada, 1921-.

Instructors<sup>1</sup>

CHARLES LEROY BROWN, M.A., Instructor in Biology.

B.A., University of Nevada, 1912; M.A., *ibid.*, 1913; Instructor in Biology, University of Nevada, 1913-.

CATHARINE FRANCES SOMERS, B.A., Instructor in Physical Education.

Special Certificate in Physical Education, Los Angeles State Normal School, 1917; B.A., University of Nevada, 1920; Instructor in Physical Education for Women, University of Nevada, 1919-.

CLARENCE H. KENT, B.S., Instructor in Mechanical Engineering.

B.S. in Electrical Engineering, Purdue University, 1915; Assistant in Mechanical Engineering, 1920; Instructor in Mechanical Engineering, *ibid.*, 1920-.

M. JULIA DETRAZ, M.A., Instructor in Education.

B.A., University of Cincinnati, 1910; M.A., Teachers College, Columbia University, 1918; Elementary Supervisor and Demonstration Teacher, Oswego Normal School, New York, 1915-1917; Demonstration Teacher, Horace Mann School, Teachers College, 1917-1921; Instructor in Education, University of Nevada, 1921-.

ROBERT L. JONES, M.A., Instructor in History.

B.S., Henderson-Brown College, Arkadelphia, Arkansas, 1916; A.B., Southern Methodist University, Dallas, Texas, 1917; M.A., University of Texas, 1920; Head of the History Department, Texas Military College, 1920-1921; Instructor in History, University of Nevada, 1921-.

TONETTE BENSON, Instructor in Music.

Supervisor of Music, Wenatchee, Washington, 1910-1914; Supervisor of Music, Shokoece, Belle Plaine, and St. Louis Park Schools, Minneapolis, 1914-1918; Federal Board for Vocational Education, Washington, D. C., 1918-1920; Instructor in Music, University of Porto Rico, 1920-1921; Instructor in Music, University of Nevada, 1921-.

<sup>1</sup>Order of seniority.

WILLIAM BRUCE HILBISH, M.S., Instructor in Physical Education for Men.

B.S., Susquehanna University, 1913; M.Sc., Syracuse University, 1914; M.S., Susquehanna University, 1915; Instructor in Physical Education for Men, University of Nevada, 1921-1922.

HARVEY BRUCE HARRIS, B.Sc., Instructor in Biology.

B.Sc., University of Nebraska, 1920; Assistant Pathologist, Bureau of Plant Industry, 1919; Instructor in Botany, University of Wyoming, 1920-1921; Instructor in Biology, University of Nevada, 1921-1922.

ENOC E. VAUGHN, First Sergeant, U.S.A., Instructor in Military Science and Tactics.

Assistant in Military Department, 1920-1921; Instructor in Military Science and Tactics, 1921-.

LOUISE KERR HAMMOND, B.S., Instructor in Home Economics.

B.S., Oregon Agricultural College, 1921; Instructor in Home Economics, University of Nevada, 1922-.

RUTH A. BILLINGHURST, B.A., Instructor in Chemistry.

B.A., Ohio Wesleyan University, 1921; Instructor in Chemistry, University of Nevada, 1922-.

JOHN R. GOTTARDI, B.A., Instructor in Modern Languages.

B.A., University of Nevada, 1921; Instructor in Modern Languages, University of Nevada, 1922-.

OSCAR LESLIE CLOUGH, M.D., Instructor in Physical Education for Men.

M.D., Maryland Medical College, 1907; D.C., Oklahoma Orthopedic Institute, 1912; Trainer and Assistant Coach, Baylor University, 1912-1914; Trainer, Providence, R. I., Baseball Club, 1913; Trainer and Assistant Coach, University of Southern California, 1915; Trainer, Portland Baseball Club, 1916; Physical Director, Multnomah Athletic Club, Portland, Oregon, 1916; Physical Director and Trainer, State College of Washington, 1917-1918; Air Service, U.S.A., 1918-1919; Instructor, Physical Education for Men, University of Nevada, 1922-.

HENRY E. HIGGINS, Instructor in Mineralogy.

Instructor in Mineralogy, University of Nevada, 1922-.

#### Lecturer

BENSON DILLON BILLINGHURST, B.S., LL.B., Lecturer in Education.

B.S., Ohio Wesleyan University, 1897; LL.B., University of Washington, 1908; Superintendent of Schools, Prescott, Arizona, 1900-1907; Superintendent of Schools, Reno, Nevada, 1908-; Lecturer in Education, University of Nevada, 1920-.

#### Assistants

HELENA SHADE, B.A., Assistant in English.

B.A., University of Nevada, 1917; Assistant in English, 1921-.

VERNON A. VROOMAN, B.A., Assistant in Business Administration.

B.A., University of Nevada, 1921; Assistant in Business Administration, 1922.

RUSSELL L. BOARDMAN, B.S., Assistant in Mechanical Engineering.

B.S., University of Nevada, 1921; Assistant in Civil Engineering, 1922-.

### STANDING COMMITTEES OF THE UNIVERSITY FACULTY

The first-named member of any Committee is its Chairman, to whom all matters of business should be referred.

#### Admission and Advanced Standing—

R. C. THOMPSON, G. W. SEARS, S. G. PALMER.

#### Registration and Scholarship—

M. ADAMS, R. STEWART, F. H. SIBLEY, J. W. HALL, MISS MACK, MISS SISSA.

#### Schedules—

H. P. BOARDMAN, S. C. FEEMSTER, J. F. G. HICKS.

#### Athletics—

C. HASEMAN, R. O. COURTRIGHT, MISS SOMERS.

#### Library—

A. E. HILL, MISS WIER, F. C. LINCOLN, B. F. SCHAPPELLE, J. D. LAYMAN.

#### Scholarships and Prizes—

L. W. HARTMAN, S. W. WILCOX, MISS LEWIS.

#### Student Affairs—

MISS MACK, A. E. TURNER, J. C. JONES.

#### High-School Relationship—

J. R. YOUNG, MISS REIGELHUTH, F. W. TRAINER, MISS SAMETH, C. H. KENT, R. C. THOMPSON, C. HASEMAN.

#### Assemblies and Lecturers—

W. S. PALMER, F. W. WILSON, S. B. DOTEN.

#### Health—

P. FRANSEN, S. LOCKETT, G. B. BLAIR.

### THE UNIVERSITY ORGANIZATION

- A. College of Arts and Science.  
School of Education and Nevada State Normal School.
- B. College of Engineering.
  - (a) Mackay School of Mines.
  - (b) School of Mechanical Engineering.
  - (c) School of Electrical Engineering.
  - (d) School of Civil Engineering.
- C. College of Agriculture.
  - (a) School of Agriculture.
  - (b) School of Home Economics.
- D. Affiliated Organizations.
  - (a) Agricultural Experiment Station.
  - (b) Smith-Lever Extension in Agriculture and Home Economics.
  - (c) State Mining Laboratory.
  - (d) State Hygienic Laboratory.
  - (e) Pure Food and Drugs Control and Weights and Measures.
  - (f) State Veterinary Control Service.
  - (g) United States Bureau of Mines Experiment Station.
  - (h) Engineering Experiment Station.
- E. Summer Session.

### THE HISTORY AND DEVELOPMENT OF THE UNIVERSITY

1862—*The Morrill Land Grant.* By the terms of this grant the State of Nevada received a donation of 90,000 acres of land, in 1866, "for the endowment, support and maintenance of at least one college whose leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts." The land in this State is known as the "90,000-Acre Grant," and the sales of this land have amounted to \$107,763.84, upon which the United States Government requires an annual interest of 5%.

1864—*Foundation.* The Constitution of the State 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." A further provision in the Constitution relates to the Normal School.

1866—By a special Act of Congress there were seventy-two sections in the State set aside for the purposes of endowment of the universities in the State. The fund from the sale of this land now amounts to \$46,838.42.

1873—*Location.* The University was first located at Elko by an Act of the Legislature approved March 7, 1873. By an Act of the Legislature approved March 7, 1885, it was moved to Reno, and formally reopened March 31, 1886.

1887—The enrollment of the students in 1887-1888 was 28. The faculty consisted of 2 members, President Brown and Professor Hannah K. Clapp. During the first year 2 additional members were added, and by the end of the second year the faculty numbered 7.

During the first year five departments were recognized, although not fully organized. They were the Liberal Arts, the Mining, the Normal, the Agricultural, and the Business Schools.

- 1888—The School of Mines was organized, with Robert D. Jackson, Ph.B., as Director. The Normal School was organized, with Miss Kate N. T. Tupper as the head. The Military Department was organized, with Lieutenant Arthur C. Ducat, Jr., as commandant.
- 1889—The Agricultural Experiment Station was organized, President Brown acting as Director. By an Act of Congress passed March 2, 1887, which was accepted by this State, there was established, in connection with the colleges founded upon the Congressional Act of 1862, agricultural experiment stations, "to aid in the acquiring and diffusion among the people of the United States of useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." The Hatch Act of 1887 appropriated \$15,000 annually for this support.
- 1889—Administration of President Jones began.
- 1890—The second Morrill Act of Congress made further appropriations for endowments of institutions established under the Act of 1862. Under this endowment the University is now receiving \$25,000 per year.
- 1891—The first graduates from the School of Liberal Arts.
- 1892—The first graduates from the Schools of Mines and Agriculture.
- 1894—Administration of President Jones ended.  
Administration of President Stubbs began.
- 1895—The State Mining Laboratory was organized.
- 1899—Washoe County presented to the University a farm of sixty acres, to be used in connection with the Agricultural Experiment Station. The cost of the farm was \$12,000.
- 1904—The tridecennial celebration of the establishment of the University was held.
- 1906—Congress, under an Act dated March 16, 1906, provided for an additional appropriation for the support of the Agricultural Experiment Station, limiting the money's use to the necessary expenses of original research and experimental work in agriculture. This grant now amounts to \$15,000 per year.
- 1907—*The Nelson Fund*—An Act of Congress of March 4, 1907, carried with it an appropriation for the further support of the universities established under the Morrill Act of 1862. The present appropriation under this fund amounts to \$25,000 per year.

- 1907—Mrs. John W. Mackay and Mr. Clarence H. Mackay began a donation to the University which founded the Mackay School of Mines, the Mackay Athletic Field, and the Mackay Training Quarters, and contributed \$25,000 toward the beautifying of the Campus. They also presented a statue in bronze by Gutzon Borglum of John W. Mackay, one of the pioneers of the Comstock.
- 1911—Twenty-fifth anniversary of the establishment of the University at Reno, celebrated by Silver Jubilee and home-coming of former students and graduates.
- 1912—Mrs. John W. Mackay and Mr. Clarence H. Mackay presented to the University Board of Regents \$150,000 as an endowment for the Mackay School of Mines.
- 1914—Administration of President Stubbs closed with his death on May 27.  
By an Act of Congress known as the "Smith-Lever Act," there was established a fund for the purpose of agricultural extension. The fund amounts to \$10,000 per year, and is increased each year until it amounts in 1923 to \$15,699.
- 1914—September 14, administration of President Hendrick began.
- 1917—May 1, administration of President Hendrick ended.
- 1917—September 1, administration of President Clark began.
- 1918—The Smith-Hughes Act passed Congress early in 1917, for the promotion of vocational education. This Act provides for cooperation with the States in the promotion of such education as agriculture, home economics, trades, and industries, and in preparation of teachers of vocational subjects. Under the Nevada State Board of Vocational Education, the University of Nevada does the Nevada vocational-teacher training in accord with this Smith-Hughes Act, being granted special federal and state funds for this purpose. This work began at the University in January, 1918.
- 1918—First training detachment of 103 soldier students from June 15 to August 13; second training detachment of 103 soldier students from August 15 to October 12; Collegiate Section A—79 soldier students from October 1 to December 21; Vocational Section B—212 soldier students from October 15 to December 21.

- 1920—The School of Education was organized, with John William Hall as Dean.
- 1920—The Rare and Precious Metals Federal Mining Experiment Station was assigned to the University July 8, 1920, with Dr. Samuel C. Lind as Superintendent.
- 1920—A Federal Radio Station was established on the University Campus in September, 1920. The operant station and the government wireless laboratory are both housed in the smaller of the two Barracks buildings.
- 1921—An Engineering Experimentation Station was established with Horace P. Boardman as Director.

## COLLEGES, SCHOOLS, AND PUBLIC SERVICE DEPARTMENTS

### THE COLLEGE OF ARTS AND SCIENCE

The College of Arts and Science offers four-year courses leading to the degree of Bachelor of Arts. (Students who have majored in Mathematics and Science may, upon application to the faculty, receive the degree of Bachelor of Science if they prefer.)

Work in the following subjects is offered in the College of Arts and Science: Art, Assaying, Biology, Business Administration, Chemistry, Classics, Economics, Education, English, Geology, German Language and Literature, History, Mathematics, Mineralogy, Philosophy, Physical Education, Physics, Political Science, Psychology, Romanic Languages and Literatures, and Sociology.

### SCHOOL OF EDUCATION AND STATE NORMAL SCHOOL

The training of teachers at the University of Nevada embraces the following courses and divisions:

1. The School of Education (included as a division of the College of Arts and Science, but with its own Dean and its direct affiliations with the Colleges of Agriculture and Engineering), which offers to prospective secondary-school teachers a liberal and professional course of study of four years leading to the bachelor's degree and a teacher's high-school diploma, giving title to a teacher's high-school first-grade certificate, and also a special training course for future school principals and superintendents.

2. The State Normal School, which offers to fully accredited students of college grade a two-year professional training leading to a teacher's elementary diploma giving title to a first-grade elementary certificate. Students who cannot immediately proceed after the first year to the second year of this course are granted credentials giving title to a second-grade elementary certificate.

3. The Summer Session, organized more particularly for the benefit of present and prospective teachers and conducted for six weeks in June and July, with a wide variety of liberal and professional courses which carry both university and state-certificate credit.

## THE COLLEGE OF ENGINEERING

The Mackay School of Mines offers a four-year course in mining, leading to the degree of Bachelor of Science in Mining, which prepares students to become mining engineers, metallurgists, and mining geologists; a one-year graduate course leading to the degree of Master of Science in Mining; and a four-week course in elementary mining subjects designed to assist prospectors. The school is provided with the equipment necessary to teach efficiently the courses in mining, metallurgy, and geology, which form the basis of a mining education. The professional degree of Mining Engineer is conferred upon graduates who have held responsible mining positions for at least three years and who present satisfactory theses.

The Schools of Mechanical, of Electrical, and of Civil Engineering each offer four-year courses of instruction leading, respectively, to the degrees of Bachelor of Science in Mechanical, in Electrical, or in Civil Engineering. The shops are well equipped, and the laboratories offer most excellent facilities for practical work.

## THE COLLEGE OF AGRICULTURE

The College of Agriculture curriculum leads to the degree of Bachelor of Science in Agriculture. This is a four-year course including, in addition to the prescribed agricultural subjects, such subjects in the College of Arts and Science as are necessary to establish in the student's mind a thorough knowledge of agricultural problems. There are also short courses in butter-making, cheese-making, and city milk supply, varying with the requests of the majority of applicants.

The degree course in the School of Home Economics gives to young women of the University a comprehensive understanding of the household sciences, including both domestic science and domestic arts. The Short Courses offer study in the following subjects: Dressmaking for beginners and experienced workers. Millinery, working on new and old material. Designing and making children's clothes from old materials. Food, practical lessons on food for the family, its composition, use, and amount required.

Through the College of Agriculture the University provides a bureau of general information and welfare from which any one in the State or any one desiring to settle within its borders may receive full information concerning

the opportunities in the State for farming, stock-raising, etc., together with a statement of farm practices which have been successful.

## AGRICULTURAL EXPERIMENT STATION

The Agricultural Experiment Station receives its support from the Hatch Fund (Federal, 1887) and from the Adams Fund (1906). These funds are restricted by law to the scientific investigation of agricultural problems, including the problems arising from soil conditions, the duty of water, animal diseases, poisonous range plants, economical feeding of live stock, insect pests, plant diseases, and other problems of agricultural practice.

## AGRICULTURAL EXTENSION DIVISION

Agricultural Extension, provided for by the Smith-Lever Extension Bill, is under the immediate charge of a director.

Its specific purpose is "the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in said colleges in the several communities, and imparting to such persons information on said subjects through field demonstrations, publications, and otherwise." Further information concerning the work under this division, staff, etc., is given in this catalogue.

## LABORATORIES AND SCHOOLS

The Legislature of the State has placed the direction of several of the public service departments under the President and Board of Regents of the University.

## STATE MINING LABORATORY

The State Mining Laboratory, which was organized under an Act of the Legislature approved May 16, 1895, provides a means whereby citizens of Nevada may have ores and minerals taken from within the boundaries of the State analyzed free of charge.

## STATE HYGIENIC LABORATORY

The State Hygienic Laboratory was organized in 1909 to provide facilities for the diagnosis of infectious human diseases and to provide for the control of such diseases. The services of the laboratory are available to physicians, health officers, and health boards. The laboratory is located at the corner of Fifth and Sierra Streets, Reno.

### FOOD AND DRUGS CONTROL, AND WEIGHTS AND MEASURES

The Food and Drugs Control, and Weights and Measures Departments, established under Act of the 1909 Legislature, provide that all rules, regulations, definitions, and decisions proclaimed by the Secretary of Agriculture for the enforcement of the national law, shall be adopted by this department in the enforcement of the state law. The laboratory is located at the corner of Fifth and Sierra Streets, Reno.

### STATE VETERINARY CONTROL SERVICE

The State Veterinary Control Service was organized in 1915, to provide facilities for the diagnosis of communicable diseases of domesticated animals, for research into the nature, cause, and methods of controlling same, including the preparation and distribution of special sera and vaccines which cannot be purchased on the open market.

### SUMMER SESSION

The Summer Session of the University of Nevada opens as far as possible the full resources and facilities of the institution to teachers, to students of the University, and to any men and women who want such opportunities for liberal study as are here offered.

The Summer Session of 1922 is scheduled from June 19 to July 28, inclusive.

## ADMINISTRATION

### GOVERNMENT

The control of the University is vested by law in a Board of Regents consisting of five members elected by the people. Under the law in force until 1918, three Regents were elected each biennium, for two- or for four-year terms.

By an Act of the Legislature, approved March 24, 1917, the tenure of office for University Regents was changed to ten years. Transition to this new system began with the fall election of 1918, when three Regents were elected for terms of ten, eight, and six years, respectively. In the general election of 1920 two more Regents were elected for terms of ten and two years, respectively. At the general election of 1922, and at each biennial election thereafter, there will be elected one Regent, who shall hold office for ten years.

The administration of the University is vested by the Board of Regents in the President of the University, the University Faculty, the Faculties of the several Colleges, the Deans and Directors of the Colleges and Schools and of the Public Service Division.

### THE PRESIDENT

The President of the University is the executive head of the University. It is his duty to secure efficiency in all the departments and orderly and economical administration and healthful development in all the affairs of the University. He is ex officio a member of each committee.

### THE VICE-PRESIDENT

In the absence of the President or in case of his inability to act, the Vice-President shall perform his functions.

### DEANS

The Dean is the administrative officer of his college or school. Any matters in which the faculty of the college can legislate are within the administrative functions of the Dean. He is directly responsible to the President of the University.

### DEAN OF WOMEN

The academic and social welfare of the women students is under the particular supervision of a Dean of Women. It

is especially desirable that young women who are away from their home influences should have some one to whom they may look for advice in matters affecting their welfare as women and as students. The Dean of Women has jurisdiction over all social matters in which women students are concerned. For women students whose homes are out of the city and who are not accommodated in Manzanita Hall, the Dean of Women has a list of suitable homes accommodating women exclusively and in which a parlor is provided for the reception of visitors. Women students are required to report to the Dean of Women in order that they may register their addresses.

The Dean of Women invites correspondence with parents and guardians, and gladly cooperates with them regarding the welfare of students.

#### THE TREASURER AND COMPTROLLER

The Treasurer and Comptroller is authorized to receive all moneys arising from gifts or bounties in any form to the University or for its benefit; all fees from students or others; proceeds from all sales of farm products or any articles of personal property of whatever nature or kind; fees for services rendered in any manner, and funds from any sources whatsoever other than in cases by law required to be paid to the State Treasurer. He keeps the accounts of the moneys in his custody in such separate funds as are necessary for proper and systematic accounting.

#### THE UNIVERSITY FACULTY

The President, Vice-President, Deans, Librarian, Registrar, and all persons who give instruction, with the rank of instructor or above, in any of the regular college departments of the University, constitute the University Faculty.<sup>1</sup> Subject always to the approval of the President and the Board of Regents, the University Faculty has legislative jurisdiction in all matters of government, discipline and educational policy not delegated by it to the separate faculties, and has the right of review of all actions of the several colleges which relate to the educational welfare of the University as a whole.

<sup>1</sup>Exceptions to the above rule:

1. Any member of the Faculty not teaching during any given college year shall not have the privilege of voting in Faculty meetings during that year.
2. New appointees shall not have the right to vote until one year after appointment, except those who may be appointed to the rank of full professor, or as the head or acting head of a department.

The following are the standing committees of the Faculty:

1. Admission and Advanced Standing.
2. Registration and Scholarship.
3. Schedules.
4. Athletics.
5. Library.
6. Scholarships and Prizes.
7. Student Affairs.
8. High-School Relationship.
9. Assemblies and Lecturers.
10. Health.

#### MEETINGS

The University Faculty meets at the call of the President.

#### COLLEGE FACULTIES

The faculty of each college directs the educational and internal life of the college, makes rules and regulations peculiar to that college; formulates the course of study, the entrance and graduation requirements, which, when approved by the University Faculty, the President and the Board of Regents, become the statutes in force in that college. It shall not have the authority to take away from a student any university privilege nor shall it trench upon the executive duties of the Deans. All matters which may require the action of the University Faculty shall be presented to that body by the Dean. The faculty of each college shall organize and carry out its functions as it deems wise. The Dean shall be chairman of the faculty and ex officio a member of all committees. The action of each faculty is subject to the approval of the President and of the Board of Regents. A copy of the minutes must be filed with the President immediately following each meeting.

#### DEPARTMENTS

The department is the educational unit in the University. The head of the department is responsible directly to the President for the efficiency and educational effectiveness of the department. For general administrative work the head of the department is in that college in which his major work appears.

The heads of departments make all department reports, prepare estimates for the expenses of their departments, and are responsible for the distribution and expenditure of the funds assigned to them.



## ADVANTAGES AND EQUIPMENT

Reno, the seat of the University, is a substantially built and steadily growing city, numbering in 1922, fifteen thousand inhabitants. It is located in the valley of the beautiful Truckee River at the junction of three railroads, the Southern Pacific, a transcontinental line, the Virginia and Truckee Railway, a short line with Reno and Virginia City as terminals, and the Western Pacific Railway, another trunk-line between the East and the West.

The scenery is magnificent. The University Campus, at the northern edge of the city of Reno, is a low plateau. On the west are the Sierra Nevada Mountains, pine clad, crowned with snow the year round, and towering to majestic heights, the white summit of Mount Rose, queen of the range, being over two miles above sea-level. On the east are the lower gray-brown Virginia Mountains, endlessly restful with their subdued lights and their velvet shadows. These two ranges unite in low hills to the north, while to the south a green and fertile valley, crossed by the silver thread of the Truckee, stretches to the horizon mountains.

The air is clear and invigorating. The temperature is equable. Over three hundred days of the year the sun shines from a usually cloudless sky of wondrous blue. The nights are always cool and refreshing. There are few, if any, more healthful places in America.

The grade- and high-school system of the city has deserved repute throughout the Pacific States. The Reno Young Men's and Young Women's Christian Associations have well-equipped quarters which are centers of athletic and social activities. Music and the drama are encouraged by strong local organizations. University students are welcomed by all of the churches of Reno.

## BUILDINGS AND GROUNDS

The University Campus has an area of sixty acres and is beautifully located on an eminence overlooking the city. The academic buildings center upon a turfed quadrangle; broad walks and drives traverse the grounds. The natural advantages of the site lend well to landscape embellishment, and much has been done toward beautifying the grounds.

The following brief descriptions will give some idea of the principal buildings and the purposes for which they are used:

**AGRICULTURAL BUILDING**—The Agricultural Building is a three-story structure of brick, with stone facings and trimmings, situated directly east of the University lake. The first floor includes the administration offices, two classrooms, a large lecture-room, the millinery laboratory, the library, and the museum. The second floor is devoted to the School of Home Economics and the Department of Biology, and includes the sewing laboratory, the cooking laboratory, the model kitchen and dining-room, and the biological laboratories. The basement includes laboratories for agricultural engineering, animal husbandry, farm crops, soil physics, biology and Experiment Station Chemistry. (1918\*)

**BARRACKS**—The Barracks Building is a two-story frame building located directly north of Lincoln Hall. The first floor includes a kitchen, a mess hall, a dormitory and five offices and storerooms. The second floor is wholly a dormitory floor. This building was erected in September, 1918, for the use of the Vocational Section of the Students' Army Training Corps. (1918)

Since January, 1919, this building has been furnishing overflow quarters for various University divisions and departments.

The small building north of the Barracks, used as a barracks lavatory until January, 1919, was remodeled as quarters for the Federal Radio Station. (1920)

**CHEMISTRY BUILDING**—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 elementary inorganic and qualitative laboratories, a balance-room, stock-room, and physical chemical laboratory, which is equipped for work. The quantitative laboratory occupies the south half of the second floor. The second floor also contains a lecture-room, offices, a department library, and small laboratories. The basement is divided into two compartments, one being used as a furnace- and combustion-room, the other as an acid-room. All the laboratories are heated from the central heating plant. (1902)

**DAIRY BUILDING**—This is a two-story brick and stone building situated on the east side of the Campus directly east of

\*Figures given in parentheses at the end of paragraphs describing the buildings state the years in which the respective buildings were completed.

the Mechanical Building. The entire second floor is occupied by the Department of Agricultural Extension. The basement floor contains the creamery, in which the milk from the college herd is manufactured into butter and cheese. On this floor is also the dairy laboratory in which instruction is given in testing dairy products, the operation of separators, and the making of butter and cheese. (1913)

**DINING-HALL**—The University Dining-Hall is a one-story brick building on the west side of the Campus. It is a conveniently equipped dining-hall for the accommodation of two hundred students. (1905)

**EDUCATION BUILDING**—A two-story brick building, with stone facings and columns, situated north of the Agricultural Building. The first floor has an auditorium seating 350, with stage and dressing-room, the offices and three classrooms of the School of Education. The second floor is occupied by the Departments of Art, Economics, Business and Sociology, Philosophy and Psychology, and has the music-room and other classrooms of Education. (1920)

**ELECTRICAL BUILDING**—The Electrical Building is situated just north of the Mechanical Building. This is a handsome structure of brick, with stone facings and trimmings. The spacious laboratories are completely equipped with the most modern machinery and appliances for the study of electrical, mechanical, and civil engineering. On the first floor are located the lecture-rooms and the electrical, gas, and steam-engineering laboratories. The second floor contains the library, drafting-rooms, fuel-testing laboratory, and civil-engineering department. (1912)

**GREENHOUSE**—A working greenhouse is on the east side of the Campus. It is used by the Departments of Botany and Horticulture, and also for the study of plant industry. (1909)

**GYMNASIUM**—The Gymnasium is a brick building one hundred and twenty feet long and sixty feet wide. The assembly hall is one hundred feet by sixty feet, and is used for general University purposes. The building is devoted to the use of the men's and women's classes in Physical Education, and is equipped with shower-baths, dressing-rooms, and offices of the Physical Education departments. (1897)

**HATCH STATION**—Hatch Station is set aside almost wholly for the use of the Experiment Station. The first floor is

occupied by the Department of Veterinary Science and State Veterinary Control Service. The second floor is occupied by the library and the office of the Station Director and by the Departments of Entomology and Range Management. (1891; annex 1909)

**HEATING PLANT**—A central heating plant supplies most of the buildings on the Campus. It consists of two large boilers, pumps, engines, motors, etc., and is operated in connection with the mechanical-engineering laboratories. (1908)

**HOSPITAL**—The University Hospital is situated between the Gymnasium and Lincoln Hall. This is a one-story building and contains six rooms and a basement. There are four wards—two upon the west for men and two upon the east for women. There is a convenient kitchen where the food for the patients is prepared. A matron is in charge of the hospital. The physician engaged by the Students' Hospital Association of the University has daily office hours in this building. (1902)

**LIBRARY**—The Library Building is situated on the west side of the Quadrangle; it is constructed of brick and stone in conformity with the architecture of the other buildings. (1913)

**LINCOLN HALL**—Lincoln Hall, the men's dormitory, is a modern three-story brick building, built after the plan of such halls in use in the larger eastern colleges. It affords a comfortable home for ninety men. (1896)

**MACKAY SCHOOL OF MINES**—The Mackay School of Mines, the gift of Mrs. John W. Mackay and Mr. Clarence H. Mackay, houses the Departments of Mining, Metallurgy, Geology, and Mineralogy. It is a dignified and spacious structure in the colonial style. The main portion of the building has two stories and there are two single-story wings in the rear, between which a library and a court are situated. Upon the first floor are the mining lecture-room, drafting-room, and office, the museum, the mining library, the mining and metallurgical laboratory, the assay laboratory, the chemical laboratory, the weighing-room, and the parting-room. Upon the second floor are the geological lecture-room, drafting-room, and office; the petrographic laboratory, the mineralogical laboratory, the research laboratory, and the office of the Department of Metallurgy. (1908)

**MANZANITA HALL**—Manzanita Hall, which is the women's hall of residence, is a brick building electrically lighted and

steam heated; it provides accommodations for about eighty-five women. There are single rooms, double rooms, two-room suites for two women, and three-room suites for four women. All of the rooms have outside exposure. There is a large sleeping-porch on the side of the building overlooking the lake, and those who desire to sleep out of doors will do well to state this in their applications that they may be assigned rooms conveniently located for this purpose. A covered passageway connects the hall with the dining-hall. (1896; annex 1909)

**MECHANICAL BUILDING**—The Mechanical Building is on the east side of the Quadrangle; the ground floor 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, and a toolroom equipped with small machine tools and experimental apparatus for the use of shop 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. (1897)

**MINES EXPERIMENTING BUILDING**—This building has been erected north of the east wing of the School of Mines Building. It is a two-story and basement brick building, housing the storage-rooms, laboratories, library, and offices of the Federal Rare and Precious Metals Mining Experiment Station. (1921)

**MORRILL HALL**—Morrill Hall is a three-story brick building with a large basement. On the first floor are the offices of the President, the Comptroller, and the Registrar. The Departments of Mathematics and the Classics occupy the second floor. The third floor is used for storage. The office of the Superintendent of Buildings and Grounds is in the basement of this building. (1886)

**PHYSICS BUILDING**—The Physics Building, which is in the main devoted to the Department of Physics, is a substantial two-story brick building. On the first floor are the balance-room, the darkrooms, the storage-battery room, the shop, and the laboratories. The second floor contains the lecture-room, with a seating capacity of eighty persons, the apparatus-rooms, and the offices. (1889; annex 1905)

**PRESIDENT'S HOUSE**—The President's house is situated on the southeast corner of the Campus. (1900)

**STEWART HALL**—Stewart Hall is a three-story brick building with a basement. The basement is used as an armory and contains also the offices of the Military Department. The Departments of History and Political Science and of Modern Languages occupy the first floor. The second floor is occupied by the Department of English. (1890)

**THE MACKAY FIELD AND TRAINING QUARTERS**—The natural amphitheater on the Campus, which had been leased to the University for a number of years by former 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 (1909). 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 Olympic 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 American football field, surrounded by a quarter-mile track which has an arm extended to make provision for the 220-yard events.

#### LIBRARIES GENERAL LIBRARY

The University Library contains 36,600 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 volumes of various kinds. The books are catalogued according to the Dewey Decimal Classification System.

The reading-room is supplied with daily and weekly newspapers and with many of the best periodicals. The list includes subscriptions to about two hundred of the leading cultural, scientific, and technical magazines and journals.

The Library is open from 7:50 a. m. to 4:50 p. m. every day except Sundays and holidays. During the Summer Session and vacations special hours are announced.

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. Borrowers residing outside of Reno are asked to pay the necessary postage or expressage on the books loaned to them.

#### AGRICULTURAL COLLEGE LIBRARY

The Agricultural College Library contains all of the livestock record-books of the Department of Animal Husbandry and Dairying, as well as a large collection of agricultural papers, magazines and other current literature. It is located in Room 103, Agricultural Building, and is used chiefly by members of the faculty and students in Agriculture and Home Economics. The use of this library is extended to the general public.

#### AGRICULTURAL EXPERIMENT STATION LIBRARY

The Agricultural Experiment Station Library, containing about twenty-eight hundred bound volumes and a large number of pamphlets is housed in Hatch Station. The 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, and general works on agriculture and the related sciences. 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

Reference books, text-books, recent technical journals, and other works pertaining to geology, mineralogy, mining, and metallurgy are concentrated in one large study-room which is conveniently located upon the ground floor of the Mackay School of Mines. This library is open at all times during the sessions.

#### MINING EXPERIMENT STATION LIBRARY

The library of the U. S. Bureau of Mines Station at the University consists of between 2,000 and 3,000 volumes and pamphlets. Thirty-five current periodicals are received. A complete set of the publications of the U. S. Bureau of Mines is maintained.

#### OTHER DEPARTMENTAL LIBRARIES

These libraries are maintained primarily for the use of students taking work in the respective departments. They cover animal husbandry, biology, chemistry, education, home economics, physics, and veterinary science.

#### TRAVELING LIBRARIES

The University has fifteen traveling libraries for the use of Nevadans outside of Reno. Numbers 1 and 2 have twenty-five books each; the others have fifty books apiece. So far as practicable they are lent to schools or communities that will pay transportation charges. The "travelers" may remain three months or longer in a place. Then they return to the University Library, are checked up, and made ready to lend again. The University will continue this in a modest way until the work can be done better by others. The University requires a deposit of \$5 on each "traveler."

#### CITY AND STATE LIBRARIES

Besides the University libraries, members of the University have the facilities of the Reno Free Library, and of the State Library, which is located at Carson City. The State Library has a printed catalogue of its miscellaneous department, a copy of which is furnished to borrowers.

#### LABORATORIES

##### ARTS AND SCIENCE LABORATORIES

*Biological*—The Biological Department occupies part of the basement, and the north half of the second floor of the Agricultural Building. There are five laboratories consisting of the following: (1) The main laboratory, used for all the elementary courses, which will accommodate thirty-five students; (2) The advanced zoological laboratory; (3) The advanced botanical laboratory; (4) The plant-breeding and horticultural laboratory; and (5) The anatomy laboratory. The first three are located on the second floor, and the last two are in the basement. In addition to these laboratories, there are small rooms for storage, an iceroom, a darkroom, a fireproof incubator-room, and a small museum and exhibition-room. In the basement there are arrangements for the keeping of running aquaria and supplies of living animals. In the central part of each laboratory are stationary tables provided with gas, water, and sink connections, lockers and drawers—all adapted for the setting up of apparatus in physiological and other experimental work. Tables grouped

in front of the windows are arranged for microscopic work. Each individual table is provided with a microscope, locker, and combination-lock drawers for the keeping of individual supplies and apparatus. Wall cabinets, reagent cases, and lockers are used for storing general equipment and supplies. The department possesses fifty-five compound microscopes, ten of which are provided with oil-immersion lenses and all the accessories needed for the most delicate and precise microscopical work. Among the larger pieces of apparatus are an electrical incubator, a Freas electric oven, paraffine water-bath, dry-air and steam sterilizers, autoclave, centrifuges, and a full projection apparatus for microscopic lantern-slide and opaque demonstrations. Four complete sets of physiological apparatus will accommodate eight students in experimental animal physiology. Smaller apparatus and a greenhouse make possible a limited amount of work in plant physiology.

*Chemical*—The laboratory for qualitative analysis will accommodate sections of sixty students each. The sophomore laboratory will accommodate sections of thirty-six each, with locker room for three sections. The laboratory is completely fitted with water, gas, and fume closets. The quantitative analysis laboratory will accommodate 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 twelve balances, and a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

*Geological and Mineralogical*—The Departments of Geology and Mineralogy are 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, and 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.

*Physical*—The work of the Physical Laboratory is fully adapted to the needs of the students of arts, science, medicine, education, or engineering. The General Laboratory contains, besides a shop, a Freshman and Sophomore laboratory for work in sound, mechanics, heat, light, magnetism, and electricity. The equipment of these laboratories consists of modern apparatus of approved design and substantial construction, suited for accurate physical measurements. The apparatus for the more important experiments has been duplicated, so that at present individual work can be insisted upon in the laboratory. Aside from the main laboratories, there are a weighing-room, containing four Becker balances mounted on piers; a darkroom provided with standard photometric apparatus; and a battery-room equipped with sixty lead storage batteries and fifteen Edison storage batteries. 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.

#### ENGINEERING LABORATORIES

*Civil Engineering*—A first-class Riehlé testing machine, 1909 model, 200,000 pounds capacity, operated by an electric motor, a complete cement-testing outfit, and a good assortment of surveying instruments comprise the laboratory equipment of this department. All of these features, as well as a drafting-room, are located in the Electrical Building. The large testing machine is used for testing and illustrating the principles governing the strength and elasticity of materials used in engineering construction.

*Electrical*—The equipment of the Electrical Engineering Laboratory is one of the best in the country. Machines of practically all standard types are available for study and operation. In addition to this apparatus there have been provided the necessary controlling devices and instruments for handling the wide range of voltages and currents used in the experimental tests. The equipment is especially designed for study of the electrical engineering problems which occur in commercial work, and consists of direct- and alternating-current generators, motors and converters, high and low potential transformers, a Tirrell regulator, synchron-

oscopes, power-factor meter, rheostats, voltmeters, ammeters, and watt-meters, multipliers, and numerous other smaller pieces of apparatus.

*Mechanical*—The equipment of the Mechanical Laboratory for steam and gas engineering consists largely of typical engines, so arranged as to be run independently of one another, each provided with its individual variable load and complete apparatus for testing.

The principal units for steam testing consist of the following:

A 100-hp. Babcock and Wilcox boiler, oil fired and provided with complete boiler-room accessories.

A 12x24 Alliss-Corliss engine, belted to a 65-kw. 200-volt alternator.

A 10x10 Buffalo Forge Co. high-speed automatic engine equipped with an Alden dynamometer.

A 5x5 vertical slide-valve engine.

A 7-kw. General Electric turbo-generator outfit.

A 6-hp. De Laval turbine geared to a centrifugal pump.

Two headlight turbo-generator outfits arranged for comparative tests.

A Wheeler surface condenser, arranged to measure the steam consumption of any unit.

The principal units for gas-engine testing are the following:

A 30-hp. three-cylinder vertical Standard gas engine belted to a 17-kw. direct-current generator.

A 10-hp. Fairbanks-Morse oil engine belted to a 10-kw. direct-current generator.

A 6-hp. Fairbanks-Morse gas engine provided with friction brake.

A 6-hp. Semi-Diesel Swedish oil engine.

A 40-hp. Willys-Knight automobile engine.

A 4-hp. horizontal gas engine belted to a centrifugal pump.

The laboratory contains instruments for measuring and recording pressure, temperature and flow of stream, thermometers, pyrometers, steam and gas calorimeters, and steam- and gas-engine indicators, with suitable apparatus for their calibration. The laboratory is equipped to make tests on lubricating oils and for fractional distillation of crude oils.

#### MINING SCHOOL LABORATORIES

*Assay*—Preparation of crucible charges and all furnace work is done in the Assay Laboratory in the Mackay Building. This laboratory is fully equipped with six Thompson

pulp scales, three double-muffle soft-coal furnaces, a large oil fusion furnace, 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. A Case combination gas and oil three-muffle furnace has been added to this laboratory by the State Mining Laboratory.

Connected with both the Chemical Laboratory and the parting-room is the weighing-room. Substantial piers carry the balances. Both chemical and button balances for assaying work are placed in this room. The equipment consists of two analytical balances and eight button balances. Different makes of balances are in use, including the Becker, the Ainsworth, the Keller, the Oertling, and the Staudinger. An Ainsworth chemical balance and a Thompson multiple-rider button balance belonging to the State Ore Sampler are also installed in this laboratory.

The cleaning of beads, parting, and annealing are provided for in a parting-room convenient to the weighing-room and the Assay Laboratory. The room is equipped with cement tables, a hood, and a set of bullion rolls.

*Chemical*—The Chemical Laboratory of the School of Mines is fully equipped with the usual desks, hoods, hot-plates, and air-baths. Each desk is provided with gas, electricity, and compressed air. Steam connections for still and drying-coils are provided. Electric air-baths and drying pans are provided for overnight work. A small electric-driven five-jar Abbe mill is used for the fine grinding tests. Four four-gallon slime agitators, driven by a 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. A complete electrolytic outfit for lead, copper, and other determinations has been installed. This laboratory will accommodate sixteen students.

*Metallurgical*—The Metallurgical Laboratory equipment includes the following machines: a three-stamp battery and feeder, amalgamating plates, a four-foot Union concentrator, a Wilfley concentrating table, a two-compartment jig, classifiers and sizing cones, a 4x8 Sturtevant ore crusher, a pair of 10x12 crushing rolls, a 2x6 Columbian shaking screen, a one-ton cyanide plant, a 3x8 roasting furnace, an 18-inch amalgamating pan, a 150-pound tube mill, a small Pachuca

agitator, a filter press and montejus, an automatic sampler, a crusher, a sample grinder, and a miniature concentrating testing plant consisting of ore feeder, hydraulic classifier, Wilfley table, two-compartment jig, and settling tanks, all mounted on a single table, a laboratory-size Deister slimer, and Janney and Callow flotation machines.

Power for the laboratory is supplied by two induction motors, one a 15-hp. and one a 5-hp. All the machines are so arranged that they can work independently or in conjunction with one another. The following processes may be conducted on a working scale: The dry crushing and automatic sampling of an ore; the concentration of sands and slimes after crushing an ore either in stamp battery or rolls; the wet crushing, plate amalgamation, and concentration of a gold ore; the cyanide treatment of a gold or a silver ore, and the pan amalgamation of a silver ore.

*Metallographic*—The Metallographic Laboratory equipment includes a Sauveur & Boylston polishing machine, apparatus for hand polishing, a large Leitz metallurgical microscope with photomicrographic camera, and a set of prepared specimens of the common and ferro alloys.

*Mining*—The Mining Laboratory is equipped with an 8½x9-in. Laidlaw feather-valve compressor operated by a 25-hp. electric motor. The rock drills in the laboratory include an Ingersoll-Sergeant piston drill, a Jackhammer drill, Waugh and Butterfly stopers, and Coehise piston, and hammer drills. A Tool-O-Meter, Clark air-meter, and Ober-top drill-tester are provided for testing these drills. The laboratory also contains hand and machine drill steels, an electric blasting machine and tester, mine lamps, mine shovels, hygrometers, and anemometers.

#### PUBLIC USE OF SCHOOL OF MINES LABORATORIES

As there are no public testing laboratories in the State of Nevada, the University Board of Regents has authorized the use of the laboratories of the Mackay School of Mines by properly qualified persons under certain restrictions. The conditions under which the laboratories may be used are as follows:

1. The laboratories may be used only during regular laboratory hours, which are from 8:40 to 12:15 a. m. and 1:15 to 3:45 p. m. from Monday to Friday, inclusive, and from 8:40 to 12:15 a. m. Saturday. The laboratories may not be used on Sunday. All work must be planned to conform

to this requirement, and no motors must be left running at other times.

2. No person will be permitted to use the laboratories at times when his work will interfere with that of students, faculty, or other experimenters.

3. Any person desiring to use the laboratories must first satisfy the instructor in charge that he is thoroughly capable of undertaking the work he has in view.

4. He must then present to the instructor a written application setting forth the work he proposes to undertake and stating what machines he wishes to use and for what lengths of time. The use of the assay laboratory for routine assaying will not be permitted.

5. If the instructor approves this application, he will sign it and note thereon the fees and deposits which he considers necessary to reimburse the University for supplies used, power consumed, wear on machinery, breakage, etc.

6. The application must be presented to the Comptroller and the fees and deposits noted thereon paid before laboratory work may begin. Any unused portions of deposits may be recovered from the Comptroller upon presentation of a refund order signed by the instructor.

7. The laboratories must be kept in good order during the experiments, and at the conclusion of the experiments must be put in the same condition in which they were found.

#### LABORATORIES OF THE EXPERIMENT STATION OF THE UNITED STATES BUREAU OF MINES

The laboratories of the U. S. Bureau of Mines are equipped to carry on investigations in ore dressing, flotation, hydro- and electro-metallurgy, chemistry, and radioactivity. The usual facilities are provided for assaying and chemical analysis. The equipment for preliminary ore dressing includes a Case crusher, iron rolls, Brown pulverizer, coffee mill, Abbe silex-lined ball mill, Abbe pebble mill, Patterson iron ball mill, Sturtevant impact screen, Tyler automatic screen shaker with complete set of screens, Wetherill magnetic separator, Dings magnetic separator, Richards pulsating classifier and jig, and Wilfley table. Flotation equipment of various designs includes two Ruth, two mechanical, one Colburn, and one Janney machine. The hydrometallurgical equipment consists of earthenware leaching pots, redwood agitating and settling tanks, acid-proof distributing pumps, filter presses and vacuum and pressure pumps. The electrical equipment includes an electrical

switchboard of 50-k.v.a. capacity, and electric vacuum, arc, and resistance furnaces. The laboratories for work in radio-activity are provided with a full electroscopic equipment for the measurement of radium ores and the various radioactive products, and includes alpha ray, gamma ray, and emanation electroscopes, designed by the Bureau of Mines, and an apparatus for collecting radium emanation. About 500 milligrams of radium element and 30 milligram equivalents of mesothorium are available. Equipment for high-temperature measurements consists of a Brown pyrometer, a Thwing pyrometer, platinum-rhodium and base metal thermocouples, and a Leeds and Northrop potentiometer. Special equipment includes a Gaertner comparator for the measurement of wave-lengths, a photometer for determining the brightness of luminous paints, and a Caron-Clevenger reduction furnace for the treatment of refractory manganese silver and gold ores.

#### AGRICULTURAL LABORATORIES

*Dairy*—On the first floor of the Dairy Building are the laboratories for the manufacture of butter, ice-cream, and cheese, and equipment for bottling milk and sterilizing utensils. The refrigeration is by means of a 2½-ton Remington ammonia compressor. The dairy testing laboratory in the Agricultural Building is equipped with the necessary apparatus for making quantitative and qualitative tests of dairy products. It has lockers and desks for the students, and has ample floor room for expansion as need requires.

*Experiment Station Chemical*—In this laboratory the 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.

*Farm Crops*—This laboratory includes a large display of samples of seeds and matured plants of the different varieties of cereal and forage crops. The equipment includes a large electric germinator for testing all kinds of farm seeds for germination; a flour mill and oven for making gluten and baking tests of wheat flour; testers and cleaners; dockage machines; and other equipment used by the Federal Government for the commercial grading of grain and hay. Students will make germination and purity tests of commercial samples of farm seeds sent to the laboratory from the various farming districts of the State.

*Farm Mechanics*—The Farm Mechanics Laboratory is equipped with all kinds of farm machinery, as plows,

harrows, cultivators, weeders, rollers, grain drills, manure spreaders, mowing machines, rakes, binders, road drags, and levelers. Under the direction of the instructor, the construction, adjustment, and repair of these machines will be studied and different makes of machines compared. A section of the laboratory is given over to the study of gas engines. The collection of gas engines gives the students ample opportunity to become familiar with the construction and operation of the various types and makes of gas engines. Tools for taking apart and assembling the various machines, speed indicators, and apparatus for a dynamometer and break tests are provided.

*Farm Structures*—This laboratory will be equipped with drafting tables, drafting boards, models of various farm buildings, road drags, concrete structures, and concrete forms. The work includes the design of ordinary farm and out-buildings and making complete cost estimates of these buildings.

*Irrigation*—This laboratory is fully equipped with apparatus for the thorough and practical demonstration of the principles of irrigation and for experimental work in connection with the courses offered to agricultural students. The laboratory equipment consists of water-measuring devices; model pumping plant with weir tank; models showing different methods of preparing land for irrigation of various crops; models showing methods of draining lands under different conditions; drain tiles and tools for placing same; irrigation appliances for use in distribution of pumped water; and field instruments for measuring water and surveying land. The Irrigation Division has drafting-room facilities for the drawing and mapping of field work and for the computation of data secured in connection with the prescribed courses.

*Range Improvement*—This is the newest of the University laboratories, and its main purpose is to study the botanical character of range plants. A herbarium will be assembled including mounted and classified specimens of all the important forage plants of Nevada and of adjacent States. These plants will be arranged in accordance with the system worked out by the United States Forest Service, and will be open to the inspection of the public.

In the range laboratory notes on the habits and structures and uses of range plants will be preserved, and the laboratory



will be the University headquarters of all the range investigations carried on in Nevada.

*Seed*—The Seed Laboratory, included as a part of the Farm Crops Laboratory, is under the direction of the head of the Department of Agronomy. Here farmers and dealers may have samples tested as to vitality and purity; a report showing percentage value of seed is mailed free to the senders of the samples. The laboratory contains a large electric germinator, a set of seed-grading tables, and a large seed-display cabinet.

*Soil Physics*—The Soil Physics Laboratory contains tables fitted with gas and water, and holding the chemical reagents used in the work; soil screens; tubes for determining capillarity, water retention and effect of mulches. Various appliances for determining column weight, pore space, specific gravity, etc., are provided. Harvard balances for weighing, not demanding extreme accuracy, and analytical balances for the more exact work are furnished. In connection with the soil-moisture work, there are provided balances for weighing, soil cans, an electric soil oven, and soil augers and tubes for taking samples. For the work in mechanical analysis, the laboratory is fitted with analytical balances, agitator, soil sieves and shaker, and a centrifuge. A part of the laboratory is used as a storeroom, where soil can be taken, dried, ground, mixed, and stored in suitable bins.

*Wool*—The Wool Laboratory has been equipped with forty one-half fleeces of wool, representing the various breeds from the sheep sections of America, New Zealand, Argentine, Great Britain, and Australia. Small samples of wool for study and examination are mounted on plaques. A set of microscopes will be used for minute examination of the wool structure. A laboratory machine for testing the tensile strength will be installed, also a small scouring machine and incubator for studying the shrinkage of wool. A set of cases contains the entire Nevada exhibit displayed at the Panama-Pacific International Exposition.

*Veterinary Science*—This laboratory is fitted up for research in pathology and bacteriology. It is used for the work of the Department of Veterinary Science in the Agricultural Experiment Station, and the State Veterinary Control Service.

## HOME ECONOMICS LABORATORIES

*Cooking*—The cooking laboratories, pantries and locker-rooms are on the second floor of the south half of the Agricultural Building. The Cooking Laboratory is equipped with tables, four set-in white enamel sinks, and gas plates for twelve students, around a hollow square, with all the utensils for individual practice in cooking, and with full equipment for a large quantity of cooking and catering. Adjoining the cooking laboratories are two unit kitchens equipped with gas ranges, sinks, tables, closets and utensils for preparing family-sized receipts; a wood-and-coal range, and oil and electric stoves, so that the students may learn the use of all common fuels. Adjoining the unit kitchens is a dining-room suitably furnished for catering. The large built-in sideboards and side-wall lights make the room very attractive. A few special exhibits of food products are shown in cases in the Cooking Laboratory.

*Sewing*—The Sewing Laboratory, well lighted by south and west windows and the modern electric fixtures, is fitted with sewing- and drafting-tables and individual lockers for twenty students, with ironing boards, irons, and six sewing-machines. Adjoining this room is a large garment-fitting room equipped with full-length triplicate mirrors and space for hanging all garments in the process of making.

*Millinery*—The Millinery Laboratory, on the first floor, is equipped with low work-tables and individual lockers for twenty students, with a white enamel sink for dampening and shaping hat foundations, and with a full equipment for steaming, renovating and pressing hat materials.

*Demonstration*—The Demonstration Laboratory and Lecture-Room has raised seats for one hundred students, and a 16-foot demonstration table equipped with a white enamel sink, and a gas range. This lecture-room is also provided with a lantern for illustration of demonstrations and lectures.

## SCIENTIFIC COLLECTIONS

## MACKAY MUSEUM

The Mackay Museum, located in the northwest wing of the Mackay School of Mines, contains the mining, metallurgical, geological, and mineralogical displays. The exhibits in this museum are arranged in such a manner as to give a good general idea of the mining industry of the State of Nevada, and to illustrate standard classifications of minerals and rocks. At the left of the entrance to the museum is a large map of Nevada, showing the location of all the mining districts of the State, while in the center of the museum at the rear there is a topographical map of the State on a still larger scale. The show-cases on the left-hand side of the museum present a collection of minerals arranged scientifically according to Dana, followed by a systematic collection of rocks; the cases on the right-hand side of the museum are devoted to displays of Nevada ores of the precious and base metals and of Nevada economic minerals, arranged according to counties, while the cases on the center aisle contain collections of minerals arranged according to their economic uses.

Special exhibits include examples of fossil footprints and fossil trees; a collection of rock drills from the earliest to the most recent type; an exhibit illustrating mining and various mining processes; and a collection of assay products.

Among the several collections included in the museum are the Nevada State Mining Exhibit from the Panama-Pacific Exposition, the exhibit at the Goldfield session of the American Mining Congress in 1909, the loan collection of the United States Geological Survey of the rocks and minerals of Goldfield; the Maxson collection of ores and minerals of Nevada, presented by Colonel H. B. Maxson; the collection of rocks and minerals formerly in the State Capitol at Carson City; the Cole collection, purchased from Dr. Cole by Mr. Mackay and presented by him to the museum; the Malcolm McDonald collection, presented to the University after the death of Mr. McDonald, and several other smaller collections received from various sources.

Among the gifts made to the Mackay Museum during the past two years, the following are worthy of note:

Beautiful collection of Lake Superior ores and minerals collected by Samuel Brady and donated by his son, S. H. Brady.

Large collection of ores and minerals, including many fine specimens from the Comstock Lode, from H. J. Gosse.

Miscellaneous collection of minerals from Mrs. Robert Parry.

Good collection of South American minerals, including tin and copper ores from Walter C. Rea, a former student.

Interesting specimens of arsenical and antimonial ores of the White Caps mine, Manhattan, from John C. Kirchen.

One or more fine specimens from Messrs. R. Brennan, A. A. Codd, V. P. Gianella, M. C. Hamlen, Charles Lund, J. D. Patterson, Reed, William V. Rudderow, and from the Black Panther Mining Co., Catlin Shale Products Co., Gilo Lead Mining Co., and Tonopah Divide Mining Co.

The continued growth of the museum depends largely upon the generosity of those engaged in the development of the mining industry of Nevada, and contributions of specimens of country rocks, ores, minerals, and metallurgical products, and of photographs, maps, diagrams, and models are earnestly desired.

The museum is open to the public during the school year, and as far as possible every facility will be placed at the disposal of any one who wishes to inspect or study the various collections.

## AGRICULTURAL MUSEUM

The Agricultural Museum is in the southwest room on the first floor of the Agricultural Building. It includes an educational display of the most important farm crops and agricultural products of Nevada. A portion of the biological collections, including economic insect life-histories and mounts of economic birds and mammals is arranged here for public exhibition.

## BIOLOGICAL COLLECTIONS

The biological collections include a set of some 400 skins and mounts of native birds; 100 sets of birds' eggs and about as many nests, donated by Mr. Steinmetz of Carson City; 250 insect life-histories and several miscellaneous groups; 75 stuffed mammal skins and mounts; 25 mounted skeletons of various vertebrates; nearly a thousand general museum prep-

arations; about 10,000 prepared microscopic slides; some 200 zoological and physiological models, and about 60 botanical models, some 900 lantern slides, as well as much miscellaneous material.

#### HERBARIUM

The Nevada Agricultural Experiment Station herbarium now contains 12,000 mounted sheets, nearly all of western species, and at least half of them from Nevada. Certain of the forage plants, as grasses, clovers, and lupines, are especially well represented. Although as yet small, this collection is of considerable importance, as it contains a number of types and typical plants obtained from type localities.

Connected with this herbarium is a large number of negatives depicting various phases of plant life.

#### PATHOLOGICAL MUSEUM

The Department of Veterinary Science has a collection of several hundred permanently mounted gross pathological specimens covering practically all the common infectious diseases of animals and miscellaneous disease processes of particular interest. The collection also contains some material from human sources, mostly representing disease processes common to both man and the lower animals. This collection is available for teaching purposes and inspection.

#### CHEMICAL SPECIMENS

A number of substances, representing the field of the chemical industries have been collected and placed in cases in the lecture-room of the Chemistry Building. Among these are samples purchased from chemical dealers; about 200 samples made and put up by students in the laboratory; about 80 samples of American-made dyes manufactured by the National Aniline and Chemical Company and donated by Professor Maxwell Adams; plastics, including artificial silk and leather; explosives; alloys; lubricating oils; and all the common minerals.

## PUBLIC LECTURES

### GENERAL ASSEMBLY

A general assembly of University students and members of the faculty is under the special direction of the Standing Committee on Assemblies and Lecturers. 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. The 11-o'clock hour Fridays is kept free for assemblies.

