VOL. VIII MARCH, 1913 No. 3

THE UNIVERSITY OF IDAHO BULLETIN

CATALOG NUMBER 1912-1913

WITH

ANNOUNCEMENTS FOR 1913-1914

PUBLISHED QUARTERLY BY THE UNIVERSITY OF IDAHO
MOSCOW, IDAHO

VOL. VIII MARCH, 1913 No. 3

UNIVERSITY OF IDAHO BULLETIN
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TWENTY-FIRST ANNUAL CATALOG

OF THE

UNIVERSITY OF IDAHO

1912-1913

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MOSCOW, IDAHO

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1913 CALENDAR 1913

JANUARY						
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CALENDAR

Academic Year 1912-1913

SECOND SEMESTER

1913

Feb. 3-4	Monday and Tuesday.....REGISTRATION
Feb. 5	Wednesday.....All University exercises begin
Feb. 22	Saturday.....Final date for Condition Examinations
Mar. 14	Friday.....Forest Rangers' Short Course ends
Mar. 14	Friday.....School of Practical Agriculture ends
Mar. 15	Saturday.....Miners' Short Course ends
Apr. 15	Tuesday.....Meeting of Board of Regents
*Apr. 21-26	Monday-Saturday.....Annual Encampment
May 1-2	Thursday and Friday.....Interscholastic Track Meet
May 30	Friday.....Memorial Day (holiday)
June 4	Wednesday.....Second Semester Examinations begin
June 8	Sunday.....Baccalaureate Sermon
June 10	Tuesday.....Meeting of Board of Regents
June 10	Tuesday.....Convocation Address
June 10	Tuesday.....Alumni Banquet
June 11	Wednesday .....COMMENCEMENT
June 11	Wednesday.....Executive Session of Convocation
June 16	Monday.....Summer Session begins
July 26	Saturday.....Summer Session ends

Academic Year 1913-1914

FIRST SEMESTER

1913

Sept. 13	Saturday.....Condition Examinations
Sept. 13	Saturday.....First Faculty Meeting
Sept. 15-16	Monday-Tuesday .....REGISTRATION
Sept. 17	Wednesday.....All University exercises begin

Oct. 13 Monday.....School of Practical Agriculture begins
Nov. 26 Wednesday, 12:05 P.M.....Thanksgiving Recess begins
Dec. 1 Monday, 7:35 A.M.....Thanksgiving Recess ends
Dec. 16 Tuesday.....Meeting of Board of Regents
Dec. 18 Thursday, 5:30 P.M.....Christmas Vacation begins

1914

Jan. 5 Monday, 7:35 A.M.....Christmas Vacation ends
Jan. 5 Monday.....Forest Rangers' Short Course begins
Jan. 5 Monday.....Miners' Short Course begins
Jan. 26 Monday.....First Semester Examinations begin
Jan. 30 Friday.....First Semester Examinations end

SECOND SEMESTER

Feb. 2-3 Monday and Tuesday.....REGISTRATION
Feb. 4 Wednesday.....All University exercises begin
Feb. 21 Saturday.....Final date of Condition Examinations
Mar. 13 Friday.....Forest Rangers' Short Course ends
Mar. 13 Friday.....School of Practical Agriculture ends
Mar. 14 Saturday.....Miners' Short Course ends
Apr. 14 Tuesday.....Meeting of Board of Regents
May 7-8 Thursday and Friday.....Interscholastic Track Meet
June 3 Wednesday.....Second Semester Examinations begin
June 7 Sunday.....Baccalaureate Sermon
June 9 Tuesday.....Meeting of Board of Regents
June 10 Wednesday .....COMMENCEMENT

June 15 Monday.....Summer Session begins
July 25 Saturday.....Summer Session ends

BOARD OF REGENTS*

E. H. MOFFITT.....*President*.....Wallace
Term expires 1917.

EDWARD S. SWEET.....*Vice-President*.....Grangeville
Term expires 1913.

MRS. SAMUEL H. HAYS.....*Secretary*.....Boise
Term expires 1913.

GEORGE R. BARKER.....Sandpoint
Term expires 1915.

D. WORTH CLARK.....Pocatello
Term expires 1917.

EXECUTIVE COMMITTEE

E. H. MOFFITT — MRS. SAMUEL H. HAYS
D. WORTH CLARK

*Superseded by new board of control to be appointed in April.

ADMINISTRATIVE OFFICERS

*President.....J. A. MacLean, Ph.D., LL.D.

Acting President.....W. L. Carlyle, M.S.

Dean of the University Faculty.....J. G. Eldridge, Ph.D.

Dean of the College of Agriculture, and
Director of Experiment Station.....W. L. Carlyle, M.S.

Dean of the College of Law.....O. E. McCutcheon, B.A.

Dean of the College of Engineering.....C. N. Little, Ph.D.

Dean of Women.....Miss Permeal J. French

Bursar, and Secretary of Faculty.....Francis Jenkins

Commandant of Cadets.....Lieut. J. F. Franklin

Librarian.....Miss Belle Sweet, B.L.S.

*Resigned February 1, 1913.

OFFICERS OF INSTRUCTION AND ADMINISTRATION*

†JAMES ALEXANDER MACLEAN, PH.D., LL.D., *President of the University.*

B.A., University of Toronto, 1892; M.A., Columbia University, 1893; Ph. D., Columbia University, 1894; LL.D., University of Colorado, 1905; Professor of Political Science, University of Colorado, 1894-1900; President and Professor of Political Science, University of Idaho, 1900-1913.

WILLIAM LEVI CARLYLE, M.S., *Dean of the College of Agriculture, and Director of the Experiment Station,* ACTING PRESIDENT.

B.S.A., University of Toronto, 1892; M.S., Colorado Agricultural College, 1905; Instructor in Dairying, Ontario Agricultural College, 1893; Lecturer, Live Stock and Dairy Husbandry Extension Department, University of Minnesota, 1893-97; Professor of Animal Husbandry, University of Wisconsin, 1897-1903; Professor of Agriculture, Colorado Agricultural College, 1903-05; Dean of Agriculture, 1905-09; Expert in Animal Husbandry, U. S. Department of Agriculture, 1905-09; Superintendent in charge Live Stock Division, Alaska-Yukon-Pacific Exposition, 1909; Dean of the College of Agriculture, and Director of the Experiment Station, University of Idaho, 1910—; Acting President February 1, 1913—.

JOHN MERTON ALDRICH, PH.D., *Professor of Biology.*

B.S., South Dakota Agricultural College, 1888; M.S., 1891; M.S., University of Kansas, 1893; Ph.D., Leland Stanford, Jr., University, 1906; Assistant in Zoology and Entomology, South Dakota Agricultural College and Experiment Station, 1889-92; Professor of Zoology, and Entomologist of the Experiment Station, University of Idaho, 1893-1905; Professor of Biology, 1905—.

JAY GLOVER ELDRIDGE, PH.D., *Professor of the German Language and Literature, and Dean of the University Faculty.*

B.A., Yale University, 1896; M.A., 1899; Ph.D., 1906; Graduate Scholar, Yale University, 1896-1901; Assistant in German, Sheffield Scientific School, Yale University, 1897-98; Instructor in German, Yale College, 1899-1901; Professor of Modern Languages, University of Idaho, 1901-08; Professor of the German Language and Literature, 1908—; Dean of the University Faculty, 1903—.

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*(a) Professors, associate professors, and assistant professors, together with those of equivalent rank, are arranged in groups according to seniority of appointment; (b) instructors, (c) teaching fellows and assistants, and (d) special lecturers follow in alphabetical order.

†Resigned February 1, 1913.