The following is a list of the lectures given in 1921-1922:

### COMMENCEMENT, 1921

- May 15—Baccalaureate Sermon—Reverend Robert Freeman, Pastor First Presbyterian Church of Pasadena.  
 May 17—Phi Kappa Phi Address—"Tusitala in Samoa," Dr. David Starr Jordan.  
 May 18—Commencement Address—"The University and Citizenship," Dr. David Starr Jordan.

### ASSEMBLY ADDRESSES

- October 6—"The Voice of Russia," Mitri Alexandrovich Schwartz.  
 "Leading Lights of Western Literature" Series—Dr. George Wharton James of Pasadena:  
 October 4—Bret Harte and His Coworkers, Ina Coolbrith, and Charles Warren Stoddard.  
 October 11—Joaquin Miller, The Poet of the Sierras.  
 October 18—John Muir, The Nature-Lover.  
 October 25—Edwin Markham, The Poet of Humanity.  
 October 31—Mark Twain, The Prince of Humorists.  
 December 9—"The Flag"—Colonel C. H. Moore, Commander Darrell Dunkle Post, American Legion.

1922

- February 1—"Student Life in Poland," Captain Edmund Chambers.  
 March 17—"Labor and the Public Interest," Dr. Edward T. Devine of New York City.

### FACULTY SCIENCE CLUB LECTURES

- September 29—A New System of Acid Analysis, Professor George W. Sears.  
 October 13—Einstein's Theory of Relativity, Professor Charles Haseman.  
 October 27—The Work of the Extension Division, Professor Merle D. Collins.

- November 10—A Family of Bleeders, Professor Peter Frandsen.  
 November 17—Relation of Vitamines to the Human Diet, Professor V. E. Scott.  
 December 8—Epic Fission and the Program of Peace, Professor S. C. Feemster.
- 1922
- January 12—Aims and Purposes of School Education, Dean John W. Hall.  
 January 26—Tuberculosis and Its Control, Dr. Edward Records.  
 February 9—Field Work of the Experiment Station, Director S. B. Doten.  
 February 23—Underground Waters of Nevada, Professor Frederick L. Bixby.  
 March 23—Intelligence Tests and Their Relation to Student Scholarship, Professor J. R. Young.  
 April 7—Fuel Resources and Conservation, Pacific Coast States, Dean F. H. Sibley.  
 April 21—The New Army, Colonel J. P. Ryan.  
 May 4—Recent Shakespearian Research, Professor H. W. Hill.

## ORGANIZATIONS AND PUBLICATIONS

## THE ALUMNI ASSOCIATION

The Alumni Association was organized in June, 1894. Its object is to promote union and good fellowship among the Alumni, and to advance and protect the interests of the University of Nevada. The dues of the association are \$1 a year for ten years, or a life membership for \$10. The annual meeting is held during Commencement week.

## OFFICERS FOR 1921-1922

President.....	HELEN R. HOBBS, '11
Vice-President.....	JOSEPH F. McDONALD, '15
Secretary.....	MRS. LOUISE BLANEY LEWERS, '95

## THE ASSOCIATED STUDENTS

The student body is organized into an association called "The Associated Students of the University of Nevada." Through this association the students handle all matters relating to the student body as a whole, and control all athletic interests of the University subject to the approval of the Faculty Committee on Athletics. The officers of this association are elected by popular vote. By the payment of the student fee of \$6 per semester a student receives the A. S. U. N. card which entitles him to a vote in the association and admission to all local games, contests, or other events under the association's management, and a subscription to the U. of N. Sagebrush.

## THE STUDENT HOSPITAL ASSOCIATION

The Student Hospital Association was established by action of the student body in January, 1919. Its membership is confined to the students of the University who are away from their homes. By request of the association and with the approval of the Board of Regents, the Hospital Association fee has been fixed for the present at \$2 each semester and is payable to the Comptroller at the time of registration. The fee will be exacted of all students who do not live with their parents or guardians in Reno or Sparks unless they present at the time of registration a written request from their parents or guardians that they shall not pay this hospital fee.

The University furnishes the hospital building with its

equipment, light and heat, and the daytime services of a matron, free to all students. The fund obtained from the hospital fee is used to provide the services of a physician, who will have regular consultation and visiting periods at the University hospital, and to provide ordinary medicines, general hospital supplies, and such general assistance as the matron may need. Membership in the association entitles the student to free consultation with the University physician and to free medical services and treatment at the University hospital in all ordinary illnesses of not more than six weeks' duration, except in those cases requiring special operations, special nursing, special prescriptions, or other exceptional services, which shall be paid for by the individual. Patients will obtain their board from the dining-hall and will be expected to pay the regular rate therefor, but the association funds will provide such special articles of diet as the matron may deem desirable, free of extra charge.

#### THE ASSOCIATED WOMEN STUDENTS

The Associated Women Students is an organization made up of all the women students registered at the institution. Its purpose is to bring all the women together in order to obtain more effective action. The dues are 25 cents per semester, which is deducted from the amount paid into the A. S. U. N. treasury. The organization gives a \$25 scholarship each year to the woman student attaining the highest average grade for the year and who receives no other scholarship.

#### 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 Agricultural Building. Reports are presented and discussed at each meeting. The subjects of the reports are either the result of individual research or articles of general interest that have recently appeared in scientific journals. The meetings are open to visitors.

Advanced students find the meetings of considerable value.

#### THE UNIVERSITY LIBERAL ARTS CLUB

The University Liberal Arts Club is designed to bring together members of the Faculty whose interests lie primarily

in human relations, including the languages and literatures, and the social sciences. Meetings are usually held monthly. Following the paper or address is a free discussion of the points at issue. The club cordially welcomes to its meetings any one whether from within or without the University community.

#### HONOR SOCIETY

The Phi Kappa Phi is a national honor society composed of graduate and undergraduate members of all departments in American universities and colleges. Its prime object is to emphasize scholarship in the thought of college students, to hold fast to the original purpose for which institutions of learning were founded, and to stimulate mental achievement by the prize of membership. This society elects to membership a certain number from the graduating class, on the basis of high scholarship.

#### CLUBS AND ASSOCIATIONS

*The Engineering Society*—All engineering students and the engineering faculty are members of the Engineering Society. The society meets once or twice a month during the semester. Engineers and technical men are invited to address the members. The purpose of the society is to broaden the view-point and increase the knowledge of the students, as well as to extend their acquaintance among practicing engineers.

*The Agricultural Association*—This organization includes members of the three agricultural divisions of the University of Nevada. The purpose of the association is to keep its members in touch with current agricultural development in the State and country. Meetings are held the first Tuesday night of each month in the Agricultural Building. Short talks are given by the members and by agriculturists who visit the University. The meetings are informal and are open to all members of the University and the public.

*The Chemistry Club*—The purpose of the club is to foster interest in the science of chemistry.

*The Crucible Club*—This is an organization of the upper-class mining, metallurgical, and geological students and faculty. The club meets every other Wednesday, and is addressed by prominent members of the mining profession, or papers are read by the various members. The Crucible Club is affiliated with the Society of the American Institute of Mining and Metallurgical Engineers.

*The Debating Society*—Membership in Clionia, the debating society of the University of Nevada, is open to all the students of the University. Its purpose is to encourage and support debating, both local and intercollegiate.

*Delta Alpha Epsilon*—The purpose of this society is not only to develop histrionic talent among the young women of the University, but to awaken an appreciative interest in dramatic interpretation by the presentation of standard plays.

*The Campus Players*—The aim of this society is to offer the men and women of the University a chance to develop their talents both in the appreciation of good plays and by furnishing the opportunity for presentation.

*Mu Alpha Nu*—This club was formerly known as the "Math" Club, and its aim is the furtherance of interest in the science of mathematics.

*Coffin and Keys*—A club organized for the purpose of securing and rendering efficient the complete cooperation of all students by combining in organized form the men of the University who are considered leaders in student life and activity.

*Home Economics Society*—The faculty of the Department of Home Economics and all students electing one or more courses in that department are members of this association.

*Fraternalities and Sororities*—The following fraternalities and sororities have chapters, the figures in parentheses giving the dates chapters were established in this University: National fraternalities—Sigma Nu (1914), Sigma Alpha Epsilon (1917), Phi Sigma Kappa (1917), Alpha Tau Omega (1921); Sigma Phi Sigma (1922); local—Kappa Lambda (1921). National sororities—Delta Delta Delta (1913), Pi Beta Phi (1915), and Gamma Phi Beta (1921); local—D. K. T. and Sigma Alpha Omega.

*Lincoln Hall Association*—The Lincoln Hall Association is an organization composed of the students of the University of Nevada who reside in Lincoln Hall. Its object is to promote and settle all matters of student concern in Lincoln Hall and to preserve its customs and traditions.

*Manzanita Hall Association*—Residents of this hall are organized into a body under the name of Manzanita Hall Association, with president, vice-president, secretary and treasurer elected for one year. The chairmen of standing

committees, which include the phases of dormitory life (Red Cross work, laundry, room inspection, bell duty, quiet, and fire-drill), are appointed by the president of the association. Meetings of the association are held monthly.

*Christian Association*—The Young Women's Christian Association has a branch organization among the students with a membership of over one hundred girls in the University. The purpose of the association is the maintenance of high standards in all student relations, mutual helpfulness and pleasure, and the promotion of Christian ideals.

The Young Men's Christian Fellowship Association of the University of Nevada has for its purpose the encouragement and cultivation of religious interests among men on the campus. Among other activities, it favors the formation of discussion groups which deal with problems of vital ethical and religious interest.

*The Trowel and Square Club*—This is a club of campus members of the Blue Lodge Masons.

*Musical Organizations*—Volunteer organizations for the promotion of both vocal and instrumental music are heartily encouraged. The organizations at present are the Men's Quartet, the Women's Glee Club, the University Orchestra, and the University Band.

#### UNIVERSITY PUBLICATIONS

*The Bulletin*—The Bulletin is the official publication of the University and is issued quarterly. The object is to give to the public information concerning the various departments of the University and such other matters as may be helpful to the cause of education in the State.

*University Studies*—The University Studies are published at irregular intervals.

#### STUDENT PUBLICATIONS

*The U. of N. Sagebrush*—The U. of N. Sagebrush is issued weekly throughout the University year by the students of the University. The Sagebrush staff have Room 102 of the Physics Building as their office.

*The Artemisia*—The Artemisia is an annual published by the Associated Students of the University of Nevada.

## PHYSICAL EDUCATION AND ATHLETICS

## MEN

The purpose of this department is to assist the men of the University to live to the best advantage, and so to aid them in the formation of hygienic habits that during their stay at the University they may make profitable physical preparation for life. There is urgent necessity that each student should have an intelligent appreciation of the means requisite for the preservation of his health, in order that he may be able to formulate wisely his own policy of health control.

## REQUIRED PHYSICAL EDUCATION

Physical Education is required of all Freshmen and Sophomores unless excused for disability by the University physician.

## PHYSICAL EXAMINATIONS

Each student on entrance to this department is given a physical examination in order that his work may be directed to meet his individual requirements. Members of squads out for varsity teams, reporting regularly, are excused from the practical work during the regular season of that sport, and are entitled to full credit in that portion of their work. Credit, the equivalent of a one-hour subject, is given and counts toward the college degree. The individual's grade rests largely on the basis of attendance, punctuality, earnestness, and application, but practical tests are also given.

## UNIFORM, FEE, AND DEPOSIT

Each student must provide himself with a regulation uniform. These should not be procured until after arrival at the University.

*Tentative Cost of Uniform:*

White sleeveless gym shirt.....	\$0.75
White running pants, short leg.....	\$1.25 up
White rubber-soled shoes.....	\$2.00 up
Athletic supporter.....	\$0.75 up

A fee of 75 cents will be charged each semester to cover the expense of laundering the towels.

## ATHLETICS

Excellent facilities are provided on the Mackay Athletic Field for all branches of athletics. American football, baseball, track, basket-ball, and tennis are the games of special

prominence at present. The main policy of the University is to foster the spirit of honor and manliness in athletics, to suppress evil tendencies, and to see to it that athletic sports do not encroach upon the claims of scholarship. Athletic activities in the University are supervised by the Directors of the Departments of Physical Training for Men and Women, who are counseled by the Athletic Committee of the Faculty.

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

1. All contestants must be amateurs.
2. No student who is taking less than ten hours of work of University grade, and who is not attending all these classes regularly, shall be allowed to represent the University in any athletic contest.
3. On the first day of every month each team captain must submit a complete list of players comprising the squad to the Registration Committee. The Registration Committee shall, on receipt of this list, notify each student whose work is unsatisfactory.
4. The captain of each team shall submit to the Committee on Athletics at least seven days before each game a list of those persons from whom the team is to be chosen, and any person who, at that time, is reported as not passing in 60 per cent of his work shall be debarred from participating in that game.
5. Contestants must not receive any pecuniary benefit whatsoever from their connection with any athletic team.
6. No student on probation will be permitted to represent the University in any public contest.
7. All students must pass a physical examination satisfactory to the Committee on Athletics.
8. Schedules for all games must be submitted to the Committee on Athletics and approved by them.
9. Approval by the Committee on Athletics is required in the case of every individual intending to represent the University of Nevada in any single contest.

## WOMEN

The University gives its young women the opportunity for an all-around physical development by maintaining a Department of Physical Education. Physical training, properly applied, makes an important contribution to sense- and motor-training and to the development of physical judgment,

presence of mind, self-reliance, courage, and strength of will. These ends are sought through systematic exercise, both out of doors and in the gymnasium, as well as through the various forms of athletics suited to women.

The women students of the University have organized an Athletic Section in conjunction with the Women's League for the purpose of fostering mass and interclass athletics. Every woman is eligible to membership by participating in any sport and through this organization may win recognition in many branches of athletic activity, *i. e.*, hockey, volley ball, basket-ball, baseball, track, and tennis.

Work in Physical Education is required of all Freshman and Sophomore women. Upon entering a class, students are carefully examined and measured by the Physical Director to discover the individual needs of each. As far as possible the work of this department will be adapted to these needs. If necessary, upon the advice of a physician, Freshman and Sophomore work may be *postponed*.

During each semester of this required work instruction is given in personal and public hygiene.

Women taking these courses are required to provide themselves with a regulation gymnasium suit and shoes. Suits with guimpes cost from \$8 to \$10. Students must provide themselves with suits, but are advised not to make such purchase until they have counseled with the Physical Director for Women. A 75-cent fee is required each semester to cover the cost of laundering guimpes and towels.

## MILITARY SCIENCE AND TACTICS

1. There is established at the University an Infantry Unit of the Reserve Officers Training Corps.

These corps were established by the Act of Congress of June 3, 1916, and are for the purpose of preparing, by systematic and standard methods of training, students at civil educational institutions for reserve officers in the United States Army.

2. The corps consists of all physically fit male students in first and second years at the University and such additional students as may elect to continue with the advanced work in their third and fourth years.

3. When registering in Military for the first time at the University, students are required to take an examination to determine their *physical* fitness for enrollment in the Reserve Officers' Training Corps.

4. The United States Government furnishes service uniforms and all equipment necessary to carry on the instruction. In addition, those who elect to continue the work in their Junior and Senior years are paid commutation of rations and are required to attend a training camp at the end of the Junior year. The commutation of rations paid to students following the advanced course is paid throughout the entire calendar year and amounts to about \$150 a year. While at the training camp the student is paid \$30 per month.

5. The arms, equipment, and uniforms issued to students for military training are the property of the United States for which the University is financially responsible. To protect the University against any charge for loss or damage to government property arising from misuse or neglect on the part of the student, a deposit will be required from each student registered in Military as follows:

First semester of training.....	\$30
Second semester of training.....	\$20
Second year of training.....	\$10

The entire deposit will be returned to any student who has completed a full year of military training, and the uniform will then become the student's own property without cost to him and subject only to the requirement that he must use this uniform for a second year's training if such second



year is required of him. A student who is dropped from military for any cause during the first year will be credited with one-ninth the value of the uniform issued to him for each month in which he has used the uniform for military training; the remaining value of the uniform will be deducted from his deposit, and the uniform will then become the property of the student.

The uniform, which will be fitted to the student, will approximate in value \$35 and will normally consist of a cap, coat and breeches, waist-belt, two flannel shirts, a pair of spiral puttees, and one pair of russet shoes. All articles of the uniform, except the cap, will be suitable for civilian wear after removing the distinctive military ornaments.

When stock-sized uniforms provided by the Quartermaster Department of the Army are issued to cadets, the amount of the deposit required will be reduced as follows:

First year, \$10; other years, \$5.

6. Every cadet who is a candidate for graduation in any of the schools of the University will be required to complete the required course of military instruction. Other cadets will receive an amount of military instruction proportionate to the length of their attendance at the University. Students who are excused from military instruction will be required to take additional work aggregating the number of credits allowed for work in the Freshman and Sophomore years in Military Science and Tactics.

The following students may be exempted from military training:

- a. Students over 27 years of age.
  - b. Students who have had military training and instruction under federal officers equivalent to that prescribed in the basic course for units of the Reserve Officers Training Corps.
7. Students who satisfactorily complete the basic and advanced military courses will be tendered commissions by the United States Government as Second Lieutenants of Infantry in the Reserve Corps of the Army.
8. Special Regulations for the Department of Military Science and Tactics are published in pamphlet form, a copy of which will be issued to each student registered in Military. The cadets will be held to a strict observance of all special regulations of the Military Department and to such orders and instructions as may be issued from time to time in connection with their military training.

9. 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.

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

11. 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.

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

13. 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 in the armory immediately after drill.

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

## HONORS AND COMPETITIONS

### UNIVERSITY HONORS

The University gives recognition to such students as attain a high grade of scholarship by announcing at Commencement-time the students who have received honorable mention in each of the several colleges, or in their full four-year course. Honorable mention is won by attaining a standing of 90 per cent or better on the average in the full work of any one year or of the four years.

### DEBATE AND ORATION

The University engages yearly in two intercollegiate debates. Teams for these debates are chosen each year by a series of preliminary contests to which all of the students of the University are eligible. Beginning with 1921 a gold fob has been presented to every speaker who represents the University either in oratory or debate in an intercollegiate contest. A prize of twenty dollars, to be divided equally between the members of the winning team, is offered to the representatives of the class in the University which wins in a contest arranged as follows: Representatives of the Freshman and Sophomore years shall debate together, and representatives of the Junior and Senior years shall debate together. The winners of the Freshman-Sophomore contest will debate against the winners of the Junior-Senior contest. The final winners are to receive the prizes.

The student in these contests who evidences the best ability in oratory shall receive a prize of ten dollars. Each class may be represented by from two to five contestants.

### GOLD MEDAL

A gold medal is awarded annually to that member of the graduating class who has attained the highest average grade of scholarship throughout his college course.

### PHILO S. BENNETT PRIZE

The Philo S. Bennett prize is the interest on a fund of four hundred dollars at 4 per cent, the prize to be awarded for the best essay on "The Principles of Free Government."

## UNDERGRADUATE SCHOLARSHIPS

Deserving students, whose scholarship is excellent, are, upon the recommendation of the Scholarships Committee, provided financial assistance through the medium of scholarships.

For 1922-1923 the following scholarships are available:

### 1. REGENTS' SCHOLARSHIPS

Five Regents' Scholarships of \$50 each, to be awarded to regular students on the basis of scholarship, one to a Freshman, two to Sophomores, and two to Juniors. These scholarships will be announced at Commencement, but shall not be paid to the winners until the first of October following and after these winners have enrolled for the subsequent year's work in this University. There shall be alternates chosen, one Freshman, two Sophomores, and two Juniors, satisfying similar conditions, to whom, if they are duly enrolled for the subsequent year's work in this University, the scholarships will be given in the event that the winners are not enrolled.

### 2. TONOPAH LODGE OF ELKS SCHOLARSHIP

(Established, 1915)

Tonopah Lodge of Elks No. 1062 continue the scholarships begun in 1915, when they gave scholarships as follows: \$100 in 1915; \$200 in 1916; \$300 in 1917; and \$400 in 1918; and annually \$400 thereafter. The scholarships are open to students of accredited high schools within the jurisdiction of Tonopah Lodge who have spent a full senior year in such accredited high school. The examination of candidates is to be held under the auspices of the University of Nevada.

### 3. THE ELLA S. STUBBS MEMORIAL SCHOLARSHIP

(Established, 1919)

The Women's Faculty Club offers the Ella S. Stubbs Memorial Scholarship of \$100 to a student entering the Junior or Senior class who is working his way, wholly or in part, through the University and who has received no other scholarship.

## 4. THE ALICE G. CLARK SCHOLARSHIP

(Established, 1917)

A yearly scholarship of \$250, established and maintained by Mrs. W. A. Clark, Jr., in honor of her mother, Katherine Hays McManus, is being continued by Mr. W. A. Clark, Jr., in memory of Mrs. Clark, and is known as the Alice G. Clark Scholarship. It is to be awarded alternately to a man and then to a woman student who is closing the Junior year and is the worthiest Junior of individual ability and need. The Scholarships Committee shall choose an alternate for the scholarship, judging on the same conditions. The scholarship award shall not be payable until October 1 following the Commencement announcement and shall be paid only if the winner is then duly enrolled for the Senior year's work in this University, otherwise it shall be paid to the chosen alternate, provided that alternate is duly enrolled for the Senior year's work in this University.

## 5. ASSOCIATED WOMEN STUDENTS' SCHOLARSHIP

A yearly scholarship of \$25 is given by the Associated Women Students of the University of Nevada to the woman student attaining the highest average grade for the year and who receives no other scholarship.

## 6. THE J. H. CLEMONS SCHOLARSHIP

(Established, 1919)

A yearly scholarship of \$50 established by Mr. J. H. Clemons, to be awarded to that Sophomore in the College of Agriculture who is adjudged by the Dean of that College and by the Heads of the Departments of Agronomy, Animal Husbandry, Dairying, Home Economics, and Biology to be the worthiest Sophomore in the College of Agriculture. An alternate shall also be chosen by the same committee. The scholarship sum is payable on October 1 following the Commencement announcement, to the winning student if that student is then enrolled for another year's work in the College of Agriculture, otherwise the sum will be paid to the alternate if then enrolled in the College of Agriculture.

## 7. THE HOME ECONOMICS SCHOLARSHIP

(Established, 1921)

A yearly scholarship in Home Economics of the value of \$100 is offered by Professor Sarah L. Lewis, Head of the

School of Home Economics. The faculty of the School of Home Economics, including the Dean of Agriculture, assisted by the Head of the Department of Physical Education for Women, shall choose the winner of the scholarship and an alternate.

The award will be made on the following points:

Qualities of leadership.

Appropriate dress.

Application of laws of nutrition and hygiene.

Interest in problems of the home-maker.

Scholarship.

The scholarship sum is payable on October 1 following the Commencement announcement to the winning student if that student is then enrolled for another year's work in the School of Home Economics, otherwise the sum will be paid to the alternate if then enrolled in the School of Home Economics.

## 8. THE LEWIS D. FOLSOM SCHOLARSHIP

(Established, 1920)

An annual scholarship of \$100, given by Mrs. Mary E. Folsom of Reno, in memory of her husband, Lewis D. Folsom.

This scholarship is to be awarded alternately to a man and then to a woman student of the Junior Class, who is deemed by the Scholarship Committee to be the worthiest member of that class of individual ability and need and who is not receiving another scholarship. The Scholarship Committee shall choose an alternate for this scholarship, judging on the same conditions. This scholarship award is payable on October 1 following the Commencement announcement and shall then be paid to the winner only if enrolled for regular Senior work at the University. Otherwise, it shall be paid to the chosen alternate, provided that the alternate is duly enrolled for Senior work in this University. Under the same conditions as above, this scholarship is renewed to be awarded to a man student at Commencement, 1922.

## 9. RENO LODGE OF ELKS SCHOLARSHIPS

(Established, 1920)

Reno Lodge No. 597, Benevolent and Protective Order of Elks, has established four scholarships. These are annual scholarships of the value of \$300 each. They are to be awarded by the Scholarship Committee of this lodge to four students of the University selected from a list of ten

students nominated by a University Committee consisting of the President of the University, the Physical Director for Men, and the Master of Lincoln Hall. This University Committee, annually, between April 1 and April 15, is to nominate ten students who satisfy the following requirements:

1. They shall be of excellent character.
2. They shall be leaders among their fellows.
3. They shall be active participants in the athletics of the University.
4. They shall have no unremoved conditions or incompletes, and they shall have no failures in their scholarship records for the University year in which nominations are made.
5. They shall be citizens of the United States and 100% Americans.

To each of the four students selected from this nominated list by the Elks Scholarship Committee, the Elks Lodge will pay \$150 on the 15th of the following September and the remaining \$150 on the 15th of the following January, provided that the student is, on those respective dates, registered in the University of Nevada and in attendance upon University work.

10. RENO LODGE OF ELKS MEMBERSHIP SCHOLARSHIPS  
(Established, 1920)

Reno Lodge No. 597, Benevolent and Protective Order of Elks, Reno, Nevada, grants yearly, beginning with the year 1920, membership in its lodge, with remission of all lodge fees and dues until graduation, to four selected students of this University. A committee of three from the University staff, appointed by the President of the University, is to make nominations to the Elks lodge of the worthiest Juniors and Seniors. In selecting the nominees, the committee is to apply the following standard:

Each nominee must be a man—

1. Whose scholarship is high.
2. Whose character is excellent.
3. Who is a leader among his fellows.
4. Who is a citizen of the United States and a 100% American.

11. THE ROSE SIGLER MATHEWS SCHOLARSHIP  
(Established, 1920)

This scholarship was founded by Mr. Isaac R. Mathews of Reno, Nevada, in memory of his wife, Rose Sigler Mathews. The trust fund, given by Mr. Mathews for scholarship purposes, amounts to \$6,700, and yields an annual income above \$300. By arrangement with the donor during the earlier

years of this scholarship, the Board of Regents will grant scholarships from the income of this trust fund upon the recommendation of Mr. Mathews, and such scholarships may be, on Mr. Mathews's further recommendation, continued to his nominees, provided they make good scholarship records.

12. RENO BRANCH OF THE NATIONAL ASSOCIATION OF  
UNIVERSITY WOMEN SCHOLARSHIP  
(Established, 1921)

The Reno branch of the National Association of University Women offers a scholarship having annual value of \$200. This scholarship is to be awarded to an upper-class woman student of the University of Nevada, who has taken all her work at the University of Nevada, provided that—

1. She shall have maintained a high average during the first two or three years of her college course in the University of Nevada, and shall have been active in college activities.
2. She shall not have received another scholarship for the period covered by this scholarship.

This scholarship shall be awarded on the recommendation of the University Committee on Scholarships with the approval of the Executive Committee of the National Association of University Women.

These same committees shall choose an alternate satisfying similar conditions.

The winner of this scholarship shall be announced at Commencement.

The scholarship shall be paid to the winner in two equal installments; one at the beginning of each semester in the following University year; provided, she be duly enrolled in the University of Nevada; otherwise it shall be paid to the chosen alternate provided she be enrolled.

13. THE MARYE WILLIAMS BUTLER SCHOLARSHIP FUND  
In the University year 1921-1922, Mrs. Sophie E. Williams of Nye County, Nevada, established a scholarship fund of \$1,000, to be known as the Marye Williams Butler Scholarship Fund, in memory of her daughter, Marye Williams, a graduate of the Normal School of the University of Nevada, Class of 1899.

The income from this fund is to be awarded annually by the University Scholarship Committee, beginning with the Commencement of 1923, to the most worthy student who has completed University mathematics through calculus and differential equations with an average grade of at least 2

in all these University mathematics courses, who has earned due credits in this minimum of mathematics, not later than the closing semester of the Junior year, and who receives no other scholarship.

This scholarship will be payable on or before October 1 following the Commencement of its award, provided the student winner is then enrolled for the new year's work in the University of Nevada, otherwise the scholarship will be payable to an alternate chosen under similar conditions by the University Scholarship Committee and duly enrolled for the new year's work in the University of Nevada.

#### 14. THE ADOLPHUS LEIGH FITZGERALD SCHOLARSHIPS

These two scholarships, each of an annual value of \$150, were established in the fall of 1921 by the Scottish Rite bodies of Masonry in Nevada.

These scholarships are to be awarded at each Commencement, beginning with that of the year 1922, one to a man student, the other to a woman student, by the University Scholarship Committee under the following conditions:

1. The student must be the worthiest man or woman completing a regular Freshman year's work in the University of Nevada who receives no other scholarship.
2. The student must be of a Nevada family and must be a graduate of a Nevada high school.
3. The scholarship sum will be paid to the winner on the 15th day of September following the Commencement award, provided that the winner is then enrolled for the regular work of the Sophomore year in his chosen course at the University of Nevada. Otherwise, this scholarship sum shall be paid to an alternate chosen under the same conditions by the Committee and duly enrolled for the work of the Sophomore year in the University of Nevada.

#### 15. THE AZRO E. CHENEY SCHOLARSHIPS

(Established, 1922)

The Honorable Azro E. Cheney bequeathed to the University of Nevada five thousand dollars in trust, to be controlled and invested by the Board of Regents. The income from this trust fund is to be paid at each annual commencement of the University to that member of the Freshman or Sophomore class who is a bona-fide resident of Nevada and whom the Dean of the Department of English shall certify is justly entitled thereto as the best student in English, during that year, character and improvement both being considered.

#### 16. THE RHODES SCHOLARSHIPS

Special attention is called to the Rhodes Scholarships in Oxford University, England, to which one appointment from the State of Nevada will be made for each of the years 1920, 1921, 1923, and so on, omitting every third year. The scholarships are each of the value of approximately \$1,500 a year, and are tenable for three years.

Scholars will be selected on the basis of the following qualities:

1. Qualities of manhood, force of character, and leadership.
2. Literary and scholastic ability and attainments.
3. Physical vigor, as shown by interest in outdoor sports or in other ways.

The ideal Rhodes scholar should excel in all three of the qualities indicated, but in the absence of such an ideal combination, committees will prefer a man who shows distinction either of character and personality, or of intellect, over one who shows a lower degree of excellence in both. Participation and interest in open-air and athletic pursuits form an essential qualification for a Rhodes scholar, but exceptional athletic distinction is not to be treated as of equal importance with other requirements.

In addition to the above requirements, a candidate to be eligible for election from the State of Nevada must—

1. Be a citizen of the United States, with at least five years' domicile, and unmarried.
2. Be a student in or a graduate of the University of Nevada, or, if a student in some other university or college, a resident of Nevada.
3. By the 1st of October of the year for which he is elected have passed his nineteenth and not have passed his twenty-fifth birthday.
4. By the 1st of October of the year for which he is elected have completed at least his Sophomore year in the University of Nevada or in some other recognized degree-granting university or college of the United States.

The appointments thus far made to Rhodes Scholarships from the State of Nevada are as follows:

- 1907—ARTHUR LEONIDAS ST. CLAIR,<sup>1</sup> Deeth, Nevada.  
 1908—WILLIAM SCOTT UNSWORTH, Reno, Nevada.  
 1910—STANLEY MAYHEW WILTON, Goldfield, Nevada.  
 1911—CEDRIC HARDING BEEBE, Reno, Nevada.  
 1913—FLOYD SHERMAN BRYANT, Sparks, Nevada.  
 1914—WALTER CLARENCE JEPSON, Verdi, Nevada.  
 1917—THOMAS HENRY EDSALL,<sup>2</sup> Reno, Nevada.  
 1918—No appointment was made, owing to the war.  
 1919—STANLEY M. PARGELLIS, Reno, Nevada.  
 1920—No candidate chosen.  
 1921—CHARLES M. CHATFIELD, Reno, Nevada.

<sup>1</sup>Died February 20, 1920.

<sup>2</sup>Died January 2, 1918.

The Rhodes Scholarships offer an unusual opportunity both for a university education in the Liberal Arts, the Sciences, Engineering, or the professions of Jurisprudence or Theology, and for travel among the chief centers of life and activity in foreign lands. These advantages, with the gift of financial means approximately ample for their enjoyment, have made these scholarships the most attractive ever established.

Further information about Oxford and the Rhodes Scholarships may be secured by addressing the President of the University of Nevada, or the Secretary of the Committee, Professor J. E. Church, Jr., Reno, Nevada.

## BENEFICIARY AID

## LOAN FUNDS

The Nevada State Federation of Women's Clubs has established a scholarship fund for the University of Nevada to be loaned to students in amounts varying to suit individual needs. The money thus loaned is to be returned to the fund at the borrower's convenience without interest. The fund is available first to girls, high-school graduates, or girls who have completed one year of normal or university work, the latter to have the preference. Boys are eligible under like conditions, but only when the funds are ample and no applications from girls are on file. Students desiring to take advantage of this offer will apply to Mrs. E. E. Wardin, State Chairman of the Committee on Student Loan Fund, 130 West Liberty Street, Reno, Nevada.

*The David Russell Loan Fund*—The interest on \$19,500 is available for loans to deserving students who satisfy the President of the University of their fitness to be recipients of this aid. The money is loaned to students on the basis of 4 per cent interest until maturity.

*The Olin Ward Bequest*—Two scholarships of \$300 each, bequeathed by Mr. Olin W. Ward. Under the terms of will the beneficiaries of such scholarships must be earnest, industrious boys, of good moral character, financially unable to attend or continue their attendance at the University without the aid of such scholarships, and shall be chosen by the President of the University. Each beneficiary so chosen must, as a condition of his receiving such scholarship and before said sum or any part thereof is paid to him, enter into a written agreement with the Board of Regents that he will, within seven years after receiving such scholarship, pay or cause to be paid to the Board of Regents the sum of \$300 for the purpose of providing a scholarship in the University for some boy having like qualifications and chosen as above specified.

## OTHER AID FOR 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 and young women.

Students are favored whenever possible with such work as typewriting, copying, housework, dining-hall service, and janitorial service. A committee allots the open positions to students who apply, giving preference to those who have good scholarship records, who need the assistance, who do the work well, and to upper classman applicants. During the year 1921-1922 the committee was able to place sixty men and women students on the Campus, and through its direct efforts additional students were provided with positions in the city. Applications for campus employment should be made to the Secretary of the President. 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.*

The *necessary campus* expenses for a University year are covered by \$325 to \$375 for each Nevada student. Students from other States should add \$60 for tuition. (See page 83 for tabulation of expenses.) It is clearly better, both for the individual student and for the common student life on the campus, if students can do their necessary money-earning during the long summer vacation. If they can have all their time during their University year free for their studies and for their participation in general student activities, they will more surely develop themselves into fully rounded men and women than if they are compelled to inroad their time with many hours each week given to work for pay. *Particularly is it desirable that first-year students should, if possible, plan fully to finance their first year without necessity of working for pay during the University year.*

## EXPENSES OF STUDENTS

### TUITION

In accordance with legislative enactment, no tuition is charged to students from Nevada. The Board of Regents is empowered to charge tuition to students who come from outside of Nevada. The Board of Regents has set this tuition charge, payable by students from outside Nevada, at \$30 per semester.

### LATE REGISTRATION FEES

A fee of \$3 is charged for registration later than the regular enrolling days of each semester. This fee is increased to \$5 for those registering later than the end of the week including enrollment days. No exception is made to this rule. Each student shall complete his registration by 4 p. m. of the second day after he begins registration, otherwise he shall pay to the Comptroller 75 cents for each day or fraction of a day thereafter until his registration is completed.

### UNIFORMS

Young women are required to provide themselves with a regulation gymnasium outfit costing about \$8 to \$10.

Students in cooking will provide themselves with two white aprons and caps, costing about \$3.

Military students must make deposits of \$30 for first semester, \$20 for second semester, and \$10 for second year of their required military work. These deposits cover uniforms and equipment.

### THE DORMITORIES

*Manzanita Hall*—Manzanita Hall is the campus residence for women students. It is a well-ventilated, -heated and -lighted dormitory brick building, with all modern conveniences and comfortably furnished. It can accommodate, at present, eighty-five women residents.

Dean of Women Margaret E. Mack and Assistant Dean of Women Helena Shade live in Manzanita Hall and have supervision over it and over the University Dining-Hall.

Unless women students have applied for residence in Manzanita Hall in excess of the number which can be accommodated, all unmarried women students who are not residents of Reno or Sparks are expected to live in Man-

zanita Hall. Exceptions to this rule may be granted by the Dean of Women. Residence privilege in this hall will not be granted to married women unless they were formerly students of the University. The Dean of Women, upon request, will secure suitable homes for any women students who cannot be accommodated in Manzanita Hall.

Application for residence privileges in Manzanita Hall should be made to the Dean of Women who will consider such applications in the order of their receipt. Special application blanks for hall residence will be sent on request made either to the Registrar of the University or to the Dean of Women.

In order to be honored, reservations must be accompanied by a sum covering the room-rent for the semester concerned. Such sum will be returned in full to the one making the reservation if due notification is sent of desire to cancel reservation, on or before the end of the first enrollment day of the term, to Dean Margaret Mack. If cancellation or withdrawal is made after the end of the first enrollment day, but before the end of the third week of the semester, one-half of the room fee will be rebated. If withdrawal is made after the end of the third week, no rebate on the semester's room-rent will be made.

No one can be given room in the dormitory until room-rent for the term has been paid.

All residents of Manzanita Hall are required to register in and to carry throughout each semester at least fourteen credit hours of University work unless excused by the Dean of Women.

Room-rent is \$5 per month, payable in advance, for the semester, at the first of each semester. Students coming to Manzanita Hall must be provided with the following articles: Four sheets, 60x90 inches; four pillowslips, 20x30 inches; two white bedspreads; one pair of blankets; two comforts; one mattress protector, 3x6 feet, six good towels, two dresser scarfs, and personal toilet articles. If white curtains and rugs are desired, they must be supplied by the students. Young women should also have two large aprons for work in the laboratories. All articles of room equipment and wearing apparel should be plainly marked with the name of the owner. Residents at Manzanita Hall are required to take care of their own rooms and linen.

Manzanita Hall will open Monday, September 4, 1922, to receive student residents for the University year 1922-1923.

*Lincoln Hall*—Lincoln Hall is the University home for young men. The building has accommodations for 90 young men, and it is equal to the best of modern college halls. Professor A. E. Turner lives in the hall and is in charge. Young men coming to Lincoln Hall must provide themselves with the following articles: Two white bedspreads; one pair blankets; one comfort, 72x90 inches; one mattress protector, 3x6 feet; six good towels, and personal toilet articles. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the owner. The charge for room in the Hall is \$6 per month, payable for each semester at the beginning of the semester.

Application for residence privileges in Lincoln Hall should be made to Master of Lincoln Hall, A. E. Turner, who will consider such applications in the order of their receipt. Special application blanks will be sent upon request made either to Mr. Turner or to the Registrar of the University.

In order to be honored, reservations must be accompanied by a sum covering the room-rent for the semester concerned. Such sum will be returned in full to the one making the reservation if due notification is sent of desire to cancel reservation, on or before the end of the first enrollment day of the term, to Mr. Turner. If cancellation or withdrawal is made after the end of the first enrollment day, but before the end of the third week of the semester, one-half of the room fee will be rebated. If withdrawal is made after the end of the third week, no rebate on the semester's room-rent will be made.

No one can be given room in the dormitory until room-rent for the term has been paid.

On being assigned a room in Lincoln Hall or Manzanita Hall, a deposit of \$5 will be required to cover any possible damage to furniture or fixtures. This deposit will be refunded at the end of the semester on presentation of a proper certificate from the officer in charge of the Hall.

Lincoln Hall will be open Monday, September 4, 1922, to receive residents for the university year 1922-1923.

#### THE UNIVERSITY DINING-HALL

For the accommodation of the students the University conducts a dining-hall in quarters adjoining Manzanita Hall. The service is maintained for the purpose of obtaining board and table service of the most acceptable character and at the most reasonable figure. Students boarding at



the dining-hall will be charged \$25 per month for board. All students residing at a University dormitory are required to board at the University Dining-Hall.

#### REGULATIONS GOVERNING THE UNIVERSITY DINING-HALL

1. Board is payable in advance.
2. Students desiring to board regularly at the University Dining-Hall will be required to register with the head waiter.
3. Registration at the Dining-Hall will be made only on presentation of the Comptroller's receipt for board paid, or of a special permit issued by the President. In order to furnish board at the rate charged, it is imperative that all board bills be paid, and it is therefore ordered that no credit be extended. *Students who intend to board at the Dining-Hall will be expected to come with sufficient money to keep their board paid one month in advance.*
4. No rebate shall be made on board for less than one week's continuous absence. Due notice must be given and permission secured from Miss Mack in advance, or no rebate will be allowed.

#### PREFERENCES IN DINING-HALL AND DORMITORIES GIVEN TO NEVADA STUDENTS

The Board of Regents adopted the following rule:

Whenever the requests for University of Nevada dormitory or dining-hall privileges exceed the number that can be accommodated, preference shall be given as follows:

- (1) To Nevada students.
- (2) To formerly enrolled students from outside Nevada.
- (3) To new students from outside Nevada.

#### LABORATORY FEES AND DEPOSITS

**LABORATORY FEES**—Departments giving laboratory courses must charge fees to cover special expenses incident to such courses. These fees are calculated to cover the cost of the materials used and the expense incurred for the individual student.

**LABORATORY DEPOSITS**—Deposits are required to cover costs of breakage in laboratory courses where breakages are liable to occur. These deposits are payable at the beginning of each semester. At the end of the semester deduction is made for actual breakage, and the balance of the deposit is refunded to the student upon order from the head of the department.

If a student takes two or more courses in any one department where a fee is required, the fee for each course must be paid; however, one deposit only is required under the same conditions.

#### ASSOCIATED STUDENTS MEMBERSHIP FEE

At the request of the Associated Students of the University the Board of Regents voted to make the fee for membership

in the Student Association a compulsory fee upon all students except visitors, members of the University staff, and Nevada school-teachers in active service. This fee, \$6 per semester, which includes subscription to the U. of N. Sagebrush, must be paid to the Comptroller at the time of registration.

#### MEDICAL FEE

At the request of the Associated Students of the University the Board of Regents voted to make the medical fee for membership in the Hospital Association a compulsory fee upon all students with the exception of those who present, at the time of their registration, written request from their parents or guardians that they shall not pay this hospital fee, and with the exception of those students who live in Reno or Sparks. This fee is \$2 per semester and is payable to the Comptroller on registration.

#### FEES AND DEPOSITS PER COURSE PER SEMESTER, 1922-1923

	Fees	Deposits
Agronomy 4, 72.....	\$1.00	.....
Agronomy 6, 62.....	3.00	\$3.00
Agronomy 4, 53.....	2.00	.....
Agronomy 57.....	3.00	.....
Agronomy 62.....	1.00	1.00
Agronomy 71.....	1.00	2.00
Agronomy 73.....	2.00	2.00
Animal Husbandry 4, 56.....	3.00	.....
Athletic fee (Associated Students).....	6.00	.....
Bacteriology 51.....	2.00	\$2.00
Botany 1, 2, 53.....	1.00	2.00
Botany 56, 64, 71.....	2.00	2.00
Botany 91, 92-93 (fee and deposit per credit-hour)....	1.00	1.00
Chemistry 9, 10, 23.....	6.00	5.00
Chemistry 5, 62.....	2.00	5.00
Chemistry 1, 6, 22, 51-52, 61, 84, 100.....	4.00	5.00
Chemistry 63-64, 200 (fee per credit-hour).....	2.00	5.00
Chemistry 41.....	4.00	5.00
Civil Engineering 52, 54, 60, 64.....	3.00	5.00
Civil Engineering 58.....	5.00	5.00
Civil Engineering 72.....	2.50	.....
Civil Engineering 90.....	1.00	.....
Dairy Husbandry 1.....	2.00	2.00
Dairy Husbandry 54.....	3.00	.....
Dairy Husbandry 55.....	1.00	3.00
<sup>2</sup> Diploma (Degree or Certificate).....	5.00	.....
Electrical Engineering 60.....	2.50	2.50

<sup>1</sup>For registration purposes a blanket deposit of \$10, which covers all deposits except that for military, is required from each student. Deposits are listed separately merely to assist in adjustment of breakage tickets at close of University year.

<sup>2</sup>If two diplomas are granted in one year, the charge will be \$5 for the first and \$3 for the second; if three diplomas are granted in any one year, the charge will be \$5 for the first, \$3 for the second, and \$2 for the third.

	<i>Fees</i>	<i>Deposits</i>
Electrical Engineering 61-62, 63-64, 67-68.....	\$2.50	\$5.00
Electrical Engineering 80.....	5.00	5.00
Geology 52.....		5.00
*History Syllabus.....	25c to 1.00	
Home Economics 31-32, 56, 83-84, 85.....	5.00	1.00
Home Economics 9, 15, 16, 18, 45, 49, 50, 65-66, 95.....	2.00	1.00
Home Economics 88.....	1.00	1.00
Home Economics (locker).....		.50
Home Economics 87.....	1.50	
Horticulture 1.....	2.00	2.00
Horticulture 11.....	1.00	1.00
Hygiene 7-8.....	1.50	2.00
Mechanic Arts 1, 2, 3, 4, 6.....	3.50 per credit	
Medical Fee (Hospital Association).....	2.00	
Metallurgy 51.....	15.00	
Metallurgy 52.....	5.00	5.00
Metallurgy 56.....	1.00	5.00
Metallurgy 65.....	5.00	
Metallurgy 70.....	10.00	
Metallurgy 80, 180 (deposit according to work).		
Military.....		5.00
Mineralogy 1, 2.....		4.00
Nature Study 1-2.....	1.00	2.00
Physical Education (locker).....		.50
Physical Education (laundry).....	.75	
Physics 1-2, 5-6, 55-56, 57-58, 63, 69-70.....	3.00	5.00
Typewriting.....	1.00	
Zoology 2, 9, 51.....	2.00	2.00
Zoology 53, 63-64, 66, 91, 92.....	1.00	2.00

TABULAR ESTIMATE OF NECESSARY EXPENSES OF STUDENTS  
EXCLUSIVE OF CLOTHING AND TRAVELING<sup>2</sup>

	<i>Low</i>	<i>Moderate</i>	<i>Liberal</i>
*Tuition.....	None	None	None
Board, 36 weeks.....	\$216.00	\$216.00	\$325.00
Room.....	45.00	54.00	108.00
*Laundry.....	25.00	35.00	50.00
Books and stationery.....	15.00	25.00	45.00
Fees (laboratory, athletic, medical, etc.)	20.00	30.00	40.00
*Totals.....	\$321.00	\$360.00	\$568.00

<sup>1</sup>According to work being done.

<sup>2</sup>The low and moderate estimates apply to residents of dormitories. The liberal estimate, with the exception of books and fees, applies to students living elsewhere.

<sup>3</sup>Students from outside the State of Nevada must pay a tuition of \$30 each semester.

<sup>4</sup>This item may be greatly reduced by residents in Manzanita Hall who choose to take advantage of the house-laundry facilities.

<sup>5</sup>These amounts do not include the deposit of \$10 required of all students at the beginning of each semester nor the required military deposit, nor do they include the cost of special uniforms needed in some departments, such as the gymnasium uniforms.

### 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. 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 to go elsewhere.

#### OFFICIAL NOTICES

Students should watch the bulletin-board for notices. AN OFFICIAL NOTICE PROPERLY POSTED IS DEEMED SUFFICIENT INFORMATION TO ALL STUDENTS.

## ADMISSION AND DEGREES

Applicants for admission to first-year standing in the University of Nevada should present satisfactory evidence of having completed fifteen units of high-school or preparatory work. A "unit" represents a year's study in any subject in a secondary school, constituting approximately one-quarter of a full year's work. Two periods of laboratory work, or shop work, count as the equivalent of one recitation. Examinations will be required of all students who do not present acceptable credentials.

All high-school and other certificates which are to be presented for admission should be forwarded to the Registrar of the University prior to the time the student expects to enter.

### LIMITATION OF ENROLLMENT

The Board of Regents at its Commencement session, held May 11, 1920, unanimously adopted the following rules for limitation of enrollment in the University of Nevada, to be applicable from and after September 1, 1920:

That the University of Nevada shall not, during either semester of any University year, receive students whose families or whose guardians reside outside the State of Nevada or who, if they have been living independently of family or guardian, have themselves been residing outside the State of Nevada, to a number exceeding 50% of the total number of students from Nevada enrolled during the preceding University year, September to May, inclusive; *provided*—

(a) That the above limitation shall not be put into effect until the total enrollment of the University has reached 600 for a given semester, or when it will reduce the enrollment below 600; and

(b) That the above limitation policy shall not operate to exclude any students from outside the State of Nevada who desire to enroll in the regular courses for mining engineers and who are fully qualified for entrance or advanced standing in the Mackay School of Mines.

### REQUIREMENTS FOR ADMISSIONS TO THE SEVERAL COLLEGES AND SCHOOLS

#### ADMISSION OF CANDIDATES FOR DEGREES

The privileges of the University, while open to all qualified persons of good character and serious purposes, are designed

primarily for those who satisfy the requirements for admission and become candidates for degrees. In order to insure some breadth of view on the part of students as well as some degree of achievement, curricula have been established in the several colleges, each intended to meet the needs of a considerable body of students. So far as is consistent with the purposes the curricula are intended to fulfil, students are left free to choose their work according to their individual needs and tastes. For most persons it is believed that the pursuit and completion of a regular curriculum is of much higher value than any unrestricted selection of courses. The University wishes, therefore, to impress upon parents and students its firm belief that, under all ordinary circumstances, students should satisfy the requirements for admission and pursue the regular curricula.

TO THE COLLEGE OF ARTS AND SCIENCE; AND TO THE NEVADA STATE NORMAL SCHOOL

For unconditional admission, 15 units.

I. *Required*: English, 3 units.

Mathematics, 2 units (Algebra and Plane Geometry).

II. *Elective in Groups*:

Three in one and two in another; or two units in each of three of the following groups:

1. Foreign Language: (If foreign language is offered for admission, at least two units must be in one language.)

Latin.	French.	German.
Greek.	Spanish.	

2. Natural Sciences:

Botany.	General Science.	Physics.
Chemistry.	Geology.	Physiology.
		Zoology.

3. Social Sciences:

Economics.  
History (Ancient, Medieval, and Modern, English, or American History and Civics).

4. Mathematics: c and d.

III. 10 of the 15 required units must be from Divisions I and II.

IV. *Free Electives*: 5 or 4 units.

These may be selected from any of the above subjects, or from any of the subjects appearing on the next page. Not more than 4 units may be taken in subjects 17 to 24, inclusive, and not more than 3 units in any one of these subjects. A student who offers the foreign language group (at least 2 units in one language) may offer 1 unit in another language, but ordinarily he is not prepared to take the second year of that language in the University.

TO THE COLLEGE OF ENGINEERING  
ALL SCHOOLS

I. Required:	English .....	3 units
	Mathematics .....	3 units
	Algebra .....	1½ units
	Plane Geometry.....	1 unit
	Solid Geometry.....	½ unit
	History .....	1 unit
	Physics .....	1 unit
	Additional Science.....	1 unit
II. Elective.....		6 units
Total .....		15 units

\*TO THE COLLEGE OF AGRICULTURE  
SCHOOL OF AGRICULTURE

I. Required:	English .....	3 units
	History .....	1 unit
	<sup>2</sup> Mathematics.....	2½ units
	<sup>2</sup> Natural Science.....	2 units
II. Elective: Academic or vocational subjects..		6½ units
Total .....		15 units

SCHOOL OF HOME ECONOMICS

I. Required:	English .....	3 units
	History .....	1 unit
	Mathematics .....	2 units
	<sup>2</sup> Natural Science.....	2 units
II. Elective: Academic or vocational subjects..		7 units
Total .....		15 units

Students intending to enter the Home Economics Department will find the requirements more easily fulfilled if they will present one year of Chemistry and one year of French toward entrance requirements.

SUBJECTS ACCREDITED FOR ADMISSION

Subject	Units <sup>4</sup>
1. English (a).....	1
English (b).....	1
English (c).....	1
English (d).....	1
2. Latin (a).....	1
Latin (b).....	1
Latin (c).....	1
Latin (d).....	1

<sup>1</sup>The electives may be chosen from recognized high-school subjects, but in no case may more than 2 units be elected in any one vocational subject or more than 4 be elected in vocational subjects. It is advised that the electives include 2 units of foreign language, preferably modern language, and that the science requirement be in chemistry. In certain meritorious cases some entrance credit, not exceeding 1 unit, may be granted for practical experience.

<sup>2</sup>Students offering only 1 unit of algebra and 1 unit of plane geometry are required to take Mathematics 11 and 12 in the College. Students offering 1 unit of algebra, 1 unit of plane geometry, and ½ unit of plane trigonometry are relieved from taking mathematics in the College.

<sup>3</sup>Beginning with the class entering September, 1923, one unit of Chemistry will be required of students entering the School of Agriculture and School of Home Economics.

<sup>4</sup>A 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. Greek (a).....	1
Greek (b).....	1
4. German (a).....	1
German (b).....	1
5. French (a).....	1
French (b).....	1
6. Spanish (a).....	1
Spanish (b).....	1
7. Ancient History (a).....	1
Medieval and Modern History (b).....	1
English History (c).....	1
American History and Civics (d).....	1
8. Economics.....	1
9. Algebra (a).....	1
Plane Geometry (b).....	½
Advanced Algebra (c).....	½
Solid Geometry (d).....	1
10. General Science.....	1
11. Physics.....	1
12. Chemistry.....	½ or 1
13. Physical Geography.....	½ or 1
14. Botany.....	½ or 1
15. Zoology.....	1
16. Physiology.....	½ to 3
17. Music.....	½ to 3
18. Drawing.....	½ to 3
19. Agriculture.....	½ to 3
20. Domestic Science.....	½ to 3
21. Manual Training.....	1 to 3
22. Shopwork.....	½ to 3
23. Bookkeeping.....	1 to 3
24. Stenography.....	1
25. Vocational Work.....	½ to 1
26. Commercial Law.....	½ to 1
27. Commercial Arithmetic.....	½ to 1
28. Commercial Geography.....	½ to 1
29. Typewriting.....	1

Additional units for subjects listed above or additional subjects will be accepted if approved by the Committee on Admission and Advanced Standing.

METHODS OF ADMISSION

The credits required for admission to the undergraduate department, as detailed above, may be secured:

By examination;

By certificate from an accredited high school or other secondary school;

By transfer from any university or college of recognized standing.

## ADMISSION BY EXAMINATION

Examinations for admission are held at the University immediately preceding the opening of the fall semester. These examinations cover all subjects required or accepted for admission.

## ADMISSION BY CERTIFICATE FROM AN ACCREDITED PREPARATORY SCHOOL

On application to the Registrar blank certificates may be obtained by students who wish to enter the University by this method. Students should obtain blanks early and should have them filled out and sent to the Registrar for approval as soon as possible after the closing of the high-school year in June.

## ADMISSION BY TRANSFER

Admission is granted by transfer from any university or college of recognized standing on presentation of the proper credentials, but such credit is provisional until the first year's work is completed.

## ADMISSION OF PERSONS WHO ARE NOT CANDIDATES FOR DEGREES

## UNCLASSIFIED STUDENTS

An "unclassified" student is one who has satisfied the regular requirements for admission, but who, for reasons satisfactory to the Dean of his college, does not desire to pursue any regular curriculum. He shall present to his Dean a written application for permission to register as an unclassified student, stating why he does not wish to take a regular curriculum, and specifying the courses of instruction he wishes to elect, the prerequisites to which he must already have satisfied. Unless he is over 21 years of age or is self-supporting, his application must bear the approval of his parents or guardian.

Unclassified students are subject to all rules relating to registration and scholarship. By satisfying the requirements in any curriculum for which they have full admission, they may become candidates for degrees.

## SPECIAL STUDENTS

A special student is one who *cannot* satisfy the requirements for admission to the college in which he wishes to study. Any person who can satisfy such requirements will be permitted to register only as a regular or as an unclassified student.

Special students must be at least 20 years of age. Except upon the specific recommendation of the principals of their high schools, students who in the previous semester were in high schools will not be admitted to special standing. All applicants must present certificates of good character from reliable persons, credentials covering such academic work as they may have done, or other evidence of their ability and disposition to do satisfactory work in the University. Persons who have shown no serious purposes either in school or in employment will be refused admission. Those admitted will usually be expected to register in not fewer than ten hours in courses of elementary character which may be counted for admission. They will be permitted to register in advanced courses only upon the approval of their Dean and the head of the department concerned. They are expected to meet all requirements for regular admission within two years after entering the University. Except by action of the University Faculty, no person will be permitted to register as a special student for more than four semesters.

For any person who can present satisfactory reasons for such action, the rules relating to the minimum age limit and the minimum number of hours of registration may be waived by vote of the University Faculty.

Special students are subject to all the rules relating to registration and scholarship. By satisfying the requirements for admission to any college they may gain regular standing and become candidates for degrees.

## SPECIAL WORLD-WAR SERVICE MEN SPECIALS

War special students will be admitted at 18 years of age or over.

Any special student who is a World-War veteran and holds an honorable discharge from the United States Army, Navy, or Marine Corps shall be permitted to graduate without regard to entrance deficiencies if he meets all the other requirements for a degree; provided, that if such student should fail in any college subject having entrance prerequisites for which he has no credit, these prerequisites must be made up before the student will be permitted to repeat the college subject.

## VISITORS

With the consent of the President and the instructors concerned, regular visitors may be enrolled as such, during the first three weeks of the term. They shall be governed by the regular University rules. Casual visitors may not have the

privilege of attending a class in excess of four times during any given semester except with permission from the President. No official record of these visits need be made. Regularly enrolled students of the University, who are registered for the full number of hours, may be allowed only the privilege of the casual visitor. Under no circumstances will visitors be allowed to do laboratory work, engage in class discussion, take the time of the instructor from regular class work, or receive credit toward a degree. If a visitor registers after the regular days for registration such visitor shall pay the late registration fee required of regular students (see page 77.)

#### ADMISSION TO ADVANCED STANDING

Students who have graduated from a full four-year high school course and who have also graduated from a one-year professional course in an accredited normal school are allowed one year's credit on advanced standing.

Graduates from a two-year normal school, who are also graduates from a full four-year approved high-school course will be allowed two years' credit on advanced standing, if they have completed all of the prescribed requirements for admission, and provided the subjects offered for advanced standing are in harmony with the group requirements for graduation.

The preceding statements refer to advanced standing granted by the College of Arts and Science and the State Normal School. All other applicants for advanced standing from reputable universities and colleges will receive, upon presentation of their credentials, such credit as the Committee on Admission and Advanced Standing may deem fair. In all doubtful cases the claims will be referred to the heads of the departments. All credit for advanced standing, however, is provisional and subject to revision at the end of the first year following the enrollment of the student. No such student, however, will be granted a Bachelor's Degree or a diploma without at least one full year of work in residence.

#### UNIVERSITY RULES GOVERNING REGISTRATION

The following rules govern matters of registration, classification of students, conditions and failures, late registration, absences, hours of registration, withdrawals, transfer of students from one college to another, and honorable dismissal:

##### I. METHOD OF REGISTERING

1. On registration day the student will secure a registration blank from the Registrar. This card will be filled out

by the student in accordance with the directions thereon.

2. In registering, the student will observe carefully the rules governing conditions, failures, maximum number of hours, status, and prerequisites.

3. All students having required courses must give preference to such courses in regular sequence; no required course may be deferred beyond one year.

4. Students are expected to remove entrance deficiencies in their Freshman year. At the close of the second semester of each year the Committee on Admission and Advanced Standing will send to the Registration Committee a list of all Freshmen who have not registered for or who have failed in entrance subjects in which they were deficient. The Registration Committee shall then hold up the registration of such students in their Sophomore year until they register for the subjects in which they are deficient.

5. The signature of the instructor must be obtained for each course the student wishes to pursue.

6. The card must then be approved and signed by the Dean of the College in which the student has registered.

7. After having obtained the Dean's approval, fees will be paid to the Comptroller, who will issue receipts for the same. These receipts must be presented to the Registrar and to the heads of the departments concerned.

8. The registration card shall finally be deposited with the Registrar, who in turn will issue class cards to be filled out by the student and returned to the Registrar. These cards shall be sent to the various instructors and shall entitle the student to enter the classes concerned.

9. Any change of residence occurring after the completion of the student's registration should be reported to the Registrar immediately.

##### II. CLASSIFICATION OF STUDENTS

1. Three classes of students, seeking college credit, are recognized—regular, unclassified, and special.

2. A "regular" student is one who has satisfied the requirements for admission to a college and is pursuing a curriculum leading to a diploma or degree.

3. An "unclassified" student is one who has satisfied the requirements for admission to a college, but, for reasons satisfactory to his Dean, is not pursuing a regular curriculum.

4. A "special" student is one who, though unable to satisfy the requirements for admission to the college in

which he wishes to study, is permitted to register in courses for which he has satisfactory preparation.

5. For regular Sophomore, Junior, or Senior standing, a student's deficiencies must not exceed 6 college units from the requirements of his college.

6. Students entering the University of Nevada from other colleges will be registered for one year as unclassified. At the end of the year the number of advanced credits allowed will be determined in part by the quality of the work done in this University.

### III. CONDITIONS AND FAILURES

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

2. Any student who receives a final grade of 5 in any subject shall be considered as "failed" in that subject.

3. Any student who receives a grade of 4 shall be conditioned. A condition may be removed by satisfying the requirements of the department.

4. A failure in a required subject shall be removed by repeating the subject in class. This must be done as soon as the study is repeated in the University program, and any required subject in which a student has failed takes precedence over all other subjects in the arrangement of his program.

5. If a condition in any course is not removed within the next year of the student's residence after it is incurred, the course must be repeated in class.

6. A student may be dropped from class at any time for negligence or misconduct upon recommendation by the instructor and with the approval of the committee concerned.

7. A student may be placed on probation or suspended from the University at any time his scholarship or conduct warrants such action. In general, whenever a student is failing to pass in two-thirds of his work, he is liable to be placed on probation or to be suspended from the University. Each individual case will be considered by the Committee on Registration and Scholarship.

8. Students who have twice been suspended for unsatisfactory work are not permitted to register again.

9. No student while on probation may represent the University in any public contest.

10. By a vote of the Faculty Committee on Registration, the rules stated above may be waived for any student who can show that his unsatisfactory record is due to reasons for which he is not personally responsible.

### IV. LATE REGISTRATION

1. A fee of \$3, to be increased to \$5 for those registering later than the end of the week including enrollment days, shall be charged for belated registration, and there shall be no exception to this rule.

2. A student who begins to register after the regular registration days shall not be permitted to enroll in the number of hours to which he would otherwise be regularly entitled; for every week or fraction thereof of delay in registering one hour will be deducted.

3. No person will be permitted to register as a student after the close of the third week of either semester, with exception that the Committee on Admission and Advanced Standing has discretion to extend this time not beyond four weeks from the beginning of the second semester's recitations in the cases of mid-year high-school graduates or transferees from any other college or university whose first semester ends later than that of the University of Nevada. This rule applies also to changes in registration.

4. Each student shall complete his registration by 4 o'clock p. m. of the second day after he begins registration, otherwise he shall pay to the Comptroller 75 cents for each day or fraction of a day thereafter until his registration is completed.

### V. ABSENCES

1. The business of a student is at the University and the regulations regarding absences should be lived up to cheerfully. Each student is expected to be present at every college exercise for which he is registered.

2. For each total of 17 absences during a semester, or for a total of 26 absences during both semesters, the student will receive one negative credit. For a total of 34 absences during both semesters he will receive two negative credits, and an additional negative credit for each additional 17 absences.

3. In extraordinary cases, such as prolonged illness (of three or more days duration, accompanied by a physician's certificate), quarantine, or absence due to serious illness or death of a member of the immediate family, the Registration Committee may exempt students from operation of this rule.

4. Absence incurred by reason of University activities may be excused in advance by the Registration Committee.

5. Each instructor shall be required to report weekly to the Registrar's office all absences incurred in his classes during the week, or that no absences have been incurred.

#### VI. HOURS OF REGISTRATION

1. In addition to required Military Science and Physical Education, regular students in the Colleges of Engineering or Agriculture shall register for eighteen hours except in the School of Home Economics, where an average of only  $16\frac{1}{2}$  units is required. In the Normal School, or in the College of Arts and Science, students shall register for fifteen hours in addition to required Military Science and Physical Education.

2. No Freshman during the first semester shall be allowed to enroll in more credits than his regular course requires.

3. Any student may at any time enroll in as low as three credits less than his course requires, but to take less than this amount the student must have the Dean's permission.

4. In case a student during the previous semester<sup>1</sup> receives above 3 in three-fourths of all of his work, and has no 4 or 5, he may enroll in a maximum of three hours above the normal requirement of his course. No other student shall be allowed any extra work.

Two exceptions may be allowed to this rule:

(1) A Senior, who, during the previous semester, carried the allowed three extra hours, received above 3 in three-fourths of his work, received no 4 or 5 in any work, and who needs one to four hours for graduation above that allowed by the rule, may be allowed to register, each semester, in one or two hours above the extra three allowed by the rule.

(2) A Senior, who, during the previous semester, received above 3 in two-thirds of his work, received no 4 or 5 in any work, and who lacks for graduation a few more hours than the rule allows, may be allowed three hours above his regular course. The Registration Committee shall enforce this rule.

5. In case a student failed to pass in some of his work during the previous semester, the Dean may restrict his registration to fewer hours than his course regularly requires.

<sup>1</sup>Previous semester, when used to determine the maximum number of hours, shall be construed to mean the last semester in which a student was registered.

Students entering from another school with advanced standing who wish to take extra hours must furnish records to the Registration Committee showing that the work previously done was of grade corresponding to that required of our own students who are eligible for extra hours.

6. The Registrar shall check up these regulations for each student when he finishes registering.

7. At the beginning of any semester, with the approval of the Deans concerned, a student may change his registration from one college to another. In so transferring, the student shall satisfy the admission requirements of the college to which he transfers, effective at the time he is admitted to the University, and he shall satisfy the course of study of the college to which he transfers, effective at the time the transfer is made, the details of the transfer to be handled by the Committee on Admission and Advanced Standing.

8. Special students must enroll in at least ten hours of work. Exception to this rule can only be made by action of the University Faculty.

#### VII. WITHDRAWALS

1. A student who wishes to withdraw from any course shall first secure from the Registrar a withdrawal slip. He shall take this to the instructor in the course in question for his recommendation. When the recommendation signature of the instructor is secured, he will then report to the Dean of his college, who may grant a withdrawal from the class. The withdrawal slip must be filed by the student with the Registrar, who shall notify the instructors concerned. The date of the withdrawal shall be the date on which the slip is filed with the Registrar.

2. After the end of the sixth week of the semester a student desiring to withdraw from a course must present to the Dean a written statement from the instructor stating that his work done to date is of passing grade, otherwise the record will be "withdrawal with failure."

3. In courses in which fees are charged no fees will be returned to the student upon withdrawal from class after the end of the third week of any given semester.

#### VIII. TRANSFER OF STUDENTS TO ONE COLLEGE FROM ANOTHER

1. When a student transfers from one college to another he shall have the same standing in the college to which he transfers as he had in the college from which he transferred, except that he shall satisfy the specific requirements of the college to which he transfers.

#### IX. HONORABLE DISMISSAL

1. Upon the request of a student in good standing, the Registrar will issue a letter of honorable dismissal. If the



student desires to enter another university, a copy of his or her university credentials, including entrance, will accompany the letter.

#### THE GRADING SYSTEM

1. The following grading system became effective in May, 1921:

1	equals 95% to 100%	} (passing)
1.5	equals 90% to 94%	
2	equals 85% to 89%	
2.5	equals 80% to 84%	
3	equals 75% to 79%	
3.5	equals 70% to 74%	} (condition)
4	equals 60% to 69%	
5	equals Below 60%	

2. In order to carry extra work during any semester, a student shall receive above 3 in three-fourths of all of his work in the preceding semester, and shall have no grades in Sections 4 and 5. Exceptions are made to this rule in the case of Seniors:

(1) A Senior, who, during the previous semester, carried the allowed extra three hours, received above 3 in three-fourths of his work, received no 4 or 5 in any work and who needs one to four hours for graduation above that allowed by the rule, may be allowed to register, each semester, in one or two hours above the three extra allowed by the rule.

(2) A Senior, who, during the previous semester, received above 3 in two-thirds of his work, received no 4 or 5 in any work, and who lacks for graduation a few more hours than the rule allows, may be allowed three hours above his regular course. The Registration Committee shall enforce this rule.

3. In order to graduate, a student shall have at least 50% of all his credits above a grade of 3.

4. In determining honors, the average of the figures representing the grades per credit shall be taken.

#### REQUIREMENTS FOR GRADUATION

A candidate for a Bachelor's Degree must pass in all the subjects both prescribed and elective in his chosen course, and he must conform to all directions given in connection with that course in regard to electives.

In the College of Arts and Science credit for 124<sup>a</sup> credits for men and 123 for women are required for graduation.

<sup>a</sup>Beginning with the class graduating in May, 1924, these totals of credits required for graduation will be increased by 3, and beginning with the class graduating in May, 1925, and thereafter, these totals of hours required for graduation will be increased by 4. These increases will be due to the addition of 2

In the College of Agriculture credit for 148<sup>a</sup> credits must be presented, except in the School of Home Economics, where only 137 credits are required.

In the College of Engineering and in the State Normal School a candidate must complete the course of study as laid down.

#### DEGREES

The College of Arts and Science confers upon its graduates the Degree of Bachelor of Arts. Any student, however, who pursues a course in which the natural sciences or mathematics have received particular emphasis may, upon petition to the faculty of the College of Arts and Science, be granted the Degree of Bachelor of Science.

Upon graduates of the College of Engineering are conferred degrees as follows: Graduates of the Mackay School of Mines receive the degree of Bachelor of Science in Mining Engineering. Graduates of the School of Mechanical and Electrical Engineering receive the Degree of Bachelor of Science in Mechanical Engineering or Bachelor of Science in Electrical Engineering. Graduates of the School of Civil Engineering receive the Degree of Bachelor of Science in Civil Engineering.

Graduates of the College of Agriculture receive the Degree of Bachelor of Science in Agriculture. Graduates from the School of Home Economics receive the Degree of Bachelor of Science in Home Economics.

A charge of \$5 is made for all baccalaureate diplomas. If, however, a student in addition to receiving the baccalaureate degree receives a diploma for a teacher's certificate, the arrangement of the charge is as follows: If two diplomas are granted in any one year, the charge will be \$5 for the first, and \$3 for the second; if three are granted in one year, the charge will be \$5 for the first, \$3 for the second, and \$2 for the third.

#### DIPLOMAS

For information concerning teachers' diplomas, see The School of Education.

#### RESIDENCE REQUIREMENT

If a student is in residence at the University for one year only, that year's work must be done in the college from which the degree is expected. No college faculty in the University will recommend a student for a degree unless he

required credit-hours in Physical Education for men in the Freshman and Sophomore classes beginning with the Freshman class of the year 1920-1921, and to the addition of 2 credits to the Sophomore military requirement beginning with the Sophomore class of the year 1921-1922.

has been a regularly registered student in that college for at least one year. Attendance at the summer session is construed as resident study.

#### THESES

A thesis, if satisfactory, may be offered by each candidate 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 be done in connection with ordinary classwork.

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.

The thesis should be typewritten upon 8½x11 paper and bound in a 9x11½ 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 library.

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

*The Origin of the English Guilds*

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 EDWARDS SMITH  
RENO, NEVADA  
1920

#### GRADUATE COURSES

*Admission*—Graduates of this University or of other colleges or universities of equal rank are admitted to graduate standing in this University without examination. Admission

to graduate study should not be understood as implying admission to candidacy.

*Registration*—Students wishing to register should present their credentials to the Committee on Admission and Advanced Standing, and if approved a card of admission will be issued to the applicant. When the student has decided in what department he desires to do his major work, he will confer with the head of that department, who, in consultation with the student, will outline the work to be done. The student will then submit the major and minor courses chosen for approval to the Dean of the College in which the work is offered.

*Fees*—Graduate students pay the same fees as the undergraduates in the various departments of the University.

*Degrees Offered*—The University offers the following advanced degrees in residence: Master of Arts and Master of Science.

*Residence and Candidacy*—The student desiring to become a candidate for an advanced degree should file a petition, approved by his major professor, with the Chairman of the Registration Committee, stating the graduate work already done, and setting forth the proposed work to be offered in candidacy for the degree. No graduate student is considered a candidate for any advanced degree unless he has been definitely advanced to candidacy by his major professor and the Registration Committee. At least one semester must elapse between the formal advancement to candidacy for any degree and the conferring of that degree. Actual residence and study, except for graduates of this University, must precede formal advancement. Graduate work done in other universities may be accredited toward an advanced degree at the University of Nevada, but such allowance of credit will not reduce the period of residence. The time of residence for students of this University shall not be less than one semester and for graduates of other universities not less than one year.

*Outside Work*—Work which has been accepted for the Bachelor's Degree may not be used to meet any of the requirements for the Master's Degree. In general one year of the student's full time will be necessary to complete the work for a Master's Degree. Candidates for advanced degrees who do not wish to spend more than one year in residence may be allowed to give only a limited amount of

time to instruction, laboratory assistance, or other outside work. The amount and nature of this work must be definitely set forth by the student and officially allowed by the Registration Committee. Students doing outside work in excess of the equivalent of two or three units per week will require more than one year to complete the work for a Master's Degree.

*Courses of Study*—The courses of study shall represent thirty units of graduate work. Graduate courses shall be interpreted as those offered primarily for holders of the Bachelor's Degree. Graduate credit may, however, be given for courses scheduled primarily for Juniors and Seniors. The total number of credits allowed for Junior and Senior courses shall not exceed one-half the total number of credits required for the degree. Any Junior and Senior courses, however, may be counted as "Graduate Courses" if one additional hour without additional credit is devoted to the study of advanced problems connected with the course. At least one-half the work done must represent work done within the major subject, the remaining credits being distributed equally between two minor subjects, except with special approval of the Registration Committee. The work in the major and minor subjects must not be given by the same instructor. No course may count toward the degree except with the approval of the major professor and the Registration Committee.

A thesis shall constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units and shall have the general form prescribed for the Bachelor's thesis, or shall be a reprint of an article appearing in a reputable periodical. It must be presented to the Registration Committee for their final approval at least two weeks before the date set for the conferring of the degree.

The Master's Degree will be conferred only after an oral examination upon the thesis and in the major and minor subjects, conducted by examiners appointed by the Registration Committee.

When semester examinations are taken, the grades 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; and the Degree of Master of Science upon those who have received the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups. The diploma fee for a Master's degree is \$5.

## ENGINEERING DEGREES

The engineering degrees—Engineer of Mines (E.M.), Mechanical Engineer (M.E.), Civil Engineer (C.E.), and Electrical Engineer (E.E.)—may be conferred upon graduates who have taken corresponding courses in the College of Engineering of the University of Nevada, or upon graduates of other institutions who have obtained the Master of Science degree in engineering from the University of Nevada; who have subsequently been engaged in honorable and successful engineering work in positions of responsibility for a period of at least three years in the case of holders of the B.S. degree, or two years in that of holders of the M.S. degree; and who submit theses showing ability to conduct original engineering work. Theses will not be considered original when they are merely investigations in literature, compilations of routine laboratory tests or presentations of the work of others.

The engineering degrees may also be conferred upon graduates of the College of Engineering of the University of Nevada and upon graduates of other engineering colleges of equal standing, who, after graduation, have been engaged for a period of at least one year in honorable and successful engineering work in a position of responsibility, and who subsequently complete successfully one year of graduate work in engineering, including thesis, at the University of Nevada. Graduates of other institutions must include in their graduate work any subjects in the corresponding undergraduate curricula which are required by the College of Engineering of the University of Nevada, but whose equivalents were lacking in their undergraduate courses.

Formal application for an engineering degree must be filed with the Registrar not later than the beginning of the second semester of the year in which the degree is sought, and approved in turn by the Engineering Faculty and the Registration Committee. The application must be accompanied by detailed and satisfactory evidence as to the extent and character of the applicant's professional work. The thesis shall have the general form prescribed for the Bachelor's thesis, or shall be a reprint of an article appearing in a reputable magazine. In the case of a nonresident applicant, it shall be presented to the Engineering Faculty for final approval and transmission to the Registration Committee (for recommendation to the University Faculty) at least eight weeks before the date set for conferring the degree. The diploma fee for an engineering degree is \$5.



## THE COLLEGE OF ARTS AND SCIENCE

## FACULTY

- WALTER E. CLARK, Ph.D., LL.D., President of the University.  
 MAXWELL ADAMS, Ph.D., Dean of the College of Arts and Science;  
 Professor of Chemistry.  
 JAMES EDWARD CHURCH, JR., Ph.D., Professor of the Classics.  
 JEANNE ELIZABETH WIER, A.B., Professor of History.  
 PETER FRANDSEN, A.M., Professor of Biology.  
 HERBERT WYNFORD HILL, Ph.D., Professor of English.  
 LEON WILSON HARTMAN, Ph.D., Professor of Physics.  
 CHARLES HASEMAN, Ph.D., Professor of Mathematics and Mechanics.  
 REUBEN CYRIL THOMPSON, A.M., Professor of Philosophy.  
 J CLAUDE JONES, A.B., Professor of Geology and Mineralogy.  
 WALTER S. PALMER, E.M., Professor of Metallurgy.  
 ALBERT ELLSWORTH HILL, A.B., Professor of English.  
 JAMES REED YOUNG, Ph.D., Professor of Psychology.  
 COLONEL JOHN PAUL RYAN, Professor of Military Science and Tactics.  
 JOHN WILLIAM HALL, A.M., Professor of Education.  
 SARAH LOUISE LEWIS, B.S., Professor of Home Economics.  
 BENJAMIN F. SCHAPPELLE, Ph.D., Professor of Modern Languages.  
 ARCHIBALD EDWARDS TURNER, A.B., Professor of Oral English.  
 KATHERINE LEWERS, Associate Professor of Freehand Drawing and Art.  
 KATHARINE RIEGELHUTH, A.M., Associate Professor of English.  
 ELSIE SAMETH, B.S., Associate Professor of Physical Education for Women.  
 JAMES A. NYSWANDER, B.S., Associate Professor of Mathematics and Mechanics.  
 GEORGE WALLACE SEARS, Ph.D., Associate Professor of Chemistry.  
 RAYMOND O. COURTRIGHT, B.A., Associate Professor of Physical Education for Men.  
 FRED W. TRAINER, M.A., Associate Professor of Education.  
 SIDNEY WARREN WILCOX, B.L., Associate Professor of Economics, Business, and Sociology.  
 Major AGARD H. BAILEY, Associate Professor of Military Science and Tactics.  
 PHILIP A. LEHENBAUER, Ph.D., Associate Professor of Biology.  
 MARGARET ELIZABETH MACK, A.M., Associate Professor of Biology.  
 SILAS CALVIN FEEMSTER, A.M., Assistant Professor of History.  
 GILBERT BRUCE BLAIR, A.M., Assistant Professor of Physics.  
 JESSIE P. POPE, B.S., Assistant Professor of Home Economics.  
 JOHN F. G. HICKS, Ph.D., Assistant Professor of Chemistry.  
 Captain WILLIAM JOHN HENRY RYAN, Assistant Professor of Military Science and Tactics.  
 FRANCIS CLARK MURGOTTEN, A.M., Assistant Professor of Modern Languages.  
 CHARLES LEROY BROWN, A.M., Instructor in Biology.  
 CATHARINE FRANCES SOMERS, A.B., Instructor in Physical Education for Women.  
 M. JULIA DETRAZ, A.M., Instructor in Education.  
 ROBERT L. JONES, M.A., Instructor in History and Political Science.

- Mrs. LOUISE KERR HAMMOND, B.S., Instructor in Home Economics.  
 RUTH ANNA BILLINGHURST, B.A., Instructor in Chemistry.  
 JOHN R. GOTTARDI, B.A., Instructor in Modern Languages.  
 OSCAR L. CLOUGH, M.D., Instructor in Physical Education for Men.

## AIM

The aim of the College of Arts and Science is twofold:

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

## ADMISSION REQUIREMENTS

For admission requirements, entrance subjects and the number of credits belonging to each, see pages 84-87.

## REQUIREMENTS FOR A BACCALAUREATE DEGREE IN ARTS AND SCIENCE

In order to be recommended for the Degree of Bachelor of Arts<sup>1</sup> a candidate must, first, have satisfied the requirements for admission; and, second, have gained credits in prescribed and elective courses aggregating 124<sup>2</sup> semester units. These units are to be distributed as follows:

## FRESHMAN AND SOPHOMORE REQUIREMENTS

## Freshman Year

First Semester	Units	Second Semester	Units
English 1 (Composition and Rhetoric)	3	English 2 (Composition and Rhetoric)	3
Foreign Language	3 or 4	Foreign Language	3 or 4
History, Economics, Political Science, Philosophy, or Psychology	3	History, Economics, Political Science, Philosophy, or Psychology	3
Physics, Chemistry, Biology, or Mathematics	3 or 4	Physics, Chemistry, Biology, or Mathematics	3 or 4
Hygiene	1	Hygiene 1	1
Military and Physical Education	1-2	Military and Physical Education	1-2
Elective	0-2	Elective	0-2

## Sophomore Year

First Semester	Units	Second Semester	Units
English 41 (Literature)	2	English 42 (Literature)	2
Foreign Language	3	Foreign Language	3
Social Science	3	Social Science	3
Natural Science or Mathematics	2 to 4	Natural Science or Mathematics	2 to 4
Military and Physical Education	1 to 2 <sup>1</sup>	Military and Physical Education	1 to 2 <sup>1</sup>
Elective	3 to 5	Elective	3 to 5

In case of 4 units entrance in one foreign language, 2 units in each of two, or 3 units in one and 1 in another, one year in college in advanced work in one of these languages will suffice. Otherwise two years in college shall be in the same language.

<sup>1</sup>Students who have majored in Mathematics or Science may, on petition to the Faculty, be granted the Degree of Bachelor of Science.

<sup>2</sup>See foot-note, pages 96, 97, for variations in graduation requirements.

The Social Science Group shall include: History 1-2, 3-4, Economics 5, 1-2, 41-42, Political Science 1-2, Psychology 2, 5, Philosophy 7, 8, 21, 22.

The Social Science requirement in the Freshman year may, in the case of premedical students, with the consent of the Dean, be deferred until the Sophomore or Junior year.

No subject with the number 50 or more will be open to Freshmen or Sophomores without the permission of the Dean.

The Freshman requirement in Social Science may be satisfied by 6 units of history, 6 of philosophy, or 3 units from each of any two of philosophy, psychology, and economics.

The Sophomore requirement in Social Science may be fulfilled by 6 units from any one of the following: History, Economics, Political Science, Physiology, Philosophy (it being understood, for the purposes of this elective, that History and Political Science are different departments). No more than 6 units in the first two years' Social Science requirements may be taken in any one department.

The professors concerned may repeat their courses if they desire, but the Freshman course in Economics (Economics 5, Economic History of the United States) must be offered in the first semester and the Freshman Psychology in the second semester.

The new required work for Freshmen and Sophomores shall apply to the Freshman class entering in September, 1921, and to all successive classes.

Students transferring to Arts and Science from other institutions and from other colleges in the University of Nevada must meet the above Freshman and Sophomore requirements.

Courses given primarily in other colleges of the University may be taken by Arts and Science students, but not to exceed twenty units of such work shall be counted for Arts and Science Degrees.

#### JUNIOR AND SENIOR REQUIREMENTS

Candidates for a Baccalaureate Degree must select courses in a group of departments consisting of a major and one or two correlated minors, the total aggregating not fewer than thirty hours of work designed primarily for Juniors and Seniors. Subject to the requirement of correlation, the group may be chosen from any department in the College of Arts and Science. The combined work of the two or three departments should represent a unity of aim. The particular

grouping, however, will depend upon the particular aim of the student. For example, a student making some one language his major may find it desirable to elect a considerable amount of History. A student planning to study medicine should elect a major in Biology or Chemistry, but may find it desirable to take additional work in Physics. Those intending to study law, should elect a major in Political Science or Economics, but may find it desirable to take advanced work in English. Students taking a Science major will generally find it profitable to have a good reading knowledge of French and German.

The foregoing directions must be regarded as general in nature; any grouping of major and minor subjects showing an intelligent purpose will be approved.

The specific requirements for majors and minors in the different departments will be found in the description of courses of study under their respective heads in the courses of instruction.

It is advisable that students should plan their work for the Junior and Senior years as early as the Sophomore year, in order that the studies then elected may fit in with their later work. At the beginning of the Junior year, each student must give the Dean written notice of his selection of major and minor departments; such selection should bear the approval of the instructors concerned.

Any student after electing his major and minor departments may, with the consent of the department concerned and of the Dean, change his major department or major and minor departments, as the case may be, provided he complies with all the requirements in the case of the new major and minor departments.

The remaining units necessary to make a total of 124<sup>1</sup> may be freely elected from any department, or, subject to the limit of twenty units named above, from the other colleges of the University.

#### THE TEACHER'S HIGH-SCHOOL DIPLOMA

For the requirements for a Teacher's High-School Diploma, see School of Education and the Courses of Instruction.

#### PREMEDICAL COURSES

The requirements for admission to Class A medical colleges vary from a minimum of two years of standard college work

<sup>1</sup>For class entering in 1921, 123 hours for women and 130 hours for men, including Military Science and Physical Education, will be required.

to the possession of a Bachelor's degree. Students contemplating studying medicine should communicate early in their undergraduate course with the Dean of the particular medical college they may wish to enter in order to learn the exact entrance requirements at the time they expect to enter. Practically all medical colleges prescribe the same minimum of subject-matter which includes general zoology, vertebrate anatomy, embryology, general inorganic chemistry, qualitative analysis, organic chemistry, general physics, and a reading knowledge of French or German. Quantitative analysis is also required by some and advised by others. In general, the first two years in the University of Nevada should include the following courses: English 1-2, French 1-2 or German 1-2, French 3-4 or German 3-4 or 11-12, Zoology 1, Zoology 9, Zoology 64, Physics 1-2, Chemistry 5-7 and 6-4 and 51-52.

The University will confer the degree of Bachelor of Arts upon any student of high rank who, after completing three years of approved work in this University, shall enter a medical school rated Class A by the American Medical Association, and shall complete worthily one year's work in such medical school. In order to receive the degree in this way, the student must, at the end of his first year in the medical school, present a signed testimonial from the Dean of the medical school to the Dean of the College of Arts and Science, such testimonial to include a statement of courses taken, grades achieved, and a recommendation that the degree be granted.

For further advice relative to this work, the student is referred to Professor Frandsen, who is designated adviser of premedical students.

#### PRELEGAL COURSES

Students who purpose to study law should elect their college work in such a way as to comply with the requirements and recommendations of the better law schools. Such requirements or recommendations usually embrace: (1) fundamental courses in English; (2) the study of at least one foreign language, preferably Latin; (3) some work in mathematics or logic, or both; and (4) a considerable number of selected courses in the social sciences. The following recommended course is based on the requirements and recommendations of a few of the more accessible law schools of high standing, and it is believed that it will satisfy the requirements of law schools generally. Students will sometimes

find it advantageous to deviate from this course, and in such cases they should consult Professor Sidney W. Wilcox, who is designated as adviser of prelegal students.

#### Freshman Year:

1. English.
2. Mathematics.
3. History.
4. Foreign Language,  
Latin preferred.
5. Elective.

#### Sophomore Year:

1. English.
2. History (American).
3. Foreign Language  
(continuation).
4. Economics or Political Science.
5. Elective.

#### Junior Year:

1. History (Eng. Const.).
2. Economics, Business, and Sociology.
3. Political Science.
4. Elective.

Certain law schools admit students upon the completion of three years of college work. The University will confer the degree of Bachelor of Arts upon any student of high rank who, after completing three years of approved work in this University, shall enter a law school of approved standing and shall complete worthily one year's work in such law school. (A student of high rank is one who stands above the average of his class.) In order to receive the degree in this way the student must, at the end of his first year in the law school, present a signed testimonial from the Dean of the law school to the Dean of the College of Arts and Science, such testimonial to include a statement of courses taken, grades achieved, and a recommendation that the degree be granted.

#### THE MASTER'S DEGREE IN ARTS AND SCIENCE

For requirements for the Master's Degree, see page 100.

THE SCHOOL OF EDUCATION AND THE NEVADA STATE NORMAL SCHOOL

Faculty list including names like WALTER E. CLARK, JOHN W. HALL, and others, along with their respective titles and departments.

THE SCHOOL OF EDUCATION AND THE NEVADA STATE NORMAL SCHOOL

Faculty list including names like ALBERT BELL, HENRY CLARK, and others, along with their respective titles and departments.

Text describing the school's operations, including enrollment figures, financial reports, and administrative details.

Text describing the school's operations, including enrollment figures, financial reports, and administrative details.

Text describing the school's operations, including enrollment figures, financial reports, and administrative details.

THE NEVADA STATE NORMAL SCHOOL

Text describing the school's operations, including enrollment figures, financial reports, and administrative details.



## THE SCHOOL OF EDUCATION AND THE NEVADA STATE NORMAL SCHOOL

### FACULTY

- WALTER E. CLARK, Ph.D., LL.D., President of the University.  
 JOHN W. HALL, M.A., Dean of the School of Education; Professor of Education.  
 REUBEN CYRIL THOMPSON, M.A., Professor of Philosophy.  
 ALBERT ELLSWORTH HILL, A.B., Professor of English.  
 JAMES REED YOUNG, Ph.D., Professor of Psychology.  
 KATHERINE LEWERS, Associate Professor of Freehand Drawing and Art.  
 ELSIE SAMETH, B.S., Associate Professor of Physical Education for Women.  
 FRED W. TRAINER, A.M., Associate Professor of Education.  
 MARGARET ELIZABETH MACK, A.M., Associate Professor of Biology.  
 TONETTE BENSON, Instructor in Music.  
 M. JULIA DETRAZ, M.A., Instructor in Education.  
 SYLVIA CAMPIGLIA, B.S., State Supervisor of Vocational Education.  
 CLARENCE H. KENT, B.S., Instructor in Mechanical Engineering.  
 B. D. BILLINGHURST, A.B., LL.B., Lecturer in Education.  
 GEORGE W. BARR, B.S., State Supervisor Agricultural Education.

### COOPERATING

- High-School Teachers*, assisting in special methods and practice—  
 AGNES BELL, A.B., Teacher of French and Spanish.  
 BERNICE CROSBY, B.S., Teacher of Domestic Science.  
 VERONICA DICKEY, A.B., Teacher of English.  
 GEORGE L. HICKS, B.S., Teacher of General Science.  
 MRS. A. F. LOOMIS, A.B., Teacher of Spanish.  
 FREDERICK H. PALMER, A.B., Teacher of History.  
 ALWINE SIELAFF, A.B., Teacher of Mathematics.  
 HARRIETT WHITE, A.B., Teacher of English.

*Elementary-School Teachers*, assisting in special methods and practice—

- MAUD BISHOP, First Grade.  
 LORETTO ENGLER, Domestic Science.  
 GEORGIA MACNAIR, High Fifth Grade.  
 ELIZABETH MCCORMACK, Second Grade.  
 FLORENCE SHIRLEY, Fourth Grade.  
 ELIZABETH SMITH, Seventh Grade.  
 GEORGIANA STEINER, Second Grade.

*Appointment Committee for Teachers—*

- JOHN W. HALL, F. W. TRAINER, M. JULIA DETRAZ.

The Nevada State Normal School was established as an integral part of the University of Nevada by an Act of the Legislature approved February 7, 1887. The first session was in the academic year 1887-1888. In the fall of 1920 it took

up its work in the finely equipped new Education Building. The connection of the Normal School with the other departments of the University gives it certain advantages. Its students enjoy the same rights and privileges of those enrolled in any other school or college of the University. Their association with those students who are pursuing four-year courses gives them greater breadth of view and higher ideals. Its students and graduates, if they satisfy the requirements for admission to any other school or college of the University, may become candidates for the University degrees. Subject only to the provisions that they meet the specific requirements of the college which they enter, they are given full credit in any of the Colleges of the University for the work they have done in the Normal School.

### AIM

The aim of the Normal School is to give adequate preparation and training to those students of the University who wish to teach in the public schools of the State. To achieve this purpose, thoroughgoing courses in the theory and practice of teaching and in academic subjects are offered for those who are preparing to teach in the elementary schools. The School of Education will recommend no student or graduate for any teaching position who is seriously deficient in the subject-matter to be taught.

### ADMISSION REQUIREMENTS

For admission requirements, entrance subjects, and the number of units belonging to each, see pages 84-85.

### TEACHERS' ELEMENTARY DIPLOMAS

#### FIRST-GRADE CERTIFICATES

Students who satisfy the admission requirements and complete both years of the curriculum outlined following will be granted diplomas entitling them to first-grade elementary certificates from the State Board of Education. These give the holders the right to teach, without examination, for five years in any of the elementary schools of the State. On evidence of successful teaching for not less than forty-five months, the State Board of Education will grant the holders first-grade elementary certificates valid for life.

#### SECOND-GRADE CERTIFICATES

Students who, for financial or other reasons, cannot continue their studies for two years, may, upon satisfying the

requirements for admission, and completing one year of the two-year course, be granted diplomas entitling them to second-grade elementary certificates from the State Board of Education. These give the holders the right to teach, without examination, for three years in any of the elementary schools of the State. At the expiration of the time for which they are valid, these certificates cannot be renewed. If holders wish to continue teaching, they must either complete the requirements of the two-year course of study, or pass the state examination for a first-grade certificate.

## COURSE OF STUDY

	FIRST YEAR	First Semester	Second Semester
Education 20 (Principles of Teaching).....		3	3
Education 31 (The Teaching of Arithmetic).....		3	3
Education 34 (The Teaching of English).....		3	3
Education 37 (The Teaching of Geography).....		3	3
Education 23 (Problems in Rural Education).....		2	2
Education 25 (Observation of Teaching).....		1	1
Education 28 (Practice Teaching and Conferences).....		2	5
Biology 1-2 (Nature Study).....		2	2
Music 1-2.....		1	1
Art 1-2.....		1	1
Physical Education 1-2.....		1	1
Home Economics 9 (General Home Economics).....		3	3
Totals.....	17	17	16
SECOND YEAR			
Psychology 5 (General Psychology).....		3	3
Psychology 8 (Psychology of Childhood).....		2	2
Education 35 (The Teaching of English).....		3	3
Education 42 (The Teaching of History and Civics).....		3	3
Education 29 (Practice Teaching and Conferences).....		5	5
Education 24 (School Management, Law, and Hygiene).....		1	1
Music 5.....		2	2
Art 8.....		1	1
Physical Education 10.....		1	1
English 1-2 (Composition and Rhetoric).....		3	3
Philosophy 23 (Social Ethics).....		2	2
Hygiene.....		2	2
Education 41 (Kindergarten Methods).....		1	1
Education 48 (Educational Tests and Measurements).....		1	1
Totals.....	16	16	17

Graduates of the Nevada County Normal-Training Schools are admitted to the second year of the course, and can ordinarily complete their work in one year.

## SCHOOL OF EDUCATION

The School of Education is included as a division of the College of Arts and Science, but with its own Dean, and direct affiliations with the Colleges of Agriculture and Engineering in cooperative work in the training of teachers. It offers a liberal and professional course of study of four years

to prospective secondary-school teachers and to those students looking forward to supervisory and administrative positions in the schools of Nevada. At the end of this time successful candidates are granted a Bachelor's degree and a University teacher's diploma, the latter giving title to a teacher's first-grade high-school certificate. On evidence later of at least forty-five months of successful teaching, this certificate is exchangeable to the State Board of Education for a life diploma.

The degree of Bachelor of Arts is granted on the completion of prescribed and elective courses aggregating 123 semester units,<sup>1</sup> which should be distributed so as to prepare the student for efficient high-school teaching in at least two high-school subjects.

The University teacher's diploma is granted to graduates of the four-year course on the following conditions:

Candidates in the regular academic departments are required to take 18 hours of professional work, distributed as follows: Psychology 5 (3 hours), Psychology 10 (2 hours), Education 60 (3 hours), Education 61 (2 hours), Education 63 (1 hour), Education 71 (3 hours), Education 75 (2 hours), Education 76 (2 hours), and two additional credits to be arranged.

Candidates for the teacher's certificate in Agriculture, Home Economics or trades are required to take 14 to 15 hours of professional work to be approved by the Dean of the School of Education.

Arrangements have been made with the Reno public schools whereby prospective teachers in high school may have adequate teaching under normal conditions. Members of the high-school faculty and of the School of Education will cooperate in the supervision of this work.

All candidates for the teacher's diploma should confer with the Dean of the School of Education at the beginning of the Sophomore year, as it is highly desirable that they begin their professional studies at that time. Failure to do this will limit the opportunity for choice in advanced academic courses.

<sup>1</sup>For men this becomes 126 units for the class graduating in 1924 and 128 units for the class graduating in 1925 by reason of the added requirement of Physical Education for Men.

...the Board of Education...  
 ...the degree of Bachelor of Arts is granted on the completion of prescribed and elective courses amounting to 120 credit hours...  
 ...the University teacher's diploma is granted to graduates of the four-year course on the following conditions:

Candidates in the regular academic department are admitted to take 12 hours of professional work distributed as follows: Psychology 24 hours; Psychology 1912 (12 hours); Education 60 (3 hours); Education of 12 hours; Education (1 hour); Education 11 (3 hours); Education 15 (2 hours); and two additional credits to be arranged.

Arrangements have been made with the State Public Schools whereby prospective teachers in high school may obtain teaching experience under normal conditions. The high school faculty and of the School of Education cooperate in the supervision of this work.

All candidates for the teacher's diploma should complete the term of the School of Education in the regular course. The sophomore year, as it is highly desirable that they can their professional studies at that time. It is to be noted that the opportunity for choice in advanced and special courses.

The aim of the College of Engineering is to give students a broad knowledge of those subjects which form the basis of the Mining, Mechanical, Electrical, and Civil Engineering professions. The technical courses of study are arranged and directed with the purpose of preparing students not only for immediate usefulness but also for future professional growth. The work is in the form of both lectures and recitations, supplemented by exercises in the laboratory and shop.

## THE COLLEGE OF ENGINEERING

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

The aim of the College of Engineering is to give students a broad knowledge of those subjects which form the basis of the Mining, Mechanical, Electrical, and Civil Engineering professions. The technical courses of study are arranged and directed with the purpose of preparing students not only for immediate usefulness but also for future professional growth. The work is in the form of both lectures and recitations, supplemented by exercises in the laboratory and shop.

The aim of the College of Engineering is to give students a broad knowledge of those subjects which form the basis of the Mining, Mechanical, Electrical, and Civil Engineering professions. The technical courses of study are arranged and directed with the purpose of preparing students not only for immediate usefulness but also for future professional growth. The work is in the form of both lectures and recitations, supplemented by exercises in the laboratory and shop.

The aim of the College of Engineering is to give students a broad knowledge of those subjects which form the basis of the Mining, Mechanical, Electrical, and Civil Engineering professions. The technical courses of study are arranged and directed with the purpose of preparing students not only for immediate usefulness but also for future professional growth. The work is in the form of both lectures and recitations, supplemented by exercises in the laboratory and shop.

The aim of the College of Engineering is to give students a broad knowledge of those subjects which form the basis of the Mining, Mechanical, Electrical, and Civil Engineering professions. The technical courses of study are arranged and directed with the purpose of preparing students not only for immediate usefulness but also for future professional growth. The work is in the form of both lectures and recitations, supplemented by exercises in the laboratory and shop.

## THE COLLEGE OF ENGINEERING

## FACULTY

- WALTER E. CLARK, Ph.D., LL.D., President of the University.  
 FREDERICK H. SIBLEY, M.E., Dean of the College of Engineering  
 Professor of Mechanical Engineering.  
 FRANCIS CHURCH LINCOLN, Ph.D., Director, Mackay School of Mines  
 Professor of Mining.  
 MAXWELL ADAMS, Ph.D., Professor of Chemistry.  
 HERBERT WYNFORD HILL, Ph.D., Professor of English.  
 HORACE PRENTISS BOARDMAN, C.E., Professor of Civil Engineering.  
 LEON WILSON HARTMAN, Ph.D., Professor of Physics.  
 CHARLES HASEMAN, Ph.D., Professor of Mathematics and Mechanics  
 J CLAUDE JONES, A.B., Professor of Geology and Mineralogy.  
 WALTER S. PALMER, E.M., Professor of Metallurgy.  
 ALBERT ELLSWORTH HILL, A.B., Professor of English.  
 COLONEL JOHN PAUL RYAN, Professor of Military Science and Tactics  
 STANLEY G. PALMER, M.E., Professor of Electrical Engineering.  
 ARCHIBALD EDWARDS TURNER, A.B., Professor of Oral English.  
 KATHERINE LEWERS, Associate Professor of Freehand Drawing.  
 JAMES A. NYSWANDER, B.S., Associate Professor of Mathematics and  
 Mechanics.  
 GEORGE WALLACE SEARS, Ph.D., Associate Professor of Chemistry.  
 RAYMOND ORLANDO COURTRIGHT, B.A., Associate Professor of Physical  
 Education for Men.  
 FREDERICK L. BIXBY, C.E., Associate Professor of Civil Engineering  
 ALBERT WILLIAM PRESTON, Assistant Professor of Mechanical Engi-  
 neering.  
 GILBERT BRUCE BLAIR, A.M., Assistant Professor of Physics.  
 JOHN F. G. HICKS, Ph.D., Assistant Professor of Chemistry.  
 CLARENCE H. KENT, B.S., Instructor in Mechanical Engineering.  
 OSCAR L. CLOUGH, M.D., Instructor in Physical Education for Men.  
 HENRY HIGGINS, Instructor in Mineralogy.

## AIM

The aim of the College of Engineering is to give young men a knowledge of those subjects which form the basis of the Mining, Mechanical, Electrical, and Civil Engineering professions. The technical courses of study are arranged and directed with the purpose of preparing students not only for immediate usefulness but also for future professional growth. The work is in the form of both lectures and recitations, supplemented by exercises in the drafting-room, field, laboratory, and shop.

## EQUIPMENT

For a general description of the equipment of the College of Engineering, see Mackay School of Mines, Mechanical Building, Electrical Building, Chemistry Building, laboratories for geology and mineralogy, laboratories of the mining department, Mining and Geological Museum, and the chemical laboratories, in the earlier part of this catalogue.

## ADMISSION REQUIREMENTS

For admission requirements, entrance subjects, and the number of credits belonging to each, see page 84, et seq.

## \*REQUIREMENTS FOR A BACCALAUREATE DEGREE IN ENGINEERING

The Degree of Bachelor of Science in (a) Mining Engineering, (b) Mechanical Engineering, (c) Electrical Engineering, and (d) Civil Engineering is conferred upon students who have satisfactorily completed the full course in the Schools of (a) Mines, (b) Mechanical Engineering, (c) Electrical Engineering, and (d) Civil Engineering.

In all the schools the requirement of six units in Military Science, two units in Physical Education for Men, and two units in Freshman Hygiene, must be met in addition to all the course requirements as specified below.

## SCHOOL OF MINES

## COURSES OF STUDY

	LAB.	LEC.
<i>Freshman Year—First Semester</i>		
English 1.....Composition and Rhetoric.....	-	3
Chemistry 5.....General Inorganic Chemistry.....	1	3
Mathematics 11.....Advanced Algebra.....	-	2
Mathematics 12.....Plane Trigonometry.....	-	3
Mechanical Engineering 2.....Elementary Mechanical Drawing.....	2	-
Mining 1.....Introduction to Mining.....	-	1
Mineralogy 1.....Determinative Mineralogy.....	2	-
Hygiene 1.....Personal Hygiene.....	-	1
<i>Freshman Year—Second Semester</i>		
English 2.....Composition and Rhetoric.....	-	3
Chemistry 6.....General Inorganic Chemistry.....	2	2
Mathematics 13.....Analytic Geometry.....	-	3
Mechanical Engineering 6.....Descriptive Geometry.....	3	-
Mineralogy 2.....Blowpipe Analysis.....	2	-
Mineralogy 3.....Descriptive Mineralogy.....	-	2
Hygiene 2.....Personal Hygiene.....	-	1
	18	

\*For the requirements for the Degrees of Mining, Mechanical, Electrical, and Civil Engineering, see page 101.

		LAB. LEC.
<i>Summer Work</i>		
Mining 5.....	Practical Mining.....	Four Weeks
<i>Sophomore Year—First Semester</i>		
Chemistry 9.....	Quantitative Analysis.....	3
Mathematics 25.....	Differential Calculus.....	3
Physics 3.....	General Physics for Engineers.....	1
Physics 5.....	Physical Measurements.....	2
Geology 3.....	General Geology.....	1
18		
<i>Sophomore Year—Second Semester</i>		
Chemistry 10.....	Quantitative Analysis.....	3
Mathematics 26.....	Integral Calculus.....	3
Physics 4.....	General Physics for Engineers.....	1
Physics 6.....	Physical Measurements.....	2
Geology 4.....	Historical Geology.....	1
Economics 4.....	Introduction to Economics.....	1
18		
<i>Junior Year—First Semester</i>		
Mining 51.....	Excavation.....	1
Metallurgy 51.....	Fire Assaying.....	3
Geology 51.....	Petrology.....	1
Mathematics 55.....	Analytic Mechanics.....	1
Civil Engineering 51.....	Surveying.....	1
Civil Engineering 52.....	Surveying Laboratory.....	2
18		
<i>Junior Year—Second Semester</i>		
Mining 52.....	Mine Plant.....	1
Metallurgy 55.....	General Metallurgy.....	1
Geology 60.....	Economic Geology.....	1
Geology 52.....	Petrographic Laboratory.....	2
Mining 60.....	Junior Mining Trip.....	0
Civil Engineering 53.....	Surveying.....	1
Civil Engineering 54.....	Surveying Laboratory.....	2
Civil Engineering 71.....	Resistance of Materials.....	1
Civil Engineering 72.....	Testing Materials.....	1
18		
<i>Summer School</i>		
Civil Engineering 58.....	Mine Surveying.....	Four Weeks
Geology 71.....	Field Geology.....	Two Weeks
<i>Senior Year—First Semester</i>		
Mining 61.....	Mining Methods.....	3
Metallurgy 60.....	Metallurgy of Copper, Lead, Zinc.....	3
Metallurgy 65.....	Ore Dressing.....	2
Electrical Engineering 59.....	Principles and Practice of Electrical Eng.....	2
Electrical Engineering 60.....	Electrical Engineering Laboratory.....	1
Elective.....		5
18		
<i>Senior Year—Second Semester</i>		
Mining 65.....	Mine Rescue and First Aid.....	0
Mining 72.....	Economics of Mining.....	0
Mining 80.....	Senior Mining Trip.....	0
Metallurgy 70.....	Metallurgy of Gold and Silver.....	2
Mechanical Engineering 67.....	Steam and Gas Power.....	2
Mechanical Engineering 68.....	Mechanical Laboratory.....	1
Civil Engineering 90.....	Hydraulics.....	3
Elective.....		3
17		

## PROSPECTORS SHORT COURSE

A short course for prospectors was established in 1915. This course is designed to aid the prospectors of Nevada, but is open to residents of other States. For a description of the work and other information concerning the Prospectors Short Course, see "Short Courses."

## SCHOOL OF MECHANICAL ENGINEERING

		LAB. LEC.
<i>Freshman Year—First Semester</i>		
English 1.....	Composition and Rhetoric.....	3
Chemistry 5.....	General Inorganic Chemistry.....	1
Mathematics 11.....	Advanced Algebra.....	2
Mathematics 12.....	Plane Trigonometry.....	3
Mechanic Arts 1.....	Wood Shop.....	2
Mechanical Engineering 2.....	Elementary Mechanical Drawing.....	2
Mechanical Engineering 3 or 4.....	Freehand Drawing.....	1
Hygiene 1.....	Personal Hygiene.....	1
18		
<i>Freshman Year—Second Semester</i>		
English 2.....	Composition and Rhetoric.....	3
Chemistry 6.....	General Inorganic Chemistry.....	2
Mathematics 13.....	Analytic Geometry.....	3
Mechanic Arts 2.....	Forging.....	2
Mechanic Arts 6.....	Pattern Making.....	1
Mechanical Engineering 6.....	Descriptive Geometry.....	2
Hygiene 2.....	Personal Hygiene.....	1
Elective.....		1
18		
<i>Sophomore Year—First Semester</i>		
Mechanic Arts 3.....	Machine Shop.....	2
Physics 3.....	General Physics for Engineers.....	5
Physics 5.....	Physical Measurements.....	2
Mathematics 25.....	Differential Calculus.....	5
Mechanical Engineering 5.....	Kinematics.....	1
Mechanical Engineering 21.....	Technical Report.....	1
18		
<i>Sophomore Year—Second Semester</i>		
Mechanic Arts 3.....	Machine Shop.....	2
Physics 4.....	General Physics for Engineers.....	5
Physics 6.....	Physical Measurements.....	2
Mathematics 26.....	Integral Calculus.....	3
Mechanic Arts 4.....	Foundry.....	1
Metallurgy 55.....	General Metallurgy.....	3
Elective.....		2
18		
<i>Junior Year—First Semester</i>		
Electrical Engineering 51.....	Direct-Current Machinery.....	3
Electrical Engineering 61.....	Electrical Engineering Laboratory.....	1
Mechanical Engineering 54.....	Boilers and Engines.....	3
Mathematics 55.....	Analytic Mechanics.....	5
Civil Engineering 51 and 52.....	Elementary Surveying and Plotting.....	2
Elective.....		1
18		

<i>Junior Year—Second Semester</i>		LAB. LEC.
Electrical Engineering 52	Alternating-Current Machinery	2 3
Electrical Engineering 62	Electrical Engineering Laboratory	1 1
Mechanical Engineering 53	Machine Design	3 3
Civil Engineering 74	Strength of Materials	5 5
Civil Engineering 72	Testing Materials	1 1
Civil Engineering 90	Hydraulics	3 3
Mechanical Engineering 64	Mechanical Laboratory	1 1

<i>Senior Year—First Semester</i>		LAB. LEC.
Mechanical Engineering 55	Thermodynamics	3 3
Mechanical Engineering 58	Mechanics of Heat Engines	3 3
Mechanical Engineering 65	Mechanical Laboratory	3 3
Civil Engineering 75	Theory of Structures	2 2
Mechanical Engineering 75	Power Plant Engineering	1 2
Elective		4 4

<i>Senior Year—Second Semester</i>		LAB. LEC.
Mechanical Engineering 56	Thermodynamics	3 3
Mechanical Engineering 66	Mechanical Laboratory	3 3
Psychology 5	General Psychology	3 3
Civil Engineering 78	Structural Design	2 2
Economics 4	Introduction to Economics	2 2
Elective		5 5

### SCHOOL OF ELECTRICAL ENGINEERING

<i>Freshman Year—First Semester</i>		LAB. LEC.
English 1	Composition and Rhetoric	3 3
Chemistry 5	General Inorganic Chemistry	1 3
Mathematics 11 and 12	Advanced Algebra and Plane Trigonometry	5 5
Mechanic Arts 1	Wood Work	2 2
Mechanic Arts 2	Forging	1 1
Mechanical Engineering 2	Elementary Mechanical Drawing	2 2
Hygiene 1	Personal Hygiene	1 1

<i>Freshman Year—Second Semester</i>		LAB. LEC.
English 2	Composition and Rhetoric	3 3
Chemistry 6	General Inorganic Chemistry	2 2
Mathematics 13	Analytic Geometry	3 3
Mechanic Arts 4	Foundry Practice	1 1
Mechanical Engineering 6	Descriptive Geometry	3 3
Hygiene 2	Personal Hygiene	1 1
Mechanical Engineering 3	Freehand Drawing	1 1
Elective		2 2

<i>Sophomore Year—First Semester</i>		LAB. LEC.
Mechanic Arts 3	Machine Work	2 2
Physics 3 and 5	General Physics and Physical Measurements	2 5
Mathematics 25	Differential Calculus	5 5
Mechanical Engineering 5	Kinematics	3 3
Elective		1 1

<i>Sophomore Year—Second Semester</i>		LAB. LEC.
Mechanic Arts 3	Machine Work	2 2
Physics 4 and 6	General Physics and Physical Measurements	2 5
Mathematics 26	Integral Calculus	3 3
Metallurgy 55	General Metallurgy	3 3
Economics 4	Introduction to Economics	2 2
Elective		1 1

<i>Junior Year—First Semester</i>		LAB. LEC.
Electrical Engineering 51	Direct-Current Machinery	3 3
Electrical Engineering 61	Electrical Engineering Laboratory	1 1
Mechanical Engineering 54	Engines and Boilers	3 3
Mathematics 55	Analytic Mechanics	5 5
Civil Engineering 51 and 52	Elementary Surveying and Plotting	2 2
Elective		1 1

<i>Junior Year—Second Semester</i>		LAB. LEC.
Electrical Engineering 52	Alternating-Current Machinery	3 3
Electrical Engineering 62	Electrical Engineering Laboratory	1 1
Mechanical Engineering 53	Machine Design	2 1
Mechanical Engineering 64	Mechanical Engineering Laboratory	1 1
Civil Engineering 90	Hydraulics	3 3
Civil Engineering 74	Strength of Materials	5 5
Elective		1 1

<i>Senior Year—First Semester</i>		LAB. LEC.
Mechanical Engineering 55	Thermodynamics	3 3
Mechanical Engineering 65	Mechanical Engineering Laboratory	2 2
Electrical Engineering 53	Advanced Alternating Currents	3 3
Electrical Engineering 55	Electrical Problems	2 2
Electrical Engineering 63	Electrical Engineering Laboratory	2 1
Physics 57	Electrical Measurements	2 2
Elective		3 3

<i>Senior Year—Second Semester</i>		LAB. LEC.
Mechanical Engineering 56	Thermodynamics	3 3
Mechanical Engineering 66	Mechanical Engineering Laboratory	2 2
Electrical Engineering 56	Electrical Problems	1 1
Electrical Engineering 58	Electrical Design	2 1
Electrical Engineering 64	Electrical Engineering Laboratory	2 1
Civil Engineering 72	Testing Materials Laboratory	1 1
Elective		5 5

### SCHOOL OF CIVIL ENGINEERING

<i>Freshman Year—First Semester</i>		LAB. LEC.
English 1	Composition and Rhetoric	3 3
Chemistry 5	General Inorganic Chemistry	1 3
Mathematics 11	Advanced Algebra	2 2
Mathematics 12	Plane Trigonometry	3 3
Mechanical Engineering 2	Elementary Mechanical Drawing	2 2
Mechanical Engineering 3	Freehand Drawing	1 1
Hygiene 1	Personal Hygiene	1 1
Elective		2 2

<i>Freshman Year—Second Semester</i>		LAB. LE
English 2.....	Composition and Rhetoric.....	1
Chemistry 6.....	General Inorganic Chemistry.....	2
Mathematics 13.....	Analytic Geometry.....	1
Civil Engineering 8.....	Elements of Civil Engineering.....	1
Mechanical Engineering 4.....	Mechanical Drawing.....	1
Mechanical Engineering 6.....	Descriptive Geometry.....	1
Hygiene 2.....	Personal Hygiene.....	1
Elective.....	.....	1
		18
<i>Sophomore Year—First Semester</i>		
Mathematics 25.....	Differential Calculus.....	1
Physics 1.....	General Physics.....	1
Mineralogy 1.....	Determinative Mineralogy.....	2
Geology 3.....	General Geology.....	2
Civil Engineering 51 and 52.....	Elementary Surveying.....	2
		18
<i>Sophomore Year—Second Semester</i>		
Mathematics 26.....	Integral Calculus.....	1
Physics 2.....	General Physics.....	1
Geology 4.....	Historical Geology.....	1
Civil Engineering 20.....	Technical Report.....	1
Civil Engineering 53 and 54.....	Advanced Surveying.....	2
Mechanical Engineering 67, 68 Mech. Lab. and Steam and Gas Power.....	.....	2
		18
<i>Junior Year—First Semester</i>		
Civil Engineering 55.....	Foundations and Substructures.....	1
Civil Engineering 63 and 64.....	Railroad Engineering.....	2
Civil Engineering 69.....	Graphic Statics.....	1
Civil Engineering 75.....	Theory of Structures.....	2
Mathematics 55.....	Analytic Mechanics.....	2
Elective.....	.....	2
		18
<i>Junior Year—Second Semester</i>		
Civil Engineering 72.....	Testing of Materials.....	1
Civil Engineering 74.....	Mechanics of Materials.....	5
Civil Engineering 90.....	Hydraulics.....	3
Civil Engineering 76.....	Theory of Structures.....	2
Metallurgy 55.....	General Metallurgy.....	2
Economics 4.....	Introduction to Economics.....	2
Elective.....	.....	2
		18
<i>Senior Year—First Semester</i>		
Civil Engineering 67.....	Engineering Economics.....	2
Civil Engineering 77.....	Structural Design.....	3
Civil Engineering 85.....	Reinforced Concrete.....	2
Electrical Engineering 59, 60.....	Principles and Practice of Electrical Eng.....	1
Civil Engineering 94.....	Irrigation Engineering.....	1
Elective.....	.....	3
		18
<i>Senior Year—Second Semester</i>		
Civil Engineering 78.....	Structural Design.....	3
Civil Engineering 92.....	Sewerage.....	3
Civil Engineering 93.....	Public Water Supply.....	2
Civil Engineering 86.....	Reinforced Concrete.....	2
Civil Engineering 99.....	Engineering Problems.....	2
or	.....	2
Civil Engineering 100.....	Thesis.....	2
Psychology 5.....	General Psychology.....	3
Elective.....	.....	3
		18

## THE COLLEGE OF AGRICULTURE

1. THE SCHOOL OF AGRICULTURE
2. THE SCHOOL OF HOME ECONOMICS
3. SHORT COURSES

## THE COLLEGE OF AGRICULTURE

## FACULTY

- WALTER E. CLARK, Ph.D., LL.D., President of the University.  
 ROBERT STEWART, Ph.D., Dean of the College of Agriculture; Professor of Agronomy.  
 PETER FRANDSEN, A.M., Professor of Biology.  
 MAXWELL ADAMS, Ph.D., Professor of Chemistry.  
 HERBERT WYNFORD HILL, Ph.D., Professor of English.  
 HORACE PRENTISS BOARDMAN, C.E., Professor of Civil Engineering.  
 LEON WILSON HARTMAN, Ph.D., Professor of Physics.  
 CHARLES HASEMAN, Ph.D., Professor of Mathematics and Mechanics.  
 FREDERICK WESTON WILSON, M.S., Professor of Animal Husbandry.  
 ALBERT ELLSWORTH HILL, A.B., Professor of English.  
 Colonel JOHN PAUL RYAN, Professor of Military Science and Tactics.  
 STANLEY GUSTAVUS PALMER, M.E., Professor of Electrical Engineering.  
 VERNER E. SCOTT, B.S., Professor of Dairying.  
 SARAH L. LEWIS, B.S., Professor of Home Economics.  
 ARCHIBALD EDWARDS TURNER, B.A., Professor of Oral English.  
 KATHERINE LEWERS, Associate Professor of Freehand Drawing.  
 ELSIE SAMETH, B.S., Associate Professor of Physical Education for Women.  
 JAMES ANDREW NYSWANDER, B.S., Associate Professor of Mathematics and Mechanics.  
 GEORGE WALLACE SEARS, Ph.D., Associate Professor of Chemistry.  
 RAYMOND ORLANDO COURTRIGHT, B.A., Associate Professor of Physical Education for Men.  
 STEPHEN LOCKETT, V.M.D., Associate Professor of Veterinary Science.  
 SIDNEY WARREN WILCOX, B.L., Associate Professor of Economics and Sociology.  
 MARGARET ELIZABETH MACK, A.M., Associate Professor of Biology.  
 FREDERICK L. BIXBY, C.E., Associate Professor of Civil Engineering.  
 PHILIP A. LEHENBAUER, Ph.D., Associate Professor of Biology.  
 ALBERT WILLIAM PRESTON, Assistant Professor of Mechanical Engineering.  
 GEORGE HARDMAN, M.S., Assistant Professor of Agronomy.  
 GILBERT BRUCE BLAIR, A.M., Assistant Professor of Physics.  
 JESSIE P. POPE, B.S., Assistant Professor of Home Economics.  
 JOHN F. G. HICKS, Ph.D., Assistant Professor of Chemistry.  
 CHARLES LEROY BROWN, M.A., Instructor in Biology.