CHARLES NEWTON LITTLE, PH.D., *Professor of Civil Engineering, and Dean of the College of Engineering.*

A.B., University of Nebraska, 1879; A.M., University of Nebraska, 1884; Ph.D., Yale University, 1885; Instructor in Mathematics and Civil Engineering, University of Nebraska, 1880-84; Associate Professor of Civil Engineering, 1885-90; Professor of Civil Engineering, 1890-93; Professor of Mathematics, Leland Stanford, Jr., University, 1893-1901; on leave of absence at Universities of Goettingen and Berlin, 1899-1900; Professor of Civil Engineering, University of Idaho, 1901—; Dean of the College of Engineering, 1911—.

Rev. WILLIAM SANDS MORLEY, A.M., SC.D., *Professor of Mathematics.*

A.B., The College of Emporia, 1893; A.M., Princeton University, 1896; Sc.D., (honoris causa), The College of Emporia, 1902; Instructor in Mathematics, The College of Emporia, 1896-1900; Graduate Student, University of Berlin, 1900-01; Graduate Student, University of Chicago, 1901-02; Associate Professor of Mathematics, University of Idaho, 1902-05; Professor of Mathematics, 1905—.

EDWARD MASLIN HULME, A.M., *Professor of History.*

A.B., Leland Stanford, Jr., University, 1897; A.M., Cornell University, 1902; Instructor in English and History, High School, Portland, Ore., 1897-1900; University Scholar, Harvard University, 1900-01; Graduate Student, Cornell University, 1901-02; Cornell Traveling Scholar, the Sorbonne, Paris, 1902; Lecturer in History, University of Idaho, 1902-05; Associate Professor of History, 1905-06; Professor of History, 1906—.

desire 1 year leave of absence

HENRIETTA EVANGELINE MOORE, PH.D., *Professor of English Literature.*

M.L., University of California, 1896; Ph.D., Columbia University, 1904; Instructor in the English Language and Literature, State Normal School, Los Angeles, Calif., 1896-1901; Professor of English Literature, University of Idaho, 1905—.

J. SHIRLEY JONES, B.S., *Professor of Agricultural Chemistry, and Chemist of the Experiment Station.*

B.S., College of Agriculture, University of California, 1903; Reader in Chemistry, College of Chemistry, 1903; Chemist, and Assistant to the Superintendent, Giant Powder Co., San Francisco, 1904-05; Professor of Agricultural Chemistry, and Station Chemist, University of Idaho, 1906—.

LAWRENCE EMERY GURNEY, PH.D., *Professor of Physics.*

A.B., Colby College, 1899; Ph.D., University of Chicago, 1906; Special Fellow in Physics, University of Chicago, 1900-01; Instructor in Physics and Mathematics, Bradley Polytechnic Institute, 1901-03; Graduate Student, University of Chicago, 1903-04; Acting Head of the Department of Physics and Astronomy, Allegheny College, 1904-05; Research Fellow and Assistant Instructor in the Department of Physics, University of Chicago, 1905-06; Acting Head of the Department of Physics, Rockford College, 1906; Associate Professor of Physics, University of Idaho, 1906-08; Professor of Physics, 1908—.

HAROLD LUCIUS AXTELL, PH.D., *Professor of Greek and Latin.*

A.B., Kalamazoo College, 1897; A.B., University of Chicago, 1898; A.M., 1900; Ph.D., 1906; Instructor in Latin, Des Moines College, 1898-1900; Graduate Student, University of Chicago, 1900-01; Traveling Fellow, University of Chicago, and Student in the American School of Classical Studies, Rome, Italy, 1901-02; Instructor in Latin and Greek, University of Idaho, 1902-07; Acting Principal of the State Preparatory School, 1906-07; Associate Professor of Greek and Latin, University of Idaho, 1907-09; Professor of Greek and Latin, 1909—.