- CATHARINE FRANCES SOMERS, B.A., Instructor in Physical Education for Women.  
 CLARENCE H. KENT, B.S., Instructor in Mechanical Engineering.  
 SYLVIA CAMPIGLIA, B.S., Instructor of Teacher Training in Home Economics.  
 GEORGE W. BARR, M.S., Instructor in Agricultural Education.  
 LOUISE KERR HAMMOND, B.S., Instructor in Home Economics.  
 RUTH ANNA BILLINGHURST, B.A., Instructor in Chemistry.  
 OSCAR L. CLOUGH, M.D., Instructor in Physical Education for Men.

## AIM

The aim of the School of Agriculture is to give such training in farming, gardening, and stock-raising, and in the sciences and other related subjects as will furnish a well-rounded education.

## EQUIPMENT

AGRICULTURAL BUILDING—For description of Agricultural Building, see p. 33.

UNIVERSITY FARM—The University Farm, comprising 213 acres formerly owned by the D. C. Wheeler Company, Incorporated, is located three miles south of Reno along the Virginia road. The college herds contain representative types of the following breeds: Percheron and Shire horses; Angus, Hereford and Shorthorn cattle; Cheviot, Corriedale, Cotswold, Dorset, Hampshire, Rambouillet, Southdown, and Shropshire sheep; Berkshire, Chester White, Duroc Jersey, Large Yorkshire, Poland China, and Tamworth swine.

The farm is maintained and operated as a livestock farm. Practically all feedstuffs used for the herds and flocks are grown on this farm. The farm is especially well equipped with high-class individuals of the different breeds of Nevada live stock.

EXPERIMENT STATION FARM—The College Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, affords a first-hand acquaintance with the problems and methods of practical agriculture and horticulture.

DAIRY—The two-story dairy building, equipped with up-to-date machinery and apparatus, furnishes the best opportunity for instruction in methods of handling milk and dairy products, as milk testing, butter-making, cheese manufacture, and the marketing of milk. The dairy herd of the Agricultural College gives opportunity for the study of dairy stock and milk production.



SHOPS—The shops for teaching of wood-work and blacksmithing are equipped for the best of work. Arrangements have been made for the housing and use of the representative types of farm machinery used in the various field operations.

#### ADMISSION REQUIREMENTS

For admission requirements, entrance subjects, and the number of credits belonging to each, see page 87.

#### REQUIREMENTS FOR A BACCALAUREATE DEGREE IN AGRICULTURE

The Degree of Bachelor of Science in Agriculture is conferred upon students who have satisfactorily completed the full course of study aggregating 150 semester units<sup>1</sup> in the School of Agriculture, as follows:

#### COLLEGE OF AGRICULTURE

##### COURSES OF STUDY

<i>Freshman Year—First Semester</i>		LAB.	LEC.
English 1.....	Composition and Rhetoric.....	..	3
Botany 1.....	Morphology and Physiology of Flowering Plants.....	2	2
*Chemistry 5.....	General Chemistry.....	1	3
Mechanic Arts 1.....	Wood Work.....	1	..
Animal Husbandry 1.....	Breeds of Live Stock.....	..	3
Hygiene 1.....	.....	..	1
Elective.....	.....	2	..
		18	
<i>Freshman Year—Second Semester</i>			
English 2.....	Composition and Rhetoric.....	..	3
Zoology 2.....	General Zoology.....	2	2
Dairying 1.....	Dairying.....	1	2
Chemistry 6.....	General Chemistry and Qualitative Analysis.....	2	2
Mechanic Arts 2.....	Forging.....	1	..
Hygiene 2.....	.....	..	1
Elective.....	.....	2	..
		18	
<i>Sophomore Year—First Semester</i>			
Chemistry 23.....	Agricultural Quantitative Analysis.....	3	1
Animal Husbandry 4.....	Livestock Judging.....	2	2
Physics 1.....	General Physics.....	1	3
Agronomy 6.....	Soil Management.....	1	3
Elective.....	.....	2	..
		18	

<sup>1</sup>Including four units in Military Science or Physical Education in the Freshman and Sophomore years. This total of required units rises to 151 for the class graduating in 1924, and for classes thereafter to 152, by reason of the added 2 units of required work in Physical Education for men beginning with the Freshman class in 1920-1921, and the addition of 2 credits to the Sophomore military requirement beginning with the Sophomore class of the year 1921-1922.

\*High-school chemistry or its equivalent is required of all agricultural students.

<i>Sophomore Year—Second Semester</i>		LAB.	LEC.
Agronomy 4.....	Forage Crops.....	1	3
Animal Husbandry 30.....	Livestock Feeding.....	..	3
Horticulture 2.....	Elements of Horticulture.....	1	2
Physics 2.....	General Physics.....	1	3
Chemistry 22.....	Agricultural Organic Chemistry.....	2	2
		18	

#### AGRONOMY—HORTICULTURE MAJOR

<i>Junior Year—First Semester</i>			
Civil Engineering 51.....	Elementary Surveying.....	..	2
Civil Engineering 52.....	Elementary Surveying and Plotting.....	2	..
Hygiene 53.....	Rural Hygiene.....	..	3
Zoology 53.....	Economic Zoology.....	1	2
Economics 1.....	Principles of Economics.....	..	3
Elective.....	.....	5	..
		18	

<i>Junior Year—Second Semester</i>			
Agronomy 58.....	Irrigation and Drainage.....	2	3
Agronomy 62.....	Soil Fertility.....	2	2
Agronomy 71.....	Farm Mechanics.....	2	1
Economics 2.....	Principles of Economics.....	..	3
Elective.....	.....	3	..
		18	

<i>Senior Year—First Semester</i>			
Botany 61.....	Plant Breeding.....	..	3
Agronomy 53.....	Field Crops.....	2	2
Elective.....	.....	11	..
		18	

<i>Senior Year—Second Semester</i>			
Botany 56.....	Plant Physiology.....	2	2
Botany 64.....	Plant Pathology.....	1	2
Agronomy 57.....	Farm Management.....	1	3
Agronomy 72.....	Farm Structures.....	2	..
Elective.....	.....	5	..
		18	

#### ANIMAL HUSBANDRY—DAIRYING MAJOR

<i>Junior Year—First Semester</i>			
Civil Engineering 51.....	Elementary Surveying.....	..	2
Civil Engineering 52.....	Elementary Surveying.....	2	..
Hygiene 53.....	Rural Hygiene.....	..	3
Zoology 51.....	Anatomy of Domestic Animals.....	1	2
Economics 1.....	Principles of Economics.....	..	3
Bacteriology 51.....	General Bacteriology.....	2	2
Elective.....	.....	1	..
		18	

<i>Junior Year—Second Semester</i>			
Agronomy 58.....	Irrigation and Drainage.....	2	3
Animal Husbandry 51.....	Genetics.....	..	3
Agronomy 71.....	Farm Mechanics.....	3	..
Economics 2.....	Principles of Economics.....	..	3
Elective.....	.....	4	..
		18	

<i>Senior Year—First Semester</i>		LAB. LEC.
Animal Husbandry 56.....	Advanced Livestock Judging.....	2 1
Animal Husbandry 55.....	Advanced Livestock Feeding.....	2 1
Veterinary Science 54.....	Veterinary Science.....	2 3
Dairying 53.....	Milk Production.....	3 ..
Elective.....		4 ..

<i>Senior Year—Second Semester</i>		
Agronomy 72.....	Farm Structures.....	2 ..
Agronomy 57.....	Farm Management.....	1 3
Animal Husbandry 57.....	Livestock Management.....	1 3
Elective.....		9 ..

## SCHOOL OF HOME ECONOMICS

## REQUIREMENTS FOR A BACCALAUREATE DEGREE IN HOME ECONOMICS

The degree of Bachelor of Science in Home Economics is conferred upon students who have satisfactorily completed the full course of study aggregating 137 semester units (including 3 units in Physical Education and 2 units in Hygiene in the Freshman and Sophomore years) in the School of Home Economics as given on the following pages.

## AIM

The aim of the School of Home Economics is to raise the ideals of home-making, to prepare young women for the successful management of a home, and to impart to them scientific and technical knowledge, coupled with sufficient practice to fit them to become, either thoughtful home-makers, teachers of home economics, or workers in any field where this knowledge is needed.

Experience in actual home-making, either as a daughter working in the family or as a manager of a house, is a great aid to the successful work of the Home Economics course, and students are urged to get some such vocational experience.

## EQUIPMENT

The Department of Home Economics has six large rooms and two offices in the Agricultural Building. For detailed description, see Agricultural Building and Laboratories.

The library of the Home Economics Department, covering dietetics, household sciences, house decoration, and textiles, is kept in the main University library building. Special fashion magazines are on a reference table in the sewing laboratory.

## SCHOOL OF HOME ECONOMICS

## COURSES OF STUDY

<i>Freshman Year—First Semester</i>		LAB. LEC.
English 1.....	Composition and Rhetoric.....	3 ..
Art 5.....	Principles of Art.....	2 ..
Physical Education 1.....	Freshman Practice.....	1 ..
Home Economics 15.....	Elementary Clothing.....	2 1
History or Modern Language.....		3 ..
Hygiene 1.....		1 ..
Botany 1.....	Morphology and Physiology of Flowering Plants.....	2 2

*Freshman Year—Second Semester*

English 2.....	Composition and Rhetoric.....	3 ..
Art 6.....	Art Applied to the Home.....	2 ..
Physical Education 2.....	Freshman Practice.....	1 ..
Home Economics 18.....	Elementary Clothing.....	2 ..
History or Modern Language.....		3 ..
Hygiene 2.....		1 ..
Home Economics 16.....	Textiles.....	2 ..
Elective.....		3 ..

*Sophomore Year—First Semester*

English 11.....	Public Speaking.....	2 ..
Chemistry 5.....	General Inorganic Chemistry.....	1 3
Physical Education 3.....	Sophomore Practice.....	3 ..
Home Economics 31.....	Elementary Cookery.....	2 1
Physics 19.....	Household Physics.....	1 2
Elective.....		5 ..

*Sophomore Year—Second Semester*

English 12.....	Public Speaking.....	2 ..
Chemistry 22.....	Agricultural Organic Chemistry.....	2 2
Physical Education 4.....	Sophomore Practice.....	3 ..
Home Economics 32.....	Elementary Cookery.....	2 1
Physics 20.....	Household Physics.....	1 2
Elective.....		5 ..

*Junior Year—First Semester*

Chemistry 25.....	Household Chemistry.....	2 ..
Hygiene 7.....	Anatomy, Physiology and Hygiene.....	1 2
Economics 1.....	Principles of Economics.....	3 ..
Home Economics 65.....	Advanced Clothing.....	2 ..
Elective.....		7 ..

*Junior Year—Second Semester*

Hygiene 8.....	Anatomy, Physiology and Hygiene.....	1 2
Economics 2.....	Principles of Economics.....	3 ..
Home Economics 66.....	Advanced Clothing.....	2 ..
Home Economics 56.....	Elementary Dietetics.....	2 1
Elective.....		6 ..

Senior Year—First Semester		LAB. LEC.
Home Economics 81.....	Dietetics .....	2
Home Economics 83.....	Dietetics .....	3
Home Economics 87.....	House Decoration.....	1 2
Elective.....	.....	9

Senior Year—Second Semester		
Home Economics 86.....	Household Administration.....	3
Home Economics 88.....	Care of the House.....	1 1
Home Economics 76.....	Child Care.....	2
Elective.....	.....	10

RECOMMENDED ELECTIVES

Group I—Related Subjects:

French 1-2, Zoology 1, History 53, Foreign Language, English 44-45, Latin 61 (Greek and Roman Art), and Latin 62 (Renaissance and Modern Art).

Group II—Home Economics Electives:

Home Economics, 45, 49-50, 51, 52, 85, 95; Education 65.

Attention is called to the fact that students majoring in Home Economics are allowed sufficient electives to take a second major or minor in some other department.

REQUIREMENTS FOR A HIGH-SCHOOL TEACHER'S CERTIFICATE  
IN HOME ECONOMICS

In addition to the Home Economics course of study, the following courses are required for the high-school teacher's certificate:

Psychology 5.....	General Psychology.....	3 credits
Education 60.....	Problems in Secondary Education.....	3 credits
Education 71.....	Principles of Teaching.....	3 credits
Education 63.....	School Management, Law, and Hygiene.....	1 credit
Education 75-76.....	Practice Teaching.....	4 credits
Total.....	.....	14 credits

SHORT COURSES

For description of Short Course in Dairying and Home-Makers' Short Course, see "Short Courses."

It is strongly recommended that students in Home Economics shall present one year of French toward graduation.

COURSES OF INSTRUCTION

THE FOLLOWING TABLE GIVES THE COURSES IN WHICH INSTRUCTION IS OFFERED BY THE UNIVERSITY. THE DEPARTMENTS ARE LISTED IN ALPHABETIC ORDER AS IN THE TABLE BELOW. IF AN INSTRUCTION GIVEN BY A DEPARTMENT IS LISTED FOR A PARTICULAR SUBJECT, THE NAME OF THE DEPARTMENT IS INDICATED BY THE NAME OF THE DEPARTMENT IN THE FIRST COLUMN OF THE TABLE. IF A PARTICULAR COURSE IS LISTED IN A DEPARTMENT OTHER THAN THE DEPARTMENT OF HOME ECONOMICS, THE NAME OF THE DEPARTMENT IS INDICATED BY THE NAME OF THE DEPARTMENT IN THE FIRST COLUMN OF THE TABLE. IF A COURSE IS LISTED IN A DEPARTMENT OTHER THAN THE DEPARTMENT OF HOME ECONOMICS, THE NAME OF THE DEPARTMENT IS INDICATED BY THE NAME OF THE DEPARTMENT IN THE FIRST COLUMN OF THE TABLE. IF A COURSE IS LISTED IN A DEPARTMENT OTHER THAN THE DEPARTMENT OF HOME ECONOMICS, THE NAME OF THE DEPARTMENT IS INDICATED BY THE NAME OF THE DEPARTMENT IN THE FIRST COLUMN OF THE TABLE.

DEPARTMENT	COURSE	CREDITS
AGRICULTURE	...	...
ARTS AND SCIENCES	...	...
BUSINESS ADMINISTRATION	...	...
EDUCATION	...	...
ENGINEERING	...	...
HOME ECONOMICS	...	...
LAW	...	...
LIBERAL ARTS	...	...
MECHANICAL ENGINEERING	...	...
MINING ENGINEERING	...	...
PHYSICS	...	...
PSYCHOLOGY	...	...
THEOLOGY	...	...

## COURSES OF INSTRUCTION

On the following pages, listed under the Departments to which they belong, are given all the courses in which instruction is offered by the University. The Departments are arranged in alphabetical order, as in the table below. If all the instruction given by a department is intended for a particular College, this fact is indicated by the name of the College below the name of the Department. If certain courses offered by a Department are intended for a particular College, this fact is indicated by the name of the College following the number of the course. In all cases where no limitations of this character are found, it may be assumed that, so far as the curricula and regulations of the several colleges permit election, the instruction offered is open to all qualified students of the University.

The numbers prefixed to the courses ordinarily denote the classes of students for whom the work is intended, courses numbered from 1 to 50 being designated primarily for Freshmen and Sophomores, 51 to 100 for Juniors and Seniors, and 101 to 200 for graduate students.

## DEPARTMENTS

Agronomy	Geology
Animal Husbandry	History and Political Science
Art	Home Economics
Biology	Mathematics
Bacteriology	Mechanic Arts
Botany	Mechanical Engineering
Horticulture	Metallurgy
Hygiene	Military Science and Tactics
Nature Study	Mineralogy
Zoology	Mining
Business (See Economics, Business, and Sociology)	Modern Languages
Chemistry	French
Civil Engineering	German
Classics	Italian
Greek	Portuguese
Latin	Spanish
Dairy and Poultry Husbandry	Philosophy
Drawing (See Mechanical Engineering)	Physical Education
Economics, Business, and Sociology	Men
Education	Women
Vocational Education	Physics
Agriculture	Political Science (See History and Political Science)
Home Economics	Psychology
Trades and Industry	Sociology (See Economics, Business, and Sociology)
Music	Veterinary Science
Electrical Engineering	
English Language and Literature	

## AGRONOMY

College of Agriculture

PROFESSOR STEWART

ASSISTANT PROFESSOR HARDMAN

1. ELEMENTARY AGRICULTURE. Introduction to Agronomy and Horticulture. 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 kinds of crops and their culture. *First semester. Three credits.* 105 Agricultural Building. Professor Stewart.

4. FORAGE CROPS. Legumes and grasses, the special use of these crops as hay, soiling, silage, pasture, green manure, cover crops, etc.; the care and management of pastures; plans for the rotation of soiling-crops; adaptation of grasses and other crops for growing under different climatic and soil conditions. Laboratory—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. *Second semester. Lectures, three hours; laboratory, one period. Four credits.* 9 Agricultural Building. Professor Stewart. Fee, \$2.

6. SOIL MANAGEMENT. A general lecture and laboratory course in geology of soils, origin, formation, physical composition, soil moisture, moisture movements and conservation, physical processes, surface tension, osmosis, capillarity, aeration and temperature. Influence of washing, drainage, and irrigation. Laboratory—comparison of the physical properties of different soil types as—specific gravity, water retention, capillarity, organic matter, alkalies, etc. Effect of mulches; soil sampling; mechanical analysis. *Prerequisite: Agronomy 1. First semester. Lectures, two hours; laboratory, two periods. Four credits.* 8 Agricultural Building. Professor Stewart. Fee, \$3; deposit, \$3.

53. FIELD CROPS. The principal cereal crops—corn, wheat, oats, barley, rye, rice, sorghum, etc. Laboratory—the study of the matured plant of the different varieties of grain; the judging of grain and hay according to the commercial standards of perfection for pure-bred varieties. *Knight: Judging and Commercial Grading of Small Grains and Hay. First semester. Lectures, three hours; laboratory, one period. Four credits.* 9 Agricultural Building. Professor Stewart. Fee, \$2.

57. FARM MANAGEMENT. The evolution of farming; the relation of capital and labor to farm management; the general management of implements and equipment; ownership versus rental of land; the choice of a farm; systems of farming; farming compared with other lines of business; marketing problems; advertising; farm records and farm accounts; the management of fields, crops, and manures. *Warren: Farm Management. Second semester. Lectures, three hours; laboratory, two periods. Four credits.* 110 Agricultural Building. Professor Stewart. Fee, \$3.

58. IRRIGATION AND DRAINAGE. A study of the principles of irrigation as follows: Sources of water supply; measurement of water; water requirements of crops; duty of water; losses in use of irrigation water; preparation of land and methods of irrigation; farm ditches and structures; drainage of farm lands and reclamation of alkali lands. *Second semester. Lectures, three hours; laboratory, two periods. Five credits.* 110 Agricultural Building, Assistant Professor Hardman.

62. SOIL FERTILITY. Composition and value of fertilizers, barn-yard and green manures; maintenance and improvement of fertility; effect of various crops and different systems of farming on the fertility of the soil. Studies of crop rotation and fertility. Study of the productivity, best uses of Nevada soils and their improvement. Effect of irrigation upon the fertility of the soil. The laboratory work consists of investigations of the effect of irrigation on soil texture, moisture, fertility, etc., and effect of irrigation on alkali. *Prerequisite: Agronomy 6. Second semester. Lectures, three hours; laboratory, one period. Four credits.* 3 Agricultural Building. Professor Stewart. Fee, \$3; deposit, \$3.

71. GENERAL FARM MECHANICS. A fully equipped laboratory in the basement of the Agricultural Building offers facilities for a full course of instruction and practice in the machinery and equipment of the farm, including concrete mixing and forms for concrete: construction and use of modern field machinery for tillage, seeding and harvesting; general labor-saving machinery for the farm; farm pumps, windmills, pressure systems and gasoline engines. (Machinery for study and demonstration purposes is loaned by the leading implement houses of Nevada.) *Second semester. Junior year. Lecture, one hour; laboratory, two periods. Three credits.* 8 Agricultural Building. Assistant Professor Hardman. Fee, \$1; deposit, \$2.

72. FARM STRUCTURES. A course in the methods of construction and designs of ordinary farm buildings, including houses, barns, sheds, granaries, silos, etc. Various small farm implements and appliances as road-drags, levelers, irrigation boxes and forms for concrete work will be designed and built. Field trips will be taken to observe buildings under construction; sketches and complete cost estimates will be made of these buildings. Principles of rural sanitation including heating, lighting, water supply, and sewerage disposal. *Second semester. Laboratory, two periods. Two credits.* 9 Agricultural Building. Assistant Professor Hardman. Fee, \$1.

73. FARM MOTORS AND TRACTORS. The advanced study of farm motors, water, gasoline, and electric engines; gasoline and steam tractors; demonstrations and practice work are given in the operation of the various types of motors. *Second semester. Lecture, one hour; laboratory, two periods. Three credits.* 8 Agricultural Building. Assistant Professor Hardman. Fee, \$2; deposit, \$2.

74. HISTORY OF IRRIGATION. Review of the history of irrigation; a study of irrigation institutions, economics, water rights, and irrigation organizations; development of irrigation law and the doctrine of appropriation; riparian rights. *Second semester. Three credits.* 105 Agricultural Building.

#### ANIMAL HUSBANDRY

College of Agriculture

PROFESSOR WILSON

1. BREEDS OF LIVE STOCK. The origin, development, characteristics, and uses of types and breeds of farm animals. For illustration, the animals owned by the department and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various types and breeds. *Plumb: Types and Breeds of Farm Animals. First semester. Three credits.* 105 Agricultural Building. Professor Wilson.

4. LIVESTOCK JUDGING. Practice in judging live stock to gain familiarity with the points of excellence in the various breeds of farm animals. *Plumb: Judging Farm Animals. Prerequisite: Animal Husbandry 1. First semester. Lectures, two hours; laboratory, two periods. Four credits.* 105 Agricultural Building, and University Farm. Professor Wilson. Fee, \$3.

30. LIVESTOCK FEEDING. The principles underlying and

problems connected with the feeding of farm animals. *Henry: Feeds and Feeding. Savage: Manual. Prerequisite: Animal Husbandry 1 and 4, Chemistry 5, 6. Second semester. Three credits.* 105 Agricultural Building. Professor Wilson.

51. GENETICS. A discussion of the principles underlying the science of breeding, the aim of which is to develop, maintain, and improve the various types and breeds of farm animals and farm crops, studied with special reference to their application to breeding of farm animals. *Mumford: The Breeding of Animals. Prerequisite: Zoology 1 and 51. Second semester. Three credits.* 105 Agricultural Building. Professor Wilson.

54. LIVESTOCK REGISTRATION. The details of registering pure-bred animals, requiring the use of blanks for making application for registry; the use of herd books. A study of the history of the recognized registry associations and the rules governing them; a study of the value of pedigrees and how to keep the herd records. *Prerequisite: Animal Husbandry 1 and 4. First semester. One credit.* 105 Agricultural Building. Professor Wilson.

55. ADVANCED LIVESTOCK FEEDING. The work in this course is largely laboratory, consisting of actual feeding experiments with farm animals. The laboratory is given for at least sixty days, seven days a week. *Prerequisite: Animal Husbandry 1, 4, 30. First semester. Lecture, one hour; laboratory, two periods. Three credits.* 105 Agricultural Building, and University Farm. Professor Wilson.

56. ADVANCED STOCK JUDGING. Comparative scoring and judging. The judging of animals in classes, as at fairs and stock shows. *Prerequisite: Animal Husbandry 4. First semester. Three credits.* 105 Agricultural Building, and University Farm. Professor Wilson. Fee, \$3.

57. LIVESTOCK MANAGEMENT. A study of the problems confronting the livestock farmer; calculating profits under various conditions; systematic keeping of records of farming operations; selection of animals for the feed yard, show ring, market, and butcher. *Prerequisite: Animal Husbandry 1, 4, 51, 54, 55. Second semester. Three credits.* 105 Agricultural Building. Professor Wilson.

#### ART

ASSOCIATE PROFESSOR LEWERS

Requirements for a minor in Art: Art 1-2 (4 units), 3-4 (4 units), 51-52 (3 units), and 53-54 (3 units).

Requirements for a major in Art: Art 1-2 (4 units), 3-4 (4 units), 51-52 (6 units), and 53-54 (6 units).

Requirements for a special art teacher's certificate: Art 1-2 (4 units); Art 3-4 (3 units), Art 7-8 (4 units), Art 51-52 (6 units), Art 53-54 (7 units); Mechanical Engineering 2 (1 unit), Mechanical Engineering 3 (2 units); Mechanic Arts 5 (4 units), Art 5-6 (4 units).

1-2. ELEMENTARY ART. The fundamental principles of form, color, and light and shade. Application of principles in drawing and painting in all mediums, pencil, charcoal, oil color, water color, and pastel. Drawing and painting from nature in landscape and still life. Fundamental principles of design. Applied design in manual arts. *Both semesters. One credit required each semester.* More credits may be elected. Education Building. Associate Professor Lewers.

3-4. INTERMEDIATE ART. A continuation of the work of Art 1-2, with addition of clay modeling, drawing, and painting from life. *Both semesters. Credits to be arranged.* Education Building. Associate Professor Lewers.

5-6. ART APPLIED TO THE HOME. (School of Home Economics). The fundamental principles of form, color, and light and shade. Color and form studied from nature in landscape and still life. Color and line harmony as applied to dress, millinery, and house furnishing. Fundamental principles of design. Original designing and its application in all ways relating to the home. *Two credits required each semester.* Education Building. Associate Professor Lewers.

7-8. TEACHERS' COURSE. A continuation of the first year's course (Art 1-2) in all branches and its application to each grade in public-school work. *Second semester. One credit.* Education Building. Associate Professor Lewers.

51-52. ADVANCED ART. The continuation of Art 3-4 in more advanced work. *Both semesters.* Education Building. Associate Professor Lewers.

53-54. ADVANCED ART. Continuation of Art 51-52 in more advanced work. *Both semesters. Credits to be arranged.* Education Building. Associate Professor Lewers.

For the history of Art, see Latin 61 and 62.

#### BIOLOGY

PROFESSOR FRANDSEN  
ASSOCIATE PROFESSOR LEHENBAUER  
ASSOCIATE PROFESSOR MACK  
MR. BROWN

The Department of Biology includes the following divisions: Bacteriology, Botany, Horticulture, Hygiene, Nature Study, and Zoology.

*Bacteriology*

51. GENERAL BACTERIOLOGY. A course of lectures and laboratory exercises on the morphology and life processes of the bacteria, with some references to allied organisms. The relationship of microorganisms to soil fertility, dairy products, water purity, sewerage, and the production of disease will be considered. *Prerequisite*: Zoology 2, Botany 2, or Hygiene 7-8. *First semester. Lectures, two hours; laboratory, two periods. Four credits.* 212 Agricultural Building. Professor Frandsen. Fee, \$2; deposit, \$2.

*Botany*

Requirements for a minor in Botany: Botany 1 and 2, Zoology 2, and six hours of Junior-Senior work.

Requirements for a major in Botany: Botany 1 and 2, Zoology 2, and twelve hours of Junior-Senior work.

Requirements for a teacher's recommendation in Botany: A major or a minor in the Department.

Students intending to pursue graduate or advanced professional courses in Botany are advised to take Mathematics 5 and 12, Chemistry 5, 6, 7, 4, 51-52, Physics 1-2 (if they have not presented Physics for admission), German 1-2 and 19-20, and French 1-2.

1. MORPHOLOGY AND PHYSIOLOGY OF THE FLOWERING PLANTS. A study of the fundamental principles of botany. The structure, physiological activities, and adaptations of the higher plants. The importance of plants in nature and their usefulness to man. *Second semester. Lectures, two hours; laboratory, two hours. Four credits.* 110 and 210 Agricultural Building. Associate Professor Lehenbauer. Fee, \$1; deposit, \$2.

2. MORPHOLOGY AND PHYSIOLOGY OF THE NONFLOWERING PLANTS. A study of the morphology and physiology of algae, bacteria, fungi, mosses, ferns, and gymnosperms. The economic importance of the forms, especially bacteria and fungi. The evolution of the plant kingdom. *First semester. Lectures, two hours; laboratory, two periods. Four credits.* 209 Agricultural Building. Associate Professor Lehenbauer. Fee, \$1; deposit, \$2.

53. TAXONOMY. A systematic and comparative study of the principal families of flowering plants with special reference to their field recognition characters. The laboratory and field work will give an acquaintance with the common plants of our local flora. *Prerequisite*: Botany 1. *Lecture, one hour; laboratory, two periods. Three credits.* 209 Agricultural Building. Associate Professor Lehenbauer. Fee, \$1; deposit, \$2.

56. PLANT PHYSIOLOGY. A more advanced study of plant nutrition, growth, and response to environment. Emphasis upon the physiological processes of plants which are fundamental to agricultural and horticultural practice. *Prerequisite*: Botany 4 and Elementary Chemistry and Physics. *Second semester. Lecture, two hours; laboratory, two periods. Four credits.* 209 Agricultural Building. Associate Professor Lehenbauer. Fee, \$2; deposit, \$2.

61. PLANT BREEDING (College of Agriculture). A study of variations in plants, methods of selection and improving by the breeding of crops, fruits, and vegetables. Reports of results obtained by various investigators. *Prerequisite*: Botany 1. *First semester. Lectures, three hours. Three credits.* 209 Agricultural Building. Associate Professor Lehenbauer.

64. PLANT PATHOLOGY (College of Agriculture). A study of the important diseases of economic plants of Nevada, their causes, identification, and control. *Prerequisite*: Botany 1. *Second semester. Lectures, two hours; laboratory, one period. Three credits.* 209 Agricultural Building. Associate Professor Lehenbauer. Fee, \$2; deposit, \$2.

70. HISTOLOGY AND TECHNIQUE. The preparation of microscopic slides and a comparative study of the structure and development of plant tissues. *Prerequisite*: Botany 3 or Botany 2. *Second semester. Credits to be arranged.* 209 Agricultural Building. Associate Professor Lehenbauer. Fee, \$2; deposit, \$2.

91. ADVANCED BOTANY. Special problems in some field of botany, physiology, pathology, histology, or taxonomy. Laboratory, assigned readings and reports. *Prerequisite*: Two or three years of Botany. *First semester. Credits to be arranged.* 209 Agricultural Building. Associate Professor Lehenbauer. Fee, \$1 per laboratory credit; deposit, \$1 per laboratory credit.

92-93. A continuation of Botany 91.

*Horticulture*

2. ELEMENTS OF HORTICULTURE (College of Agriculture). A general survey of the principles of fruit growing and vegetable gardening, with special reference to the farm home. Text-book work, assigned readings and practical exercises. *Prerequisite*: Botany 1. *Second semester. Lectures, two hours; laboratory, one period. Three credits.* 4 Agricul-

tural Building. Associate Professor Lehenbauer. Fee, \$2; deposit, \$2.

11. PLANT PROPAGATION (College of Agriculture). The planting, care, and culture requirements of ornamental and garden plants. *First semester. Lecture, one hour; laboratory, one period. Two credits.* 4 Agricultural Building. Associate Professor Lehenbauer. Fee, \$1; deposit, \$1.

51. ADVANCED HORTICULTURE. Special problems in the growing of fruits or vegetables, with assigned readings and reports. *Prerequisite: Botany 1 and Horticulture 2. First semester. Lectures, two hours. Two credits.* 4 Agricultural Building. Associate Professor Lehenbauer.

### Hygiene

Requirements for a minor in Hygiene: Hygiene 1-2, 7-8, Zoology 9, and Bacteriology 52.

1-2. GENERAL AND PERSONAL HYGIENE. Two lectures per week throughout the year. Required of all Freshmen. *One credit.* Professors Frandsen, Mack, and others.

3. TEACHERS' HYGIENE. This course consists of lectures, assigned readings, and demonstrations covering the elementary principles of human anatomy and physiology, and paying particular attention to the hygienic applications. The problems of sex hygiene, including the control, the suppression and the prevention of venereal diseases, are discussed both in their individual and in their public bearings. Special attention is placed upon that phase of the subject pertaining to school life, as ventilation, cleanliness, etc. *First semester. Three lectures. Three credits.* 210 Agricultural Building. Associate Professor Mack.

7-8. HUMAN ANATOMY, PHYSIOLOGY AND HYGIENE. The general principles of human anatomy and physiology, with emphasis upon their hygienic applications. The laboratory work consists of the dissection of some vertebrate, microscopic work on tissues and organs, physiological experiments and demonstrations, study of microorganisms, etc. *Both semesters. Lectures, two hours; laboratory, one period. Total, three credits each semester. Six credits for the year.* Total course only accepted toward graduation. 110 and 210 Agricultural Building. Professor Frandsen, Mr. Brown. Fee, \$1.50; deposit, \$2.

53. RURAL HYGIENE (College of Agriculture). A course designed primarily for students in the College of Agriculture.

Sufficient attention is given animal anatomy and physiology to make the laws of hygiene understood. Emphasis is placed upon matters pertaining particularly to country life, such as sanitation of farm buildings, disposal of garbage and sewage, water for human and animal use, house-flies and other disease carriers. *Prerequisite: Zoology 2, Botany 1. First semester. Lectures, three hours; laboratory, one period. Four credits.* 110 and 210 Agricultural Building. Professor Frandsen. Fee, \$1.50; deposit, \$2.

### Nature Study

1-2. GENERAL NATURE STUDY. The object of this course is two-fold: (1) To cultivate a better understanding and appreciation of natural phenomena with emphasis on the biological features; and (2) to prepare for the teaching of nature study in the public schools. It comprises the study of life-histories, pond life, native birds, etc., and includes the making and care of aquaria, terraria, school garden, etc. *Both semesters. Two credits each semester.* 110 and 210 Agricultural Building. Associate Professor Mack. Fee, \$1; deposit, \$2.

### Zoology

Requirements for a minor in Zoology: Zoology 2 and 8 or 9, and six units of Junior-Senior work.

Requirements for a major in Zoology: Zoology 2, 9 (or Hygiene 7-8), Botany 1 or 2, and twelve units of Junior-Senior work.

Requirement for a teachers' recommendation in Zoology: A major or a minor in the department.

Additional courses advised: Physics 1-2 (or admission credit). Chemistry 1, 3, 6, 4 (or 5, 6, 7, 4), 51-52, and German 1-2 and 3-4. Desirable also is a reading knowledge of French and two years of preparatory Latin, or one year of college Latin.

2. GENERAL ZOOLOGY. An introductory course dealing with the general principles of the science. The laboratory work consists of the study of the structure, activities, and habits of a number of types representative of the principal animal groups, and chosen as much as possible from local forms. *Second semester. Lectures, two hours; laboratory, two periods. Four credits.* 110 and 210 Agricultural Building. Professor Frandsen and Mr. Brown. Fee, \$2; deposit, \$2.

8. EVOLUTION. Lectures illustrated by lantern slides on the evidence and factors of organic evolution, with a discussion of the bearing of evolutionary principles upon science and life in general. *Second semester. Two credits.* 110 Agricultural Building. Professor Frandsen.



9. COMPARATIVE ANATOMY OF VERTEBRATES. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates, leading up to human anatomy. Laboratory dissection of the dog-fish, salamander, and a mammal. *Prerequisite:* Zoology 2, or Hygiene 7-8. *First semester. Lectures, three hours; laboratory, two periods. Four credits.* 5 Agricultural Building. Professor Frandsen. Fee, \$2; deposit, \$2.

51. ANATOMY OF DOMESTIC ANIMALS (College of Agriculture). Lectures, the same as course 9, text-book and reference assignments. Laboratory study of skeletons of domestic animals, and the dissection of a cat, dog, or sheep. *Prerequisite:* Zoology 2, or Hygiene 7-8 or 53. *First semester. Lectures, three hours; laboratory, one period. Four credits.* 5 Agricultural Building. Mr. Brown. Fee, \$2; deposit, \$2.

53. ECONOMIC ZOOLOGY (College of Agriculture). Lectures dealing with the habits and life-histories of the more important economic vertebrates, insects, worms, etc., in their relations to agriculture. *First semester. Lectures, two hours; laboratory, one period. Three credits.* 110 and 210 Agricultural Building. Mr. Brown. Fee, \$1; deposit, \$2.

63-64. EMBRYOLOGY. Lectures on comparative embryology of vertebrates. The laboratory work consists of the study of preparations of the frog, chick, pig, and human embryos at various stages of development. Some training in the preparation of embryological material will be given. *Prerequisite:* Zoology 2 and 9, or Hygiene 7-8. *Second semester. Lectures, three hours; laboratory, two periods. Four credits.* 212 Agricultural Building. Professor Frandsen. (Alternates with Zoology 65 and 66.) Fee, \$1; deposit, \$2.

65. HISTOLOGY. The microscope and accessory apparatus, histological methods, and technique. Comparative cytology of animal tissues. *Prerequisite:* Zoology 1 and 9, or Hygiene 7-8. *Second semester. Lectures, three hours; laboratory, two periods. Four credits.* 212 Agricultural Building. Professor Frandsen. (Alternates with Zoology 64.) Fee, \$1; deposit, \$2.

66. HISTOLOGY. Same course as 65. *Second semester.*

91. ADVANCED ZOOLOGY. Special zoological problems. Major students may select some problem for investigation under the direction of the instructor. Library reading, laboratory work, and reports, with final results embodied in the form of a

thesis. *First semester. Credits to be arranged.* 212 Agricultural Building. Professor Frandsen. Fee, \$1; deposit, \$2.

92. ADVANCED ZOOLOGY. Continuation of course 91.

### CHEMISTRY

PROFESSOR ADAMS  
ASSOCIATE PROFESSOR SEARS  
ASSISTANT PROFESSOR HICKS  
MISS BILLINGHURST

Requirements for a minor in Chemistry: Either (for students without admission credit) courses 1, 5, 6, or (for students with one admission credit) courses 5, 6, and, in either case, course 9 and three additional units of Junior-Senior work.

Requirements for a major in Chemistry: Mathematics 5 and 7; Physics 1-2 (or admission credit), and either (for students without admission credit in Chemistry) courses 1, 5, 6, or (for students with one admission credit) courses 5, 6, and, in either case, courses 9, 10, and 51-52, and four additional units of Junior-Senior work.

Requirements for a teacher's recommendation in Chemistry: A major or a minor in the Department.

For the benefit of students majoring in Chemistry with the idea of either entering the commercial field or continuing their study towards a higher degree the following course of study is recommended. It will be noticed that the Junior and Senior years are left quite free for electives. This is done to enable the student to decide at the end of the Sophomore year which particular field of chemistry, viz: engineering, analytical, organic, inorganic, or agricultural, he desires to stress. He should consult with the head of the department regarding these electives:

*Freshman Year*—Chemistry 5, 6; English, Modern Language, Social Science; Mathematics 11-12.

*Sophomore Year*—Chemistry 9-10; English, Modern Language, Social Science; Physics 1-2; Mathematics 13; Mechanical Engineering 2; Mineralogy 2.

*Junior Year*—Chemistry 51-52, 61-62; Mathematics 25-26.

*Senior Year*—Chemistry 63, 81-82, 84.

1. ELEMENTARY CHEMISTRY. Lectures, recitations, and laboratory work on the elementary theories and principles of chemistry. Designed for students who have not presented matriculation chemistry. The work will be taken up from the view-point of the practical application of chemistry in modern life, and for the student who does not pursue the subject further it will give a view of the general field of chemistry. *First semester. Two lectures; two laboratory periods. Four credits.* Assistant Professor Hicks. Fee, \$4; deposit, \$5.

5. GENERAL INORGANIC CHEMISTRY. A course in general

chemistry covering the nonmetals. Open to students who have presented matriculation chemistry or who have completed Chemistry 1. *Either semester. Four credits.* 210 Chemistry Building. Professors Adams, Sears, and Hicks. Fee, \$2; deposit, \$5.

6. GENERAL INORGANIC CHEMISTRY AND QUALITATIVE ANALYSIS. A lecture and laboratory course designed to give the student a general knowledge of the occurrence, preparation, and properties of the metallic elements, including the systematic qualitative analysis of the more common metals and acids. The subject-matter will be taken up from the standpoint of the periodic law and the theories of qualitative analysis. *Prerequisite:* Chemistry 5. *One lecture; two quizzes, two laboratory periods each week. Either semester. Four credits.* Room 106, Chemistry Building. Professors Sears and Hicks. Fee, \$4; deposit, \$5.

9. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in gravimetric analysis. *One lecture and three laboratory periods each week. Prerequisite:* Chemistry 4 and 6. *First semester. Three credits.* 203 Chemistry Building. Professor Adams. Fee, \$6; deposit, \$5.

10. QUANTITATIVE ANALYSIS. Attention will be given primarily to volumetric analysis, but special determinations in analytical chemistry will be assigned to meet the demands of the individual students and the department in which the degree is sought. *One lecture and three laboratory periods each week. Prerequisite:* Chemistry 9. *Second semester. Three credits.* 203 Chemistry Building. Professor Adams. Fee, \$6; deposit, \$5.

22. AGRICULTURAL ORGANIC CHEMISTRY (College of Agriculture). Elementary lectures on the simple compounds of carbon accompanied by laboratory work two afternoons each week. This course is designed especially for students in the College of Agriculture and the School of Home Economics. (Not open to students in the College of Arts and Science.) *Prerequisite:* Chemistry 5 and 6. *Second semester. Four credits.* 201 and 101 Chemistry Building. Professor Hicks and Miss Billinghamurst. Laboratory fee, \$4; deposit, \$5.

23. AGRICULTURAL QUANTITATIVE ANALYSIS (College of Agriculture). A laboratory course intended for students in the College of Agriculture, designed to give the student familiarity with quantitative methods and some experience

in the analysis of farm and dairy products, soil, fertilizers, and stock foods. *Prerequisite:* Chemistry 5 and 6. *One lecture and three laboratory periods each week. First semester. Four credits.* 203 Chemistry Building. Professor Adams and..... Fee, \$6; deposit, \$5.

26. HOUSEHOLD CHEMISTRY (College of Agriculture). A lecture course with classroom experiments, to demonstrate the application of the principles of chemistry to problems of domestic science. *Prerequisite:* Chemistry 21. *Second semester. Two credits.* Professor Adams.

41. INDUSTRIAL INORGANIC CHEMISTRY. Lecture, discussion, and laboratory demonstration of the more important inorganic industrial processes, including testing and analyses of raw materials and finished products, and computation of costs. *Prerequisite:* Chemistry 9, 10. *First semester. Three credits. One lecture, two laboratory periods.* Given in alternate years. Offered 1922-1923. Assistant Professor Hicks. Fee, \$4; deposit, \$5.

51-52. ORGANIC CHEMISTRY. A lecture and laboratory course dealing with the compounds of carbon. Given in alternate years. *Prerequisite:* Chemistry 5 and 6. *Both semesters. Two lectures; two laboratory periods. Four credits each semester.* 210 and 101 Chemistry Building. Professor Adams and Miss Billinghamurst. Fee, \$4; deposit, \$5.

54. ADVANCED ORGANIC CHEMISTRY. A lecture course on special chapters in organic chemistry. Given in alternate years. *Prerequisite:* Chemistry 51-52. *First semester. Two credits.* 210 Chemistry Building. Professor Adams. (Not given in 1922-1923.)

61. ADVANCED INORGANIC CHEMISTRY AND QUALITATIVE ANALYSIS. A lecture and laboratory course designed to give a more intimate knowledge of the less common elements. Special emphasis will be given to a comparative study of properties and analytical relations, including the methods employed for their separation and detection. *One lecture and two laboratory periods. Prerequisite:* Chemistry 9 and 10. *First semester. Three credits.* 102 Chemistry Building. Associate Professor Sears. Fee, \$4; deposit, \$5.

62. CHEMISTRY OF THE RARER METALS. A lecture and laboratory course designed to give the student a rather intimate knowledge of the properties, analytical relations, and chemistry of some of the rarer metals. *Prerequisite:* Chemistry 9.

*Second semester. Two credits.* 206 Chemistry Building. Associate Professor Sears. Fee, \$2; deposit, \$5.

63-64. ADVANCED QUANTITATIVE ANALYSIS. A laboratory course designed to give the student practice in careful quantitative work. The analysis of silicates and the ultimate analysis of carbon compounds will be included in this course. Work in various lines of technical analysis arranged to suit the needs of the individual student will also be included in this course. *Prerequisite:* Chemistry 10. *Both semesters. Credits to be arranged.* 204 Chemistry Building. Professors Adams and Sears. Fee, \$2 per credit-hour, according to the work done; deposit, \$5.

81-82. PHYSICAL CHEMISTRY. A lecture course correlating facts and theories concerning chemical reactions, solutions, vapor tension, osmotic pressure, viscosity, polarimetry, electrical conductivity, thermo-chemistry, chemical dynamics, equilibrium, and related phenomena. Open to Juniors and Seniors who have completed two years of Chemistry and Mathematics 11. A knowledge of integral calculus is desirable. Given in alternate years. *Both semesters. Two credits each semester.* 210 Chemistry Building. Associate Professor Sears. (Not given in 1922-1923.)

84. PHYSICAL CHEMISTRY. A laboratory course to accompany Chemistry 82. *Second semester. Two credits.* Given in alternate years. 204 Chemistry Building. Associate Professor Sears. Fee, \$4; deposit, \$5. (Not given in 1922-1923.)

91. HISTORY OF CHEMISTRY. A lecture course on the history and development of the science of chemistry. *Prerequisite:* Two years of college chemistry. Given in alternate years. *First semester. Two credits.* Professor Adams. (Given in 1922-1923.)

94. THE CHEMISTRY OF THE HIGHER ORDER COMPOUNDS. Discussion of the reactions which take place between molecules, and the resulting compounds from the standpoint of Werner's theory of secondary or residual valence. Parallel cases with organic compounds and reactions introduced and discussed. Inorganic and organic chemistry from the common standpoint of the electron theory. *Prerequisite:* Chemistry 51-52; a knowledge of advanced inorganic chemistry is desirable. Open to seniors and graduate students only. *Second semester. Three credits.* Given in alternate years. Offered in 1922-1923. Assistant Professor Hicks.

100. THESIS COURSE FOR UNDERGRADUATES. Laboratory

and library work on a special topic to be chosen by the student in consultation with the instructors. *Prerequisite:* Chemistry 10, 51-52 or 81-82 and German, and recommended by the head of the department. *Second semester. Two credits.* 204 Chemistry Building. Professors Adams, Sears, and Hicks. Fee, \$4; deposit, \$5.

200. THESIS COURSE FOR GRADUATE STUDENTS. Special problems for research chosen in consultation with some member of the department and carried on under his direction. No student will be admitted to this course who has not completed four years of work in chemistry and graduated from an approved college. *Both semesters. Credits to be arranged.* 203 and 204 Chemistry Building. Professors Adams, Sears, and Hicks. Fee, \$2 per credit-hour, according to work; deposit, \$5.

#### CIVIL ENGINEERING

College of Engineering

PROFESSOR BOARDMAN

ASSOCIATE PROFESSOR BIXBY

2. MAP DRAWING. The work in this course consists of plotting engineering and topographic maps from field-survey notes. *Either semester. Laboratory, one period. One credit.* Electrical Building. Associate Professor Bixby.

8. THE ELEMENTS OF CIVIL ENGINEERING. An outline of the general field included in civil engineering, followed by a brief discussion of a few of the fundamental principles involved in the following: Engineering computations, excavation and other volumes, elementary surveying, transportation engineering, structural engineering and hydraulics. The solution of many problems is required and numerous applications are pointed out of mathematics and the other fundamental sciences which form the basis of engineering. *Second semester. Two credits.* Electrical Building. Professor Boardman.

11-12. ENGINEERING LITERATURE. The presentation and discussion of topics selected from current engineering literature. *Both semesters. One credit each semester.* Electrical Building. Professor Boardman.

20. TECHNICAL REPORT. A systematic write-up of some approved technical subject. *Prerequisite:* English 1-2. *Second semester. One credit.* Electrical Building. Associate Professor Bixby.

51-52. ELEMENTARY SURVEYING. Lectures, recitations, problems and field work and drafting illustrating ordinary surveying methods and the use of common surveying instruments. *Prerequisite:* Mathematics 12. *First semester. Lectures, two credits; laboratory, two credits.* Electrical Building. Professor Boardman and Associate Professor Bixby. Fee, \$3; deposit, \$5.

53-54. ADVANCED SURVEYING. Lectures and problems on observations for meridian, time, and latitude, topographic, hydrographic, city and mine surveying, with special emphasis on computations. Field work on solar and polaris observations, adjustments of instruments, topographic surveying and plotting of map of a portion of the University grounds. *Prerequisite:* Civil Engineering 51 and 52. *Second semester. Lectures, two credits; laboratory, two credits.* Electrical Building. Professor Boardman and Associate Professor Bixby. Fee, \$3; deposit, \$5.

55. FOUNDATIONS AND SUBSTRUCTURES. A study of the temporary and permanent features of such construction. A considerable portion of this course deals with Portland cement concrete, its design, manufacture, and uses in substructures. The laboratory work includes the preparation of working plans of a specified structure, usually a concrete culvert. *First semester. Lectures, two credits; laboratory, one credit; total, three credits.* Electrical Building. Professor Boardman.

58 Sm. MINE SURVEYING. At the close of the college year, the Junior class in surveying will take a four-weeks trip to some mining district in Nevada, unless another location is approved by the Regents. Both underground and surface surveying are carried on, and maps are made from these surveys. All the ordinary surveying operations that a mining engineer may be called upon to perform are practiced. *Prerequisite:* C. E. 51, 52, 53, and 54, or equivalent advanced credit. Professor Boardman and Associate Professor Bixby. Fee, \$5; deposit, \$5.

60. HIGHWAY ENGINEERING. A detailed study is made of the location, construction, and maintenance of highways. *Either semester. Four credits.* Electrical Building. Associate Professor Bixby. Fee, \$3; deposit, \$5.

63-64. RAILROAD ENGINEERING. Lectures, recitations, and field work on the location and construction of railroads. Also a study of locomotive tractive power and train resis-

tances and their effects on the economic location and operation of railroads. *Prerequisite:* Civil Engineering 51-52. *First semester. Lectures, three credits; laboratory, two credits.* Electrical Building. Associate Professor Bixby.

67. ENGINEERING ECONOMICS. Economic selection, sinking funds, salvage value, depreciation, estimating, etc. Illustrated by engineering problems. *First semester. Lectures, two credits.* Electrical Building. Professor Boardman.

69. GRAPHIC STATICS. A course which covers the principles of graphic statics, and their applications to the analysis of stresses in statically determined structures for various conditions of loadings. *First semester. One hour. One credit.* Electrical Building. Associate Professor Bixby.

71. RESISTANCE OF MATERIALS. A general study of the elasticity of materials, relation between stress and strain, working stresses, common theories of riveted joints, flexure, torsion, and column action. *Prerequisite:* Mathematics 26. *First semester. Lectures, two hours. Two credits.* Electrical Building. Mr. Kent.

72. TESTING MATERIALS LABORATORY. The experiments are as follows: Tension tests on steel, wrought and cast iron; compression tests on wood, building stone, brick, cast iron, wrought iron, and steel; effects on the strength of mortar by varying the proportions of sand, water, and cement; tests on standard cement briquettes; cross-bending tests on wooden and steel beams; cross-breaking tests on standard cast-iron test bars; tests of small iron, steel, and wood columns. A carefully prepared report clearly stated is required of each test. *Second semester. Laboratory, one period. One credit.* Electrical Building. Mr. Kent. Fee, \$2.50.

74. MECHANICS OF MATERIALS. A study of the behavior of materials under stress and a discussion of stress and strain due to bending, buckling, and torsion. The applications of the cardinal principles of mechanics to riveted joints, pipes, cylinders, beams, columns, and shafts. The principle of work and area moments applied to finding deflections and moments of continuous beams. An extended discussion covering the general relations between stress and strain, with applications to combined stress, composite beams, resilience, hooks, and fatigue of metals. *Prerequisite:* Mathematics 55. *Second semester. Lectures, five hours. Five credits.* Electrical Building. Mr. Kent.

75-76. **STRUCTURAL ANALYSIS.** A study of the determination of stresses in roof and bridge trusses and girders, and of the economic problems involved in the selection of the type of structure, materials to be used, length and number of bridge spans. *Prerequisite:* Mathematics 26. *Both semesters. Lectures, two credits each semester.* Electrical Building. Professor Boardman.

77-78. **STRUCTURAL DESIGN.** Applications of courses 75-76 and the principles and standard practice methods of design to the designs of several common types of steel structures. Complete working drawings are made of at least two structures, one of them being a railroad plate girder bridge. *Prerequisite:* Civil Engineering 75-76. *Laboratory, three credits first semester; two credits second semester.* Electrical Building. Professor Boardman.

85-86. **REINFORCED CONCRETE.** The theory and practice of reinforced concrete design and construction. In the laboratory part of the course applications are made to the design of several types of structures, including a retaining wall and an arch bridge. *Prerequisite:* Mathematics 55 and Civil Engineering 74. *First semester, lectures, two credits; laboratory, two credits. Second semester, lectures, one credit; laboratory, two credits.* Electrical Building. Associate Professor Bixby.

90. **HYDRAULICS.** A study of the principles of hydraulics and hydrostatics, the pressure and buoyancy of water, and the laws of its flow through openings and in channels of various kinds. Especial emphasis is laid on the solution of numerous practical problems by the student. *Prerequisite:* Mathematics 25 and 26, Physics 1 and 2 or Physics 3 and 4. *Second semester. Lectures, three hours. Three credits.* Electrical Building. Professor Boardman. Fee, \$1.

92. **SEWERAGE.** Studies are made of the various sewerage, drainage, and sewage-disposal systems of towns and cities. *Second semester. Lectures, three hours. Three credits.* Electrical Building. Associate Professor Bixby.

93. **PUBLIC WATER SUPPLIES.** A study is made of the sources, collection, purification, and distribution of municipal water supplies from the engineering and sanitary points of view. *Second semester. Lectures, two hours. Two credits.* Electrical Building. Associate Professor Bixby.

94. **IRRIGATION ENGINEERING.** A study is made of the collection, storage, and distribution of water for irrigation, with

special reference to the structures involved. *First semester. Lectures, two hours; laboratory, one period. Three credits.* Electrical Building. Associate Professor Bixby.

96. **WATER-POWER ENGINEERING.** A study is made of the more important problems of water-power development, including the characteristics of hydraulic motors affecting selection and installation. A study is also made of the costs and the feasibility of water-power projects. *Prerequisite:* C. E. 90. *Second semester. Lectures, three hours. Three credits.* Electrical Building. Professor Boardman.

99. **ENGINEERING PROBLEMS.** This course consists of the working of assigned problems, the solution of which requires the application of various phases of engineering practice. A complete report of the work done on each problem, including all necessary drawings, costs, estimates, and conclusions, must be furnished to the department. This course is intended as an optional substitute for a thesis. *Second semester. Two credits.* Electrical Building. Professor Boardman.

100. **THESIS.** Thesis on an approved subject in which the student is especially interested. *Second semester. Two credits.* Professor Boardman.

#### THE CLASSICS

PROFESSOR CHURCH  
PROFESSOR THOMPSON

Requirements for a minor in Greek: Greek 1-2, 3-4, and six units in courses 51 to 68.

Requirements for a major in Greek: Greek 1-2, 3-4, and twelve units in courses 51 to 68.

Students intending to take a major or a minor in Greek are advised to elect course 5, if they have not a thorough grasp of the elements of Greek, and a course in the history of Greece.

Requirements for a minor in Latin: With no admission credits in Latin—Latin 1-2, 3-4, and six units; with two admission credits—Latin 3-4, and six units.

Requirements for a major in Latin: With no admission credits—Latin 1-2, 3-4, 7-8, and ten units; with two admission credits, 3-4, 7-8, and ten units.

Entrance credits in Latin above two, especially if they include Vergil's *Aeneid*, will be accepted in meeting major and minor requirements.

The substitution of courses in Greek for equivalent courses in Latin will be permitted.

#### I. GREEK

1-2. **ELEMENTARY GREEK.** Grammar, exercises, and Xenophon's *Anabasis*, Book I. An introductory course for all students who wish by somewhat concentrated effort to acquire in one year the ability to read ordinary Attic prose. *Both*

*semesters.* Credit not to be given until both are completed. *Six credits for the year.* Total course only accepted toward graduation. 203 Stewart Hall. Professor Thompson.

3-4. PLATO AND HOMER. In the first semester, Plato's *Apology* and *Crito*, with selections from the other writings, will be read. In the second semester, Homer's *Iliad*, Books I-VI, will be read as an introduction to epic poetry, with as much attention as is necessary to the grammar and prosody of Homer, and to the Ionic dialect. *Both semesters. Three credits each semester.* 203 Stewart Hall. Professor Thompson.

5. GREEK PROSE COMPOSITION. A systematic study of Greek grammar, and the writing of sentences and simple connected narrative. Open to those taking Greek 3-4, and to those who have not already had Greek composition and are pursuing any of the more advanced courses. *Both semesters.* Credit not to be given until both are completed. *Two credits for the year.* 203 Stewart Hall. Professor Thompson.

51. GREEK LITERATURE—HISTORY. Thucydides, the Sicilian Expedition, Book VII, with some study of the historical and political aspects of the campaign. *Prerequisite:* Greek 1-2 and 3-4. *First semester. Two credits.* (Given in 1922-1923.) 203 Stewart Hall. Professor Thompson.

53. GREEK LITERATURE—INTRODUCTION TO GREEK TRAGEDY. Reading of the *Medea* of Euripides and the *Oedipus Tyrannus* of Sophocles, with some attention to their structure and meters. *Prerequisite:* Greek 1 and 2. *First semester. Three credits.* (Not given in 1922-1923.) 203 Stewart Hall. Professor Thompson.

54. GREEK LITERATURE—TRAGEDY. Reading of the *Antigone* of Sophocles, and the *Prometheus Bound* and the *Agamemnon* of Aeschylus. Studies in the development of tragedy, and in the dramatic construction and presentation of the plays read. *Prerequisite:* Greek 1-2 and 3-4. *First semester. Three credits.* (Given in 1922-1923.) 203 Stewart Hall. Professor Thompson.

57. GREEK LITERATURE—ORATORY. Reading of Demosthenes's *Oration on the Crown* as a masterpiece of eloquence and with special reference to Demosthenes as an orator and statesman. *Prerequisite:* Greek 1-2 and 3-4. *Second semester. Three credits.* (Given in 1922-1923.) 203 Stewart Hall. Professor Thompson.

63. GREEK TESTAMENT. Selections from the Gospels and

*Epistles. First semester. Two credits.* 203 Stewart Hall. Professor Thompson.

65. GREEK LITERATURE—PHILOSOPHY. Reading of Plato's *Phædo*, with a brief study of the history of ancient philosophy. *Prerequisite:* Greek 1-2 and 3-4. *Second semester. Three credits.* Professor Thompson.

## II. LATIN

A knowledge of Latin is not required for Courses 41-42, 51-52 and 56.

1-2. BEGINNING LATIN. This course is designed to prepare for the reading of Vergil and also for admission to the professional schools. *Both semesters. Six or ten credits for the year.* Total course only accepted toward graduation. 203 Morrill Hall. Professor Church.

3-4. VERGIL. This course is intended for such students as present one or two years of Latin at entrance, but wish to continue the study in college. *Both semesters. Three credits each semester.* 203 Morrill Hall. Professor Church.

5. CICERO. *De Senectute. First semester. Three credits.* 203 Morrill Hall. Professor Church.

6. HORACE AND CATULLUS. Latin Lyric Poetry. *Second semester. Three credits.* 203 Morrill Hall. Professor Church.

7-8. LATIN PROSE COMPOSITION. Required of all students who have elected Latin as their major department, or who seek to be recommended as teachers of Latin. *Both semesters. One credit each semester.* 203 Morrill Hall. Professor Church.

41. GREEK AND ROMAN ART. Illustrated by lantern slides and reproductions. *First semester. Two or three credits.* 203 Morrill Hall. Professor Church.

42. RENAISSANCE AND MODERN ART. *Second Semester. Two or three credits.* 203 Morrill Hall. Professor Church.

51-52. COMPARATIVE CLASSICAL LITERATURE IN ENGLISH. Particularly the Epic, Drama, and Pastoral, with supplemental reference to Classical Mythology and Modern Literature. *Both semesters. Two credits each semester.* 203 Morrill Hall. Professor Church.

53. COMPARATIVE PASTORAL POETRY. Theocritus to Mantuan. *First semester. Two credits.* (Alternate years; given in fall, 1923.) 203 Morrill Hall. Professor Church.

54. THE ROMAN NOVEL. Petronius, Trimalchio's Dinner. *Second semester. Two credits.* 203 Morrill Hall. Professor Church.

56. COMPARATIVE MYTHOLOGY. Its religious, art, and literary forms. *Second semester. Two credits.* (Alternate years; given in spring, 1923.) 203 Morrill Hall. Professor Church.

101. SEMINAR FOR GRADUATES. The study of the Roman burial formulæ, their development, and religious significance. *Both semesters. Three credits.* 203 Morrill Hall. Professor Church.

#### DAIRY AND POULTRY HUSBANDRY

College of Agriculture

PROFESSOR SCOTT

1. DAIRYING. The composition and secretion of milk and causes of variation in its composition; the operation of the Babcock test as applied to milk and milk products; the various methods of cream-raising, including the study of the construction and operation of centrifugal separators; methods of making and marketing butter, with special reference to farm conditions, and the proper handling of milk on the farm will be discussed in the lectures. The laboratory work includes the testing of milk and other dairy products, operation of centrifugal cream separators, and the making and scoring of butter, and an observation of the essential points of the sanitary production and handling of dairy products as shown in the college barn and dairy. *Second semester. Lectures, two hours; laboratory, one period. Three credits.* 105 Agricultural Building. Professor Scott. Fee, \$2; deposit, \$2.

2. FARM POULTRY MANAGEMENT. Raising poultry under farm conditions. This course deals with the housing, raising of poultry, handling of stock for the market, and egg production, killing, dressing, diseases, hatching, and rearing of young chicks. It is taught with special reference to farm conditions. *First semester. Two credits.* 105 Agricultural Building. Professor Scott.

4. JUDGING AND CULLING. This course deals with all the principal breeds of poultry as given in the American Standard of Perfection, which is used as a text. The laboratory work consists of judging such poultry as can be obtained in Reno and vicinity, examination of hens to estimate pro-

duction, demonstrations in marketing and caponizing. *Second semester. One lecture, one laboratory. Two credits.* 105 Agricultural Building. Professor Scott.

53. MILK PRODUCTION. Dairy husbandry in its relation to the producer of dairy products rather than the manufacturer. The lectures deal with the problems of the dairy farmer, such as adaptations of the dairy breeds, selection, management, feeding of dairy cattle, dairy barns, and calf-raising. The laboratory includes the judging of dairy cattle, visits to the local dairy farms and the observation of systems of dairy management followed by them. *Prerequisite: Dairying 1. First semester. Lectures, three hours; laboratory, one period. Four credits.* 105 Agricultural Building. Professor Scott.

54. BUTTER-MAKING. Laboratory practice in the manufacture of creamery butter and ice-cream. Instruction will cover sampling and testing of cream; pasteurizing and ripening of cream for butter-making, churning, with special attention to the factors that control the composition of butter; preparing butter for the market; the preparation and use of home-made and commercial starters; creamery accounts; determining the amount of water in butter; testing for oleomargarine; manufacture of ice-cream, sherbets; ices, lacto. *Prerequisite: Dairying 1 and Bacteriology 51. Second semester. Lecture, one hour; laboratory, two periods. Three credits.* Dairy Building. Professor Scott. Fee, \$3. (This course will not be given unless elected by five or more students.)

55. DAIRY SANITATION. This course is the application of bacteriology to the problems of the producer and consumer of milk. It deals with the fundamental principles upon which are based sanitary production and handling of milk, cream-ripening and curing of cheese, the market milk industry; the relations of milk to the public health and the important relations of butter- and cheese-making. *Prerequisite: Dairying 1. First semester. Lecture, two hours; laboratory, one period. Three credits.* Dairy Building. Professor Scott. Fee, \$1; deposit, \$3.

56. CHEESE-MAKING. A study of the comparative and characteristics of common American and European cheese. The laboratory work consists of manufacturing the common types of hard and soft cheese. *Van Slyke: Cheese-Making. Prerequisite: Dairying 1, Bacteriology 51. Second semester. Lecture, one hour; laboratory, two periods. Three credits.*

Dairy Building, Professor Scott. (This course will not be given unless elected by five or more students.)

### ECONOMICS, BUSINESS, AND SOCIOLOGY

ASSOCIATE PROFESSOR WILCOX

Requirements for a minor in Economics: History 1-2 or 3-4, Economics 1-2, and six units in courses 51 to 54.

Requirements for a major in Economics: History 1-2 and 3-4, Economics 1-2, and twelve units in Courses 51 to 66.

#### *Economics*

1-2. PRINCIPLES OF ECONOMICS. The economics of production, value and exchange, the medium of exchange, international trade, distribution of wealth, problems of labor, problems of economic practice; taxation. *Prerequisite:* One year of university work. *Both semesters. Three credits each semester.* 103 Education Building. Associate Professor Wilcox.

4. INTRODUCTION TO ECONOMICS (College of Engineering). Production and consumption, value and exchange (money, banking, foreign exchange, international trade). Problems in distributive justice (labor problems and labor legislation). Economic aspects of selected public questions. *Second semester. Two credits.* 103 Education Building. Associate Professor Wilcox.

5. ECONOMIC HISTORY OF THE UNITED STATES. Introductory historical treatment of topics selected from the following list: The industrial revolution, the tariff, money and banking, public finance and taxation, land policy, the labor movement, cooperation, immigration, the railroads and government regulation. History in the light of economic determinism and of personalism. *Open to Freshmen. First semester. Three credits.* 103 Education Building. Associate Professor Wilcox.

51. PUBLIC FINANCE. Public expenditure, principles and nature of taxation, financial administration, public debts. *Prerequisite:* Economics 1-2. *First semester. Three credits.* 103 Education Building. Associate Professor Wilcox. (Not given in 1922-1923.)

52. MONEY AND BANKING. A study of the problems centering around the use of money and credit. *Prerequisite:*

Economics 1-2. *Second semester. Three credits.* 103 Education Building. Associate Professor Wilcox. (Not given in 1922-1923.)

53. INTERNATIONAL TRADE. Theory of international trade, history of the controversy between free trade and protection, the new interest in foreign trade, the policy behind the Webb-Pomerene and the Edge laws. *Prerequisite:* Economics 1-2. *Second semester. Three credits.* 103 Education Building. Associate Professor Wilcox.

54. THE STATE IN RELATION TO INDUSTRY. A study of the problems centering around state and national regulation of industrial combinations and the public-service corporations. Chief attention is given to railroad transportation and to interstate trade. *Prerequisite:* Economics 1-2. *Second semester. Three credits.* 103 Education Building. Associate Professor Wilcox.

55. THE EVOLUTION OF MODERN INDUSTRY. A study of the chief stages of the growth of industry and commerce since the Eleventh Century. *First semester. Two credits.* Given when required by students whose major subject is economics.

56. HISTORY OF ECONOMIC THOUGHT. A critical review of the leading systems of economic thought since the Sixteenth Century. *Prerequisite:* Economics 1-2, and the additional units offered by a major student. *Second semester. Two credits.* Given only when required by students whose major subject is economics.

61. INTRODUCTION TO STATISTICAL METHODS. (Higher mathematical analysis will be avoided as far as possible). Tabulation, averages (mean, median, mode, etc.), application of the theory of probability, correlation, use of tables, calculating machines, slide rule, etc., graphical methods of presenting facts. Statistics in the service of education, business and industry. *First semester. Lecture, two hours; laboratory, one period. Three credits.* 103 Education Building. Associate Professor Wilcox.

66. THE HUMAN FACTOR IN INDUSTRY. A course in employment management and welfare work in the light of recent contributions of economics and sociology. The importance of the human factor. Working and living conditions in selected industries. Vocational guidance and education of employees. Welfare work in typical companies. The human significance of scientific management. Employment man-



agement as a profession. Lectures and assigned readings. *Second semester. Three credits.*

### Business<sup>1</sup>

MR. ....

41-42. BUSINESS ADMINISTRATION. Individual proprietorship; partnership; corporations; organizing a business; office routine; efficiency; wholesale and retail concerns; office organization and management. *Both semesters. Three credits each semester.*

43-44. ACCOUNTING. Preliminary work; partnership and corporation accounting. *Both semesters. Three credits each semester.*

45-46. BUSINESS LAW. Contracts; negotiable paper; sales; agency; partnership; corporations. *Both semesters. Three credits each semester.*

53-54. ADVANCED ACCOUNTING. Theory and classification of accounts; business statements and problems. *Prerequisite: Business Administration 43-44. Both semesters. Three credits each semester.*

57. SALESMANSHIP. Modern sales organizations; selling problems and practice. *First semester. Two credits.*

58. ADVERTISING. Principles of advertising; personal selling; sales campaigns; media; writing advertisements; special problems. *Second semester. Two credits.*

### Sociology

71. INTRODUCTION TO THE STUDY OF SOCIOLOGY. The social nature of man; the nature of society; social institutions; social evolution. *First semester. Three credits.* 103 Education Building. Associate Professor Wilcox.

72. SOCIAL PROGRESS. A study of social organization in relation to fundamental progress. Contemporary social movements and tendencies, with special reference to the more or less conscious effort of society to control its evolution in the interest of better living. *Prerequisite: Sociology 71. Second semester. Three credits.* 103 Education Building. Associate Professor Wilcox.

<sup>1</sup>All courses in Business are given in the Education Building. No business course is open to regular Freshmen.

### EDUCATION

PROFESSOR HALL  
ASSOCIATE PROFESSOR TRANER  
ASSISTANT PROFESSOR CAMPIGLIA  
ASSISTANT PROFESSOR PRESTON  
MISS DETRAZ  
MISS BENSON  
MR. KENT  
MR. BILLINGHURST  
MR. BARR

Requirements for a minor in Education: Psychology 5 and 10; Education 60, 63, 71, 75, 76, and two units to be arranged.

Requirements for a major in Education: Psychology 5 and 10; Education 60, 61, 63, 71, 75, 76, and ten to twelve additional credits, depending upon the aim in view.

20. PRINCIPLES OF TEACHING. For teachers in elementary schools. A study of the various types of classroom teaching to discover the principles of selection, organization and presentation of subject-matter to children of the first six grades. *First year, second semester. Three credits.* 105 Education Building. Professor Hall.

23. PROBLEMS IN RURAL EDUCATION. A survey of Nevada school conditions, the need of Nevada rural communities, and the opportunity and responsibility of the rural teacher for leadership among both children and adults are among the more important topics studied. *First year, first semester. Two credits.* 104 Education Building. Associate Professor Traner.

24. SCHOOL MANAGEMENT, LAW, AND HYGIENE. A consideration of the fundamental facts of school law and the fundamental problems of school organization and school hygiene from the point of view of the teacher in the elementary school. *Second year, second semester. One credit.* 105 Education Building. Mr. Billinghamurst.

25. OBSERVATION OF TEACHING. Observation and discussion of specific classroom work as a preparation for practice teaching. *First year, first semester. One credit.* Public Schools. Miss Detraz.

28. PRACTICE TEACHING AND GROUP CONFERENCES. The selection and organization of subject-matter and the technique of teaching. *One hour a day, five days a week. First year, second semester. Five credits.* 209 Education Building and Public Schools. Miss Detraz, Professor Hall, and Elementary Teachers.

29. PRACTICE TEACHING AND GROUP CONFERENCES. Continuation of Education 28. *One hour a day, five days a week. First semester of second year. Five credits.* 209 Education Building and Public Schools. Miss Detraz, Professor Hall, and Elementary Teachers.

31. THE TEACHING OF ARITHMETIC. A study of the modern aims in teaching arithmetic; of the effect of these aims on the selection and organization of arithmetic material for the different grades; and of the presentation of this material. *First semester, first year. Three credits.* 209 Education Building. Miss Detraz.

34. THE TEACHING OF ENGLISH. Principles underlying the selection, organization and presentation of subject-matter for the first four grades and the study of children's literature for these grades. *Second semester, first year. Three credits.* 209 Education Building. Miss Detraz.

35. THE TEACHING OF ENGLISH. Principles underlying the selection, organization and presentation of subject-matter for grades 5 to 8 and the study of children's literature for these grades. *First semester, second year. Three credits.* 209 Education Building. Miss Detraz.

37. THE TEACHING OF GEOGRAPHY. A study of the modern aims in teaching geography, with discussion of the selection, organization and presentation of suitable geographical material for the different grades. *First semester, first year. Two credits.* 104 Education Building. Associate Professor Traner.

41. KINDERGARTEN METHODS FOR PRIMARY TEACHERS. *Second semester, second year. One credit.* 209 Education Building. Miss Detraz.

42. THE TEACHING OF HISTORY AND CIVICS. A consideration of the aims of teaching history and civics and the effect of these aims on the selection, organization and presentation of subject-matter suitable for the grades. *Second semester, second year. Three credits.* 209 Education Building. Miss Detraz.

48. EDUCATIONAL TESTS AND MEASUREMENTS. This course will consider the most serviceable tests and scales for measuring the elementary subjects. It is designed to assist teachers in judging and improving their instruction. The course will involve giving the tests, scoring, and interpreting the results. *Second semester, second year. One credit.* 104 Education Building. Associate Professor Traner.

60. PROBLEMS OF SECONDARY EDUCATION. The course will involve a study of the specific aims of the American high school; the place of the high school in the public-school system; the junior high school; and legal provisions for the high school and its support in Nevada. *Second semester. Three credits.* Open to Juniors only. 104 Education Building. Associate Professor Traner.

63. SCHOOL MANAGEMENT, LAW, AND HYGIENE. A consideration of the fundamental facts of school law and the fundamental problems of school organization and school hygiene from the point of view of the teacher in the secondary school. *First semester. One credit.* 104 Education Building. Mr. Billinghamurst.

71. PRINCIPLES OF TEACHING. For teachers in secondary schools. A study of the various types of classroom teaching to discover the principles of selection, organization and presentation of subject-matter in secondary schools. To be taken in the Senior year. *First semester. Three credits.* 105 Education Building. Professor Hall.

75-76. PRACTICE TEACHING. For candidates for the high-school teacher's diploma. This work will be done in Grades 7 to 12 of the Reno Public Schools under the direction of the Professor of Secondary Education and under the immediate supervision of the teacher in charge. Students must reserve two consecutive periods on Tuesday and Thursday forenoons and one period on Monday and Wednesday afternoons for this work. *Both semesters. Two credits each semester.* Education Building and Public Schools. Associate Professor Traner, Professor Hall, and High-School Teachers.

### Vocational Education

#### AGRICULTURE

76. EDUCATION. Practice Teaching in Agriculture. Each student will teach a class in agriculture in the Reno High School five days per week throughout the semester. *Prerequisite:* Senior standing in College of Agriculture. *Second semester. Credits to be arranged.* No fees or deposits. Mr. Barr, Associate Professor Traner, and Professor Hall.

86. EDUCATION. Problems in Agricultural Education. This course is a study of the important problems that an agricultural teacher must meet, such as planning the course of study, collecting reference books and bulletins, equipment, and a study of the methods of contact with the adult farmer,

with main emphasis upon classroom procedure. Should be taken in connection with Education 76. *Prerequisite*: Senior standing in the College of Agriculture. *Second semester. Credits to be arranged.* Mr. Barr.

## HOME ECONOMICS

65. PROBLEMS IN TEACHING HOME ECONOMICS. Curricula, equipment, and methods of teaching, with observation, making lesson plans, outlines for courses adapted to various needs. Open to Seniors only. *Prerequisite*: Home Economics 56, 66. *First semester. Lectures, two hours. Two credits.* 206 Agricultural Building. Assistant Professor Campiglia.

75-76. PRACTICE TEACHING. For candidates for the high-school teacher's diploma. This work will be done in Grades 7 to 12 of the Reno Public Schools under the direction of the Professor of Secondary Education and under the immediate supervision of the teacher in charge. Students must reserve two consecutive periods on Tuesday and Thursday forenoons and one period on Monday and Wednesday afternoons for this work. *Both semesters. Two credits each semester.* Education Building and Public Schools. Assistant Professor Campiglia, Associate Professor Traner, and High-School Teachers.

## TRADES AND INDUSTRY

91. EDUCATION. Problems in Vocational Education in Trades and Industries. A course of instruction designed to train teachers for work in vocational education under the Smith-Hughes Act and the Industrial Rehabilitation Act. Includes a study of the laws mentioned and their application to local conditions. How to lay out and give instruction in shop mathematics, science, mechanical drawing, industrial safety, shop methods, and foremanship. *First semester. Two credits.* Elective for prospective teachers of vocational training only. Mr. Kent.

76. EDUCATION. Practice Teaching in Trades and Industries. Two evenings per week. *Second semester. Two credits.* Elective for students who have taken Education 91. Mr. Kent, Associate Professor Traner, and Professor Hall.

## COURSES OFFERED PRIMARILY FOR TEACHERS IN SERVICE

Time and place according to the convenience of the teachers. No fees for teachers in service.

101-102. RESEARCH COURSE IN SECONDARY EDUCATION.

Primarily for Senior and graduate students. *Either semester. One credit.* Associate Professor Traner. Given upon request of a sufficient number of teachers.

105-106. PROBLEMS IN ELEMENTARY TEACHING. Given upon request of a sufficient number of teachers. *Either semester. One credit.* 105 Education Building. Professor Hall and Miss Detraz.

121-122. SCHOOL SUPERVISION. A course intended for school principals and superintendents, and all those who look forward to supervisory work. *One semester or both. One credit each semester.* 105 Education Building. Professor Hall. Given only upon request of a sufficient number of teachers.

## Music

Requirements for a minor in Music: Music 1-2 and 5, 11-12, 50-51, 54-55, and 57.

*NOTE*—The courses of the department are of two kinds: (a) A course in public-school music for those who intend to teach (Music 1-2 and 5); (b) Courses involving the study of music from scientific, historical, and interpretative view-points (Music 50-51, 52 and 54-55). Courses 1-2 and 5-6 should be taken in the Freshman and Sophomore years; other courses may be taken in any year of college residence.

1-2. ELEMENTS OF MUSIC. Notation and terminology; intervals, triads, chords of the seventh; sight-singing; ear-training. *Both semesters. One credit each semester.* Education Building. Miss Benson.

5. METHODS. The presentation and illustration through class work of elementary and advanced musical problems in order; care of child voice; use of phonograph in schoolroom music; interpretation of songs; the principles of conducting; music outlines for graded and ungraded schools; practice teaching in public schools of Reno. *Prerequisite*: Music 1-2. *First semester. Two credits.* Education Building. Miss Benson.

11-12. GLEE CLUB. Membership open to all women students of musical ability who can pass entrance requirements. Examinations given by special appointment. Concerts of serious and dignified music are given at various times during the year. *Both semesters. One-half credit each semester.* Education Building. Miss Benson.

15-16. ORCHESTRA. *Both semesters. One-half credit each semester.* Education Building. Miss Benson.

31-32. CHORUS SINGING. Open to any one interested in

<sup>1</sup>Not more than a total of four units in the above subjects may be counted toward graduation.

<sup>2</sup>Not more than a total of two units in Chorus Singing may be counted toward graduation.

simple singing. A large number of choruses suitable for classroom and community singing will be used. *One-half credit each semester.* 205 Education Building. Miss Benson.

50-51. HARMONY. The review of major and minor scales; intervals and triads; chord analysis of simple hymns; connection and inversion of primary and secondary triads; cadences, chord of the dominant seventh and its inversion; simple keyboard harmonization; construction and harmonization of original melodies; harmonization of given basses and melodies; ear recognition and practice in naming chords as illustrated at the piano. *Prerequisite:* Music 1-2. *Both semesters. Three credits each semester.* Education Building. Miss Benson.

52. HARMONY, ADVANCED. The study of secondary seventh chords and their inversions; altered chords; accidental chord formations; modulations; chord analysis by ear and eye; analysis of all musical forms from the simplest to the most complex. *Prerequisite:* Music 50-51. *First semester. Three credits.* Education Building. Miss Benson.

54-55. GLEE CLUB. (See Music 11-12.) *Second year.*

57. HISTORY OF MUSIC, AND APPRECIATION. Lecture course with collateral readings. Outlines of the evolution of music by periods; lives of composers, music of the various periods and in all the different forms, illustrated with the Victrola. *Second semester. Two credits.* Education Building. Miss Benson.

59-60. ORCHESTRA. *Both semesters. One-half credit each semester.* Education Building. Miss Benson.

17-18. BAND. The Band is organized for the study of a good grade of music, one concert being given at the end of each semester. In addition, the Band gladly cooperates with the different student associations by furnishing music for athletic and other events. *Both semesters. One-half credit each semester.* Mechanical Building. Assistant Professor Preston.

#### ELECTRICAL ENGINEERING

College of Engineering

PROFESSOR PALMER

MR. ....

2. ENGINEERING LABORATORY. The installation, operation, and repair of the various types of electrical and mechanical

<sup>1</sup>Not more than a total of four units in the above subjects may be counted toward graduation.

laboratory and power-station equipment. This course is intended to familiarize the student with the laboratory equipment and methods, and is introductory to the Junior and Senior laboratory courses. *Either semester. One laboratory period. One credit.* Electrical Building. Professor Palmer and Mr. ....

51. DIRECT-CURRENT MACHINERY. The fundamental principles, theory, characteristics, construction, and operation of direct-current machines and circuits, supplemented by electrical problems. *First semester. Three credits.* Electrical Building. Professor Palmer.

52. ALTERNATING-CURRENT MACHINERY. Theory and application of alternating currents in electrical circuits and machinery; representation of alternating currents by vectors and by complex quantities. *Second semester. Three credits.* Electrical Building. Professor Palmer.

53. ADVANCED ALTERNATING CURRENTS. A continuation of the preceding course, taking up the more advanced problems in the application of electrical machinery. *First semester. Three credits.* Electrical Building. Professor Palmer.

54. ELECTRIC RAILWAYS. Covers the construction, equipment, and operation of different types of electric roads and electrification of steam roads. Elective for Senior electrical students. *Second semester. Two credits.* Electrical Building. Mr. ....

55-56. ELECTRICAL PROBLEMS. A course of electrical engineering problems for Senior electrical students; requires a knowledge of trigonometry, calculus, vectors, complex quantities, alternating-current circuits, etc. *Both semesters. One or two credits each semester.* Electrical Building. Professor Palmer and Mr. ....

58. ELECTRICAL DESIGN. Covers the calculations involved in the design of electrical machinery. *Prerequisite:* E. E. 52 and 53. *One lecture and two computing periods. Second semester. Three credits.* Electrical Building. Mr. ....

59. PRINCIPLES AND PRACTICE OF ELECTRICAL ENGINEERING. An abbreviated electrical course especially designed for mining and other engineering students who have but limited time to spend upon this subject. Covers the fundamental principles governing the application of electricity. *First semester. Two credits.* Electrical Building. Professor Palmer.

60. ELECTRICAL ENGINEERING LABORATORY. A practical course for mining and civil engineering students. This course is designed to supplement lecture course 59. *First semester. One credit.* Electrical Building. Professor Palmer and Mr. .... Fee, \$2.50; deposit, \$2.50.

61-62. ELECTRICAL ENGINEERING LABORATORY. Instruction in the use and care of electrical measuring instruments. Elementary tests on direct- and alternating-current machinery. *Prerequisite:* Physics 6. *Both semesters. Lecture, one hour; laboratory, one period. Two credits each semester.* Electrical Building. Professor Palmer. Fee, \$2.50; deposit, \$5.

63-64. ELECTRICAL ENGINEERING LABORATORY, ADVANCED COURSE. This course is a continuation of the preceding one, but deals with more advanced problems in electrical testing. *Both semesters. Lecture, one hour; laboratory, two periods. Three credits each semester.* Electrical Building. Professor Palmer. Fee, \$2.50; deposit, \$5.

65-66. ENGINEERING APPLICATIONS. This course takes up the study of storage-battery engineering, practical illumination problems, electric heating and welding, and other applications of electricity in modern engineering practice. Elective for Junior and Senior students. *Both semesters. Three credits each semester.* Electrical Building. Professor Palmer.

67-68. TELEPHONE ENGINEERING. An elective course for Senior students who have completed the prescribed course for Junior electrical students. The course takes up the study of modern telephone systems, including the application of the vacuum valve. It also includes the study of radio circuits and equipment as applied to both telephone and telegraph work. *One lecture and one laboratory period. Both semesters. Two credits each semester.* Electrical Building. Professor Palmer. Fee, \$2.50; deposit, \$5.

80. ELECTRICAL INVESTIGATION. Original investigation of some electrical engineering problem. Elective for Seniors in Electrical Engineering, who, in the opinion of the instructor, are qualified to undertake the work and are particularly interested in the special study to be undertaken. *Second semester. Two credits.* Electrical Building. Professor Palmer. Laboratory fee of \$5 may be required; deposit, \$5.

## ENGLISH LANGUAGE AND LITERATURE

PROFESSOR H. W. HILL  
 PROFESSOR A. E. HILL  
 PROFESSOR TURNER  
 ASSOCIATE PROFESSOR RIEGELHUTH  
 MISS SHADE  
 MR. ....

Requirements for a minor in English: English 44-45, 78, 94, and six additional units in courses 51 to 100.

Requirements for a major in English: English 44-45, 78, 94, and twelve additional units in courses 51 to 100.

Requirements for a teacher's recommendation in English: a major or a minor with an average grade of not less than 2 in the department.

0-0. COMPOSITION AND RHETORIC. A course designed for students who are not equipped to pursue English 1-2. *Both semesters. No credits.* 201 Stewart Hall. Professor Turner.

1-2. 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. *Three sections. Both semesters. Three credits each semester.* 206 Stewart Hall. Professors A. E. Hill and Turner, Associate Professor Riegelhuth, Miss Shade, and Mr. ....

3. ADVANCED COMPOSITION. The study and practice of exposition, description, and narration. In this and the following course the aim is to develop the individual needs of the student, as well as to give him general training in writing. *Prerequisite:* English 1-2. *First semester. Three credits.* 206 Stewart Hall. Professor A. E. Hill.

4. ADVANCED COMPOSITION. The study and practice of one of the forms of discourse. *Prerequisite:* English 1-2 and 3. *Second semester. Three credits.* 206 Stewart Hall. Professor A. E. Hill.

11-12. PUBLIC SPEAKING. The study of principles of effective speaking, voice building, and gesture. The presentation of original speeches before the class, illustrating the different forms of public address. *Both semesters. Two credits each semester.* 201 Stewart Hall. Professor Turner.

13-14. ADVANCED PUBLIC SPEAKING. The study of great speeches with the preparation and presentation of formal addresses. Lectures and required reading. *Prerequisite:*

English 11-12. *Both semesters. One credit each semester.* 201 Stewart Hall. Professor Turner.

16-17. ARGUMENTATION. The discussion of the principles of argumentation. The preparation of briefs and the presentation of arguments. *Both semesters. Two credits each semester.* 201 Stewart Hall. Professor Turner.

18-19. PRINCIPLES OF ARGUMENTATION. Oral discussions of economic, historical, political, and sociological questions. Weekly debates, preceded by briefs, in which each member takes part three times as principal speaker. Open to students who have completed course 16-17, and to others by special consent. *Both semesters. Two credits each semester.* 201 Stewart Hall. Professor Turner.

21-22. EXPRESSION. Oral interpretation of the best literature. Sight reading. Exercises in vocal culture, breathing, position, and gesture. *Both semesters. Two credits each semester.* 201 Stewart Hall. Professor Turner.

23-24. ADVANCED EXPRESSION. The interpretation of selections from the best literature for public presentation, the laws of public reading and speaking, tone modulation, and strengthening of the vocal organs. Abridgment and arrangement of selections. *Both semesters. One credit each semester.* 201 Stewart Hall. Professor Turner.

41-42. MASTERPIECES OF ENGLISH LITERATURE. The reading and study of the more important specimens of English literature. Lectures, assigned readings, and oral and written reports. *Prerequisite:* English 1-2. *Three sections. Both semesters. Two credits each semester.* Stewart Hall. Professor A. E. Hill, Associate Professor Riegelhuth, and Mr. ....

44-45. GENERAL HISTORY OF ENGLISH LITERATURE. The study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1-2. *Both semesters. Three credits each semester.* Stewart Hall. Professor H. W. Hill.

51-52. THE SHORT STORY. The study of the short story as a type, and practice in writing short stories. *Prerequisite:* English 1-2, 3, and 4. 206 Stewart Hall. Professor A. E. Hill.

53-54. JOURNALISM. The gathering and reporting of news. *Prerequisite:* English 1-2, 41-42, 3 and 4. *Both semesters. Three credits each semester.* Stewart Hall. Mr. ....

55-56. ADVANCED JOURNALISM. Editorial writing and feature writing. *Prerequisite:* English 1-2, 41-42, 3 and 4. *Both semesters. Three credits each semester.* (Not given in 1922-1923.) Stewart Hall. Mr. ....

65. GENERAL LITERATURE. A general survey of literature. Lectures, assigned readings, and oral discussion. *Prerequisite:* English 1-2. *Second semester. One credit.* (Not given in 1922-1923.) 202 Stewart Hall. Professor H. W. Hill.

66-67. TYPES OF ENGLISH PROSE LITERATURE.<sup>1</sup> The study of representative specimens of the novel, the short story, the modern play, the essay, and the oration with a view of determining their essential differences, the principles of criticism, and the methods of approach. *Prerequisite:* English 44-45. *Both semesters. Three credits each semester.* (Not given in 1922-1923.) 202 Stewart Hall. Professor H. W. Hill.

68-69. THE ENGLISH NOVEL. The study of the development of the novel from the early Nineteenth Century to the present day. *Both semesters. Three credits each semester.* (Not given in 1922-1923.) 206 Stewart Hall. Professor A. E. Hill.

70-71. AMERICAN LITERATURE. The study of American prose and poetry from the beginning of the Nineteenth Century to the present time. *Both semesters. Three credits each semester.* 206 Stewart Hall. Professor A. E. Hill.

72-73. THE MODERN DRAMA. Ibsen, Maeterlinck, Pinero, Shaw, and other contemporary dramatists. *Prerequisite:* English 44-45. *Both semesters. Three credits each semester.* 202 Stewart Hall. Professor H. W. Hill.

75-76. SHAKESPEARE. The interpretation of six plays. *Prerequisite:* English 44-45. *Both semesters. Three credits each semester.* (Not given in 1922-1923.) 202 Stewart Hall. Professor H. W. Hill.

77. THE BIBLE AS LITERATURE. The study of the representative literary types found in the Old Testament. *Prerequisite:* English 1-2 and 41-42. *Second semester. Three credits.* Professor H. W. Hill. 202 Stewart Hall.

78. MILTON. Minor poems and Paradise Lost. *Prerequisite:* English 44-45. *Second semester. Three credits.* (Not given in 1922-1923.) 202 Stewart Hall. Professor H. W. Hill.

79. WORDSWORTH AND COLERIDGE. The study of the chief

<sup>1</sup>Open only to students with a general average of 2 or better.

writings of Wordsworth and Coleridge, accompanied by a brief survey of the period. *Prerequisite:* English 44-45. *First semester. Three credits.* 202 Stewart Hall. Professor H. W. Hill.

80. TENNYSON AND BROWNING. The study of the chief writings of Tennyson and Browning, with special emphasis on the "Idylls of the King," and "The Ring and the Book." *Prerequisite:* English 44-45. *Second semester. Three credits.* 202 Stewart Hall. Professor H. W. Hill.

91. OLD ENGLISH. Grammar and reading of simple prose and verse. *Prerequisite:* English 1-2 and 4. *First semester. Three credits.* 202 Stewart Hall. Professor H. W. Hill.

92. BEOWULF. *Prerequisite:* English 44-45 and 91. *Second semester. Three credits.* 202 Stewart Hall. Professor H. W. Hill.

93. EARLY MIDDLE ENGLISH. Grammar and reading of selections equivalent to Emerson's Middle English Reader. *Prerequisite:* English 4. *Second semester. Three credits.* 202 Stewart Hall. Professor H. W. Hill.

94. CHAUCER. The Canterbury Tales. *Prerequisite:* English 44-45. *First semester. Three credits.* (Not given in 1922-1923.) 202 Stewart Hall. Professor H. W. Hill.

101. SEMINAR FOR GRADUATES. Both semesters. Hours to be arranged with individual students. *One credit each semester.* Library. Professor H. W. Hill.

### GEOLOGY

PROFESSOR JONES

Requirements for a minor in Geology: Physics 1-2 (unless Physics is offered for admission), Chemistry 1 (unless Chemistry is offered for admission), Mineralogy 1, Geology 3, 4, and six additional units in Junior-Senior courses.

Requirements for a major in Geology: Physics 1-2 or 3-4 and 5-6, Chemistry 5 and 6, Mineralogy 1, 2, and 3, Geology 3 and 4, and twelve additional units in Junior-Senior courses.

Students expecting to follow Geology as their life work should consult with the head of the department as early as possible in their course and plan their work so as to lay an adequate foundation for further work in their specialty in a graduate school.

3. GENERAL GEOLOGY. A general discussion of geologic forces and their results, dealing chiefly with the dynamic and structural aspect of the subject. *Prerequisite:* Elementary Physics and Chemistry. *First semester. Three credits.* Mackay School of Mines. Professor Jones.

4. HISTORICAL GEOLOGY. An outline of the origin and history of the earth, including the diastrophic changes, stratigraphic relationships, and the description of the physical geography and life of the successive geological periods, with special reference to the North American Continent. *Second semester. Three credits.* Mackay School of Mines. Professor Jones.

51. PETROLOGY. The study of rock-forming minerals and rocks in the hand specimen. Lectures on the characters, origin, and classification of rocks. *Prerequisite:* Geology 3, Mineralogy 1, 2, and 3. *First semester. Two credits.* Mackay School of Mines. Professor Jones.

52. PETROGRAPHY. The study of rock-forming minerals and rocks under the microscope. *Prerequisite:* Geology 51, Physics 1-2 or 3-4. *Second semester. Two credits.* Mackay School of Mines. Professor Jones. Deposit, \$5.

60. ECONOMIC GEOLOGY. A general course treating of the mode of occurrence, distribution, origin, and distinctive features of mineral deposits, with descriptions of typical examples from important mining regions. *Prerequisite:* Geology 3, 4, and 51. *Second semester. Three credits.* Mackay School of Mines. Professor Jones.

61. ECONOMIC GEOLOGY, Advanced Course (College of Engineering). The geology of metalliferous ore deposits treating of the mode of occurrence, origin, alteration, and distribution, with a study of the more important mining camps in North America. Lectures and assigned readings. *Prerequisite:* Geology 60. *First semester. Three credits.* Mackay School of Mines. Professor Jones.

70. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of a selected area. Five days of field work are devoted to the mapping of some area in the vicinity of the University. *Prerequisite:* Geology 3. *Second semester. One credit.* Professor Jones.

71. FIELD GEOLOGY (College of Engineering). Two weeks are spent during the summer vacation in the mapping and study of some selected area, preferably some mining camp where both the surface and underground geology may be investigated. A concise report of the work, together with well-kept field notes, a finished geological map, and cross-sections, is required of each member of the class. Occasional lectures on the theoretical aspects of the work are also given.

*Prerequisite:* Geology 3, 4, 51, 52, and 70. *Two credits.* Professor Jones.

80. GEOLOGICAL INVESTIGATION. Original investigation of some geological problem. *Prerequisite:* Geology 3, 4, 51, 52, and 60, or equivalent training. *Both semesters. Credits to be arranged.* Mackay School of Mines. Professor Jones.

101. GRADUATE COURSE (College of Engineering). The original investigation of geologic problems, with seminar for discussion of current geologic literature and special topics. *Credits to be arranged.* Mackay School of Mines. Professor Jones.

#### HISTORY AND POLITICAL SCIENCE

PROFESSOR WIER  
ASSISTANT PROFESSOR FEEMSTER  
MR. JONES

Requirements for a minor in History: History 1-2, 3-4, and six units in advanced history courses, and 73-90 in Political Science.

Requirements for a major in History: History 1-2, 3-4, and twelve units in advanced history courses, and 73-90 in Political Science.

Requirements for a teacher's recommendation in History: a major or a minor, including History 51 and 55-56.

Requirements for a minor in Political Science: History 1-2, Political Science 1-2, and six units from courses 51-100.

Requirements for a major in Political Science: History 1-2, 3-4, Political Science, 1-2, and twelve units from courses 51-100, but not more than six of these twelve units may be selected from courses 73-90.

Majors or minors in History are advised to take not less than six units each in Political Science and Economics. Majors and minors in Political Science are advised to take further work in History and Economics.

High-school courses in History and Civil Government will not be counted toward the fulfilment of the requirements given above except as a student may prove by superior work in class that such high-school work is the equivalent in information and discipline of the corresponding college courses.

History 1-2 and 3-4 are designed to lay a foundation for the advanced courses in History and Political Science. History 1-2 is prerequisite to all other courses.

#### *History*

1-2. EUROPEAN CIVILIZATION. The development of western civilization in Europe from the Roman Empire to the present time. Designed to furnish perspective for the understanding of the present-day world. Total course only accepted toward graduation. *Both semesters. Three credits each semester.* 101 Stewart Hall. Professor Wier and Mr. Jones.

3-4. AMERICAN EXPANSION. Against a broad European background the spread of civilization in America will be traced. The development of each geographical section will be presented and the relation shown of each section to America as a whole. Culmination of the study will be found in a survey of the Great Basin and the place of Nevada in that basin. The course will deal in a comprehensive way with the large movements of a political, economic and social nature in the New World. It is intended to give a new and large American perspective. *Both semesters. Three credits each semester.* 101 Stewart Hall. Professor Wier.

51. THE TEACHING OF HISTORY. A study of the aims, methods, and materials for history teaching in secondary schools and colleges. *First semester. Two credits.* 101 Stewart Hall. Professor Wier.

53. INSTITUTIONAL RELATIONS OF WOMAN IN HISTORY. A study of woman's characteristics in relation to social and industrial life both in past centuries and at the present time. Especial emphasis on the vocations now open to women and the significance of college education in preparation for the same. Lectures on various vocations will be given by representatives of these professions and industries. Open to Freshmen women, as well as to all other women students. *First semester. Two credits.* 101 Stewart Hall. Professor Wier.

54. HISTORICAL GEOGRAPHY. The movements of population as influenced by geographical factors. Traces political development, particularly of Eurasia, and familiarizes the student with the map. Adapted to the needs of Normal students. *Second semester. Three credits.* 101 Stewart Hall. Professor Wier.

55-56. WESTWARD EXPANSION OF THE UNITED STATES. A study of the westward movement from the Atlantic to the Pacific and of the continuous influence of the West upon national and international affairs. Particular attention will be given to the political, economic, and social aspects of the occupation of the various sections. *Both semesters. Two credits each semester.* 101 Stewart Hall. Professor Wier. (Given in 1923-1924.)

57-58. HISTORY OF WESTERN AMERICA. The study of the development of the Pacific Slope during the Spanish, Mexican, and early American periods. Comparison made with Atlantic Coast development. Study of legal and other institutions. Important as introduction to history of Nevada.



examination of representative States of South and Central America; their struggle for stability, their relations to each other and to the United States. Library readings will be assigned in the industrial development of Latin America and in the social and cultural character of Spanish-American civilization. Recommended for students of Spanish. *Both semesters. Two credits each semester.* 105 Stewart Hall. Assistant Professor Feemster. (Given in 1923-1924.)

65-66. RESEARCH COURSE IN NEVADA HISTORY. A course designed to train students in research methods and at the same time give knowledge of Nevada history. *Both semesters. Credit to be arranged.* 101 Stewart Hall. Professor Wier.

71-72. ANCIENT CIVILIZATION. A study of the rise of the institutions of civilization, of nationality, and of empire, culminating in Imperial Rome. This course is designed for those preparing to teach History or Latin, for classical students, and for all who desire a collegiate course in ancient civilization. *Both semesters. Two credits each semester.* 105 Stewart Hall. Assistant Professor Feemster.

76. MEDIEVAL CIVILIZATION AND INSTITUTIONS. A study of the feudal system, the system of universal monarchy as embodied in the Holy Roman Empire, of the Church as the controlling force, etc. *Second semester. Three credits.* 101 Stewart Hall. Professor Wier.

77. THE RENAISSANCE. From the fall of Constantinople to the sack of Rome. This course aims to trace the rise of the modern spirit and institutions out of ancient and medieval world. Special lectures and assignments will be given upon such topics as painting, architecture, printing, navigation, the great men and masterpieces of the period, the foundation of modern languages and sciences. *First semester. Two credits.* 105 Stewart Hall. Assistant Professor Feemster. (Given in 1922-1923 on sufficient demand.)

78. THE REFORMATION. A continuation of the previous course to the Peace of Westphalia, and the foundation of the present-day national state system. The course will trace in historic sequence the main movements comprising the Spanish reformation, the Papal state, the Lutheran revolt, Council of Trent, the Spanish Empire, the revolt of the Netherlands, Anglo-Dutch sea power, the Elizabethan Age, The Thirty

Hall. Assistant Professor Feemster. (Given in 1922-1923 on sufficient demand.)

79-80. THE FRENCH REVOLUTION. Its causes and constitutional experiments. Studied from the European and American standpoint rather than as a French local crisis. *Both semesters. Two credits each semester.* 101 Stewart Hall. Professor Wier.

83. RUSSIA AND HER NEIGHBORS. The course is essentially a study of modern Russia in the light of historical development. A standard work like Wallace is read and applied to Russia of today as a method of approaching the present Russian enigma. *First semester. Two credits.* 105 Stewart Hall. Assistant Professor Feemster. (Given on demand of five students in 1923-1924.)

84. CHINA AND HER NEIGHBORS. A study of Chinese history, with emphasis upon the modern period. China's struggle for territorial integrity and for republican institutions, with American responsibility and opportunity therein, is the main theme of the course. *Second semester. Two credits.* 105 Stewart Hall. Assistant Professor Feemster. (Given on demand of five students in 1923-1924.)

91. THE TWENTIETH CENTURY: THE RIVALRY OF THE NATIONS. An intensive prewar study. Not given for less than five students. Open to History majors and minors and those specially qualified. The course will trace world movements from the Spanish-American War to the outbreak of the War of 1914. *First semester. Two credits.* 105 Stewart Hall. Assistant Professor Feemster.

92. THE TWENTIETH CENTURY: THE STRUGGLE OF THE NATIONS. A continuation of course 91. A critical study of war history and war historians, with source studies on selected topics. *Second semester. Two credits.* Assistant Professor Feemster.

99-100. HISTORY THESIS WORK. *Both semesters. Credits to be arranged.* 101 Stewart Hall. Professor Wier.

#### *Political Science*

1-2. COMPARATIVE GOVERNMENT. This course is to be regarded as introductory to the other courses in the department and is practically a prerequisite to them. A survey is

made of the structure and chief features of the practical operation of the governmental systems of the United States, England, the leading countries of Europe, and certain typical countries of South America. *Both semesters. Six credits for the year.* (Total course only accepted for graduation.) 105 Stewart Hall. Assistant Professor Feemster.

51. STATE GOVERNMENT IN THE UNITED STATES. A survey of the structure and workings of state governments and the political activities of the electorate, especially under recent conditions. *First semester. Three credits.* (Given in 1923-1924.)

53. MUNICIPAL GOVERNMENT. An introduction to the problems, both of government and administration, which confront the municipalities of the United States. Reference is also made throughout to European experience. *First semester. Three credits.* 105 Stewart Hall. Assistant Professor Feemster.

64. INTERNATIONAL LAW. An elementary study of the principal topics, accompanied by examination of leading cases. *Second semester. Three credits.* 105 Stewart Hall. Assistant Professor Feemster.

66. INTERNATIONAL GOVERNMENT AND INSTITUTIONS. The course correlates with the course in International Law and will examine in the order of their rise, the Monroe Doctrine and the Pan-American System, the Hague Conferences and Court, The League of Nations and its organs and activities. *Second semester. Two credits.* Assistant Professor Feemster. (Given in 1923-1924.)

73-74. ANCIENT INSTITUTIONS. A historical and comparative study of the legal systems of the oriental and classical nations. Important for legal students. *Both semesters. One, two, or three credits each semester.* 105 Stewart Hall. Assistant Professor Feemster.

85-86. COLONIAL EXPANSION. The history of the colonial acquisitions of the great nations and a comparative study of institutions developed therein, with special emphasis upon the United States. *Both semesters. Two credits each semester.* 101 Stewart Hall. Professor Wier.

87-88. MEDIEVAL CONSTITUTIONAL HISTORY. A study of the rise of the English constitution out of the institutions of the medieval world. Comparison will be made with the contemporary institutions of the church, the Holy Roman Empire and the early French monarchy. *Both semesters.*

*Three credits each semester.* 105 Stewart Hall. Assistant Professor Feemster.

89-90. MODERN CONSTITUTIONAL HISTORY. A detailed examination of the founding of the United States of America. The movement will be compared with the contemporary constitutional efforts in Poland and the first French Republic. *Both semesters. Three credits each semester.* 105 Stewart Hall. Assistant Professor Feemster. (Given in 1922-1923 on sufficient demand.)

99-100. THESIS.

#### HOME ECONOMICS

College of Agriculture

PROFESSOR LEWIS

ASSISTANT PROFESSOR POPE

ASSISTANT PROFESSOR CAMPIGLIA

MRS. HAMMOND

<sup>1</sup>ASSOCIATE PROFESSOR STILWELL

9. GENERAL HOME ECONOMICS. A brief survey of Home Economics subjects, including clothing and textiles, school lunches, boys and girls club work, and home nursing. Especially adapted for Normal-school students. *First semester. Lecture, one hour; laboratory, two periods. Three credits.* 203 Agricultural Building. Professor Lewis and Assistant Professor Pope. Fee, \$2; deposit, \$1.

15. ELEMENTARY CLOTHING. Making of dress forms. Drafting patterns for waist, sleeve and skirt. Designing and making patterns from drafted ones for underwear. Learning construction stitches and use of sewing-machine attachments and making the practical application of them. No credit given without H. E. 18. *First semester. Lecture, one period; laboratory, two periods. Three credits.* 204 Agricultural Building. Assistant Professor Pope. Fee, \$2; deposit, \$1.

16. TEXTILES AND DESIGN. A study of textile fibers, processes of the manufacture of fabrics, simple tests; comparison and identification of manufactured products. The study of color and design as adapted to house and clothing. *Second semester. Lectures, two hours. Two credits.* 204 Agricultural Building. Assistant Professor Pope. Fee, \$2; deposit, \$1.

18. CONTINUATION OF H. E. 15. Adapting commercial patterns to taste and suitability. Designing garments for different type figures and individuals. *Prerequisite:* H. E.

<sup>1</sup>Member of Agricultural Extension Staff.

15. *Second semester. Laboratory, two periods. Two credits.* 204 Agricultural Building. Assistant Professor Pope. Fee, \$2; deposit, \$1.

31-32. **FOODS AND COOKERY.** A study of foods from the standpoint of their composition, economy, selection, preparation and use. *Both semesters. Laboratory, two periods; lecture, one hour. Three credits each semester.* Credit not given for one semester only. 203 Agricultural Building. Assistant Professor Pope. Fee, \$5; deposit, \$1.

33. **FOODS.** This short unit course is planned to give students not majoring in Home Economics a knowledge of the chemical composition, nutritive value, and cost of foods; selection, preparation, and service of well-balanced meals; nutrition clinics; hot school lunches; marketing; pure-food laws. *First semester. Lecture, one period; laboratory, two periods. Three credits.* 203 Agricultural Building. Professor Lewis. Fee, \$5.

34. **CLOTHING AND TEXTILES.** This course will include the following short units: Study of textiles appropriate for various articles of clothing; appropriate dress for different occasions and suitability to age, complexion, and figure of the wearer; the clothing budget; labor conditions of women and children in textile industries. The laboratory work will include the care, repair, and renovating of garments; making of underwear, children's clothes and dresses. Not open to students majoring in Home Economics. *Lecture, one period; laboratory, two periods. Second semester. Three credits.* 204 Agricultural Building. Professor Lewis and Mrs. Hammond. Fee, \$2.

45. **WEAVING.** The study of such phases of decorative art as involve application of the principles of color, design and form, to hand-woven household products made from reed, raffia, sweet grass, pine needles, crepe paper, cord, and thread. *First semester. Laboratory, two periods. Two credits.* 204 Agricultural Building. Assistant Professor Pope. Fee, \$2; deposit, \$1.