CARL LEOPOLD VON ENDE, PH.D., *Professor of Chemistry.*

B.S., University of Iowa, 1893; M.S., 1894; Ph.D., University of Goettingen, 1899; Demonstrator in Chemistry, University of Iowa, 1894-95; Science Teacher, High School, Burlington, Iowa, 1895-96; Instructor in Chemistry, University of Iowa, 1896-97 and 1899-1905; Assistant Professor of Chemistry, 1905-07; Research Associate, Research Laboratory of Physical Chemistry, Massachusetts Institute of Technology, 1907-08; Professor of Chemistry, University of Idaho, 1908—.

RICHARD STANISLAUS MCCAFFERY, E.M., *Professor of Mining and Metallurgy.*

E.M., Columbia University, 1896; Chemist and Assayer, El Establecimiento Mineral de Casapalca, Peru, 1897; Assistant in Metallurgy, Columbia University, 1898-99; Superintendent, Copper Corporation of Chile, Ltd., Chanaral, Chile, 1900; Superintendent, 1901-02, and Manager, 1905-07, of the Santa Fe Gold and Copper Mining Co., New Mexico; Consulting work in Cuba, Haiti, Panama, North Carolina, Virginia, Vermont, and Nevada, 1902-05; Manager, Salt Lake Copper Co., Utah, 1905-07; General Superintendent Tintic Smelting Co., Utah, 1908; Chairman Spokane Section, American Institute of Mining Engineers, 1911—; Professor of Mining and Metallurgy, University of Idaho, 1909—.

CHARLES HOUSTON SHATTUCK, PH.D., *Professor of Forestry.*

B.S., Campbell College, 1894; M.S., 1898; Ph.D., University of Chicago, 1908; Instructor in Physics and Chemistry, Campbell College, 1895-98; Professor of Biology and Geology, and Vice President and Registrar, 1898-1903; Professor of Natural History, Washburn College, 1904-08; Senior Fellow on leave of absence at University of Chicago, 1907-08; Instructor in Botany at Marine Biological Laboratory, Woods Hole, Mass., summer, 1908; Professor of Botany and Forestry at Clemson College, 1908-09; Graduate Student at Biltmore School of Forestry, summer, 1909; with U. S. Forest Service, summers 1910-12; Professor of Forestry, University of Idaho, 1909—.

JOHN FREDERICK NICHOLSON, M.S., *Professor of Bacteriology, and Bacteriologist of the Experiment Station.*

B.S., University of Wisconsin, 1900; M.S., 1902; Assistant Bacteriologist, University of Wisconsin, 1900-02; Assistant Bacteriologist at the N. Y. Experiment Station (Geneva), 1902-03; Assistant Bacteriologist at the Oklahoma Agricultural and Mechanical College and Experiment Station, 1903-05; Professor of Botany and Entomology, 1905-09; Associate Professor of Bacteriology, University of Idaho, 1909-10; Professor of Bacteriology and Bacteriologist of the Experiment Station, 1910—.

WILLIAM HALE WICKS, M.S.AGR., *Professor of Horticulture, and Horticulturist of the Experiment Station.*

B.S., Oregon Agricultural College, 1904; M.S., 1906; M.S.Agr., Cornell University, 1908; Assistant Professor of Horticulture, Oregon Agricultural College and Experiment Station, 1904-07; Assistant Horticulturist and Professor of Pomology, New Hampshire Agricultural College, 1908-09; Associate Professor of Horticulture, University of Idaho, 1909-11; Professor of Horticulture and Horticulturist of the Experiment Station, 1911—.

EDWARD JOHN IDDINGS, B.S.(AGR.), *Professor of Animal Husbandry.*

B.S.(Agr.), Colorado Agricultural College, 1907; Special Agent, Bureau of Plant Industry, U. S. Department of Agriculture, 1906; Assistant to the Dean of Agriculture, Colorado Agricultural College, 1907-09; Field Commissioner, Dry Farming Congress, summer of 1909; Assistant in Animal Husbandry, Colorado Agricultural College, 1909-10; Editor Dry Farming Congress Bulletin, summer of 1910; Principal of the School of Practical Agriculture, and Assistant in Animal Husbandry, University of Idaho, 1910-11; Professor of Animal Husbandry, 1911—.