46. **WEAVING.** Same as 45. *Second semester.*

49. **ELEMENTARY MILLINERY.** The making of seasonable hats from cloth, straw, and used materials. Practice in the processes involved, including design, patterns, wire frames, and blocked foundations; making and placing of trimmings, bows, folds, etc. *First semester. Laboratory, two periods.*

*Two credits.* 108 Agricultural Building. Assistant Professor Pope. Fee, \$2; deposit, \$1.

50. **ADVANCED MILLINERY.** The making of hats involving more difficult problems including straw sewed without a foundation material, transparent hats, making and using flowers in trimmings; patterns copied from leading magazines and exclusive shops. *Second semester. Laboratory, two periods. Two credits.* 108 Agricultural Building. Assistant Professor Pope. Fee, \$2; deposit, \$1.

51. **HOME DEMONSTRATION WORK.** A study of the plans and purposes of home demonstration work. Training in community organization and in methods of conducting the work under the Farm Bureau. This course is designed for prospective home demonstration leaders. *Hours to be arranged. To be given on sufficient demand. Second semester. One laboratory. One credit.* 109 Agricultural Building. Associate Professor Stilwell.

52. **BOYS AND GIRLS CLUB WORK.** A study of the plans and purposes of club work and the methods of organizing clubs and conducting club meetings. Training in the actual work of home economics club projects and in demonstration team work. This course is designed for prospective rural teachers and club leaders. *Hours to be arranged. To be given on sufficient demand. Second semester. One laboratory. One credit.* 109 Agricultural Building. Associate Professor Stilwell.

53. **THE HOUSE.** The following units will be studied: Selection of site, construction, and repair of house; lighting, plumbing, heating, and water systems; decorating, furnishing, and care of the house; making an old house convenient and attractive; the modern home and its scientific management; the college girl's, professional woman's, and family budgets; home vs. boarding; sanitary conditions of public eating places. Not open to students majoring in Home Economics. *First semester. Lecture, one period; laboratory, two periods. Two credits.* 204 Agricultural Building. Professor Lewis. Fee, \$1.

54. **HEALTH.** Feeding and care of the infant, child of preschool age and the school child from six to twelve; relation of income to malnutrition and child labor; hygienic habits, care of infectious diseases; corrective diets in constipation, anemia, and obesity, etc.; recreation. Not open to students majoring in Home Economics. *Prerequisite: Home*

Economics 3. *Second semester. Lecture, two periods. Two credits.* 109 Agricultural Building. Mrs. Hammond.

56. ELEMENTARY DIETETICS. This course includes a discussion of the feeding of the family, considering the nutritive requirements, cost of food, and table service. The laboratory work consists of practice in large-quantity cookery, planning, preparing and serving meals. *Prerequisite:* Home Economics 31-32, Chemistry 21. Also open to students not majoring in Home Economics if they have consent of instructor. *Lecture, one period; laboratory, two periods. Three credits. Second semester.* 203 Agricultural Building. Professor Lewis. Fee, \$5; deposit, \$1.

65. ADVANCED CLOTHING. Drafting and designing from flat patterns and also designing from the form. Working with commercial patterns to change for fit and style. Cutting, fitting, and finishing garments made from wool and silk. *Prerequisite:* H. E. 15-16-18. *Laboratory, two periods. Two credits.* 204 Agricultural Building. Assistant Professor Pope. Fee, \$2; deposit, \$1.

66. ADVANCED CLOTHING. This course will be given upon the shop plan. The students will take orders for dresses, suits, etc., design and draft the patterns, and work under the direction of the teacher as forelady. Careful account will be kept of the time spent upon each garment and charges for making will be based upon the time devoted to them and upon the difficulty of the operations. *Prerequisite:* Home Economics 15, 16, 18, 65. *Laboratory, two periods. Two credits.* 204 Agricultural Building. Fee, \$2; deposit, \$1.

76. CHILD CARE. A study of the development of the child from the beginning of life through adolescence. Habit formation; proper feeding, nursing of simple ailments. Open to Juniors and Seniors only. *Prerequisite:* Hygiene 7 and 8. Given alternate years. *Second semester. Lectures, two periods.* 109 Agricultural Building. Professor Lewis.

81. DIETETICS. Lectures on the function, nutritive value, and digestion of foods; feeding of families, typical dietaries; comparative cost and nutritive value of foods; requirements according to age, health, and activity. *Prerequisite:* Home Economics 31-32, 55-56; Chemistry 21, 25; Hygiene 7-8. *First semester. Two credits.* 206 Agricultural Building. Professor Lewis.

83. DIETETICS LABORATORY. Practice in the computing and measuring of 100 calorie portions of common foods, and

preparation of meals according to definite dietetic requirements. *Prerequisite:* Home Economics 31-32, 56; Chemistry 21, 25; Hygiene 7-8. *Parallel:* Home Economics 81-82. *First semester. Laboratory, three periods. Three credits each semester.* 203 Agricultural Building. Professor Lewis. Fee, \$5; deposit, \$1.

85. SPECIAL PROBLEMS IN FOODS. A course intended for advanced students capable of experimental and research work. *Prerequisite:* Home Economics 31-32, 56. *Either semester. Laboratory, two periods. Two credits.* 203 Agricultural Building. Professor Lewis. Fee, \$5; deposit, \$1.

86. HOUSEHOLD ADMINISTRATION. Scientific management of the home and a study of household budgets. Open to Juniors and Seniors only. Given alternate years. *Lectures, three periods. Three credits.* 109 Agricultural Building. Professor Lewis.

87. HOUSE DECORATION. Planning, decorating, and furnishing of homes, considering art, convenience, sanitation, and economy. *Prerequisite:* Art 5 and 6, Home Economics 16. *First semester. Lectures, two periods. Laboratory, one period. Three credits.* 108 Agricultural Building. Professor Lewis. Fee, \$1.50.

88. CARE OF THE HOUSE. A study of care of the house and its furnishings, making practical application of facts learned in Chemistry and Physics. *Prerequisite:* Physics 70, Chemistry 5 and 7. *Second semester. Lecture, one period; laboratory, one period. Two credits.* 109 Agricultural Building. Assistant Professor Pope. Fee, \$1; deposit, \$1.

95. SPECIAL PROBLEMS IN CLOTHING. A course intended for advanced students who wish to study some special problem, as clothing budgets, advanced principles of design and color harmony in dress, textiles, millinery, embroidery, etc. *Prerequisite:* Home Economics 15, 16, 18, 65-66, or 50. *Either semester. Laboratory, two periods. Two to four credits.* 204 Agricultural Building. Miss ..... Fee, \$2; deposit, \$1.

#### MATHEMATICS AND MECHANICS

PROFESSOR HASEMAN  
ASSOCIATE PROFESSOR NYSWANDER

Requirements for a minor in Mathematics: Mathematics 11, 12, 13, 25, 26.

Requirements for a major in Mathematics: Mathematics 11, 12, 13, 25, 26, 85, and seven additional units approved by the department.

Requirements for a teacher's recommendation in Mathematics; a major or minor and a recommendation from the head of the department as to scholarship.

5. **ELEMENTARY ALGEBRA.** A thorough study of elementary algebra including quadratic equations. The course is designed to suit a variety of students, those having had practically no algebra and those having had as much as one year in the high school. This course will be required of students whose credentials permit them to take Mathematics II, but who are unable to carry it. Such students will receive no credit for this course. *First semester. Three credits.* 204 Morrill Hall. Professor Haseman.
7. **SOLID GEOMETRY.** The geometry of the plane, the cone, the prism, the pyramid, and the sphere. *Second semester. Two credits.* 202 Morrill Hall. Associate Professor Nyswander.
- 9-10. **ELEMENTARY ANALYSIS.** This course will cover algebra, trigonometry, and analytic geometry. It is designed for Freshmen who choose mathematics for their science requirement. *Both semesters. Six credits.* 204 Morrill Hall. Professor Haseman and Associate Professor Nyswander.
11. **ADVANCED ALGEBRA.** A thorough review and drill in algebra, with special emphasis on the topics that will be most helpful in the higher courses in mathematics. This course is required of all engineering students. *First semester. Two credits.* 202 Morrill Hall. Professor Haseman.
13. **PLANE TRIGONOMETRY.** A study of the trigonometric functions and identities. Considerable time is devoted to the solution of triangles. *First semester. Three credits.* 202 Morrill Hall. Associate Professor Nyswander.
14. **ANALYTIC GEOMETRY.** An analytical treatment of the properties of the straight line, circle, parabola, ellipse, and hyperbola. Polar coordinates, the transformation of coordinates, and the general second-degree equation in two variables will also be studied. *Second semester. Three credits.* 202 Morrill Hall. Associate Professor Nyswander.
25. **DIFFERENTIAL CALCULUS.** A thorough study of the fundamental principles of differential calculus with 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.* 204 Morrill Hall. Professor Haseman.
26. **INTEGRAL CALCULUS.** The elements of integral calcu-

- lus are first taken up in conjunction with certain topics in differential calculus not completed in the previous course. This is followed by the application of integration to areas of curves, areas of surface, volumes, moments of inertia, centers of gravity, etc. *Second semester. Three credits.* 204 Morrill Hall. Professor Haseman.
28. **MATHEMATICAL THEORY OF INVESTMENTS.** *Either semester. Three credits.* 204 Morrill Hall. Professor Haseman.
30. **DESCRIPTIVE ASTRONOMY.** A treatment of the facts and laws of astronomy, with a study of the solar system, the stars, comets, etc. *Second semester. Three credits.* 202 Morrill Hall. Associate Professor Nyswander.
35. **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.* 202 Morrill Hall. Associate Professor Nyswander.
40. **DETERMINANTS AND THE THEORY OF EQUATIONS.** The study of determinants and their applications. The theory of the quadratic, cubic, biquadratic, and the general algebraic equation. Approximation methods of solving equations of higher degree than the second. *Second semester. Two credits.* 204 Morrill Hall. Professor Haseman.
55. **ANALYTIC MECHANICS.** Work in the resolution of forces, moment inertia, laws of motion, friction, dynamics of machinery, work and energy, and impulse. Special emphasis is given to practical problems. *First semester. Three credits. Second semester, five credits.* 204 Morrill Hall. Professor Haseman.
62. **ENGINEERING MATHEMATICS.** A general course in Mathematics especially designed for electrical engineering students. *Steinmetz: Engineering Mathematics. Second semester. Two credits.* 204 Morrill Hall. Professor Haseman.
70. **SOLID ANALYTICAL GEOMETRY.** A study of the plane, ellipsoid, paraboloid, hyperboloid, and the general equation of the second degree in three dimensional spaces. *First semester. Two credits.* 202 Morrill Hall. Associate Professor Nyswander.
73. **PROJECTIVE GEOMETRY.** A synthetic development of the more fundamental projective properties of conic sections,

including also an elementary treatment of homographic systems, involutions, anharmonic ratios, and the principle of duality. *First semester. Two credits.* 202 Morrill Hall. Associate Professor Nyswander.

75. HISTORY OF ELEMENTARY MATHEMATICS. Lectures and assigned readings on the history of the mathematical science. *First semester. Two credits.* 204 Morrill Hall. Professor Haseman.

85. DIFFERENTIAL EQUATIONS. Study of the ordinary and partial differential equations of the first and second orders with special attention to geometrical and physical applications. *First semester. Three credits.* 204 Morrill Hall. Professor Haseman.

105. THEORY OF FUNCTIONS OF THE COMPLEX VARIABLE. The fundamental operations applied to the complex number, the series, Riemann surfaces, etc. *Both semesters. Five credits for the year.* 204 Morrill Hall. Professor Haseman.

110. THEORY OF NUMBERS. Lectures and reports. *Second semester. Three credits.* 202 Morrill Hall. Associate Professor Nyswander.

115. VECTOR ANALYSIS. A study of the Vector notation applied to problems of physics. *Second semester. Three credits.* 202 Morrill Hall. Associate Professor Nyswander.

125-126. ADVANCED CALCULUS. A more rigorous study of the differential and integral calculus, with extensive applications to geometrical and physical problems. *Three credits, first semester. Two credits, second semester.* 204 Morrill Hall. Professor Haseman and Associate Professor Nyswander.

130. MODERN GEOMETRY. A comprehensive treatment of homogeneous coordinates and abridged notation with their applications in investigating analytically metrical and projective properties of lines and conics. *Both semesters. Two credits.* Associate Professor Nyswander.

135. FOURIER'S SERIES AND FOURIER'S INTEGRALS. A study of a few of the more important partial differential equations of physics. Development of the functions into cosine and sine series. *First semester. Three credits.* 204 Morrill Hall. Professor Haseman.

150. SEMINAR. Library work and reports on various topics of mathematical interest. *Both semesters. Two credits each semester.* Professor Haseman and Associate Professor Nyswander.

For the benefit of students desiring to make mathematics their major, or to take more advanced courses in mathematics, the following subjects will be offered at any time: Elliptic Integrals and Elliptic Functions, Differential Geometry, Partial Differential Equations, Calculus of Variations, Theory of Probabilities, Theory of Functions of a Real Variable, and Synthetic Geometry.

#### MECHANIC ARTS

College of Engineering

ASSOCIATE PROFESSOR LEWERS

ASSISTANT PROFESSOR PRESTON

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. A number of exercises in wood turning are given to all taking this course. *Freshman year. Either semester. One or two credits either semester, according to the requirements of the respective departments.* Mechanical Building. Assistant Professor Preston. Fee, \$3.50 per credit.

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. *Freshman year. One or two credits either semester, according to the requirements of the respective departments.* 101 Mechanical Building. Assistant Professor Preston. Fee, \$3.50 per credit.

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 a complete machine. *Both semesters. One to four credits either or both semesters according to the requirements of the respective departments.* 101 Mechanical Building. Assistant Professor Preston. Fee, \$3.50 per credit, according to work being done.

4. FOUNDRY PRACTICE. Instruction is given in pattern-making, molding, core-making, and casting in brass and iron. Practically all of the castings used in the machine shop are made by the students in this course. *Sophomore year. Second semester. One credit, according to the requirements of the respective departments.* 101 Mechanical Building. Assistant Professor Preston. Fee, \$3.50 per credit.

5. MANUAL-TRAINING TEACHERS' COURSE. Applied design and construction in wood and metal. *Two credits.* Physics Building and Mechanical Building. Associate Professor Lewers.

6. PATTERN-MAKING. Instruction is given in making of wood patterns for use in the foundry, introducing solid and built-up patterns, also dry and green sand-cores, horizontal cores and core-prints. Instruction is given on segment boxing and the two- and three-part flask. *Freshman year. Second semester. One credit, according to the requirements of the respective departments.* 101 Mechanical Building. Assistant Professor Preston. Fee, \$3.50 per credit.

#### MECHANICAL ENGINEERING

College of Engineering

PROFESSOR SIBLEY  
ASSOCIATE PROFESSOR LEWERS  
ASSISTANT PROFESSOR PRESTON  
MR. KENT

2. ELEMENTARY MECHANICAL DRAWING. Lettering, geometrical construction, isometric and cabinet projection and drawing from sketch of simple machine parts. *First semester. Two credits.* Electrical Building. Mr. Kent.

3. FREEHAND DRAWING. Perspective drawings of machines and buildings. Perspective drawings from mechanical drawings. Memory drawings of machines. Isometric drawing. *First semester. One credit.* Education Building. Associate Professor Lewers.

4. MECHANICAL DRAWING. A continuation of the work in M. E. 2. This course may be substituted for M. E. 3, in the first semester and the latter taken in place of one hour

elective in the second semester. Required of Freshmen who have had no drawing in preparatory schools. *First semester. One laboratory period. One credit.* Mr. Kent.

5. KINEMATICS. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, the manner of designing trains of mechanism. *Prerequisite:* Mechanical Engineering 2 and 6. *First semester. Three credits.* Electrical Building. Professor Sibley.

6. DESCRIPTIVE GEOMETRY. Standard problems on the point, line, plane, curved surface and solid are taken up in lectures and in the drawing-room. Special attention is paid to the application of these principles to the problems of the draftsman, and a large number of practical problems are given. *Prerequisite:* Mechanical Engineering 2, Mathematics 12, Plane and Solid Geometry. *Second semester. Laboratory, three periods. Three credits.* Electrical Building. Mr. Kent.

53. 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. Three credits.* Electrical Building. Professor Sibley.

54. ENGINES AND BOILERS. Fuels and their combustion under boilers for the production of steam are first taken up. The various types of boilers and boiler-room equipment are studied, and problems involving the power and efficiency of power plants considered. The common types of steam engines and turbines, with their auxiliaries, are studied, paying attention to their construction and operation. *Prerequisite:* Physics 4; Mechanical Engineering 5. *First semester. Lectures, three. Three credits.* Electrical Building. Mr. Kent.

55-56. THERMODYNAMICS. A study of the thermodynamics of perfect gases, gaseous vapors, and steam, and their application to gas engines, air compressors, refrigerating machinery, steam engines and turbines. *Prerequisite:* Physics, Chemistry, and Mathematics. *Both semesters. Three credits each semester.* Electrical Building. Professor Sibley.

58. MECHANICS OF HEAT ENGINES. Inertia forces in the moving parts of reciprocating engines, fly-wheel design,

valves and valve gearing, governors. *Prerequisite:* Mathematics, Mechanical Engineering 53 and 54. *First semester. Three credits.* Electrical Building. Professor Sibley.

64. MECHANICAL LABORATORY. This course is designed to familiarize the student with the general process of steam- and gas-engine testing, and to give training in accuracy and reliability in securing data and analyzing results. The experiments involved include: A study of the auxiliary apparatus used in connection with steam and gas machinery; calibration of instruments, such as thermometers, pressure gages, indicator springs, etc.; tests of elementary transmission machinery; friction tests of steam and gas engines. Preceded or accompanied by Mechanical Engineering 54. *Laboratory, one period. One credit.* Electrical Building. Professor Palmer and assistant. Fee, \$2.50.

65-66. MECHANICAL LABORATORY. This work covers the following:

(a) Tests of steam turbines and reciprocating engines for the determination of power developed, steam consumed, heat lost, and the mechanical and thermal efficiencies under different loads, steam pressures, and back pressures.

(b) Thermal efficiency tests of gas, gasoline and oil engines, automobile motors and air compressors.

(c) Steam-boiler tests for determining the evaporative efficiency of boilers of different types under conditions of ordinary use, and determination of the efficiency of steam and power pumps and steam injectors when operated under various conditions.

(d) Practice in setting slide, piston and Corliss valves by measurement and by indicator.

*Prerequisite:* Mechanical Engineering 55 and 56. *Both semesters. Laboratory, three periods. Three credits.* Electrical Building. Professor Palmer and assistant. Fee, \$5 each semester.

67. MECHANICAL LABORATORY. This course embraces practice in calibrating gages, thermometers and other instruments used in testing steam and gas engines. Practice is given in valve setting, and the determination of engineering data concerned with this class of machinery. Friction tests and the simpler thermal tests are made on prime movers. For students outside the schools of Mechanical and Electrical Engineering. Must be accompanied by Mechanical Engineering 68. *Laboratory, one period. One credit.* Electrical Building. Professor Palmer and assistant. Fee, \$2.50.

68. STEAM AND GAS POWER. This course consists of the general study of steam- and gas-power plants with equipments, including steam boilers, gas producers, steam and gas engines, and steam turbines with their accessories; study of the relative costs and advantages of different forms of prime movers, the combustion, handling and storage of fuels used in power plants. For students outside the Schools of Electrical and Mechanical Engineering. Preceded or accompanied by Physics 2 or 4. Must be accompanied by Mechanical Engineering 62. *First semester. Lectures, two. Two credits.* Electrical Building. Professor Palmer and assistant.

75. POWER-PLANT ENGINEERING. A study of the principles involved in the design, construction, and operation of steam- and gas-power plants for mills, factories, and electric generating stations. A lay-out of a plant to meet specified conditions is made in the drawing-room. *Prerequisite:* E. E. 51 and 52, M. E. 54 and 64. *First semester. Two recitations and one laboratory period. Three credits.* Mr. Kent.

76. AUTOMOTIVE ENGINEERING. A brief course in the principles of the design and operation of gas engines as applied to motor vehicles. Carburetors, governing, ignition, lubricating systems. *Prerequisite:* M. E. 54. Elective for Juniors and Seniors. *Second semester. Two recitations. Two credits.* Mr. Kent.

80. THESIS. An original design or an investigation intended to give the student a knowledge of research methods in engineering. This course is elective at the discretion of the instructors in the department. *Second semester. Three credits.* Professor Sibley or Mr. Kent. Laboratory fee of \$5 may be required.

#### METALLURGY PROFESSOR PALMER

51. FIRE ASSAYING. Lectures, recitations, and laboratory work in assaying. Methods of assaying, systems of weights used, calculations and problems, equipment of assay laboratories, sampling, chemistry of assaying. The assay of gold and silver ores of the simpler types followed by the assay of difficult ores and metallurgical products. *Prerequisite:* Mineralogy 3, Chemistry 10. *First semester. Lectures, two hours; Laboratory, three periods. Five credits.* Mackay School of Mines. Professor Palmer. Fee, \$15. Students who do not complete their laboratory work during the regular periods are required to pay an additional fee to cover the extra



cost of such work. This fee will be \$1 per laboratory period for each period the furnaces are used plus the cost of any chemicals, etc., used.

52. **ADVANCED FIRE ASSAYING** (College of Engineering). A laboratory course designed to give the student routine practice in the work met in a commercial assay office. It will include practice in both wet and fire assaying and determination of minerals. Not given for less than three students. *Prerequisite:* Chemistry 10, Metallurgy 51. *First semester. One credit.* Mackay School of Mines. Professor Palmer. Fee, \$5; deposit, \$5.

55. **GENERAL METALLURGY** (College of Engineering). Lectures and recitations on the general principles and practice of metallurgy. This course is designed to take up in a general way historical data regarding the production and use of metals, their importance in the engineering profession; physical and chemical properties of metals, alloys, and metallic compounds; pyrometallurgical apparatus, fuels and refractory materials; outlines of the common metallurgical processes employed in the production of copper, lead, zinc, and the minor metals and in detail the metallurgy of iron and steel. *Prerequisite:* Chemistry 6 and Physics 2 or 3. *Second semester. Three credits.* Mackay School of Mines. Professor Palmer.

56. **METALLOGRAPHY** (College of Engineering). This course is designed to cover the methods of preparation and microscopic examination of specimens of some of the common metals and alloys, illustrating the microstructure of pure metals and alloys, the effects of heat treatment in tempering and annealing, cooling curves, the detection of the presence of flaws and defects in metals, a study of welds, and the effects of strain and mechanical treatment. *Prerequisite:* Metallurgy 55. *Second semester. Lecture, one hour; Laboratory, one period. Two credits.* Mackay School of Mines. Professor Palmer. Fee, \$1; deposit, \$5.

57. **METALLURGY OF THE MINOR AND RARE METALS** (College of Engineering). Lectures and recitations on the metallurgy of minor and rare metals including the following: Antimony, arsenic, aluminum, bismuth, mercury, molybdenum, platinum, tin, and tungsten. *Prerequisite:* Metallurgy 55. *First semester. One credit.* Mackay School of Mines. Professor Palmer.

60. **METALLURGY OF COPPER, LEAD AND ZINC** (College of

Engineering). Lectures and recitations on the metallurgy of copper, lead, and zinc. Properties of the metals and the more important alloys and compounds. Roasting, smelting, converting, leaching, and refining of copper; roasting, smelting, and refining of lead; leaching and smelting of zinc. Three months are devoted to the subject of copper and one month to lead and zinc. *Prerequisite:* Metallurgy 55. *First semester. Three credits.* Mackay School of Mines. Professor Palmer.

65. **ORE DRESSING** (College of Engineering). Lectures, recitations, and laboratory practice in ore dressing. Laws of crushing, sizing, and concentration of ores, including flotation. Machines employed and practice in operating them. *Prerequisite:* Chemistry 10, Metallurgy 51 and 55. *First semester. Lectures, two hours; Laboratory, two periods. Four credits.* Mackay School of Mines. Professor Palmer. Fee, \$5.

70. **METALLURGY OF GOLD AND SILVER** (College of Engineering). Lectures, recitations, and laboratory exercises on the metallurgy of gold and silver. Physical and chemical properties of these metals and of their compounds and alloys. Methods of extracting the precious metals from their ores with special emphasis on the cyanide method. Refining gold and silver. *Prerequisite:* Metallurgy 51 and 55; Chemistry 10. *Second semester. Lectures, three hours; Laboratory, two periods. Five credits.* Mackay School of Mines. Professor Palmer. Fee, \$10.

71. **METALLURGICAL DESIGN** (College of Engineering). The design of a metallurgical plant including the preparation of working drawings of certain parts of this plant and the solution of the engineering problems connected with it. *Prerequisite:* To be taken at the same time or after completing Metallurgy 70 and Civil Engineering 71. *Second semester. Laboratory, two periods. Two credits.* Mackay School of Mines. Professor Palmer.

72. **ELECTROMETALLURGY** (College of Engineering). Lectures and recitations on electric smelting and the electrolytic processes involved in the metallurgy of the common and precious metals. *Prerequisite:* Electrical Engineering 59 and 60, to be taken at the same time or after completing Metallurgy 60 and 70. *Second semester. One credit.* Mackay School of Mines. Professor Palmer.

73. **METALLURGICAL PROBLEMS** (College of Engineering).

This course covers common technical and economic problems related to the design, operation and management of metallurgical plants. *Prerequisite:* To be taken at the same time or after completing Metallurgy 60 and 70. *Second semester. One credit.* Mackay School of Mines. Professor Palmer.

80. METALLURGICAL RESEARCH (College of Engineering). Research work in metallurgy or some allied subject. An elective course for students who, in the opinion of the instructor, are capable of undertaking research. *Second semester. Two credits.* Mackay School of Mines. Professor Palmer. Deposit to be arranged according to work undertaken.

180. THESIS (College of Engineering). Advanced research work in metallurgy. A graduate course. *Credits to be arranged.* Mackay School of Mines. Professor Palmer. Deposit to be arranged according to work undertaken.

#### MILITARY SCIENCE AND TACTICS

COLONEL J. P. RYAN, U. S. ARMY, COMMANDANT  
MAJOR A. H. BAILEY, U. S. ARMY, ASSISTANT COMMANDANT  
CAPTAIN W. J. H. RYAN, U. S. ARMY, ASSISTANT COMMANDANT  
FIRST SERGEANT E. E. VAUGHN, U. S. ARMY, ASSISTANT INSTRUCTOR

The following courses of instruction are prescribed by the War Department for Infantry Units of the Reserve Officers Training Corps:

MILITARY 1-2. Basic Course, First Year—Practical and Theoretical. Infantry drill, rifle marksmanship; scouting and patrolling; physical training; military courtesy. Required of all first-year men students. *Three hours per week. Both semesters. One credit each semester.*

MILITARY 2A. Basic Camp Course (elective). No credit.

NOTE—Camps for practical instruction are conducted by the War Department for a period of six weeks during June and July at a Regular Army station. Attendance at the Basic Camp course is voluntary, but all students who expect to take advanced military are urged to attend the camp at the end of the first year of military training. Transportation to and from the camp and all expenses incident to service at the camp are paid by the Government.

MILITARY 3-4. Basic Course, Second Year—Practical and Theoretical. Map reading and military sketching; infantry weapons, to include rifle and bayonet, automatic rifle, grenades, musketry; command and leadership; duty as non-commissioned officers at drill; military hygiene, sanitation, and first aid. Required of all second-year men students. *Three hours per week. Both semesters. Two credits each semester.*

MILITARY 51-52. (Elective). Advanced Course, First Year—Practical and Theoretical. Field engineering; infantry weapons, machine guns, howitzers and light mortars; military law and rules of land warfare; command and leadership; duty as officers of cadet battalion. Required of all third-year men taking advanced military. *Five hours per week. Both semesters. Two credits each semester.*

MILITARY 53A. Advanced Camp Course. *Two credits.*

NOTE—Students taking advanced military and receiving a daily money allowance from the Government are required to attend a camp of instruction for a period of six weeks at the end of the third year. Under exceptional circumstances attendance at the camp may be deferred until the end of the fourth year. Students attending the advanced camp course receive pay at the rate of \$30 per month from the U. S. Government.

MILITARY 53-54. (Elective.) Advanced Course, Second Year—Practical and Theoretical. Military history; tactics of small combat units; administration of infantry company; command and leadership; duty as officers of cadet battalion. Required of all fourth-year men taking advanced military. *Five hours per week. Both semesters. Two credits each semester.*

#### MINERALOGY

PROFESSOR JONES  
MR. HIGGINS

1. 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. Two credits.* Mackay School of Mines. Professor Jones and Mr. Higgins. Deposit, \$4.

2. BLOWPIPE ANALYSIS. The determination of minerals by blowpipe analysis. *Prerequisite:* Chemistry 1 or an entrance credit in Chemistry. *Second semester. Two credits.* Mackay School of Mines. Mr. Higgins. Deposit, \$4.

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 1. *Second semester. Two credits.* Mackay School of Mines. Professor Jones.

51. ADVANCED MINERALOGY. Advanced work in either blowpipe analysis, crystallography, or the determination of min-

erals under the microscope. *Prerequisite:* Mineralogy 1, 2, and 3. *Either semester. One or two credits.* Mackay School of Mines. Professor Jones.

### MINING

College of Engineering

PROFESSOR LINCOLN

*Special Lecturers:*

STAFF OF CAR NO. 1

(U. S. Bureau of Mines)

1. INTRODUCTORY MINING. A lecture course designed to acquaint the mining student with the main features of the mining industry and with the bearing of his studies upon his future work. History of mining, importance of the mining industry, occurrence of ores and useful minerals, outlines of the processes employed in mining, education and work of the mining engineer. *Freshman year. Second semester. One credit.* 100 Mackay School of Mines. Professor Lincoln.

5. PRACTICAL MINING. Practical work in mining or metallurgy during the summer vacation. Such work must extend over a period of at least one month, and a satisfactory report must be prepared upon it. *Freshman, Sophomore, or Junior vacation.* Required for graduation. *No credit.*

51. EXCAVATION. Lectures and recitations on the principles and practice of excavation. Earth excavation, explosives, rock excavation, tunneling, shaft sinking, and boring. *Prerequisite:* Mining 1. *Junior year. First semester. Three credits.* 100 Mackay School of Mines. Professor Lincoln.

52. MINE PLANT. Lectures on the principles and practice of underground haulage, hoisting, surface transportation, mine drainage, ventilation, illumination, and general discussion of steam, gas, electric and compressed-air plants. *Prerequisite:* Mining 1. *Junior year. Second semester. Three credits.* 100 Mackay School of Mines. Professor Lincoln.

60. JUNIOR MINING TRIP. A trip to a Nevada mining district to study the geological, mining, and metallurgical conditions. This excursion will consume from four to nine days, and each student will pay his own traveling and living expenses. A detailed report of observations made on the trip will be required. *Prerequisite:* Regular Junior standing. *Junior year. Second semester.* Professors Jones, Palmer, and Lincoln. Required for graduation. *No credit.*

61. MINING METHODS. Lectures and recitations on the prospecting, development, and exploitation of mineral deposits, including underground metal-mining methods in detail, open-cut methods, coal-mining methods in brief, and placer-mining methods. *Prerequisites:* Mining 51 and 52. *Senior year. First semester. Three credits.* 100 Mackay School of Mines. Professor Lincoln.

65. MINE RESCUE. Regular training in mine rescue by the Staff of Car No. 1 of the United States Bureau of Mines, whose headquarters is at the University of Nevada. *Senior year. Second semester.* Required for graduation. *No credit.*

72. ECONOMICS OF MINING. Lectures and recitations on the business, sociology, and law of mining. Mine organizations and accounts, cost of mining, wages and welfare, accidents and their prevention, mining laws of the United States and of the State of Nevada, sampling and sale of ore and other mineral products, valuation of mining properties. *Prerequisite:* Mining 61. *Senior year. Second semester. Three credits.* 100 Mackay School of Mines. Professor Lincoln.

75. MINING SEMINAR. The discussion of articles upon geological, mining, and metallurgical subjects appearing in current technical journals. *Prerequisite:* Mining 61. *Either semester. One credit.* 105 Mackay School of Mines. Professor Lincoln.

80. SENIOR MINING TRIP. The same as Mining 60, Junior Mining Trip, but taken in the student's Senior year. Excursions are made to different mining camps successive years so that both Senior and Junior mining trips may be carried on at the same time without duplication so far as individual students are concerned. *Prerequisite:* Mining 60. *Senior year. Second semester.* Professors Jones, Palmer, and Lincoln. Required for graduation. *No credit.*

90. MINING PROJECTS. One conference and one laboratory period weekly devoted to individual problems in seeking, opening, and working imaginary mines supposed to be located in important mining camps. *Prerequisite:* Mining 61. *Optional. Second semester. Two credits.* 101 Mackay School of Mines. Professor Lincoln.

99-100. MINING RESEARCH. Research work in mining or some allied subject. An elective course for students who, in the opinion of the instructor, are capable of undertaking

research. *Both semesters. Two credits each semester.* Mackay School of Mines. Professor Lincoln.

101. MINE EXAMINATION. Lectures on the examination of metal mines and prospects. Sampling, estimation of ore, valuation of properties, forms of reports. A graduate course open as an elective to undergraduates who are suitably prepared. *Either semester. Two credits.* 102 Mackay School of Mines. Professor Lincoln.

102. THE PRECIOUS AND BASE METAL INDUSTRIES. Lectures on the business of mining base and precious metals. The occurrence, statistics, mining, milling, smelting, and marketing of copper, lead, zinc, gold, and silver discussed from the economic view-point. A graduate course open to undergraduates who are suitably prepared. *Either semester. Two credits.* 102 Mackay School of Mines. Professor Lincoln.

103. THE PETROLEUM INDUSTRY. The chemistry of petroleum, the geology of oil and gas deposits. Prospecting and drilling for oil and gas. Pumping and storing oil. Refining petroleum. Natural gas and its products. The oil-shale industry. Marketing petroleum products. A graduate course open as an elective to undergraduates who are suitably prepared. *Either semester. Two credits.* 102 Mackay School of Mines. Professor Lincoln.

199-200. THESIS. Advanced research work in mining, metallurgy, geology, or some allied science. A graduate course. *Both semesters. Four credits each semester.* Total course only accepted toward degree. Mackay School of Mines. Professor Lincoln.

PROSPECTORS' SHORT COURSE. The subjects taught in the Prospectors' Short Course are listed and described under "Short Courses."

#### MODERN LANGUAGES

PROFESSOR SCHAPPELLE  
ASSISTANT PROFESSOR MURGOTTEN  
MR. GOTTARDI

Requirements for a minor in a modern language: With no admission credit, 6 units. With two admission credits, 10 units. With four admission credits, 12 units.

Requirements for a major in modern language: With no admission credits, 12 units. With two admission credits, 16 units. With four admission credits, 18 units.

Requirements for a combined minor in Modern Languages (units in any two modern languages may be counted towards a combined

minor): With no admission credits, 8 units. With two admission credits, 12 units. With four admission credits, 14 units.

Requirements for a combined major in Modern Languages (units in any two modern languages may be counted towards a combined major): With no admission credit, 14 units. With two admission credits, 18 units. With four admission credits, 20 units.

(The term "units," as used above applies only to units in courses numbered above 50. However, compare note under German 13-14.)

Students planning to present for graduation a combined major or minor in Modern Languages may be allowed to register for an extra hour of academic work in the Freshman year.

The two parts of any beginning language course must be taken in immediately consecutive semesters.

Courses 5-6 of any language must be taken simultaneously with courses 3-4 in case the student wishes to offer that language toward a major or a minor. Likewise German 13-14 must be taken simultaneously with German 11-12 if these courses are taken before German 3-4.

(The rules in the preceding two paragraphs may be set aside only by special permission of the faculty.)

Students intending later to teach Modern Languages are urged not to restrict their courses to the minimum requirements for a major or a minor in the particular subjects. All such candidates are to confer specially with the head of the department.

Courses numbered above 50 are given only in alternate years; those numbered below 50 are given every year. Exceptions are indicated at the end of the announcement of the course concerned.

The office of the Department of Modern Languages is 102 Stewart Hall.

#### French

(All candidates for either a major or a minor in French are advised to take History 79-80 with prerequisites.)

1-2. BEGINNING FRENCH. Drill in the essentials of grammar and the translation of simple prose texts. Composition and conversation. *Both semesters. Six credits for the year. Total course only accepted towards graduation.* Professor Schappelle and Mr. Gottardi.

3-4. SECOND-YEAR FRENCH. Selections from modern French prose writers. Conversation. *Prerequisite:* French 1-2, or two years of high-school French. *Both semesters. Two credits each semester.* Professor Schappelle.

5-6. ELEMENTARY PROSE COMPOSITION AND CONVERSATION. Review of grammar. This course is to be taken simultaneously with French 3-4. *Prerequisite:* French 1-2, or two years of high-school French. *Both semesters. One credit each semester.* Professor Schappelle.

51-52. THE FRENCH NOVEL. Rapid reading of masterpieces of French fiction: Balzac, Sand, Mérimée, Zola, Dau-

det, etc. *Prerequisite:* French 3-4. *Both semesters. Two credits each semester.* Assistant Professor Murgotten.

53-54. FRENCH POETRY. A study of the French lyric poets from Villon to contemporary writers. *Prerequisite:* French 3-4. *Both semesters. Two credits each semester.* Professor Schappelle.

55-56. INTERMEDIATE FRENCH COMPOSITION AND CONVERSATION. This course should be taken simultaneously with the first year of Junior-Senior reading courses in French. *Prerequisite:* French 5-6. *Both semesters. One credit each semester.* (Offered in 1923-1924.)

57-58. GENERAL SURVEY OF FRENCH LITERATURE. The history of French literature with detailed study of special periods. Assigned outside readings and reports on works read. *Prerequisite:* Four credits of Junior-Senior work. *Both semesters. Two credits each semester.* Professor Schappelle.

59-60. SCIENTIFIC FRENCH. Readings from standard French works on science and from recent numbers of French scientific magazines. This course is particularly recommended to premedical students and to those who intend to specialize in any one of the scientific fields. *Prerequisite:* French 3-4. *Both semesters. Two credits each semester.* (Offered in 1923-1924.)

69. FRENCH CLASSIC DRAMA. A special study of the works of Corneille, Racine and Molière. *Prerequisite:* French 3-4. *First semester. Two credits.* (Offered in 1923-1924.)

70. FRENCH ROMANTIC DRAMA. A study of the drama of the romantic school with special reference to the works of Victor Hugo. *Prerequisite:* French 3-4. (It is advised that students take French 69 before electing French 70.) *Second semester. Two credits.* (Offered in 1923-1924.)

73-74. ADVANCED FRENCH COMPOSITION AND CONVERSATION. Includes a study of French epistolary style and commercial correspondence. This course should be taken simultaneously with the second year of Junior-Senior reading courses in French. *Prerequisite:* French 5-6. *Both semesters. One credit each semester.* Assistant Professor Murgotten.

#### German

1-2. BEGINNING GERMAN. A systematic study of grammar. Selected reading in easy prose and verse. Simple

composition. *Both semesters. Six credits for the year. Total course only accepted towards graduation.* Assistant Professor Murgotten.

3-4. SECOND-YEAR GERMAN. Reading of German short stories. Selections from modern lyric poetry. *Prerequisite:* German 1-2, or two years of high-school German. *Both semesters. Two credits each semester.* (Offered 1923-1924.)

5-6. ELEMENTARY PROSE COMPOSITION. Review of grammar. This course is to be taken simultaneously with German 3-4. *Prerequisite:* German 1-2, or two years of high-school German. *Both semesters. One credit each semester.* (Offered in 1923-1924.)

11-12. INTERMEDIATE GERMAN. Reading of easy selections from modern German novels and short stories. This course is similar to and alternates with German 3-4, differing only in the texts read. *Prerequisite:* German 1-2, or two years of high-school German. *Both semesters. Two credits each semester.* Assistant Professor Murgotten.

13-14. PROSE COMPOSITION. This course is similar to and alternates with German 5-6, differing only in the texts used. *Prerequisite:* German 1-2, or two years of high-school German. *Both semesters. One credit each semester.* Assistant Professor Murgotten.

NOTE—Students taking German 3-4, 5-6, and also German 11-12, 13-14, may count six of the units thus obtained towards a major or a minor.

51-52. INTRODUCTION TO THE CLASSICS. Reading and technical study of representative works of Schiller and Goethe. *Prerequisite:* German 3-4 or 7-8. Should be preceded by both of these courses. *Both semesters. Two credits each semester.* (Offered in 1923-1924.)

57-58. GENERAL SURVEY OF GERMAN LITERATURE. The history of German literature with detailed study of special periods. Assigned outside readings and reports on works read. *Prerequisite:* Four credits of Junior-Senior work. *Both semesters. Two credits each semester.* (Offered in 1924-1925.)

59-60. SCIENTIFIC GERMAN. Readings from standard German works on science and from recent numbers of German scientific magazines. This course is particularly recommended to candidates in chemistry as well as to those who wish to specialize in any other scientific field. *Prerequisite:*

German 3-4 or 7-8. Should be preceded by both of these courses. *Both semesters. Two credits each semester.* Professor Schappelle.

#### Italian

1-2. BEGINNING ITALIAN. Grammar, composition, and conversation. Reading of modern Italian prose. *Both semesters. Six credits for the year. Total course only accepted toward graduation.* (Offered in 1923-1924.)

51-52. THE ITALIAN NOVEL. Rapid reading of masterpieces of modern Italian fiction: Manzoni, Fogazzaro, Verga, etc. *Prerequisite:* Italian 1-2. *Both semesters. Two credits each semester.* Mr. Gottardi.

53-54. ITALIAN LITERATURE OF THE EIGHTEENTH AND NINETEENTH CENTURIES. Reading of important works of prose and poetry of the period, with a study of literary movements. *Prerequisite:* Italian 1-2. *Both semesters. Two credits each semester.* (Offered in 1923-1924.)

#### Portuguese

61-62. INTRODUCTION TO PORTUGUESE. A study of grammar. Reading of texts on Brazilian subjects. Conversation based on the Brazilian norm. *Prerequisite:* Four units of Junior-Senior work in any one other Romanic language. *Both semesters. Two credits each semester. Total course only accepted towards graduation.* (Given on sufficient demand.)

#### Spanish

(All candidates for either a major or a minor in Spanish are advised to take History 59-60 with prerequisites.)

1-2. FIRST-YEAR SPANISH. Elementary grammar, reading, composition, and conversation. *Both semesters. Six credits for the year. Total course only accepted towards graduation.* Assistant Professor Murgotten and Mr. Gottardi.

3-4. SECOND-YEAR SPANISH. Readings from modern Spanish prose works. Conversation. *Prerequisite:* Spanish 1-2, or two years of high-school Spanish. *Both semesters. Two credits each semester.* Professor Schappelle, Assistant Professor Murgotten, Mr. Gottardi.

5-6. ELEMENTARY PROSE COMPOSITION AND CONVERSATION. Review of grammar. This course to be taken simultaneously with Spanish 3-4. *Prerequisite:* Spanish 1-2, or two years

of high-school Spanish. *Both semesters. One credit each semester.* Professor Schappelle, Assistant Professor Murgotten, Mr. Gottardi.

51-52. THE SPANISH NOVEL. Rapid reading of masterpieces of Spanish fiction: Galdós; Valdés; Ibáñez; etc. *Prerequisite:* Spanish 3-4. *Both semesters. Two credits each semester.* Assistant Professor Murgotten.

53-54. COMMERCIAL AND JOURNALISTIC SPANISH. Readings dealing primarily with Spanish-American social and economic conditions. Spanish commercial correspondence. *Prerequisite:* Spanish 3-4, 5-6. *Both semesters. Two credits each semester.* (Offered in 1923-1924.)

55-56. INTERMEDIATE SPANISH COMPOSITION AND CONVERSATION. This course should be taken with the first year of Junior-Senior reading courses in Spanish. *Prerequisite:* Spanish 5-6. *Both semesters. One credit each semester.* (Offered in 1923-1924.)

57-58. GENERAL SURVEY OF SPANISH LITERATURE. The history of Spanish literature with detailed study of special periods. Assigned outside readings and reports on works read. *Prerequisite:* Four credits of Junior-Senior work. *Both semesters. Two credits each semester.* Assistant Professor Murgotten.

79-80. ADVANCED SPANISH PROSE COMPOSITION AND CONVERSATION. This course should be taken simultaneously with the second year of Junior-Senior reading courses in Spanish. *Prerequisite:* Spanish 5-6. *Both semesters. One credit each semester.* Assistant Professor Murgotten.

81-82. SPANISH CLASSICS. Literature of the Sixteenth and Seventeenth Centuries—Cervantes; Lope de Vega; Tirso de Molina; etc. *Prerequisite:* Four credits Junior-Senior work. *Both semesters. Two credits each semester.* (Offered in 1923-1924.)

#### PHILOSOPHY

##### PROFESSOR THOMPSON

Requirements for a major in Philosophy: Psychology 5, Philosophy 7 or 8 and 21, and 12 units in courses 51 to 100.

Requirements for a minor in Philosophy: Six units in courses 51 to 100.

1. INTRODUCTION TO PHILOSOPHY. A brief study of the problems of philosophy with the solutions suggested by the various schools. Designed both for the student who wishes a perspective for further work in philosophy, and for the

student who desires a general knowledge of the scope and methods of philosophy. *No prerequisite. First semester. Two credits.* Education Building. Professor Thompson.

2. INTRODUCTION TO PHILOSOPHY. The same as course 1 in form and content. *Second semester. Two credits.* Education Building. Professor Thompson.

7. DEDUCTIVE LOGIC. Terms, definition, division, syllogism and fallacies. Text, lectures and exercises. *No prerequisite. First semester. Three credits.* Education Building. Professor Thompson.

8. INDUCTIVE LOGIC. The assumptions of induction methods of scientific investigation, fallacies, the tests of truth. Text, lectures and exercises. *No prerequisite. Second semester. Three credits.* Education Building. Professor Thompson.

21. ETHICAL THEORIES. A study of the leading theories of moral principles and ideals. Among the topics discussed will be the concept of the good, duty, egoism, altruism, freedom, responsibility, and the doctrine of virtues. Open to Sophomores. *First semester. Three credits.* Education Building. Professor Thompson.

22. APPLIED ETHICS. The application of ethical theory to typical problems of institutional life, property, and the family. Open to Sophomores. *Second semester. Three credits.* Education Building. Professor Thompson.

28. SOCIAL ETHICS. A brief study of the fundamental ethical principles based upon concrete social problems. Required of Sophomores in the two-year Normal course. *Second semester. Two credits.* Education Building. Professor Thompson.

51. HISTORY OF ANCIENT PHILOSOPHY. A study of Greek and Roman Philosophy, and of Medieval Philosophy to the decline of scholasticism. *Prerequisite: One course in Philosophy. First semester. Two or three credits according to the work done.* (Not given in 1922-1923.) Education Building. Professor Thompson.

52. HISTORY OF MODERN PHILOSOPHY. A study of the problems and concepts of philosophy from Descartes to the present time. *Prerequisite: One course in Philosophy. Second semester. Two or three credits according to the work done.* (Not given in 1922-1923.) Education Building. Professor Thompson.

53-54. PHILOSOPHICAL TENDENCIES OF THE PRESENT. A review and criticism of the main tendencies in present philosophical thought with reference to concrete social problems. Special attention will be given to absolutism, pragmatism, pluralism, and the philosophy of Bergson. *Prerequisite: One course in Philosophy. Both semesters. Two credits each semester.* Alternates with Philosophy 51 and 52. (Not given in 1922-1923.) Education Building. Professor Thompson.

61. INTRODUCTION TO RELIGION. A study of the forms and psychological aspects of religious experience with special reference to typical historic religions. *Prerequisite: One course in Philosophy or Education 5. First semester. Two to three credits according to work done.* Education Building. Professor Thompson.

62. PHILOSOPHY OF RELIGION. The meaning and validity of religious experience. Among the topics discussed will be the religious conception of God, the world, revelation, faith, prayer, evil, immortality. *Prerequisite: One course in Philosophy and Psychology 5. Second semester. Two or three credits according to the work done.* Education Building. Professor Thompson.

83-84. METAPHYSICS. A constructive study of the problems of being, unity, order, and individuality, with practical applications of the theory developed. *Prerequisite: Two courses in Philosophy and Psychology 5. Both semesters. Two credits each semester.* Education Building. Professor Thompson.

100. RESEARCH COURSE. The thesis may be selected in any field of Philosophy. For Seniors only. *Prerequisite: The equivalent of a minor in Philosophy. Either semester. Two credits.* Education Building. Professor Thompson.

#### PHYSICAL EDUCATION

##### Women

ASSOCIATE PROFESSOR SAMETH  
MISS SOMERS

Requirements of a minor in Physical Education: It is recommended that students desiring a minor in Physical Education fulfil their Freshman and Sophomore requirement in the Department of Biology. Requirement: Physiology, and, in addition to the required Freshman and Sophomore courses, Physical Education 10, 31, 32, 55, 56, 59, 60, 61, and two years of participation in athletics.

1-2. FRESHMAN PRACTICE. Free work, light apparatus,

games, and dancing. *Three periods. Both semesters. One credit each semester.* Gymnasium.

3-4. SOPHOMORE PRACTICE. Continuation of Physical Education 1-2. *Two periods. Both semesters. One-half credit each semester.* Gymnasium.

5-6. CORRECTIVE GYMNASTICS (Practice). Required instead of part of Physical Education 1-2 and 3-4 of all students who upon examination show need of it. *Four 20-minute periods a week. One credit each semester.* Gymnasium.

10. MATERIAL COURSE. Required of students in Education and of Physical Education minors. The object of this course is to give those who intend to teach, simple games, folk-dances and setting-up drills suitable for use in the grades and enough theory to get an intelligent view-point on the physical education of the present day. There will be one lecture or recitation dealing with the meaning of physical education as a part of the life of the school child. The second period will be used for practical work. *Two periods. One semester. One credit.* Gymnasium.

12. HISTORY OF PHYSICAL EDUCATION. This course will deal with the development of physical training from the earliest times to the present day. The principal historic systems as well as the present-day theories and methods will be discussed. *Two periods. Second semester. Two credits.* (Not given in 1923-1924.) Gymnasium.

31-32. DANCING. Dancing, including national, classical, folk and interpretative. Open to all who have had the equivalent of Physical Education 1-2. Special permission to enter this section will be granted to those who have not had the equivalent of Physical Education 1-2 and 3-4, but who can pass a satisfactory practical examination. *Three periods. Both semesters. One credit each semester.*

53-54. ADVANCED DANCING. A continuation of Physical Education 31-32. This course will include interpretative dancing and the construction of at least one festival or pageant, as well as at least two dances. *Three periods. Both semesters. One credit each semester.*

55. KINESIOLOGY. *Prerequisite:* Physical Education 1-2 and 3, Zoology 1 or Hygiene 7 and 8. The chief object of this course is to familiarize the student with the mechanism of the human body, dealing particularly with the shoulder-girdle, spine, pelvis, and feet, so that the student will be prepared to study intelligently cases of round shoulders, spinal

curvature, and flat feet. *Three periods. First semester. Two credits.* Gymnasium. (Not given in 1923-1924.)

56. CORRECTIVE GYMNASTICS. Anthropometry and corrective gymnastics. *Prerequisite:* Physical Education 55. The course is intended to be a practical application of Physical Education 55. Students will be given the opportunity to prescribe exercises for students taking Physical Education 5-6. Each student will be expected to measure at least two adults and three children. *Three periods. Second semester. Two credits.* Gymnasium.

59-60. THEORY AND PRACTICE OF ATHLETICS. *Prerequisite:* Two years participation in athletics (at least one year in college). *Two periods. One credit per semester.* Basketball, baseball, hockey, soccer, track.

61. Continuation of 10. Practice teaching and conferences. Required of Physical Education minors. *One credit.*

#### Men

PROFESSOR COURTRIGHT  
INSTRUCTOR CLOUGH

1. DEVELOPMENTAL EXERCISES. Hygiene and social problems are discussed as an essential part of this course. This instruction gives an insight into the practical problems of daily living from a personal and from a community point of view, including special lectures on venereal diseases. The lectures are so arranged that the student receives the equivalent of a one-hour course in personal and social hygiene throughout the four semesters of required work. The practical work consists in calisthenics, light and heavy apparatus, and informal games, which are selected with a view to obtaining progressive effect upon the bodily organism. When the weather permits, the work is done out of doors. *Freshman year. First semester. Two hours per week. One-half credit.* Dr. Clough.

2. DEVELOPMENTAL EXERCISES. Continuation of course 1. *Second semester. One-half credit.* Dr. Clough.

3. ADVANCED EXERCISES. Lectures on hygienic and social problems are continued through the Sophomore year. The practical work consists in gymnastics—advanced apparatus exercises, gymnastic dancing, tumbling, and athletic games.

By obtaining consent of the Director of the Department a student may elect any of the following as a substitute for the practical work in courses 3 and 4: Supervised—volley ball, playground ball, tennis, cross country and gym team. *Sopho-*



more year. *First semester. Two hours per week. One-half credit.* Dr. Clough.

4. **ADVANCED EXERCISES.** Continuation of course 3. *Second semester. One-half credit.* Dr. Clough.

5-8. **SPECIAL CORRECTIVE EXERCISES.** This course is designed for all Freshmen and Sophomores whose physical examinations show they are unfitted to take courses 1, 2, 3, and 4. *One-half credit for each semester's work up to and including four semesters.* Dr. Clough.

9. **ADVANCED WORK** (paralleling courses 3 and 4). *Aim:* to develop squad leaders and to assist men to qualify for a state certificate to teach physical education in high schools. *First semester. Three hours per week. One hour credit.*

10. **CONTINUATION OF COURSE 9.** *Second semester. Three hours per week. One hour credit.* Dr. Clough.

51. **FOOTBALL IN THEORY AND PRACTICE.** A course of lectures and practical demonstrations for those who may wish to coach, or for players who are out for the varsity or for those who are interested in and wish a more intimate knowledge of America's greatest game. Open only to Juniors or Seniors who have had two or more years' college experience in this sport. *First semester. One lecture per week and one hour laboratory. One hour credit.* Not given unless eight or more are enrolled. Professor Courtright.

52. **BASKETBALL IN THEORY AND PRACTICE.** A course of lectures and practical demonstrations in America's leading winter indoor sport. *Second semester. One lecture and one hour laboratory per week. One hour credit.* The same conditions for enrollment must be met as in course 51. Professor Courtright.

54. **TRACK AND FIELD ATHLETICS.** Lectures and demonstrations on each track and field event. *Second semester. One lecture and one hour laboratory per week. One credit.* The same conditions for enrollment must be met as in course 51. Professor Courtright.

### PHYSICS

PROFESSOR HARTMAN  
ASSISTANT PROFESSOR BLAIR

Requirements for a minor in Physics: Mathematics 7, 11, and 12 (unless these are offered for admission), and 13; Physics 1-2 (unless Physics is offered for admission), 3-4 and 5-6.

Requirements for a major in Physics: Mathematics 7, 11, and 12 (unless these are offered for admission), and 13, Physics 1-2 (unless

Physics is offered for admission), 3-4, 5-6, and four additional units approved by the department.

Requirement for a teacher's recommendation in Physics: a major or a minor in the department.

1-2. **GENERAL PHYSICS.** A course in general physics primarily for students in arts and science, medicine, and agriculture. Lectures and recitations with experimental demonstrations and problem work. The laboratory work is largely quantitative in character and is designed to illustrate fundamental physical principles and to develop skill and accuracy in the methods of physical measurements. *Prerequisite:* Plane Geometry. A knowledge of trigonometry also is desirable. *Both semesters. Four credits each semester.* 103, 109, and 201 Physics Building. Assistant Professor Blair. Fee, \$1; deposit \$5.

3-4. **GENERAL PHYSICS FOR ENGINEERS.** 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. *Prerequisite:* Mathematics 7, 11, 12, and 13, high-school Physics, or Physics 1-2. *Both semesters. Five credits each semester.* 201 Physics Building. Professor Hartman.

5-6. **PHYSICAL MEASUREMENTS.** Experimental work of distinctly quantitative character is done in mechanics and heat, sound and light, and electricity and magnetism. The methods selected involve fundamental physical principles, and illustrate their most important applications. *Prerequisite:* Mathematics 7, 11, 12, and 13; Physics 1-2, or high-school Physics. *Both semesters. Two credits each semester.* 103 and 109 Physics Building. Assistant Professor Blair. Fee, \$3; deposit, \$5.

19-20. **HOUSEHOLD PHYSICS.** A course in general physics for students in home economics. The practical applications of physics in the home will be emphasized. *Prerequisite:* A thorough knowledge of elementary algebra and plane geometry. *Both semesters. Lecture, recitation and quiz, two hours; laboratory, one period. Three credits each semester.* 103 and 201 Physics Building. Assistant Professor Blair. Fee, \$3; deposit, \$5.

53-54. **GENERAL PHYSICS FOR ARTS AND SCIENCE STUDENTS OF THE SENIOR COLLEGE.** 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. *Prerequisite:* Mathe-

matics 7, 12, and 13, high-school Physics, or Physics 1-2. *Both semesters. Five credits each semester.* 201 Physics Building. Professor Hartman.