WALTER HERBERT OLIN, M.S., *Director of Agricultural Extension.* State House, Boise, Idaho.

B.S., Kansas Agricultural College, 1889; M.S., 1893; Principal and Superintendent of City Schools, Ottawa, Kan., 1889-1902; Corn Breeder, Funk Bros.' Seed Farm, Ill., 1902; Professor of Farm Crops, Iowa State College, 1902-04; Professor of Agronomy, Colorado Agricultural College, 1904-07; Vice-Dean of Agriculture, 1907-08; Industrial Commissioner, Denver, Laramie, and Northwestern R. R. Co., 1908-11; Director of Agricultural Extension, University of Idaho, 1911—.

OTIS EDDY MCCUTCHEON, B.A., *Professor of Law, and Dean of the College of Law.*

B.A., Albion College, Mich., 1873; Admitted to the Bar of Michigan, 1872; of Idaho, 1903; Regent of the University of Idaho, 1905-11; Special Lecturer in Legal Bibliography and Legislative Theory and Practice, University of Idaho, 1910-11; Professor of Law, and Dean of the College of Law, 1911—.

EUSTACE THURMAN BAKER, D.V.M., *Professor of Veterinary Science, and Veterinarian of the Experiment Station.*

D.V.M., Ohio State University, 1909; Assistant Professor of Veterinary Medicine, Washington State College, 1909-10; Assistant State Veterinarian of Washington, 1910-11; Professor of Veterinary Science, and Veterinarian of the Experiment Station, University of Idaho, 1911—.

J. FRANCIS MAGUIRE, *Professor of Music (ad interim).*

Student under Dr. Louis Maas, Leipzig, 1892-94; under Dr. William Mason, New York, 1895-98; under Mme. Antoinette Szumowska, Pupil of Paderewski, 1900-01; Director of Music, Wittenberg College Conservatory of Music, Springfield, Ohio, 1903-10; Professor of Music, Women's College of Alabama, Montgomery, Ala., 1910-11; Professor of Music (ad interim), University of Idaho, 1912-13.

GUSTUS LUDWIG LARSON, B.S. (E.E.), *Professor of Mechanical Engineering.*

B.S.,(E.E.), University of Idaho, 1907; with General Electric Co., Schenectady, 1907-09; Assistant Professor of Mechanical Engineering, 1909-11; Associate Professor (in charge) of Mechanical Engineering, 1911-12; Professor of Mechanical Engineering, 1912—.

CHARLES EDWARD TEMPLE, M.A., *Professor of Botany, and State Botanist.*

A.B., University of Nebraska, 1906; M.A., 1909; Principal of Stanberry High School, Missouri, 1904-05; Instructor in Botany and Physics, Beatrice High School, Nebraska, 1906-07; Instructor in Botany and Agriculture, Lincoln High School, Nebraska, 1907-09; Instructor in Botany, University of Michigan, 1909-11; Associate Professor (in charge) of Botany, University of Idaho, 1911-12; Professor of Botany and State Botanist, 1912—.

EVERETT WALTER HAMILTON, B.S.A., *Professor of Agricultural Engineering and Irrigation.*

B.S.A., Iowa State College, 1907; Instructor in Agricultural Engineering, Iowa State College, 1907-09; Assistant Professor, 1909-11; Associate Professor (in charge) of Agricultural Engineering and Irrigation, University of Idaho, 1911-12; Professor of Agricultural Engineering and Irrigation, 1912—.

LAURENCE JAY CORBETT, B.S.(E.E.), *Professor of Electrical Engineering.*

B.S.,(E.E.), University of California, 1902; Graduate Student, Union College, Schenectady, N. Y., 1903; with General Electric Co., Schenectady, N. Y., 1902-03; with Union Iron Works, San Francisco, Calif., 1904; with Spokane and Inland Ry., Spokane, Wash., 1905; with Washington Water Power Co., Spokane, Wash., 1905-06; Consulting Electrical, Hydraulic, and Irrigation Engineer, Spokane, Wash., 1906-11; Associate Professor (in charge) of Electrical Engineering, University of Idaho, 1911-12; Professor of Electrical Engineering, 1912—.