55-56. PHYSICAL MEASUREMENTS. Experimental work of distinctly quantitative character is done in mechanics and heat, sound and light, and electricity and magnetism. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisite:* Mathematics 7, 12, and 13; Physics 1-2 or high-school Physics. *Both semesters. Two credits each semester.* 103 and 109 Physics Building. Assistant Professor Blair. Fee, \$3; deposit, \$5.

57-58. ELECTRICAL MEASUREMENTS. Precise measurements of current electromotive force and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. Photometry. Illumination. One hour each week will be devoted to discussion and recitation. *Prerequisite:* Physics 3-4 and 5-6. *Either semester. One or two credits per semester.* 103, 109, and 201 Physics Building. Professor Hartman and Assistant Professor Blair. Fee, \$3; deposit, \$5.

59-60. HEAT AND THERMODYNAMICS. Lectures and recitations accompanied by experimental work of a quantitative character. This course, together with Physics 61-62, is introductory to Mathematical Physics. Many of the more difficult subjects merely touched upon in Physics 1-2, or 3-4, will be fully treated. (Alternates with Physics 61-62.) *Prerequisite:* Physics 1-2, or 3-4 and 5-6; and Mathematics 13, 25, and 26. *Both semesters. Two credits each semester.* 201 Physics Building. Professor Hartman.

61-62. LIGHT AND PHYSICAL OPTICS. Lectures; 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. (Alternates with Physics 59-60.) *Prerequisite:* Physics 3-4 and 5-6; Mathematics 13, 25, and 26. *Both semesters. Two credits each semester.* 201 Physics Building. Professor Hartman and Assistant Professor Blair.

63. PHYSICAL OPTICS. Laboratory exercises in connection with course 61-62. *First semester. Two credits.* 201 Physics Building. Professor Hartman and Assistant Professor Blair. Fee, \$3; deposit, \$5.

65-66. HISTORY OF PHYSICS. Lectures and recitations. Preparation of reports and discussion of assigned topics by members of the class. *Prerequisite:* Physics 1-2 or 3-4, and 5-6. *Both semesters. One credit.* 201 Physics Building. Professor Hartman.

67. DISCHARGE OF ELECTRICITY THROUGH GASES. *Prerequisite:* Physics 1-2 or 3-4. *First semester. Two credits.* 201 Physics Building. Professor Hartman.

68. ELECTRIC LIGHTING. The application of physical principles to the various problems of electric lighting, photometry, and miscellaneous applications of electricity. *Prerequisite:* Physics 3-4 and 5-6, and Mathematics 13, 25, and 26. *Second semester. Two credits.* 201 Physics Building. Professor Hartman.

101-102. MATHEMATICAL PHYSICS. An introduction to the more advanced mathematical analysis as applied to general physical problems. *Prerequisite:* Physics 3-4, 5-6, 57, and 59-60, and Mathematics 13, 25, 26, and 85. *Both semesters. One credit each semester.* 201 Physics Building. Professor Hartman.

103-104. THESIS WORK, and all special laboratory work not in the courses announced above. *Both semesters. Credits to be arranged.* 201 Physics Building. Professor Hartman.

#### PSYCHOLOGY

PROFESSOR YOUNG

Requirements for a major: Philosophy 1 or 2, Zoology 8, Economics 71, Psychology 5, 51, 60, 62, 63, and six additional hours in the department.

Requirements for a minor: Psychology 5, 8 or 10, 62, and ten additional hours in the department.

2. HUMAN NATURE. A birdseye view of man's instincts, capacities and mental traits. The laws of learning and habit-formation are emphasized. The principal aims of the course are: (1) to furnish a basis for the development of an effective method of study; (2) to present the principles that should be recognized in the conscious building of character; and (3) to develop greater social sympathy and understanding. *Second semester. Three credits.* Education Building. Professor Young.

5. GENERAL PSYCHOLOGY. An introductory course dealing with forms and laws of consciousness. Lectures, prescribed readings, term paper. Not open to Freshmen. Required for two-year Normal and high-school teacher's diplomas.

Either semester. Three credits. Education Building. Professor Young.

8. PSYCHOLOGY OF CHILDHOOD. - The development of consciousness through infancy and childhood, with special reference to the application of the principles of development to the training of children. Required for two-year Normal students. *Second semester. Two credits.* Education Building. Professor Young.

10. PSYCHOLOGY OF ADOLESCENCE. An intensive study of the characteristics dominant in the adolescent, with special emphasis upon applications to the work of the high-school teacher. Required for high-school teacher's diploma. *Second semester. Two credits.* Education Building. Professor Young.

12. PSYCHOLOGY OF OCCUPATIONS. A brief review of the fundamental principles of psychology, and a study of their applications in the chief industries and occupations of mankind. *Second semester. Three credits.* Education Building. Professor Young.

51. SOCIAL PSYCHOLOGY. A study of the applications of psychology to the group-life of society: communities, parties, nations, mobs, amusements, etc. *Prerequisite: Psychology 5, or its equivalent. First semester. Two credits.* Education Building. Professor Young.

53. ADVANCED EDUCATIONAL PSYCHOLOGY. A study of the native endowment of the individual—instincts, capacities, individual traits—the learning process, and the psychology of elementary and high-school subjects. (Not given in 1922-1923.) *First semester. Three credits.* Education Building. Professor Young.

55. ABNORMAL PSYCHOLOGY. A study of the abnormal mind in its relation to behavior. The theory of the unconscious mind, sleep, dreams, hypnotism, and obsessions are major topics in the course. *Prerequisite: Psychology 5, or its equivalent. First semester. Three credits.* Education Building. Professor Young.

59. MENTAL MEASUREMENTS. Lectures, practice, readings. Description of the more important tests of general intelligence and special ability, with some practice in testing, grading and interpreting results. Special attention will be given to the testing of school children, tests as a means of classifying employees, army personnel, etc. *First semester. Two credits.* Education Building. Professor Young.

60. COMPARATIVE PSYCHOLOGY. The genetic history of consciousness in animals, savages and civilized human beings. (Alternate years. Given in 1922-1923.) *Second semester. Two credits.* Education Building. Professor Young.

61. BUSINESS PSYCHOLOGY. A discussion and illustration of the mental laws upon which efficient buying, selling, advertising and the management of men are based. Alternate years. (Not given in 1922-1923.) *First semester. Two credits.* Education Building. Professor Young.

62. EXPERIMENTAL PSYCHOLOGY. A laboratory course in the application of scientific methods to the study of mental processes. Lectures, assigned readings, and laboratory. (Alternate years. Not given in 1922-1923.) *Second semester. Three credits.* Education Building. Professor Young.

63. ADVANCED PSYCHOLOGY. An intensive study of selected problems. Lectures, readings and a term paper. *Prerequisite: Psychology 5. First semester. Two credits.* Education Building. Professor Young.

102. RESEARCH IN PSYCHOLOGY. The thesis subject may be chosen from the field of child study, social or experimental psychology. For graduate students and Seniors. *Prerequisite: Psychology 5, and at least one course in the field in which the work is to be done. Either semester. Two credits.* Education Building. Professor Young.

#### VETERINARY SCIENCE

College of Agriculture

ASSOCIATE PROFESSOR LOCKETT

54. VETERINARY SCIENCE. A combination lecture and laboratory course covering dentition of farm animals and age determination, unsoundness, etc.; obstetrics; the more common ailments, their prevention and handling; wounds and their treatment; common drugs and their administration. *Prerequisite: Zoology 1, Hygiene 53, and Zoology 51 of all students, and Bacteriology 51 of all students in Animal Husbandry-Dairying Division. First semester. Lectures, three hours; Laboratory, two periods. Five credits.* 101 Hatch Hall. Associate Professor Lockett.

55. VETERINARY SCIENCE. A lecture course covering the more common infectious diseases of animals and methods of combatting same. *Prerequisite: Bacteriology 51, Veterinary Science 54. Second semester. Two credits.* 101 Hatch Hall. Associate Professor Lockett.

### SHORT COURSES

The Prospectors' Short Course is designed to aid the prospectors of Nevada, but is open to the residents of other States as well. The work includes lectures on prospecting, mining law, together with laboratory work in assaying, mineralogy, geology, chemistry, physics, sanitation, and mining law, together with laboratory work in assaying, mineralogy, geology, chemistry, physics, and mining law. It is impossible to cover all of these subjects in detail, but an attempt is made to present the prospectors with as many practical points as possible, and to give them an opportunity to bring up for discussion any points which may not be clear to him.

### SHORT COURSES

1. PROSPECTORS' SHORT COURSE
2. DAIRY SHORT COURSE
3. HOME-MAKERS' SHORT COURSE

Prospectors' Short Course—This course is held at the University of California, Berkeley, California. It is designed to aid the prospectors of Nevada, but is open to the residents of other States as well. The work includes lectures on prospecting, mining law, together with laboratory work in assaying, mineralogy, geology, chemistry, physics, sanitation, and mining law, together with laboratory work in assaying, mineralogy, geology, chemistry, physics, and mining law. It is impossible to cover all of these subjects in detail, but an attempt is made to present the prospectors with as many practical points as possible, and to give them an opportunity to bring up for discussion any points which may not be clear to him.

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## SHORT COURSES

## PROSPECTORS' SHORT COURSE

*Description*—The Prospectors' Short Course is designed to aid the prospectors of Nevada, but is open to the residents of other States as well. The work includes lectures on prospecting, metallurgy, mineralogy, geology, chemistry, hygiene, sanitation, and mining law, together with laboratory work in assaying, mineralogy, power, and first aid to the injured. In the short time available it is impossible to cover any one of these subjects in detail, but an attempt is made to acquaint the prospector with as many practical points as possible, and to give him an opportunity to bring up for discussion any items which may not be clear to him.

*Time*—The Prospectors' Short Course will begin on Monday, January 15, 1923, continuing for four full weeks. The course is set at this time in order to enable the prospector to attend during the season when prospecting is least active.

*Registration*—Those who desire to attend the Prospectors' Short Course should register at the Registrar's office in Morrill Hall at 8 o'clock in the morning, January 15, 1923.

*Expenses*—Room and board may be obtained at Lincoln Hall, so long as accommodations are available, at the rate of \$31 for the month. Room and board in town will cost slightly more than this. No charges are made for instruction in this course, but a fee of \$5 is charged to cover the cost of the supplies used, extra expenses, etc. No text-books are required, although certain books are recommended. The students will be expected to provide themselves with note-books.

*Certificate*—Upon the satisfactory completion of the course, a certificate will be issued.

## SUBJECTS TAUGHT IN PROSPECTORS' SHORT COURSE

Sh. 1. *Prospecting*

Fifteen practical talks on prospecting as follows:

1. Definition, History, and Importance of Prospecting.
2. Where to Go and What to Take.
3. Aids to Surface Prospecting for Lodes.

4. Surface Prospecting Methods.
5. Outcrops and Their Meaning.
6. Underground Prospecting for Lodes.
7. Placer Prospecting.
8. Prospecting for Gold and Silver Lodes.
9. Prospecting for Copper, Lead, and Zinc Lodes.
10. Prospecting for Minor Metals.
11. Prospecting for Nonmetallic Minerals.
12. Prospecting for Oil and Gas.
13. Location of Mineral Deposits.
14. Valuation of Prospects.
15. The Business of Prospecting.

These talks are given by Director Lincoln, 100 Mackay School of Mines.

Sh. 2: *Metallurgy*

Outline of Metallurgy Lectures for Prospectors Short Course:

*Lecture No. 1*—Sampling Ores, etc.

Samples vs. specimens, proper and improper methods of sampling, salting samples.

*Lecture No. 2*—Valuation, Buying, and Selling Ores.

Assay value vs. commercial value, and how they compare; factors influencing the commercial value; ore rate schedules of smelting and ore-purchasing companies.

*Lecture No. 3*—Assaying Gold and Silver Ores.

Brief outline of the apparatus necessary, steps taken, type charges, and accuracy obtained. Discussion of blow-pipe assaying and its limitations.

*Lecture No. 4*—Assaying for the Minor Metals, Copper, Lead, Zinc, etc.

Brief outline of the methods used for approximate analysis and for more exact methods.

*Lecture No. 5*—Metallurgical Treatment of Ores by Mechanical Methods.

Simple hand methods of panning, hand picking, and jigging; machine methods for coarse and for fine ores; flotation.

*Lecture No. 6*—Methods Used in Recovering Gold by Placering and Amalgamation.

Wet and dry methods.

*Lecture No. 7*—The Cyanide Process for Recovering Gold and Silver from Ores.

Brief outline of the main steps in the process.

*Lecture No. 8—Smelting of Ores.*

A brief description of the general application of this method of recovering metals as applied in cases of copper and lead.

Professor Walter S. Palmer, 100 Mackay School of Mines.

*Sh. 3: Mineralogy*

1. Introduction; characters of minerals; methods of classification and determination.
2. Iron minerals; Tungsten minerals; Manganese minerals.
3. Cobalt; Nickel; Zinc; Tin; Lead.
4. Bismuth; Arsenic; Antimony; Uranium; Molybdenum; Copper.
5. Barium; Calcium; Aluminum; Boron; Sulphur; Carbon.
6. Mercury; Silver; Gold; Potassium; Sodium.
7. Rock-forming minerals; silicates.
8. Conclusion.

Professor Jones, 202 Mackay School of Mines.

*Sh. 4: Geology*

1. Introduction; Processes active in and on the surface of the earth; Origin and classification of rocks.
2. Action of the atmosphere; Weathering; Residual ore deposits.
3. Action of running water; Transportation, sorting, and deposition; Placer deposits.
4. Origin and circulation of underground water; Solution; Deposition; Spring deposits.
5. Forces active in the interior of the earth; Diastrophism; Volcanism; Structure; Faulting.
6. Types of ore deposits; Magmatic segregations; Contact; Metamorphic deposits; Pegmatite veins.
7. Types of ore deposits; Deep-seated veins; Intermediate-depth veins; Shallow-depth veins.
8. Weathering of ore deposits; Outcrops; Secondary enrichments.
9. Nonmetalliferous deposits—Coal, Oil.
10. Mineral Resources of Nevada.
11. Relation of Geology to Mining; Value and limitation of a geologist.
12. General Lecture.

Professor Jones, 200 Mackay School of Mines.

*Sh. 5: Direct- and Alternating-Current Machinery*

This course of lectures supplemented by laboratory demonstrations is intended to cover selection, installation, and maintenance of the principal types of electrical machinery used in connection with mining and shop equipment. Both direct- and alternating-current apparatus will be studied, and a certain amount of time will be spent on the study of lighting and power circuits and wiring installations.

Professor Stanley G. Palmer, Electrical Building.

*Sh. 6: Chemistry*

This course consists of four lectures upon elementary chemistry. The first lecture gives a very brief outline of the general field of chemistry, aiming to give the student a hasty view of the subject-matter dealt with in the science of chemistry, and how chemistry is related to modern life. An attempt is made to explain the difference between an element and a compound, and to show what is meant by chemical action. The second lecture gives an outline of the general properties of precious metals; their more usual compounds, together with a short description of the elements with which they most frequently occur. The third lecture outlines a simple method for the separation and detection of the metals copper, silver, lead, and mercury, with the idea in view that the prospector in the field may be able to make the identification tests. The fourth lecture deals with the rare metals; their occurrence, properties, methods of identification, and value. All these lectures are given with experimental demonstration and with the idea in view that every part of the work shall be given in such a way that it can be applied by the prospector.

Dean Adams and Professor Sears, 206 Chemistry Building.

*Sh. 7: Hygiene and Sanitation*

The course comprises four lectures dealing with the fundamental principles of human health and disease with particular reference to keeping fit and avoiding infectious diseases under prospecting and mining-camp conditions. The topics discussed include the following: General structure and mode of operation of the human; causes of ineffective operation, disability and disease; the relation of food, water, air, dust, excretions, cleanliness, physical activity, recreation, and sleep to health; a sanitary mining camp; suggestions as to food, clothing, medical, and other supplies for the pros-

pector. The lectures will be illustrated with numerous diagrams, models, specimens, and simple demonstrations.

Professor Frandsen, 110 Agricultural Building.

#### Sh. 8: *Mine Rescue and First Aid*

The course in Mine Rescue as taught by the U. S. Bureau of Mines consists of five four-hour periods. Prospectors taking the work are taught how to proceed in case of mine fires, and are thoroughly trained in the use of self-contained oxygen breathing apparatus. In addition to wearing the apparatus they are taught how to test and assemble it. Trained men wearing this equipment can safely work in smoke and poisonous gases. This part of the course is elective.

The First-Aid course consists of fifteen hours work pertaining to the treatment of injuries and sustaining life in the patient until the doctor arrives. It is required of all students taking the Prospectors Short Course. Instruction is given in methods of controlling hemorrhage or bleeding; of treating burns and bandaging wounds; in resuscitation by artificial breathing of those who have been overcome by gas, drowning, or electric shock; and how properly to place splints for fractured bones. The course is specially designed for prospectors, as their work is of such a nature that a doctor is not always immediately available.

Staff of Car No. 1, U. S. Bureau of Mines.

#### Sh. 10: *Surveying*

Lectures on approximate methods of surveying, useful to prospectors:

*Lecture 1*—Some of the fundamental principles of surveying and approximate methods not requiring elaborate or expensive instruments.

*Lecture 2*—The approximate surveying of mining claims and the use of compasses, including the Brunton hand transit.

*Lecture 3*—Explanation of the U. S. Geological Survey topographic maps and their utility, when coupled with an aneroid barometer, for purposes of exploration and prospecting.

*Lecture 4*—The underground surveying of small mines without the use of expensive instruments.

Professor Boardman, Electrical Building.

#### Sh. 11: *Gas Engines*

Practical talks and laboratory exercises on the use of gas engines.

Dean Sibley, Mechanical Engineering Laboratory.

#### DAIRY SHORT COURSE

In 1920-1921 a Dairy Short Course for butter-makers was given for five weeks, January 21 to March 5, inclusive. Four persons took all of the work and four persons took the afternoon lectures only. The work consisted of lectures and laboratory work in butter-making, lectures in dairy bacteriology, lectures and laboratory practice in testing milk, cream, and butter. Persons who finished this course satisfactorily and who have had at least six months of practical experience in a creamery are entitled to a short-course certificate.

In the future short courses in Dairying will be given at about the same time of the year when there seems to be a demand for it. The work will be varied according to the desire of the majority of the applicants.

#### HOME-MAKERS' SHORT COURSE

**SHORT COURSE I—FOODS.** This course includes a brief study of the functions of the different food groups, their sources and the amounts needed under varying conditions of life; planning meals in relation to food requirements; use of labor-saving equipment. *Three lectures a week.* Professor Lewis. Fee, \$1.

**SHORT COURSE II—MILLINERY.** This course discusses type of hat suited to the individual, how to estimate amount of material needed; the making of hats and flowers, and their renovation. *Three laboratories.* Assistant Professor Pope. Fee, 50 cents.

**SHORT COURSE III—CHILDREN'S CLOTHING.** The general requirements of children's clothing from the practical hygienic and artistic standpoint will be considered. Old as well as new materials will be used in making of garments. *Three laboratories a week.* Assistant Professor Pope. Fee, 50 cents.

**SHORT COURSE IV—UNIT COURSE IN DRESSMAKING.** This course includes the making of a dress form, consideration of color, texture, and design suitable for the individual; adaptation of commercial patterns, and the making of wool or silk dresses. *Three laboratories a week.* Miss Campiglia. Fee, 50 cents.

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**AFFILIATED ORGANIZATIONS**

1. AGRICULTURAL EXPERIMENT STATION
2. AGRICULTURAL EXTENSION DIVISION
3. THE STATE MINING LABORATORY
4. THE STATE HYGIENIC LABORATORY
5. LABORATORY FOR PURE FOOD AND DRUGS AND WEIGHTS AND MEASURES
6. THE STATE VETERINARY CONTROL SERVICE
7. UNITED STATES BUREAU OF MINES EXPERIMENT STATION

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**HATCH BUILD**

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## AFFILIATED ORGANIZATIONS

## THE NEVADA AGRICULTURAL EXPERIMENT STATION

*Staff*

- WALTER E. CLARK, Ph.D., LL.D., President of the University.  
 SAMUEL B. DOTEN, M.A., Director and Entomologist.  
 F. L. BIXBY, C.E., Bureau of Public Roads, Irrigation Div., U.S.D.A.  
 GEORGE HARDMAN, M.S., Assistant Agronomist.  
 CHARLES E. FLEMING, B.S.A., Range Management.  
 EDWARD RECORDS, V.M.D., Veterinarian.  
 LYMAN R. VAWTER, D.V.M., Pathologist.  
 M. R. MILLER, B.S., Chemist.  
 MADGE L. FINK, B.A., Secretary to Veterinary Department.  
 MARTHA RYAN, Librarian and Secretary to Director.

Under the provisions of the Hatch Act, approved March 2, 1887, the Agricultural Experiment Station was organized in December of that year. From the Hatch Fund the Experiment Station receives \$15,000 annually, and from the Adams Fund, created by the Adams Act of 1906, it receives a like amount. Neither fund can be applied to teaching or to the work of Agricultural Extension, because the object of both funds is the investigation by scientific methods of problems in the agricultural industry.

The Nevada Experiment Station has chosen problems for study in three fields:

I. The problems of the most effective use of a limited water supply in crop production.

II. The problems of animal disease in the livestock industry of the State.

III. The problems arising from the depleted condition of Nevada ranges for sheep and cattle.

For 1921-1922 the active project list of the Station is as follows:

*Irrigation—*

## HATCH FUND

25. Methods of Increasing Hay Production in the Humboldt Valley. 1919-1924. Project Leader, F. L. Bixby.

<sup>1</sup>U. S. Department of Agriculture cooperating.

*Range Management—*

23. Revegetation of Depleted Ranges. 1916-Continuous. (Consolidating Projects 7, 8, 9, and 10 Hatch.) Project Leader, C. E. Fleming.  
 24. Methods of Increasing the Percentage of Lambs in Nevada Flocks, 1919-1921. Project Leader, C. E. Fleming.  
 26. Feeding and Finishing Range Ewes and Lambs. 1920-Continuous. Project Leader, C. E. Fleming.  
 27. Pasturage and Ensilage Production for Sheep. 1920-Continuous. Project Leader, C. E. Fleming.

*Veterinary Science—*

## ADAMS FUND

16. Hemorrhagic Disease in Cattle. 1914-Continuous. Project Leader, Dr. Edward Records.

*Entomology—*

19. Biting-Flies of Cattle. 1916-1921. Project Leader, S. B. Doten.

*Range Management—*

20. White Sage Studies. 1916-Continuous. Project Leader, C. E. Fleming.  
 22. Poisonous Range Plants. 1916 (Hatch). 1918-Continuous. (Consolidating Project 6, Hatch, and Project 14, Adams.) Project Leader, C. E. Fleming.

## AGRICULTURAL EXTENSION DIVISION

*Cooperating Parties*

THE PRESIDENT AND THE BOARD OF REGENTS OF THE UNIVERSITY OF NEVADA.

THE STATES RELATIONS SERVICE OF THE UNITED STATES DEPARTMENT OF AGRICULTURE.

THE COUNTY FARM BUREAUS.

*Administrative—**Staff*

- CECIL W. CREEL, B.S., Director and County Agent Leader.  
 MERLE D. COLLINS, B.S., State Club Leader.  
 MARY E. STILWELL, B.S., State Home Demonstration Leader.  
 EDA L. CARLSON, Secretary.  
 ROSE MITCHELL, Stenographer.  
 WINIFRED WEHE, Stenographer.

*Extension Specialists—*

- CHARLES A. NORCROSS, A.B., State Marketing Specialist.  
 VERNER E. SCOTT, B.S., State Leader in Dairying.  
 MERLE D. COLLINS, B.S., Poultry Husbandry.

*County Agricultural Agents—*

- A. J. REED, B.S., Churchill County.  
 JOHN H. WITTWER, B.S., Clark County.  
 CHESTER A. BRENNEN, B.A., Elko County.  
 JOSEPH W. WILSON, B.S., Humboldt and Pershing Counties.  
 GARDNER L. CHISM, B.S., Lincoln County.  
 THOMAS BUCKMAN, B.S., Lyon County.  
 SEWELL E. MERRILL, B.S., Washoe County.  
 THOS. R. KING, B.S., White Pine County.  
 J. CARLOS LAMBERT, B.S., Assistant, Elko County.

*Home Demonstration Agents—*

- FLORA E. McELHINNEY, B.S., Elko County.  
 HAZEL ZIMMERMAN, B.S., Washoe County.  
 MARJORIE D. MANN, A.B., Humboldt and Pershing Counties.  
 ....., Churchill and Lyon Counties.

*Club Leaders—*

- LEAH BARKER, B.S., Clark, Lincoln, and White Pine Counties.

Cooperative Extension Work in Agriculture and Home Economics is organized and conducted in Nevada under the provisions of the Smith-Lever Act of Congress, approved March 8, 1914. The Agricultural Extension Division as established under the Memorandum of Understanding, dated September 8, 1914, is a "definite and distinct administrative division" of the University of Nevada, coordinate in rank and affiliating with the College of Agriculture and the Agricultural Experiment Station. All the extension activities of the College of Agriculture and the United States Department of Agriculture in Nevada are conducted through this department.

The nature of the work is defined in general terms by law as "the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in said colleges in the several communities, and imparting to such persons information on said subjects through field demonstrations, publications, and otherwise."

The work is outlined in written projects and budget annually entered into by the cooperating parties. There are five major project divisions, as follows: Administrative; College, Station, and Extension Specialists; County Agent Work; County Home Economics Work, and County Boys and Girls Club Work.

The organization for Extension work in Nevada comprises an administrative and special staff, resident at the

University; the Nevada State Farm Bureau, and a County Farm Bureau in each county, organized pursuant to the Nevada Farm Bureau Act, approved April 1, 1919, as amended March 4, 1921, and the cooperative employment in each county so organized of a County Agricultural Agent, a County or District Home Demonstration Agent, and, if funds permit, a District Club Leader, in charge of junior Extension work. The State Farm Bureau and each County Farm Bureau are incorporated as quasi-public corporations; annually elect a board of directors; adopt, with the approval of the Extension division, an annual budget and program for Extension work, and are in immediate charge of the work, subject to the terms of such programs of work.

## THE STATE MINING LABORATORY

*Staff*

- WALTER E. CLARK, Ph.D., LL.D., President of the University.  
 FRANCIS CHURCH LINCOLN, E.M., Ph.D., Director.  
 J CLAUDE JONES, B.A., Geologist and Mineralogist.  
 WALTER S. PALMER, E.M., Metallurgist.  
 HENRY E. HIGGINS, Analyst.

The State Mining Laboratory was organized at the University of Nevada in 1895 under the provisions of an Act approved on March 16 of that year. Its object is to assist the mining industry of Nevada by making free analyses of minerals and ores taken from within the boundaries of Nevada by its citizens, and by reporting to the senders the results of such analyses, together with the uses and market values of the substances submitted.

The routine analyses and mineral determinations are made by the analyst. Unusual rocks and minerals are determined by the geologist and mineralogist, while the special tests are made by the metallurgist. The director exercises general supervision over the work of the laboratory.

Samples and specimens are listed and distributed in the order in which they are received at the laboratory, and are analyzed essentially in this order, but reports do not go out in the same order since some assays take much longer than others. The results obtained by analysis are given upon the reports for all substances except gold and silver. All that

the law permits is a statement that gold or silver is present in value above or below \$5 per ton.

The State Mining Laboratory is open from 8 to 12 a. m. and 1 to 5 p. m. daily, with the exception of Saturday afternoons and Sundays. The records of the laboratory are open to inspection, but visitors will not be permitted to see copies of reports until sufficient time has elapsed for the original reports to reach the hands of the senders.

#### THE STATE HYGIENIC LABORATORY

(Sierra and Fifth Streets)

##### Staff

WALTER E. CLARK, Ph.D., LL.D., President of the University.

<sup>1</sup>HENRY ALBERT, M.D., Director.

ALICE L. THOMPSON, M.D., Acting Director.

FLORENCE HILLHOUSE, Stenographer.

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 following outline may serve to give an idea of the scope of work that is being performed by the laboratory:

1. Examination of throat cultures for the diagnosis of diphtheria or for release from quarantine.
2. Examination of sputum for tubercle bacilli.
3. Widal tests for the diagnosis of typhoid fever.
4. Examination of blood smears for diagnosis of malaria.
5. Examination of smears of urethral pus for the diagnosis of gonorrhoea.
6. Examination of pus smears from conjunctivitis and other suppurating foci to determine the nature of infection.
7. Wasserman tests for the diagnosis of syphilis.

<sup>1</sup>Dr. Albert's directorship begins July 1, 1922.

8. Microscopic examination of urinary sediment for the presence of tubercle bacilli in suspected tuberculosis of the kidney; also for the presence of casts, pus, and blood.

9. Bacteriological water analyses. Persons desiring a water analysis should correspond with the laboratory before sending the sample. Samples submitted in unsterile bottles and not packed in ice will not be accepted for bacteriological analysis.

Proper containers are distributed to physicians and health officers free of charge for the collection and transmission of specimens.

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.

#### LABORATORY FOR PURE FOOD AND DRUGS AND WEIGHTS AND MEASURES

(Sierra and Fifth Streets)

##### Staff

WALTER E. CLARK, Ph.D., LL.D., President of the University.

SANFORD CROSEY DINSMORE, B.S., Commissioner.

WAYNE B. ADAMS, B.S., Assistant Chemist and Inspector.

FLORENCE HILLHOUSE, Stenographer.

An Act providing for the inspection and analysis of foods, drugs, and liquors, manufactured or offered for sale within the State, was passed by the 1909 session of the Legislature, and became effective on January 1, 1910. The state law is modeled after the National Food and Drugs Act of June 30, 1906, and provides that all rules, regulations, definitions, and decisions proclaimed by the Secretary of Agriculture for the enforcement of the national law shall be adopted by this department in the enforcement of the state law.

With such provisions Nevada receives valuable aid through the federal regulations, and avoids conflict with neighboring States having laws also modeled closely after the national Act. Uniformity in state and national laws, and cooperation among officials is much to be desired, and more can be accomplished under such conditions than by working under laws

that are dissimilar or antagonistic to established regulations that have been in vogue in States maintaining food laws for a number of years.

The laws of this State, being similar to the national law, obviate the necessity of manufacturers providing special labels to meet any special requirements that otherwise might exist in this State. Often labels are submitted to this department for approval or correction so that they will comply with the Nevada food law.

An Act concerning and fixing standard weights and measures, and to regulate the sale of commodities or articles of merchandise according to such standards, was passed by the 1911 Session of the Nevada Legislature and became effective January 1, 1912.

The standard weights and measures adopted by the Government of the United States have been adopted as the legal standard of weights and measures throughout the State of Nevada. With this adoption Nevada receives aid through the federal regulations and promotes uniformity in state and national standards.

#### THE STATE VETERINARY CONTROL SERVICE

##### *Staff*

WALTER E. CLARK, Ph.D., LL.D., President of the University.

EDWARD RECORDS, V.M.D., Director.

LYMAN R. VAWTER, D.V.M., Pathologist.

STEPHEN LOCKETT, V.M.D., Field Veterinarian.

<sup>1</sup>L. MARJORIE COWGILL, M.A., Laboratory Technician.

MADGE L. FINK, B.A., Secretary.

##### *Employees of State Board of Stock Commissioners Cooperating with State Veterinary Control Service*

WARREN B. EARL, D.V.M., Veterinary Inspector.

EARL M. DOBBS, D.V.M., Veterinary Inspector.

W. H. HILTS, D.V.M., Veterinary Inspector.

MARY PAINTER, B.A., Clerk.

The State Veterinary Control Service was organized during 1915, under the provisions of an Act of the Legislature

<sup>1</sup>Resigned December 31, 1921.

approved March 11, 1915. The object of this Department is to provide facilities for the routine diagnosis of communicable diseases of domesticated animals in the laboratory and the field, and to conduct research into the nature, cause, and means of control of such diseases, including the manufacture and distribution of special sera and vaccines for their control when these cannot be procured in the open market. This is intended to supplement the more elaborate research projects of the Department of Veterinary Science of the Agricultural Experiment Station and aid in the field work carried on by the Division of Agricultural Extension of the College of Agriculture and the State Board of Stock Commissioners. From time to time bulletins and circulars dealing with the communicable diseases of domesticated animals and the most modern means of controlling the same are prepared and distributed jointly with the Agricultural Extension Division of the College of Agriculture.

The Director is ex officio State Quarantine Officer. The services of the staff are available to the veterinarians and livestock owners of the State in the diagnosis and control of communicable diseases of live stock.

#### UNITED STATES BUREAU OF MINES EXPERIMENT STATION

##### *Staff*

SAMUEL C. LIND, Ph.D., Superintendent.

JOHN GROSS, E.M., Metallurgist.

D. C. BARDWELL, Ph.D., Assistant Chemist.

CHARLES W. DAVIS, B.S., Assistant Chemist.

J. WALTER SCOTT, B.S., Junior Metallurgist.

H. A. DOERNER, B.S., Assistant Chemist.

H. F. McCRAY, Chief Clerk.

ANNA M. MCFARLAND, Stenographer.

The Legislature of Nevada passed an Act in March, 1919, providing funds to house an experiment station of the United States Bureau of Mines at the University of Nevada. In June, 1920, the Bureau of Mines accepted the offer and agreed to establish one of its twelve field stations in the quarters provided by building an addition to the Mackay School of Mines Building. The new addition provides office and laboratory facilities for the present staff of the station, and allows for some future expansion of the work.



## THE SUMMER SESSION, 1922

JUNE 19 TO JULY 28

The tenth annual Summer Session of the University of Nevada will begin Monday, June 19, 1922, and will continue through Friday, July 28, this session covering six weeks.

This summer the University of Nevada proposes to do all in its power to make the Summer Session one of inspiration, information, and recreation for all the teachers of this great State who are seeking a vacation which is both profitable and pleasurable.

## THE DORMITORY

Manzanita Hall (for young women) is a building of modern construction, of the very best equipment in ventilation, heating, and lighting, and the rooms are comfortably furnished. The hall has accommodations for about seventy-five women. Summer Session students coming to Manzanita Hall should provide their own bedding and towels.

For the Summer Session the dormitory will open Saturday, June 17, 1922.

All women planning to live in the dormitory should bring with them towels, bed linen, and bedding. Only mattresses and pillows are furnished.

Men students will have no difficulty in securing accommodations in private homes or in apartments.

## THE UNIVERSITY DINING-HALL

For the students of the Summer Session the University will open the University Dining-Hall. The equipment and service are organized with a view of securing board and table service of the most acceptable character, and, unless students have relatives or friends in Reno with whom they want to make arrangements, they will find it very advantageous to share the community life of the dormitory and dining-hall.

## ADMISSION

No entrance examinations will be required. Instruction is open to any one of sufficient academic preparation to profit by it.

## CREDITS AND CERTIFICATION

No University credit is allowed for the various courses except for students who are duly qualified through graduation from an accredited high school or who meet the matriculation requirements in some other way. No one may register for more than 6 credits except upon evidence of special ability approved by the Director. It is assumed that this will occupy the full time of the student, and, therefore, the custom of allowing auditors has been discontinued.

A student wishing to secure an elementary or high-school teacher's certificate may find it advantageous to meet a few of the requirements by summer-school study. *Second-grade* elementary certificates, good for three years, are granted to those who satisfy the entrance requirements of the University and complete one year of the normal course. The required subjects in this course, offered in the Summer Session of 1922, are: Education Sm. 23, 25, 31, 34, 37; English Sm. 1; Biology Sm. 1, 3; Music Sm. 1, 2; Art Sm. 1; Physical Education Sm. 1. The subjects required *in addition* for the first-grade certificate which are offered in the Summer Session are: Psychology Sm. 5 and Sm. 8. Courses valuable for high-school teachers are: Hygiene Sm. 3; Economics Sm. 5; Sociology Sm. 7; Education 23; Education 25; English 47; Psychology 5, 8; and Modern Languages. Other courses of especial value to elementary teachers are: Bookkeeping; Economics Sm. 5, 7; English Sm. 46, 47; History Sm. 55, 5; Music Sm. 7; Penmanship; Physical Education Sm. 7.

## TEACHERS FROM OTHER STATES

Progressive teachers from other States are always welcomed by Nevada to positions for which they show superior qualifications if they can present a license from their own State to teach in the same grade of schools in which they seek appointment here. The State Board of Education is, however, quite insistent that these candidates should show that familiarity with Nevada conditions which is indispensable to their success in this school system. The acquaintance which is thus desired can be most easily established by attendance at the University Summer Session.

## EXPENSES

Every student pays an enrollment fee of \$7.50. Board may be had at the University Dining-Hall for \$7 per week, and

rooms for women at Manzanita Hall for \$6 for six weeks. A \$5 deposit fee for breakage will also be asked. For those who take Physical Education there will be a laundry fee of 25 cents. Text-books will cost from \$5 to \$12, depending upon the courses selected; excursions, \$5 to \$10 for the summer.

The tuition for the children who attend the Demonstration School will be \$3 for the session, payable in advance. The sessions of this Demonstration School will begin at 8:40 and close at 11. Rooms 104-105, Education Building.

#### RAILWAY RATES

Student half-fare rates are available on the Virginia and Truckee Railway. To obtain the benefit of such half-rate, write to the Registrar of the University of Nevada, Reno, Nevada, for a certificate to be sent to the ticket office of the company granting this privilege. Such request should be sent to the Registrar at least three weeks prior to the time the teacher expects to arrive in Reno.

#### ADVANCE RESERVATIONS

As the accommodations of the University dormitory are necessarily limited, each prospective student who desires to have room and board on the University Campus is advised to make early reservation by application to the University Comptroller, accompanied by a reservation deposit of \$7.50. This deposit will be reckoned later as covering the registration fee, or, in case the student making it is unable to attend the Summer Session, it will be returned upon application made prior to June 14, 1922.

#### REGISTRATION

The University offices will be open for registration of students on Monday, June 19, 1922, and all students are expected to register on that day. Class work will begin on Tuesday, June 20.

In this short session it is difficult to make up the loss of three or four days and at the same time try to carry on the regular advance work. Students should plan to come early in order to register and begin promptly.

#### GENERAL ASSEMBLY

A general assembly of students held once a week during the Summer Session will be devoted to especially arranged addresses.

#### EXCURSIONS AND RECREATION

The emphasis in the Summer Session will be placed upon study, yet there will be ample opportunities provided for excursions and other forms of recreation. Points of interest in and around Reno are the Nevada Historical Museum, the Nevada Packing Company, Lake Tahoe, Steamboat Springs, Bowers Mansion, Pyramid Lake, Virginia City, and Carson City, the State Capital, with their interesting associations. The faculty will cooperate in every way possible to organize trips for those groups of students who may wish to visit any of these places. Arrangements have been made with the President of the Nevada Historical Society to open that valuable and interesting collection to the students. In Reno there is a Y. M. C. A. with many recreational advantages which are open to the men for a nominal fee, and a Y. W. C. A. where all women are given a hearty welcome. The churches of Reno will afford the summer student an opportunity to hear stimulating sermons and good music.

## THE SUMMER SESSION

## FACULTY

*Regular University of Nevada Staff*

- WALTER E. CLARK, Ph. D., President of the University of Nevada.  
 JOHN W. HALL, M.A., Dean of the School of Education.  
 FRED W. TRANEER, M.A., Director and Associate Professor of Education.  
 ALBERT E. HILL, B.A., Professor of English.  
 REUBEN CYRIL THOMPSON, M.A., Professor of Philosophy and Psychology.  
 BENJAMIN F. SCHAPPELLE, Ph.D., Professor of Modern Languages.  
 MARGARET E. MACK, M.A., Assistant Professor of Biology.  
 SIDNEY W. WILCOX, B.L., Associate Professor of Economics and Sociology.  
 CATHARINE SOMERS, B.A., Instructor in Physical Education for Women.  
 TONETTE BENSON, Instructor in Music.  
 M. JULIA DETRAZ, M.A., Instructor in Education.

*Special Summer-Session Staff*

- E. OTIS VAUGHN, Principal Reno High School, Mathematics.  
 MARIAN V. MORSE, Principal Jordan High School, Jordan, Mont.  
 ELIZABETH McCORMACK, Cooperating Teacher, Reno City Schools, English.  
 GEORGIA MACNAIR, Reno City Schools, Penmanship.  
 JAMES G. JOHNSON, University of California, History.  
 LUELLA ZERATSKY, Reno High School, Art.

*Lecturers*

- Dr. WALTER E. CLARK, President of the University of Nevada.  
 Mr. W. J. HUNTING, State Superintendent of Public Instruction.  
 Mrs. L. L. WHEELER, Director of Camp Fire Girls, Reno.  
 The Reverend BREWSTER ADAMS, Washoe County Probation Officer.  
 Mr. R. C. THOMPSON, Professor of Philosophy, University of Nevada.

## COURSES OF INSTRUCTION

The center of interest for this summer's work will be in the Demonstration School. This school will consist of two rooms, with three grades each. Each grade will be limited to ten children. The school will be open to those students who register for Education 25. Those observing will be

organized into groups so as to get the greatest possible benefit for the time spent. These groups will be formed according to special interests, and conferences will be held for the discussion of the lessons observed. Education 25 may be taken for a credit in addition to the 6 regularly allowed. Desultory observation is not considered particularly valuable, and will be discouraged.

## COURSES OFFERED

*Art*

Sm. 1. ELEMENTARY ART. The fundamental principles of form, color, and light and shade. Application of principles in drawing and painting in all mediums, pencil, charcoal, oil color, water color, and pastel. Drawing and painting from nature in landscape and still life. Fundamental principles of design. *One credit.* 203 Education Building. Miss Zeratsky.

*Biology*

Sm. 1. NATURE STUDY. This course is designed to acquaint the student with the plant and the animal life of Nevada and to show how they may enliven the teaching of the regular school subjects. It comprises the study of life-histories, pond-life, native birds, etc., and includes suggestions for the making and care of aquaria, terraria, school gardens, etc. *Two credits.* 7 Agricultural Building. Assistant Professor Mack.

Sm. 3. TEACHERS HYGIENE. The object of this course is to give instruction in school and personal hygiene, paying particular attention to the problems of light, heat, and ventilation in the schoolroom, and also covering the elementary principles of human anatomy and physiology. The course consists of lectures, assigned readings, and demonstration. *Two credits.* Assistant Professor Mack.

*Bookkeeping*

BOOKKEEPING. Class will cover journalizing, posting, trial balance, statement, closing ledger, and proof balance. *No college credit.* 202 Education Building. Associate Professor Wilcox.

*Economics and Sociology*

Sm. 5. ECONOMIC PROBLEMS IN UNITED STATES HISTORY. Introductory historical treatment of topics selected from the following list: The industrial revolution, the tariff, money



and banking, public finance and taxation, the labor problem, the cooperative movement, railroads and governmental regulation, land policy, and immigration. History in the light of economic determinism and of personalism. *Two credits.* 103 Education Building. Associate Professor Wilcox.

Sm. 7. RURAL SOCIOLOGY. Types of country life. Cooperation. Tenancy. Labor problems. The city drift. Health. Recreation. Roads. Home. School. Clubs. Church. Surveys. Organization. Leadership. *Two credits.* 103 Education Building. Associate Professor Wilcox.

#### Education

Sm. 23. PROBLEMS IN RURAL EDUCATION AND SCHOOL LAW. A survey of Nevada school conditions, the need of Nevada rural communities, and the opportunity and responsibility of the rural-school teacher for leadership among both children and adults are among the more important topics studied. A study of Nevada state school law will be included. *Two credits.* 102 Education Building. Associate Professor Traner.

Sm. 25. OBSERVATION. Required reading, reports, criticisms, and discussions. Miss McCormack for the lower grades; Miss Morse for the upper grades. *One credit.* Miss Detraz and Professor Hill.

NOTE—Students should bring all the books on method they possess. They should have special method books in the subjects they wish especially to observe. Observation conferences will be held at hours to be selected. Students must reserve additional time for observation.

Sm. 31. THE TEACHING OF ARITHMETIC. In this course an effort will be made to discover and work out in detail school and community activities involving arithmetic. 209 Education Building. Miss Detraz.

Sm. 34. THE TEACHING OF ENGLISH. Principles underlying the selection, organization, and presentation of subject-matter for the first four grades, and the study of children's literature for these grades. *Two credits.* 209 Education Building. Miss Detraz.

Sm. 37. THE TEACHING OF GEOGRAPHY. A study of the modern aims in teaching geography, with discussion of the selection, organization, and presentation of suitable geographical material for the different grades. *Two credits.* 102 Education Building. Associate Professor Traner.

#### English

Sm. 1. COMPOSITION AND RHETORIC. The study of English as a means of self-expression and self-development. There will be written work, analysis of examples of good writing, and discussion of grammatical questions. *Two credits.* 200 Education Building. Professor Hill.

Sm. 46. LITERATURE SUITABLE TO THE GRAMMAR GRADES. Selections studied with a view to their fuller appreciation and enjoyment. *Two credits.* 200 Education Building. Professor Hill.

Sm. 47. AMERICAN LITERATURE SINCE 1870. The course aims to put the student in touch with the living literature of his country (as that reflects the life of today). *Two credits.* 200 Education Building. Professor Hill.

#### History

Sm. 55. HISTORY OF THE WESTWARD EXPANSION OF THE UNITED STATES. The advance of the American frontier and the rise of the new West, paralleled by topics designed to prepare prospective teachers for state examinations. *Two credits.* 103 Education Building. Mr. Johnson.

Sm. 5. EUROPEAN BACKGROUNDS OF AMERICAN HISTORY. A study of the influence of the European conditions upon the discovery and development of America. The course will be especially valuable to elementary teachers for their sixth-grade history. *Two credits.* 103 Education Building. Mr. Johnson.

#### Mathematics

ALGEBRA. The equivalent of one high-school semester's work will be covered in this course. It is offered for the benefit of advanced high-school students and others needing University entrance credit. *No college credit.* 211 Education Building. Mr. Vaughn.

PLANE GEOMETRY. The course covers a half-year of the regular high-school work, and is designed to the same needs as the algebra. *No college credit.* 211 Education Building. Mr. Vaughn.

#### Modern Languages

Sm. 1-2. FIRST-YEAR FRENCH. Drill in the essentials of grammar. Reading of simple texts. Elementary conversation and composition. *Four credits.* 207 Education Building. Professor Schappelle.

Sm. 4. SECOND-YEAR SPANISH. Intermediate readings from Nineteenth Century Spanish writers. Composition. Conversation. Those students who have already received credit for second-year Spanish may elect this course and receive additional credits, as the texts will be chosen from the works of Spanish-American writers. *Prerequisite:* Spanish Sm. 1-2, or its equivalent. *Two credits.* 207 Education Building. Professor Schappelle.

N. B. It will be noted that the offerings for 1922 are French Sm. 1-2 and Spanish Sm. 4. Should there be considerably more candidates for a beginning course in Spanish than for French Sm. 1-2, then the course in Spanish may be offered instead of the course in French, as it is the desire of the administration to accommodate the largest possible number of students. It is desirable, therefore, that all candidates for courses in Modern Languages should communicate with the Summer School office not later than June 1, 1922, indicating the courses they desire to follow.

#### Music

Sm. 1. ELEMENTS OF MUSIC. Notation and terminology; sight-singing; ear-training. *One credit.* 205 Education Building. Miss Benson.

Sm. 2. A large number of rote-songs suitable for school use. The presentation and illustration through class work of elementary and advanced musical problems, use of phonograph in schoolroom music, appreciation of songs, and music outlines for graded and ungraded schools. 205 Education Building. Miss Benson.

Sm. 31. CHORUS. Open to any one interested in assembly singing. A large number of choruses suitable for classroom and community singing will be used. 205 Education Building. Miss Benson.

#### Penmanship

PENMANSHIP. Text: The Palmer Method of Business Writing. This course will cover the principles of the Palmer Method and practice. *No college credit.* 209 Education Building. Miss MacNair.

#### Physical Education

Sm. 1. FRESHMAN PRACTICE. Free work, light apparatus, games, and folk-dancing. *One credit.* Gymnasium. Miss Somers.

Sm. 7. PUBLIC-SCHOOL GAMES AND ATHLETICS. Learning to play the various games appropriate for rural-school children. *One credit.* Gymnasium. Miss Somers.

#### Physiology and Hygiene

See Biology.

#### Psychology

Sm. 5. ELEMENTARY PSYCHOLOGY. A course in general psychology dealing with the forms and laws of consciousness. Lectures and prescribed readings. *Required for two-year Normal and high-school teacher's diploma.* *Two credits.* 207 Education Building. Professor Thompson.

Sm. 8. PSYCHOLOGY OF CHILDHOOD. The development of consciousness through infancy and childhood, with special reference to the application of the principles of development to the training of children. *Required for two-year Normal students.* *Two credits.* 207 Education Building. Professor Thompson.

## SCHEDULE OF CLASSES

SUMMER SESSION, 1922

- 7:45—  
 Education Sm. 24—Miss Detraz.  
 Penmanship—Miss MacNair.  
 Physical Education Sm. 1—Miss Somers.  
 Psychology Sm. 5—Professor Thompson.
- 8:40—  
 Education Sm. 31—Miss Detraz.  
 Demonstration School—Miss Morse and Miss McCormack.  
 Physical Education Sm. 7—Miss Somers.  
 Psychology Sm. 8—Professor Thompson.  
 Education Sm. 37—Associate Professor Traner.
- 9:35—  
 Education Sm. 25—Miss Detraz.  
 English Sm. 1—Professor Hill.  
 Demonstration School—Miss Morse and Miss McCormack.  
 Biology Sm. 1—Associate Professor Mack.  
 Education Sm. 23—Associate Professor Traner.  
 Economics Sm. 5—Associate Professor Wilcox.
- 10:30—  
 Music Sm. 1—Miss Benson.  
 English Sm. 47—Professor Hill.  
 Demonstration School—Miss Morse and Miss McCormack.  
 Biology Sm. 3—Associate Professor Mack.  
 Economics Sm. 7—Associate Professor Wilcox.
- 11:25—  
 Music Sm. 2—Miss Benson.  
 English Sm. 46—Professor Hill.  
 History Sm. 55—Mr. Johnson.  
 Modern Languages, Spanish Sm. 4—Professor Schappelle.  
 Mathematics, Algebra—Mr. Vaughn.
- 1:15—  
 History Sm. 5—Mr. Johnson.  
 Modern Languages, French Sm. 1-2 (double period)—Professor Schappelle.  
 Mathematics, Geometry—Mr. Vaughn.  
 Bookkeeping—Associate Professor Wilcox.  
 Art Sm. 1—Miss Zeratsky.
- 2:15—  
 Music Sm. 7—Miss Benson.

### ROSTER OF STUDENTS

September, 1921—May, 1922

## RECIPIENTS OF SCHOLARSHIPS AND HONORS

1921

The five REGENTS' SCHOLARSHIPS of \$50 each for excellence in scholarship awarded to

Louella Murray	George A. Cann
Dorothy Ross	Evelyn R. Hitchens
Nevada Semenza	

The ELLA SPRENGLE STUBBS SCHOLARSHIP of \$100, awarded to  
John Donovan

The ALICE G. CLARK SCHOLARSHIP of \$250, given by W. A. Clark, Jr., of Los Angeles, awarded to

Leslie M. Bruce

The UNIVERSITY ASSOCIATED WOMEN STUDENTS' SCHOLARSHIP of \$25, awarded to

Genevieve Chatfield

The J. H. CLEMONS SCHOLARSHIP of \$50, awarded to  
Donald C. Finlayson

The HOME ECONOMICS SCHOLARSHIP of \$100, awarded to  
Beulah V. Booth

The CHENEY SCHOLARSHIP of \$100, awarded to  
Bernhard Hammert

The LEWIS D. FOLSOM SCHOLARSHIP of \$100, awarded to  
Editha Brown

The HAYWARD H. HOWE SCHOLARSHIP of \$50, awarded to  
Ruby V. Spoon

The ROSE SIGLER MATHEWS SCHOLARSHIPS of \$100 each, awarded to  
Laurence E. Mathews                      Ennis F. Kinsella

The RENO BRANCH OF THE NATIONAL ASSOCIATION OF UNIVERSITY WOMEN SCHOLARSHIP of \$200, awarded to  
Evelyn Walker

The RENO LODGE OF ELKS SCHOLARSHIPS of \$300 each, awarded to  
Adele M. Clinton                      Ed. C. Reed  
James Bradshaw                      William Martin

The RENO LODGE OF ELKS MEMBERSHIP-SCHOLARSHIPS with remission of all lodge fees and dues until after graduation, awarded to  
Soren Christenson                      Hugo M. Quilici  
Willis Church                      Ralph H. Twaddle

## GOLD MEDAL

Awarded annually to that member of the graduating class who has maintained the highest average grade in scholarship throughout his or her college course: Charles Marvin Chatfield

Seniors elected to the National Honor Fraternity of the PHI KAPPA PHI, election being based on scholarship:

Margaret Barnes	Harry W. Capper
Charles M. Chatfield	Virginia Higgins
Gladys Dunkle	John Gottardi
Lulu A. Hawkins	Ernest Metscher
Lella E. Sloan	Lois E. Smyth

## HONOR STUDENTS

## Seniors

Lella E. Sloan	Charles M. Chatfield
Virginia Higgins	Margaret Barnes

## Harry W. Capper

## Juniors

Leslie Bruce	Beulah Booth
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## Sophomores

Lyn Arnold	George A. Cann
John Donovan	Evelyn Hitchens
Adele M. Clinton	Genevieve Chatfield

## Freshmen

Opal Underwood	Justine Badt
Nevada Semenza	Louise Grubnau

The Prize of \$10 for highest excellence in Oratory in Interclass Debating, awarded to Sidney Robinson

The Prize of \$20 for highest excellence as a Team in Intercollegiate Debating, to be divided equally between the members of the team, awarded to

Harold W. Westervelt	Carroll F. Wilson
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Award of Gold Watch Fobs to Speakers representing the University in Intercollegiate Debating Contests:

John H. Harrison	Howard W. Westervelt
Carroll F. Wilson	

The Prize of a set of New Standard Encyclopedia, given by MR. AND MRS. WILLIAM SCHORR of Reno, for the greatest improvement in English during second semester of the year 1920-1921, awarded to Evelyn D. Stock

During the year 1920-1921, the following scholarships not mentioned elsewhere have been awarded:

The AMERICAN SCANDINAVIAN FOUNDATION SCHOLARSHIP of \$1,000, to  
Harold Marshall Engle (Class of 1919)

(Mr. Engle will study Hydro-Electrical Engineering in Sweden.)

The YOUNG MEN'S CHRISTIAN ASSOCIATION SCHOLARSHIPS of \$50 each for ex-service men, awarded to

Earl V. Gelmstedt	Lyn Arnold	Earl Wooster
Morris T. Smith	Willis R. Pressell	Albert L. Cerveny
Fred J. Shair, Jr.	Herbert B. Shirley	Ralph H. Twaddle

## GRADUATES

Diplomas and Degrees were awarded on Commencement Day, May 18, 1921, as follows:

## CIVIL ENGINEER

Philip S. Cowgill

## BACHELOR OF ARTS, COLLEGE OF ARTS AND SCIENCE

Enola Badger	Lulu Arlene Hawkins
Antonio L. Banzon (December 23, 1920)	Virginia Chapin Higgins
Margaret Augusta Barnes	Adelaide Mary Humphrey
Leo Ignatius Bartlett (December 23, 1920)	Valentine Olds
Peggy Emily Burke	Hallie Templeton Organ
Vera Dallas	Frances Rainier
Helen Genevieve Fuss	Leila E. Sloan (December 23, 1920)
John R. Gottardi	Lois Evelyn Smyth
Rose Elizabeth Harris	Alice Wall
	Helen Lesley Wogan

Earl Wooster

## BACHELOR OF SCIENCE, COLLEGE OF ARTS AND SCIENCE

Charles Marvin Chatfield	Joseph B. Enos
Gladys Urella Dunkle	Arthur Aschmann Harms

## BACHELOR OF SCIENCE IN MINING ENGINEERING

John R. Bryan	John A. Quigley (December 23, 1920)
Harry W. Capper	
John Milton Douglas	Lloyd L. Root
Ernest August Metscher	Morris Tracy Smith

## BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Earl V. Gelmstedt	William E. Melarkey (December 23, 1920)
Thomas Reeve Hobbins	
Oliver Wendell Layman (December 23, 1920)	Robert M. Pierce

## BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

George Overstrom (December 23, 1920)

## BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Richard P. Bryan	Harold Leslie Layman
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## BACHELOR OF SCIENCE IN HOME ECONOMICS

Anne Underwood

## GRADUATES—Continued

## BACHELOR OF SCIENCE IN AGRICULTURE

Eddie S. Benson	Clarence D. Rice (December 23, 1920)
Thomas E. Buckman	
John Lathleen Knight	Joe Gavin Yater
Albert J. Reed (December 23, 1920)	

## TEACHER'S DIPLOMA OF HIGH-SCHOOL GRADE

Margaret Augusta Barnes	Rose Elizabeth Harris
Peggy Emily Burke	Lulu Arlene Hawkins
Vera Dallas	Adelaide Mary Humphrey
Gladys Urella Dunkle	Hallie Templeton Organ
Helen Genevieve Fuss	Lois Evelyn Smyth
John R. Gottardi	Anne Underwood
	Helen Lesley Wogan

## TWO-YEAR NORMAL DIPLOMA

Ellen Vesta Bradshaw	Valentine Olds
Aileen Louise Cazier	Mabel Elizabeth Riddell
Anna Llewella Dilworth	Evelyn Davida Stock
Eleanor Teresa Miller	Frances Elizabeth Tinguely
	Frances Allene Wright

## ONE-YEAR NORMAL DIPLOMA

Lulu Arlene Hawkins	Evelyn Mildred Pedrolì
	Mary Agnes Riddell

## ROSTER OF STUDENTS

## GRADUATE

William T. Barry.....	Arts and Science.....	Santa Barbara, Calif.
Agnes Bell.....	Arts and Science.....	Reno
Charles H. Bennett.....	Arts and Science.....	Sparks
Veronica Dickey.....	Arts and Science.....	Reno
Mrs. Frederick Fischer.....	Arts and Science.....	Reno
Ella Gemmell.....	Arts and Science.....	Reno
George L. Hicks.....	Arts and Science.....	Reno
William B. Hilbish.....	Arts and Science.....	Reno
Elsie E. Johnson.....	Arts and Science.....	Reno
Mrs. A. F. Loomis.....	Arts and Science.....	Reno
Mrs. Catherine H. Luke.....	Arts and Science.....	Reno
Georgia A. MacNafr.....	Arts and Science.....	Reno
Elizabeth McCormack.....	Arts and Science.....	Reno
Ruth M. Moody.....	Arts and Science.....	Reno
C. L. Neely.....	Arts and Science.....	Sparks
F. H. Palmer.....	Arts and Science.....	Reno
Mrs. Blanche Preston.....	Arts and Science.....	Reno
Annie E. Prouty.....	Arts and Science.....	Reno
Mrs. Myrtle A. Rice.....	Arts and Science.....	Reno
J. Walter Scott.....	Mines.....	Reno
Alwine Sielaff.....	Arts and Science.....	Reno
Elizabeth Smith.....	Arts and Science.....	Reno
Mrs. Vernon A. Vrooman.....	Arts and Science.....	Reno
Harriett White.....	Arts and Science.....	Reno
Earl Wooster.....	Arts and Science.....	Reno

## SENIORS

Leopoldo Abad.....	Mines.....	Philippine Islands
Gilbert S. Bailey.....	Electrical Engineering.....	San Francisco
Mary M. Beamer.....	Home Economics.....	Reno
Harry E. Benson.....	Electrical Engineering.....	McGill
Russell L. Boardman.....	Electrical Engineering.....	Reno
Beulah V. Booth.....	Home Economics.....	Reno
James Bradshaw.....	Arts and Science.....	Reno
Thelma G. Braun.....	Arts and Science.....	Dayton
Editha W. Brown.....	Arts and Science.....	Reno
Norma Brown.....	Arts and Science.....	Reno
Rolf E. Brown.....	Agriculture.....	Goldfield
Leslie M. Bruce.....	Arts and Science.....	Reno
James W. Byrkit.....	Mines.....	Reno

Clement G. Caffrey.....	Agriculture.....	Reno
George A. Cann.....	Arts and Science.....	Reno
William L. Carter.....	Electrical Engineering.....	San Francisco
Anna V. Chatham.....	Arts and Science.....	Reno
Soren Christensen.....	Agriculture.....	Sparks
Arvella Coffin.....	Arts and Science.....	Clark
William Dewey Conrad.....	Electrical Engineering.....	Lamolle
John Donovan.....	Arts and Science.....	England
George R. Egan.....	Electrical Engineering.....	Reno
Marianne Elsie.....	Arts and Science.....	Grand Ledge, Mich.
Phillip R. Frank.....	Mechanical Engineering.....	San Francisco
Charles J. Frisch.....	Electrical Engineering.....	Reno
Marianne Gignoux.....	Arts and Science.....	Reno
Robert B. Griffith.....	Civil Engineering.....	Las Vegas
Roy L. Hall.....	Arts and Science.....	Chicago, Ill.
Ernest W. Harker.....	Mines.....	San Francisco
June L. Harriman.....	Home Economics.....	Fallon
Gertrude G. Harris.....	Arts and Science.....	Reno
Lorenz C. Hitzeroth.....	Electrical Engineering.....	Berkeley, Calif.
Homer E. Johnson.....	Arts and Science.....	Pittsburg, Kans.
Harvey E. Luce.....	Elec. Engineering.....	Long Beach, Calif.
Will Martin.....	Agriculture.....	San Leandro, Calif.
Harry G. Moore.....	Mines.....	Roseville, Cal.
Hazel C. Murray.....	Arts and Science.....	Reno
Louella Murray.....	Home Economics.....	Reno
John Philbin.....	Arts and Science.....	England
Alvin Plerson.....	Arts and Science.....	Turlock, Calif.
Hugo M. Quilici.....	Arts and Science.....	Dayton
Thalia Rainier.....	Home Economics.....	Groveport, Ohio
Edward C. Reed.....	Mechanical Engineering.....	Davis, Calif.
Priscilla Reynolds.....	Arts and Science.....	Sparks
Woodfred E. Romig.....	Mines.....	Morgan, Tex.
Herbert V. Shirley.....	Arts and Science.....	Reno
Gladys Smith.....	Home Economics.....	Fallon
Ethel Steinheimer.....	Arts and Science.....	Reno
Louise Sullivan.....	Home Economics.....	Virginia City
Rowene Thompson.....	Arts and Science.....	Willits, Calif.
Ralph Twaddle.....	Civil Engineering.....	Carson City
Vernon A. Vrooman.....	Arts and Science.....	Reno
Evelyn Walker.....	Arts and Science.....	Genoa
Francis P. Walsh.....	Arts and Science.....	Tonopah
Vera Wickland.....	Home Economics.....	Fallon
Eldon Wittwer.....	Agriculture.....	Bunkerville
John B. Zant.....	Civil Engineering.....	Eolion, Tex.
Anthony Zeni.....	Arts and Science.....	Reno

## JUNIORS

Joseph E. Allen.....	Civil Engineering.....	Carson City
Robert F. Angell.....	Arts and Science.....	Long Beach, Calif.
Lyn Arnold.....	Mines.....	Stevenson, Wash.
Bertha Blattner.....	Arts and Science.....	Winnemucca
Dorothy L. Boardman.....	Arts and Science.....	Reno
Anna Brown.....	Arts and Science.....	Sparks
Mrs. W. L. Bunnell.....	Arts and Science.....	Reno
William S. Cann.....	Arts and Science.....	Reno
Marcia R. Carter.....	Arts and Science.....	Reno
Genevieve N. Chatfield.....	Arts and Science.....	Reno
Anatoly Chekalin.....	Electrical Engineering.....	China
Gregory Chekalin.....	Civil Engineering.....	China
Willis Church.....	Arts and Science.....	Reno
Henry M. Claussen.....	Mines.....	Reno
Adele Clinton.....	Arts and Science.....	Elko
Nellie E. Cobb.....	Arts and Science.....	Reno
Alexander G. Cotter.....	Arts and Science.....	Reno
Mrs. Gladys J. Crosby.....	Arts and Science.....	Sparks
Basil W. Crowley.....	Civil Engineering.....	Oakland, Calif.
Elbert D. Curtis.....	Civil Engineering.....	Reno
Evan W. Davies.....	Arts and Science.....	Fallon
Adelaide M. Davis.....	Arts and Science.....	Reno
Mrs. Thelma W. Davis.....	Arts and Science.....	Reno
Servillano Derikito.....	Arts and Science.....	Philippine Islands
Harry C. Duncan.....	Arts and Science.....	Reno
Miriam Fike.....	Arts and Science.....	Elko
Donald G. Finlayson.....	Agriculture.....	Prescott, Ariz.
Emerson W. Fisher.....	Civil Engineering.....	Berkeley, Calif.
Forrest Frost.....	Arts and Science.....	Reno
Reynold B. George.....	Agriculture.....	Nanticoke, Pa.
Francis G. Grant.....	Mines.....	Ruth
Charles Hardy.....	Agriculture.....	Los Angeles, Calif.
Lewis M. Hardy.....	Civil Engineering.....	Deeth
Dorothy Harrington.....	Arts and Science.....	Carson City
Mrs. H. B. Harris.....	Arts and Science.....	Reno
John T. Harrison.....	Arts and Science.....	Reno
Paul A. Harwood.....	Arts and Science.....	Reno
William S. Hill.....	Electrical Engineering.....	Reno
Evelyn R. Hitchens.....	Arts and Science.....	Reno
Erma A. Hoskins.....	Arts and Science.....	Winnemucca
Elizabeth K. Hunter.....	Arts and Science.....	Los Gatos, Calif.
Arthur M. James.....	Arts and Science.....	Elko
Nikita Kalinichenko.....	Electrical Engineering.....	China
Gerasim Kasatkin.....	Mines.....	China

Marcelline Kenny.....	Arts and Science.....	Carson City
Marc LeDuc.....	Arts and Science.....	Reno
Hans Lohse.....	Arts and Science.....	Fallon
Marion Lothrop.....	Arts and Science.....	Sacramento, Calif.
Agnes S. Lowry.....	Arts and Science.....	Sacramento, Calif.
Kyle J. Lutz.....	Mines.....	Tonopah
Alexander Maslenikoff.....	Mechanical Engineering.....	China
Allen R. Meeker.....	Agriculture.....	Sparks
Rose C. Mitchell.....	Arts and Science.....	Reno
Floyd F. Moffitt.....	Electrical Engineering.....	Reno
Georgie A. Money.....	Arts and Science.....	Tonopah
Kathleen Murphy.....	Arts and Science.....	Reno
Marion T. Muth.....	Arts and Science.....	Goldfield
Mary Clare O'Sullivan.....	Arts and Science.....	Reno
Eric Otto.....	Elec. Engineering.....	St. Helena, Calif.
Michael Palashoff.....	Mechanical Engineering.....	China
Marguerite Patterson.....	Arts and Science.....	Lamoille
Leland G. Peart.....	Arts and Science.....	Woodland, Calif.
Peter J. Perry.....	Arts and Science.....	Yerington
Robert A. Plaus.....	Electrical Engineering.....	Loomis, Calif.
Mrs. Lorena M. Preston.....	Arts and Science.....	Eddyville, Iowa
Lawrence Quill.....	Arts and Science.....	Carson City
Catherine Ramelli.....	Arts and Science.....	Ventura, Calif.
John M. Reynolds.....	Arts and Science.....	Los Angeles, Calif.
Lynne C. Ronnow.....	Electrical Engineering.....	Panaca
Jack Ross.....	Arts and Science.....	Yerington
Edward Rossez.....	Electrical Engineering.....	Fresno
Melvin D. Sanders.....	Mines.....	Eureka, Calif.
Arthur J. Shaver.....	Electrical Engineering.....	Reno
Florence Shirley.....	Arts and Science.....	Reno
Clementine Shurtleff.....	Arts and Science.....	Reno
Laura Shurtleff.....	Arts and Science.....	Reno
Daniel C. Simpson.....	Agriculture.....	Reno
Paul J. Sirkegian.....	Mines.....	Fresno, Calif.
Marjorie Stauffer.....	Arts and Science.....	Winnemucca
Harry E. Steele.....	Mines.....	Modesto, Calif.
Mildred Strain.....	Arts and Science.....	Berkeley, Calif.
Neal Sullivan.....	Arts and Science.....	Reno
Nevis Sullivan.....	Arts and Science.....	Reno
Donald W. Vance.....	Arts and Science.....	Whitewater, Wis.
Howard Westervelt.....	Arts and Science.....	Winnemucca
Dorothy Williams.....	Arts and Science.....	Los Angeles, Calif.
Howard R. Wilson.....	Arts and Science.....	Dixon, Calif.
Thomas Carroll Wilson.....	Arts and Science.....	Reno

## SOPHOMORES

Elliott Adams.....	Arts and Science.....	Acampo, Calif.
Lyndel Adams.....	Arts and Science.....	Reno
Henry J. Ahlers.....	Mechanical Engineering.....	Dover, N. J.
Everett E. Aine.....	Arts and Science.....	Richmond, Calif.
Justine Badt.....	Arts and Science.....	Wells
Elaine Baker.....	Normal.....	Lovelock
Marion M. Bangham.....	Home Economics.....	Susanville, Calif.
Leona B. Bergman.....	Arts and Science.....	Reno
Luelle M. Blake.....	Arts and Science.....	Virginia City
Edgar Boardman.....	Civil Engineering.....	Reno
Neneita E. Boyce.....	Normal.....	Reno
Charles L. Boyd.....	Electrical Engineering.....	Ely
Roy O. Boyer.....	Agriculture.....	Reno
Freedra Branch.....	Arts and Science.....	Fallon
Ralph A. Brant.....	Arts and Science.....	Canton, Ill.
Esther G. Breeze.....	Normal.....	Dayton
Ramona Brockliss.....	Arts and Science.....	Gardnerville
Joseph F. Brooks.....	Arts and Science.....	Richmond, Calif.
Mrs. Adeline Bryan.....	Normal.....	Reno
Hadley Bryson.....	Arts and Science.....	Rock Springs, Wyo.
Woodbury L. Bunnell.....	Mines.....	Reno
John F. Cahlan.....	Arts and Science.....	Reno
Marie Campbell.....	Arts and Science.....	Reno
Ruth E. Carter.....	Normal.....	Smith
Joseph D. Cieri.....	Arts and Science.....	Reno
Harry S. Clinton.....	Arts and Science.....	Fallon
W. Loyd Coates.....	Arts and Science.....	Cedarville, Calif.
Ashton R. Codd.....	Electrical Engineering.....	Reno
W. Wallace Colley.....	Mechanical Engineering.....	Oakland, Calif.
Helene B. Cordes.....	Arts and Science.....	Gardnerville
Mary Cox.....	Arts and Science.....	Yerington
Walter Cox.....	Arts and Science.....	Yerington
Stanley E. Davis.....	Mechanical Engineering.....	Elko
Edwin H. Dellus.....	Mines.....	Berkeley, Calif.
Lois Disher.....	Normal.....	Oakland, Calif.
Edward Dollard.....	Mines.....	San Francisco
David E. Donald.....	Arts and Science.....	Goldfield
Harold Downey.....	Mines.....	Sparks
George Duborg.....	Arts and Science.....	Reno
Arthur C. Duncan.....	Electrical Engineering.....	Reno
Irene Dunn.....	Normal.....	Reno
Erma Eason.....	Arts and Science.....	Carson City
William P. Eccleston.....	Arts and Science.....	Stockton, Calif.
Dwight W. Edwards.....	Civil Engineering.....	Carson City

Theodore G. Elges.....	Arts and Science.....	Gardnerville
Zosimo Fabella.....	Arts and Science.....	Philippine Islands
Gus P. Falbaum.....	Electrical Engineering.....	Cameron, Mont.
Dorotha Farwell.....	Arts and Science.....	Litchfield, Calif.
Henry M. Fllege.....	Arts and Science.....	McGill
William P. Fong.....	Mines.....	Canton, China
LeRoy Fothergill.....	Arts and Science.....	Carson City
Verde E. Frye.....	Civil Engineering.....	Reno
Harrison C. Gardiner.....	Mech. Engineering.....	Oakland, Calif.
Carr Gardner.....	Arts and Science.....	Reno
Clara Gibson.....	Normal.....	Litchfield, Calif.
Jessie J. Gibson.....	Arts and Science.....	Litchfield, Calif.
George A. Gooding.....	Agriculture.....	Sacramento, Calif.
Harold S. Gorman.....	Arts and Science.....	Reno
Cecil H. Green.....	Arts and Science.....	Reno
Ernest J. Greenwalt.....	Arts and Science.....	Sacramento, Calif.
Louise Grubnau.....	Arts and Science.....	Sparks
Marie Grubnau.....	Arts and Science.....	Sparks
Charles E. Haley.....	Arts and Science.....	Reno
Richard Hardin.....	Arts and Science.....	Hollister, Calif.
Ellis D. Harmon.....	Arts and Science.....	Eureka, Calif.
Eloise Harris.....	Arts and Science.....	Reno
Gilbert H. Harrison.....	Arts and Science.....	Berkeley, Calif.
Arthur T. Harrison.....	Electrical Engineering.....	Oakland, Calif.
Frank H. Hartung.....	Arts and Science.....	Reno
Hortense Haughney.....	Arts and Science.....	Lovelock
Alexander D. Henderson.....	Mines.....	Lovelock
Ira A. Herbert.....	Mines.....	Stockton, Calif.
Frances Heward.....	Home Economics.....	Reno
Charles D. Hicks.....	Electrical Engineering.....	Reno
George H. Hobbs.....	Arts and Science.....	San Diego, Calif.
John H. Horn.....	Civil Engineering.....	Georgetown, Calif.
Harold Hughes.....	Arts and Science.....	Reno
Daniel Indermuhl.....	Civil Engineering.....	Reno
Melbourne G. Irving.....	Arts and Science.....	Placerville, Calif.
David S. Jacobs.....	Electrical Engineering.....	Reno
John T. Jepsen.....	Arts and Science.....	Minden
Murray Johnson.....	Mechanical Engineering.....	Honolulu, H. I.
Noah P. Johnson.....	Arts and Science.....	Reno
Bessie A. Jones.....	Home Economics.....	Reno
Louise O. Jones.....	Normal.....	Reno
Doris Kane.....	Arts and Science.....	Carson City
Dorothy Kappler.....	Arts and Science.....	Carlin
Vivian Kensinger.....	Arts and Science.....	Palmo, Calif.
Waldemar B. King.....	Mines.....	Petaluma, Calif.



Ennis Kinsella.....	Electrical Engineering.....	Tonopah
Zelma Kitzmeyer.....	Arts and Science.....	Carson City
Marie F. Lamou.....	Arts and Science.....	Elko
John Lar Rieu.....	Arts and Science.....	Oakland, Calif.
Herman J. Laux.....	Mines.....	Kalispell, Mont.
Beatrice A. LeDuc.....	Arts and Science.....	Reno
Merle LeMaire.....	Arts and Science.....	Battle Mountain
Ella Lewis.....	Arts and Science.....	Reno
Sara D. Lewis.....	Arts and Science.....	Reno
Albert Lowry.....	Agriculture.....	Golconda
Verda Luce.....	Arts and Science.....	Tonopah
Janet Marshall.....	Arts and Science.....	Austin
Edward W. Martin.....	Mines.....	Fort Stockton, Tex.
Lawrence E. Mathews.....	Electrical Engineering.....	Reno
Howard J. McKissick.....	Agriculture.....	Reno
Murdock McLeod.....	Electrical Engineering.....	Tonopah
Wallace R. Meldrum.....	Mechanical Engineering.....	Tonopah
Adeline Merialdo.....	Arts and Science.....	Eureka
Bonita Miles.....	Arts and Science.....	Reno
John P. Miller.....	Arts and Science.....	Alturas, Calif.
Ogden F. Monahan.....	Arts and Science.....	Tonopah
Genevieve Morgan.....	Arts and Science.....	San Francisco
Margaret Murphy.....	Arts and Science.....	Reno
Horace R. Nelson.....	Electrical Engineering.....	Reno
Harlow North.....	Arts and Science.....	Reno
Edgar M. Norton.....	Arts and Science.....	Franktown
Charley M. Oliver.....	Mech. Engineering.....	Hobart Mills, Calif.
Jane B. O'Sullivan.....	Arts and Science.....	Reno
Ottway Peck.....	Electrical Engineering.....	Napa
Eunice H. Peters.....	Arts and Science.....	Sparks
Waldo Proctor.....	Arts and Science.....	Sparks
Elwood A. Rath.....	Electrical Engineering.....	Reno
Fay S. Reeder.....	Arts and Science.....	Fresno, Calif.
Jesse S. Reeder.....	Arts and Science.....	Fresno, Calif.
Theodore Reich.....	Mines.....	San Francisco
Lloyd S. Richards.....	Elec. Engineering.....	San Jose, Calif.
Lawrence Richardson.....	Arts and Science.....	Reno
Harold W. Robinson.....	Arts and Science.....	San Francisco
Sidney W. Robinson.....	Arts and Science.....	Reno
Donald A. Robison.....	Mechanical Engineering.....	Sparks
Helen M. Robison.....	Arts and Science.....	Sparks
Leslie M. Sanford.....	Mechanical Engineering.....	Fallon
Letitia Sawle.....	Normal.....	Tonopah
William S. Sawle.....	Electrical Engineering.....	Tonopah
Douglas F. Schwobeda.....	Arts and Science.....	Petaluma, Calif.

Chester M. Scranton.....	Arts and Science.....	Elko
Nevada Semenza.....	Arts and Science.....	Reno
Neil B. Shaber.....	Electrical Engineering.....	Sparks
Chris Sheerin.....	Arts and Science.....	Tonopah
Robert E. Skinner.....	Arts and Science.....	Eureka, Calif.
Clinton A. Smith.....	Electrical Engineering.....	Carlin
Vera Smith.....	Arts and Science.....	Reno
Harold J. Sorenson.....	Electrical Engineering.....	Arcata, Calif.
Ruby Spoon.....	Normal.....	Fallon
Bertha Standfast.....	Arts and Science.....	Goldfield
Frank I. Stevenson.....	Mines.....	Oakland, Calif.
Irimna Stevenson.....	Arts and Science.....	Reno
Suerre B. Strand.....	Civil Engineering.....	Benson, Minn.
Louise H. Taylor.....	Civil Engineering.....	Reno
Ruel J. Taylor.....	Arts and Science.....	Moab, Utah
William T. Thomas.....	Mech. Engineering.....	Hobart Mills, Calif.
William J. Thompson.....	Mechanical Engineering.....	Elko
Opal Underwood.....	Home Economics.....	McLeanboro, Ill.
James E. Valleau.....	Electrical Engineering.....	Reno
Marie W. Wahl.....	Arts and Science.....	Berkeley, Calif.
Carl B. Wahlund.....	Electrical Engineering.....	Elko
Louis Warnken, Jr.....	Mines.....	Dixon, Calif.
Helen Watkins.....	Arts and Science.....	Reno
Fred L. White, Jr.....	Mines.....	Reno
Isabel M. Wigg.....	Home Economics.....	Reno
Roland C. Williams.....	Arts and Science.....	Sparks
Lois Wilson.....	Arts and Science.....	Reno
Joseph P. Witmer.....	Arts and Science.....	Los Angeles, Calif.
William Otis Wright.....	Arts and Science.....	Reno
Anna York.....	Home Economics.....	Fallon

## FRESHMEN

Eleanor Ahlers.....	Arts and Science.....	Reno
Paul Aikman.....	Arts and Science.....	Oakland, Calif.
Bertha V. Anderson.....	Normal.....	Carson City
Claire Anderson.....	Normal.....	Ely
Walter L. Anderson.....	Mines.....	Tonopah
Letitia Archambault.....	Arts and Science.....	Oakland, Calif.
Alexander B. Baird.....	Arts and Science.....	Porterville, Calif.
John J. Baker.....	Arts and Science.....	Oakland, Calif.
Donald G. Bartlett.....	Arts and Science.....	Reno
Dorothy Bartlett.....	Arts and Science.....	Reno
John A. Bell.....	Arts and Science.....	Glendora, Calif.
William W. Bent.....	Agriculture.....	Berkeley, Calif.
Arvine L. Blundell.....	Home Economics.....	Sparks

Russell A. Boner.....	Arts and Science.....	Turlock, Calif.
Harriett A. Boyd.....	Arts and Science.....	Ely
Watson A. Bray.....	Arts and Science.....	Oakland, Calif.
Mark E. Bristol.....	Mechanical Engineering.....	Carson City
Erica Broecker.....	Arts and Science.....	San Anselmo, Calif.
Charles E. Brown.....	Mechanical Engineering.....	Ione, Calif.
Florence Brown.....	Arts and Science.....	Sparks
Frey Brown.....	Arts and Science.....	Reno
Richard F. Brown.....	Mines.....	Hollister, Calif.
Ruth Bunker.....	Arts and Science.....	Alturas, Calif.
Leslie Burke.....	Mechanical Engineering.....	Reno
Grace E. Burnett.....	Arts and Science.....	Ely
Clarence Bussing.....	Arts and Science.....	Lexington, Nebr.
Donald R. Cantwell.....	Arts and Science.....	Oakland, Calif.
Harold F. Capper.....	Mechanical Engineering.....	Bishop, Calif.
Ernest J. Carlson.....	Mines.....	Arcata, Calif.
Frank W. Carpenter.....	Electrical Engineering.....	Lovelock
Herman J. Cassidy.....	Mines.....	Los Angeles, Calif.
Elizabeth Caughlin.....	Arts and Science.....	Reno
Kate Cazier.....	Arts and Science.....	Wells
Arvil E. Chappell.....	Arts and Science.....	Vallejo, Calif.
Hannah Christensen.....	Normal.....	Sparks
Kathryn I. Clark.....	Home Economics.....	Reno
Marcella A. Coates.....	Home Economics.....	Sparks
Justin Collins.....	Arts and Science.....	Vallejo, Calif.
Chester M. Conner.....	Electrical Engineering.....	Fallon
Velma H. Comstock.....	Arts and Science.....	Pasadena, Calif.
Robert T. Conroy.....	Mech. Engineering.....	Roseville, Calif.
Paul Crawford.....	Arts and Science.....	Reno
George A. Cunningham.....	Arts and Science.....	Reno
Margaret Dangberg.....	Arts and Science.....	Minden
Clifford A. Davidson.....	Civil Engineering.....	Hanford, Calif.
Mrs. Herman Davis, Jr.....	Arts and Science.....	Reno
Jean Davis.....	Home Economics.....	Fallon
Ralph Dawson.....	Elec. Engineering.....	Davis Creek, Calif.
James R. Donovan.....	Mines.....	Silver City
Gladys Douglass.....	Home Economics.....	Tonopah
Lothrop Ivan Dow.....	Mines.....	Grass Valley, Calif.
Clara Doyle.....	Arts and Science.....	Ely
Irene M. Doyle.....	Arts and Science.....	San Francisco
Helen E. Duffy.....	Arts and Science.....	Goldfield
Lois Eaton.....	Arts and Science.....	Reno
Raymond N. Elges.....	Arts and Science.....	Gardnerville
Francis H. Eshbach.....	Arts and Science.....	Stockton, Calif.

Emma I. Fairbrother.....	Normal.....	Dyer
George S. Fairbrother.....	Electrical Engineering.....	Dyer
Herman E. Falbaum.....	Arts and Science.....	Cameron, Mont.
Frank Fanning.....	Electrical Engineering.....	Virginia City
Laurance J. Fee.....	Agriculture.....	Fort Bidwell, Calif.
Elna Foster.....	Arts and Science.....	Reno
Gerald Fowble.....	Electrical Engineering.....	Napa, Calif.
Harry G. Franklin.....	Arts and Science.....	Gardnerville
Howard G. Freas.....	Arts and Science.....	Fogelsville, Pa.
Ray C. Frederick.....	Arts and Science.....	Roseville, Calif.
Albert O. Frisch.....	Electrical Engineering.....	Reno
Freda Fuetsch.....	Arts and Science.....	Tonopah
John M. Fulton.....	Mines.....	Reno
William Gadda.....	Electrical Engineering.....	Reno
Claud Galmarino.....	Arts and Science.....	Oakland, Calif.
Ruth Gemmell.....	Normal.....	Claremont, Calif.
Beanel M. Gibbins.....	Arts and Science.....	Alturas, Calif.
Bert Gibbons.....	Arts and Science.....	Reno
Louis Ginocchio.....	Electrical Engineering.....	Reno
Arleigh B. Glass.....	Electrical Engineering.....	Selma, Calif.
Rafael S. Gonzales.....	Agriculture.....	Phillipine Islands
LeRoy F. Gordinier.....	Arts and Science.....	Terra Bella, Calif.
June Grant.....	Arts and Science.....	Ruth
Margaret Grant.....	Arts and Science.....	Ruth
William N. Green.....	Agriculture.....	Berkeley, Calif.
N. Patrickson Greene.....	Mines.....	Carmel, Calif.
Lewis Gridley.....	Arts and Science.....	Reno
Margaret Griffin.....	Home Economics.....	Tonopah
Carroll H. Grisingher.....	Arts and Science.....	Concord, Calif.
Alma Rae Griswold.....	Arts and Science.....	Elko
Thomas S. Griswold.....	Agriculture.....	Elko
Mildred Gullig.....	Arts and Science.....	Reno
Helen M. Halley.....	Arts and Science.....	Reno
Elizabeth Hanchett.....	Arts and Science.....	Ruth
Orrin E. Hand.....	Arts and Science.....	Oakland, Calif.
Harold H. Hansen.....	Arts and Science.....	Mendocino, Calif.
Minnie C. Hansen.....	Home Economics.....	Lovelock
M. Patricia Harper.....	Arts and Science.....	Reno
Eleanor E. Harrington.....	Arts and Science.....	Monterey, Calif.
Albert E. Harris.....	Electrical Engineering.....	Reno
Carolyn Harris.....	Home Economics.....	Reno
Everett W. Harris.....	Electrical Engineering.....	Reno
Sarah M. Harrison.....	Home Economics.....	Sparks
Leslie B. Harrison.....	Arts and Science.....	Reno

Jack P. Hauschild.....	Electrical Engineering.....	Reno
Isabel C. Hayes.....	Home Economics.....	Bridgeport, Calif.
John Herkomer.....	Arts and Science.....	Auburn, Calif.
Philip Herkomer.....	Arts and Science.....	Auburn, Calif.
Walter J. Herz.....	Electrical Engineering.....	Reno
Mrs. Mary P. Hickman.....	Arts and Science.....	Reno
Helen Hickman.....	Normal.....	Berkeley, Calif.
Florence Hillhouse.....	Arts and Science.....	Reno
Sydney R. Holt.....	Arts and Science.....	Roseville, Calif.
Raymond S. Holtzman.....	Arts and Science.....	Ely
Dwight Hood.....	Arts and Science.....	Reno
Kenneth Hook.....	Arts and Science.....	Oakland, Calif.
Noble Hueter.....	Arts and Science.....	San Francisco
Procter R. Hug.....	Arts and Science.....	Tonopah
George Humphrey.....	Mines.....	Reno
William C. Inglis.....	Electrical Engineering.....	Fallon
Noel H. Jacks, Jr.....	Agriculture.....	Berkeley, Calif.
Albert E. Jauregui.....	Arts and Science.....	Reno
Ock P. Jee.....	Agriculture.....	China
Harold Johnson.....	Electrical Engineering.....	Reno
Leland Johnson.....	Arts and Science.....	Susanville, Calif.
Elmer Jones.....	Arts and Science.....	Reno
Harold B. Keating.....	Mechanical Engineering.....	Reno
Frank M. Keesling.....	Mines.....	Sacramento, Calif.
Jane Adeline Kervin.....	Normal.....	Tonopah
Percy Ketelson.....	Arts and Science.....	Vallejo, Calif.
Arden Kimmel.....	Arts and Science.....	Sparks
Mildred Klaus.....	Arts and Science.....	Reno
Wardwell Kooser.....	Arts and Science.....	San Jose, Calif.
John Kovac.....	Mech. Engineering.....	Richmond, Calif.
Elizabeth J. Kuhn.....	Home Economics.....	Reno
Myron L. LaKamp.....	Mines.....	Battle Mountain
Henry M. Lange.....	Mines.....	Jersey City, N. J.
J. Payne Larrick.....	Electrical Engineering.....	Galt, Calif.
Lesley L. Larsen.....	Arts and Science.....	Mendocino, Calif.
Elva L. Larson.....	Normal.....	Bishop, Calif.
Willard J. Larson.....	Mines.....	Mantica, Calif.
Homer J. Law.....	Arts and Science.....	Elko
Phillip L. Lawton.....	Mines.....	Ripon, Calif.
Willadma L. Lee.....	Home Economics.....	Carson City
Rene W. Lemaire.....	Mech. Engineering.....	Battle Mountain
Curtis B. Leonard.....	Arts and Science.....	Ely
Charles R. Lindley.....	Arts and Science.....	Berkeley, Calif.
Alphonsine Liotard.....	Normal.....	Paradise Valley

Marie Litt.....	Arts and Science.....	Reno
E. Mildred Littlefield.....	Arts and Science.....	Monterey, Calif.
Charles A. Lowe.....	Arts and Science.....	Ukiah, Calif.
Fern Lowry.....	Arts and Science.....	Golconda
Merton S. Lyster.....	Electrical Engineering.....	Eureka, Calif.
John D. Macdonald.....	Elec. Engineering.....	Eureka, Calif.
Russell L. Mahan.....	Mechanical Engineering.....	Reno
William D. Malloy.....	Arts and Science.....	Austin
Ruth Manson.....	Arts and Science.....	Reno
Walker Matheson.....	Arts and Science.....	Tokyo, Japan
Pansy B. Mathews.....	Arts and Science.....	Panaca
William M. Maxwell.....	Mines.....	Dixon, Calif.
Evelyn C. Maxson.....	Arts and Science.....	Reno
Archibald B. McEwing.....	Mines.....	Watsonville, Calif.
Verla McGinnis.....	Normal.....	Reno
John McInnis.....	Electrical Engineering.....	Reno
Eugene V. Meindl.....	Mines.....	Oregon City, Oreg.
Walter Melarkey.....	Arts and Science.....	Reno
Helen M. Merchant.....	Arts and Science.....	Reno
Frances D. Miller.....	Arts and Science.....	Alturas, Calif.
Ross L. Miller.....	Electrical Engineering.....	Oxford, Mich.
Hester Mills.....	Arts and Science.....	Fallon
Harry B. Milner.....	Civil Engineering.....	Reno
Arthur P. Mobley.....	Arts and Science.....	Rialto, Calif.
Eleanor Mollart.....	Normal.....	Ludwig
Hector Monzon.....	Mines.....	Guatemala
Margaret M. Mueller.....	Arts and Science.....	Berkeley, Calif.
Thomas Mullan.....	Mines.....	San Francisco
Richard H. Nash.....	Mechanical Engineering.....	Reno
Robert A. Nash.....	Mines.....	Reno
Alice L. Norcross.....	Arts and Science.....	Reno
Eva L. Norris.....	Home Economics.....	Las Vegas
Alfred A. Oats.....	Agriculture.....	Fallon
John Ocheltree.....	Arts and Science.....	Reno
Marjorie Ohman.....	Home Economics.....	Reno
Roy C. Okerman.....	Mines.....	Gerlach
William H. Organ.....	Mines.....	Santa Cruz, Calif.
Ernest V. Orlen.....	Arts and Science.....	Vallejo, Calif.
Eugene Palmer.....	Arts and Science.....	Stockton, Calif.
Ada Patteson.....	Home Economics.....	Yerington
Lorinne L. Peacock.....	Arts and Science.....	Reno
Thelma Pedroll.....	Home Economics.....	Reno
Frank J. Penque.....	Arts and Science.....	Lovelock
Edward Perry.....	Agriculture.....	Yerington

Alta Pettycrew.....	Arts and Science.....	Goldfield
Maurice Phelan.....	Mechanical Engineering.....	Reno
Anna B. Porter.....	Arts and Science.....	Reno
George R. Prescott.....	Agriculture.....	Reno
Ewald Pyzel.....	Mech. Engineering.....	Piedmont, Calif.
Frederic Pyzel.....	Arts and Science.....	Piedmont, Calif.
Alva A. Quilici.....	Arts and Science.....	Dayton
Lourinda Rahbeck.....	Home Economics.....	Gardnerville
Kenneth L. Rees.....	Arts and Science.....	Loyalton, Calif.
Ethel A. Robb.....	Arts and Science.....	Tonopah
M. A. Robison.....	Arts and Science.....	Reno
G. William Romwall.....	Arts and Science.....	Petaluma, Calif.
Ruth Romwall.....	Arts and Science.....	Petaluma, Calif.
Amy E. Ronzone.....	Arts and Science.....	Tonopah
Irving C. Roth.....	Arts and Science.....	San Francisco
Edward H. Rott.....	Arts and Science.....	Dixon, Calif.
Charles G. Russell.....	Electrical Engineering.....	Searchlight
George W. Russell.....	Arts and Science.....	Oakland, Calif.
Bertha Sebbas.....	Arts and Science.....	Lovelock
Lawrence J. Semenza.....	Electrical Engineering.....	Reno
Katherine Shaffer.....	Arts and Science.....	Carson City
Fred Shair.....	Arts and Science.....	Reno
Donald S. Shaver.....	Civil Engineering.....	Van Buren, Ark.
Madge E. Shoemaker.....	Home Economics.....	Reno
Margaret Short.....	Arts and Science.....	Reno
Eleanor A. Siebert.....	Arts and Science.....	Reno
Ralph J. Simon.....	Mechanical Engineering.....	Reno
Ralph Sirkegian.....	Arts and Science.....	Fresno, Calif.
James F. Skene.....	Mines.....	Little Falls, N. Y.
Nellie M. Sloan.....	Arts and Science.....	Tonopah
Warren Sloss.....	Arts and Science.....	Alturas, Calif.
Willard P. Smiley.....	Civil Engineering.....	Richmond, Calif.
Emerald Smith.....	Arts and Science.....	Alturas, Calif.
Jesse Smith.....	Arts and Science.....	Oakland, Calif.
Lloyd P. Smith.....	Electrical Engineering.....	Reno
Russell S. Smith.....	Elec. Engineering.....	Roseville, Calif.
Norvell Snyder.....	Arts and Science.....	Los Angeles, Calif.
Myrtle Sorensen.....	Normal.....	Gardnerville
Herbert Spencer.....	Electrical Engineering.....	Austin
Ross G. Stafford.....	Arts and Science.....	Marysville, Calif.
C. Wesley Staples.....	Mines.....	Stockton, Calif.
Anna M. Stern.....	Arts and Science.....	Carson City
Thomas K. Stewart.....	Arts and Science.....	Reno

Dorothy Sullivan.....	Arts and Science.....	Virginia City
D. Clair Sutherland.....	Electrical Engineering.....	Reno
Leona Suttle.....	Arts and Science.....	Tuscarora
Harry J. Syphus.....	Normal.....	Panaca
Mildred Thompson.....	Arts and Science.....	Elko
Paul Thompson.....	Electrical Engineering.....	Reno
Lyman Titus.....	Arts and Science.....	Glendora, Calif.
Della Towle.....	Arts and Science.....	Auburn, Calif.
H. DeWitt Trenam.....	Electrical Engineering.....	Ludwig
Alice J. Unger.....	Arts and Science.....	Mill Valley, Calif.
Adda Vickers.....	Arts and Science.....	Sparks
Louis G. Vierra.....	Mines.....	Moss Landing, Calif.
Victor V. Vandiveer.....	Elec. Engineering.....	Modesto, Calif.
Carl E. Wadsworth.....	Normal.....	Panaca
Donald I. Walker.....	Arts and Science.....	Sebastopol, Calif.
Earle A. Walther.....	Arts and Science.....	Reno
Herman J. Walther.....	Arts and Science.....	Richmond, Calif.
Carlton Webb.....	Arts and Science.....	Reno
Marjorie Webb.....	Arts and Science.....	Reno
Thomas J. Welsh.....	Electrical Engineering.....	McGill
Eleanor Westervelt.....	Arts and Science.....	Winnemucca
Etelka Westlake.....	Arts and Science.....	Virginia City
Carl C. Whitley.....	Arts and Science.....	Truckee, Calif.
Dorothy M. Whitney.....	Arts and Science.....	Sparks
Carlyle W. Wilcox.....	Normal.....	Pioche
Frank Wilcox.....	Normal.....	Pioche
Marguerite D. Wilkinson.....	Arts and Science.....	Reno
Alice V. Williams.....	Arts and Science.....	Battle Mountain
Claire Williams.....	Arts and Science.....	Fallon
Lawrence A. Williams.....	Arts and Science.....	Sparks
Ruth Wilson.....	Arts and Science.....	Reno
Sara Wilson.....	Normal.....	Goldfield
Leonard Winer.....	Electrical Engineering.....	Reno
Adabel M. Wogan.....	Arts and Science.....	Sparks
Raymond Wood.....	Arts and Science.....	Susanville, Calif.
Luella Woodhouse.....	Normal.....	Arthur
Marjorie Worthington.....	Arts and Science.....	Grass Valley, Calif.
Fred Wyckoff.....	Civil Engineering.....	Sparks
Mary E. Wyckoff.....	Arts and Science.....	Sparks
Makato Yanagisawa.....	Arts and Science.....	Japan
Frances Yerington.....	Arts and Science.....	Carson City
Laurance Young.....	Arts and Science.....	Reno
Ethel Zaehring.....	Home Economics.....	Sparks

## UNCLASSIFIED

Daisy Benjamin	Arts and Science	Reno
Maud Bishop	Arts and Science	Reno
Kathryn Sable Boggs	Arts and Science	Reno
Dorothy Boneysteele	Normal	Reno
Davis Waite Bruce	Mines	Reno
Kenneth S. Butler	Mines	Petaluma, Calif.
Loretto Engler	Arts and Science	Reno
Nelle Francis	Arts and Science	Sparks
Laurence A. Gulling	Civil Engineering	Reno
Rose C. Hales	Home Economics	Reno
Mrs. Jeannette Jaburg	Arts and Science	New York
Frances J. Jones	Arts and Science	Reno
K. Oscar Knudson	Arts and Science	Derby
Echo L. Loder	Arts and Science	Reno
Tom B. Middleton	Mines	Elko
Raymond H. Parker	Electrical Engineering	Lockford, Calif.
Willis R. Pressell	Electrical Engineering	Reno
Blanche Radley	Arts and Science	Reno
Katherine Rannels	Arts and Science	Reno
Anna K. Rohn	Arts and Science	New York
Georgiana Steiner	Arts and Science	Sparks
Carl Stoddard	Mines	Reno
Mrs. Donald Walker	Arts and Science	Sebastopol, Calif.
Vesta H. Watson	Arts and Science	Sonora, Ark.

## SPECIALS

Alexander H. Aldrich	Agriculture	Sparks
Ira Allison	Mines	Glendale, Calif.
William D. Baisley	Civil Engineering	San Jacinto, Calif.
Lucille G. Beaman	Arts and Science	Wellington
Charles E. Beemer	Mines	Sparks
Andrew J. Brengman	Mines	Phoenix, Ariz.
Harry K. Boone	Civil Engineering	Fowler, Calif.
Mrs. B. J. Brown	Arts and Science	Oakland, Calif.
Charles L. Brown	Arts and Science	Reno
Earl E. Brown	Mech. Engineering	Oakland, Calif.
G. Samuel Cade	Mines	French Gulch, Calif.
Mrs. Glenn Campbell	Arts and Science	Reno
Carroll Carrington	Mech. Engineering	Oakland, Calif.
Raymond T. Carroll	Arts and Science	Oakland, Calif.
Russell A. Clark	Civil Engineering	Gibson City, Ill.
Mark B. Colwell	Arts and Science	Elmira, N. Y.
Ralph D. Dunlap	Mines	McGill

Harold F. Dwyer	Mechanical Engineering	San Francisco
James J. Emory	Agriculture	Chicago, Ill.
Herbert E. Foster	Arts and Science	Reno
Mrs. Harriett S. Gelder	Arts and Science	Reno
John T. Grable	Agriculture	Wyaconda, Mo.
Clarence A. Gustafson	Mech. Engineering	Stockton, Calif.
Thomas E. Haley	Mines	Ely
William B. Hasty	Electrical Engineering	San Francisco
F. Vernon Hollister	Mechanical Engineering	Sparks
Harry T. Honn	Mech. Engineering	Los Angeles, Calif.
Edgar S. Hutson	Arts and Science	Sacramento, Calif.
William M. Ireland	Agriculture	Reno
John Jerehian	Mines	Ordon, Armenia
Theodore P. Jerome	Agriculture	Marshfield, Oreg.
Theodore R. Johnson	Arts and Science	San Jose, Calif.
David S. Kay	Agriculture	Reno
William J. Kilmartin	Civil Engineering	San Francisco
James B. Koehler	Arts and Science	Mason
Victor A. Legerton	Arts and Science	Hamilton, Mont.
Mrs. Stephen Lockett	Home Economics	Reno
Louis W. Lowe	Mech. Engineering	Bandon, Oreg.
Paul L. Maloney	Agriculture	Obion, Tenn.
Herbert Marshall	Civil Engineering	St. Joseph, Mo.
Wallace McBain	Arts and Science	Sacramento, Calif.
Sidney L. McCorkle	Arts and Science	Oakland, Calif.
John B. McDonald	Mechanical Engineering	Sparks
Peter L. McGrath	Mech. Engineering	Oregon City, Oreg.
Daniel McNamara	Arts and Science	Stockton, Calif.
Robert McNaught	Mines	San Francisco
Victor J. McPartland	Agriculture	Fernley
Rita McVeigh	Arts and Science	Tonopah
Edgar A. Meighan	Mines	Gresham, Oreg.
Howard L. Miller	Arts and Science	Burlington, Vt.
Ben Hur Minton	Agriculture	Independence, Kans.
William W. Mitchell	Mines	Edna, Calif.
George Elliott Monzon	Arts and Science	San Gabriel, Calif.
Joyal R. Morton	Civil Engineering	Sacramento, Calif.
Jack R. Naylor	Mines	Calistoga, Calif.
Sigurd B. Nylander	Arts and Science	Berkeley, Calif.
Jack Pike	Arts and Science	Reno
Harold Pilkington	Arts and Science	Yerington
Mrs. Helen B. Pratt	Arts and Science	Reno
George C. Ransom	Arts and Science	Thomaston, Conn.

G. Walter Reimers.....	Arts and Science.....	Oakland, Calif.
Robert V. Routzahn.....	Mech. Engineering.....	Terra Haute, Ind.
Ted Edwin Savacool.....	Mech. Engineering.....	Jackson, Miss.
William P. Schuler.....	Mech. Engineering.....	Petaluma, Calif.
Raymond C. Schulz.....	Arts and Science.....	Arroyo Ranch, Calif.
Jay Schumacher.....	Mech. Engineering.....	Sunnyvale, Calif.
James E. Scott.....	Arts and Science.....	Oakland, Calif.
Laurence V. Sherwood.....	Mechanical Engineering.....	San Francisco
Robert P. Sims.....	Arts and Science.....	San Francisco
Paul B. Smith.....	Mines.....	Duryea, Pa.
Arthur Snyder.....	Arts and Science.....	Washington, D. C.
Robert E. Stanley.....	Arts and Science.....	Sacramento, Calif.
Walter D. Stephens.....	Arts and Science.....	Reno
Leonard A. Styles.....	Agriculture.....	South Hero, Vt.
William C. Tait.....	Arts and Science.....	Oakland, Calif.
Raymond B. Taylor.....	Elec. Eng.....	East San Diego, Calif.
Louis Titus.....	Agriculture.....	Van Nuys, Calif.
Ewart B. Todd.....	Mines.....	Monterey, Calif.
Elmer J. Towle.....	Civil Engineering.....	San Anselmo, Calif.
Willard E. Tucker.....	Agriculture.....	Standish, Calif.
Warren B. Tupper.....	Mines.....	Los Angeles, Calif.
Raymond M. Tuttle.....	Elec. Engineering.....	Springfield, Ohio.
William H. Van Horn.....	Mines.....	Gold Roads, Ariz.
Lester Walker.....	Arts and Science.....	San Francisco
Kinnicutt Wentworth.....	Arts and Science.....	Brookline, Mass.
John A. Wieschel.....	Agriculture.....	Reno
Cornelia Williamson.....	Arts and Science.....	Reno
Raymond H. Wunderlich.....	Arts and Science.....	Stockton, Calif.

## VISITORS

George D. Cushing.....	Arts and Science.....	Yerington
D. H. Cordano.....	Arts and Science.....	Reno
Mrs. M. C. Ross.....	Arts and Science.....	Reno
Elsie Sameth.....	Arts and Science.....	Reno
Fred W. Traner.....	Arts and Science.....	Reno
Mrs. J. R. Young.....	Arts and Science.....	Reno

## PROSPECTORS' SHORT COURSE

Chas. R. Bishop.....	Berkeley, Calif.	Edson S. Pettis.....	Goldfield
Herbert L. Bond.....	Reno	John F. Petritsch.....	Reno
Earl R. Brown.....	Reno	Lyman Pierce.....	Reno
Frederick M. Chipman.....	Reno	Fay S. Reeder.....	Fresno, Calif.
Herbert S. Edmund.....	Reno	Jesse S. Reeder.....	Fresno, Calif.
Walter E. Eisenberg.....	Las Vegas	William W. Simpson.....	Reno
Ernest V. Frederick.....	Reno	William M. Sizer.....	Reno
Burn G. Hood.....	Reno	Albert L. Stiles.....	Goldfield
Martin Kline.....	Sparks	Lee Swisher.....	Reno
John G. Knittington.....	Reno	George E. Wilcox.....	Reno
Allan R. Mason.....	Genoa	Albert J. Winebrake.....	Reno
James C. Moran.....	Truckee, Calif.		

## HOME-MAKERS' SHORT COURSE

Mrs. Neil Barber.....	Reno	Mrs. H. B. Leach.....	Reno
Mrs. E. R. Berg.....	Reno	Mrs. D. M. Mason.....	Reno
Clare Campbell.....	Reno	Mrs. A. J. Pederson.....	Reno
Mrs. S. J. Hall.....	Reno	Frances Rockwell.....	Reno
Mrs. Ruth Hannah.....	Reno	Mrs. Walter Scott.....	Reno
Marie Jensen.....	Reno	Roxy Thoma.....	Reno
Mrs. C. P. Johnson.....	Reno	Mrs. Vernard.....	Reno
LaVerne LeMaire.....	Reno	Annis Zepp.....	Reno

## SUMMER-SCHOOL STUDENTS, 1921

Algot E. Anderson.....	Sparks	Dorothy Crandall.....	Oakland, Calif.
Irene E. Backus.....	Golconda	Mrs. Alice Cunningham.....	Reno
George W. Barnes.....	Reno	George A. Cunningham.....	Reno
Donald G. Bartlett.....	Reno	Ione Dalby.....	Fallon
Mrs. J. Beach.....	Reno	Chester W. Davis.....	Indiana
Frances Bell.....	Reno	Francis Dickinson.....	Reno
Mrs. J. F. Blanchard.....	Reno	Frances Dietrich.....	Reno
Dorothy L. Boardman.....	Reno	Irene Dunn.....	Reno
Beulah V. Booth.....	Reno	Pauline Dunn.....	Reno
Mrs. L. C. Booth.....	Reno	Ruth Dunn.....	Reno
Freeda Branch.....	Fallon	Ruth Eaton.....	Reno
Raymond Browne.....	Reno	Ella Eddy.....	Berkeley, Calif.
Leslie M. Bruce.....	Reno	Gerry W. Eden.....	Alleghany, Calif.
Lucile Burke.....	Alameda, Calif.	Mrs. Myra Estes.....	Hilltop
Lyell Burke.....	Reno	Millicent M. Foote.....	Ohio
Mrs. A. W. Cahlan.....	Reno	Marianne Gignoux.....	Reno
Ruth E. Carter.....	Smith	Boon Gill.....	Reno
Arvella M. Coffin.....	Reno	Florence Gomm.....	Tonopah
Elva F. Colquhoun.....	Silver City	John Gottardi.....	Loyalton, Calif.

Ruth Gunter.....	Reno	Ruth K. Raymond.....	Reno
Paul A. Harwood.....	Reno	Priscilla Reynolds.....	Sparks
Helen Hickman.....	El Centro, Calif.	Nora Roberts.....	Winnemucca
Alethea Hillhouse.....	Reno	Blanche L. Roberts.....	Reno
Madeline Horgan.....	Reno	William B. Robison.....	Osceola
Nevada Johnson.....	Eureka	Mrs. W. B. Robison.....	Osceola
Homer Johnson.....	Kansas	Mrs. T. J. Ryan.....	Reno
Mrs. Pearl Karaus.....	Yerington	Edna Schacht.....	Yerington
Leona Keim.....	Delano, Calif.	Theresa F. Schulz.....	Carson City
Mrs. J. C. Laird.....	Reno	Henry C. Scranton.....	Idaho
Marie Lamb.....	Winnemucca	Laura Shurtleff.....	Reno
Mrs. Ruth B. Leonard.....	Reno	Clementine Shurtleff.....	Reno
Anna L. Lederer.....	Eureka	Mrs. Ida C. Siegel.....	Ely
Beatrice LeDuc.....	Reno	Alice Shair.....	Reno
Mrs. Sabilla Marshall.....	Ely	Fred Shair.....	Reno
Laurena Marzen.....	Truckee, Calif.	Florence Shirley.....	Reno
Mrs. G. M. McGinnis.....	Reno	Dana Shoptaugh.....	Sparks
Verla A. McGinnis.....	Reno	Elizabeth Smith.....	Reno
Flora Melendy.....	Fallon	Gladys Smith.....	Fallon
Mildred Meiss.....	Reno	Edith Mae Smith.....	Tuscarora
Lillian Meiss.....	Reno	Vera Smith.....	Reno
Mrs. W. A. Merrill.....	Constantia	Mrs. Grace Staples.....	Rochester
Eleanor Merrow.....	Alameda, Calif.	Georgiana Steiner.....	Sparks
Hester Mills.....	Fallon	Johanna Sullivan.....	Las Vegas
Mrs. M. Morgan.....	Dixie Valley	Esther Summerfield.....	Mina
Evelyn Nelson.....	Reno	Rose Taverna.....	Virginia City
Thelma Ninnis.....	Reno	Noble Waite.....	Bunkerville
Jessie Olds.....	Constantia, Calif.	Francis P. Walsh.....	Tonopah
Katherine O'Sullivan.....	Reno	Dorothy Ward.....	Reno
E. N. J. Ott.....	Nevada City, Calif.	Vesta H. Watson.....	Sonora, Ark.
Amelia Patrone.....	Reno	Mrs. J. Wayman.....	Ely
Martha Patterson.....	Carson City	Greta R. Wells.....	Winnemucca
Mrs. Pearl.....	Fallon	Lily M. Williams.....	Tonopah
John Philbin.....	England	Lawrence A. Williams.....	Sparks
Jack Pike.....	Reno	Harriet M. Wilson.....	Fallon
Thelma M. Pray.....	Reno	Margaret York.....	Fallon

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Seniors.....	26	
Juniors.....	58	
Sophomores.....	91	
Freshmen.....	153	
Graduate.....	24	
Unclassified.....	15	
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Visitors.....	6	
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NORMAL SCHOOL		
Sophomores.....	11	
Freshmen.....	18	
Unclassified.....	1	
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Mackay School of Mines— COLLEGE OF ENGINEERING		
Seniors.....	5	
Juniors.....	8	
Sophomores.....	14	
Freshmen.....	25	
Graduate.....	1	
Unclassified.....	4	
Specials.....	15	
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School of Mechanical Engineering—		
Seniors.....	2	
Juniors.....	2	
Sophomores.....	11	
Freshmen.....	13	
Specials.....	14	
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School of Civil Engineering—		
Seniors.....	3	
Juniors.....	6	
Sophomores.....	7	
Freshmen.....	5	
Unclassified.....	1	
Specials.....	7	
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School of Electrical Engineering—		
Seniors.....	9	
Juniors.....	9	
Sophomores.....	20	
Freshmen.....	31	
Unclassified.....	2	
Specials.....	3	
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School of Agriculture— COLLEGE OF AGRICULTURE		
Seniors.....	5	
Juniors.....	5	
Sophomores.....	4	
Freshmen.....	9	
Specials.....	13	
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School of Home Economics—		
Seniors.....	8	
Sophomores.....	6	
Freshmen.....	19	
Unclassified.....	1	
Specials.....	1	
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Enrollment of Men.....		461
Enrollment of Women.....		265
Total Prospectors' Short Course.....		23
Total Home-Makers' Short Course.....		16
Total Summer School, 1921.....		110
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Grand Total Enrollment.....		875

ENROLLMENT SUMMARY  
COLLEGE OF AGRICULTURE

Table with columns for various categories and rows of enrollment data.

COLLEGE OF BUSINESS

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DIRECTORY OF OFFICERS AND EMPLOYEES

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## DIRECTORY

### OFFICERS, FACULTY, PUBLIC-SERVICE WORKERS, AND OTHER EMPLOYEES CONNECTED WITH THE UNIVERSITY

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at end of each address.

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- Wilson, Joseph W., County Agent, Agricultural Extension Division, Winnemucca.
- Wittwer, John H., County Agent, Agricultural Extension Division, Las Vegas.
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- Zimmerman, Hazel, County Home Demonstration Agent, 125 E. Seventh St. 1267-J.



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CARSON CITY, NEVADA

STATE PRINTING OFFICE, : JOE FARNSWORTH, SUPERINTENDENT

1922

UNIVERSITY OF NEVADA BULLETIN

VOL. XVI

MAY 1, 1922

No. 2

THE  
UNIVERSITY OF NEVADA  
CATALOGUE



1922-1923

With Record for 1921-1922

THIRTY-FOURTH ANNUAL NUMBER

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PUBLISHED QUARTERLY BY THE UNIVERSITY OF NEVADA  
RENO, NEVADA

Entered in the Postoffice at Reno, Nevada, as second-class matter under Act of Congress, July 16, 1894. Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized April 21, 1919.