JESSIE MAY HOOVER, B.S., *Professor of Home Economics.*

B.S., Kansas State Agricultural College, 1905; Special Work at Lewis Institute, Chicago; Special Work at University of Chicago; Advanced Work at Kansas State Agricultural College; Preceptress of the School of Agriculture, South Dakota State College, 1907-09; Dean of Women, and Professor of Home Economics, North Dakota State Agricultural College, 1909-12; Professor of Home Economics, University of Idaho, 1912—.

JOHN FRANCIS FRANKLIN, 1ST. LIEUT. U.S.A., *Professor of Military Science and Tactics, and Commandant of Cadets.*

Graduate of West Point Military Academy, 1903; on duty with Regiment in Philippine Islands, 1903-05; at Fort Assiniboine, Mont., 1905-06; at Fort Wayne, Mich., 1906-09; with Regiment in Philippine Islands, 1909-12; Professor of Military Science and Tactics, and Commandant of Cadets, University of Idaho, Sept. 16, 1912—.

PETER POWELL PETERSON, PH.D., *Professor of Soils.*

B.S., Brigham Young University, 1905; Ph.D., University of

Chicago, 1909; Instructor in Soils, University of Wisconsin, 1909-11; Assistant Professor of Soils, University of Wisconsin, 1911-12; Professor of Soils, University of Idaho, 1912—.

PHILIP HENDRICK SOULEN, M.A., *Associate Professor of Education*

A.B., Hope College, 1892; M.A., 1905; Principal High School, Oregon City, Ore., 1892-94; Instructor in Latin, Northwestern Classical Academy, Orange City, Iowa, 1894-1901; Principal, 1901-06; Instructor in Summer Normal Schools, Iowa, 1900-06; Instructor in Education and in Preparatory Physics and Geometry, University of Idaho, 1906-07; Principal of the State Preparatory School, and Instructor in Education, 1907-11; Conductor State Summer Normal School, Coeur d'Alene, 1908 and 1910; Associate Professor of Education, 1911—.

FRANCIS JENKINS, *Bursar, and Secretary of the Faculty.*

Treasurer of Shoshone County, 1885-87; Superintendent Bunker Hill and Sullivan Mine, 1886-93; Independent Operator, 1894-97; General Manager, Virtue Consolidated Mines of Silver City, Idaho, and Baker City, Ore., 1899-1901; Bursar, Secretary of the Faculty, University of Idaho, 1905—.

PERMEAL JANE FRENCH, *Dean of Women.*

Graduate of College of Notre Dame, San Francisco, 1887; Teacher in the Public Schools of Idaho, 1887-98; State Superintendent of Public Instruction, 1899-1903; Dean of Women, University of Idaho, 1908—.

CHARLES WILCOX VAN DER VEER, *Director of the Gymnasium.*

Student, Union College, 1875-76; Physical Director, Union College, 1877-82; Physical Director, Y. M. C. A., Schenectady, N. Y., 1883-85; Physical Director, Catholic Union, Albany, N. Y., 1889-91; Physical Director, Case School of Applied Science, 1892-93; Physical Director, Seattle Athletic Club, Seattle, Wash., 1893-95; Physical Director, University of Washington, 1895-1904; Director of the Gymnasium, University of Idaho, 1910—.

*CLARENCE CLYDE TULL, M.A., *Associate Professor of the English Language.*

Ph.B., De Pauw University, 1905; M.A., Harvard University, 1909; Assistant in Rhetoric, De Pauw University, 1904-05; Principal, High School, Monon, Ind., 1905-06; Graduate Student, Harvard University, 1906-09; Instructor in the English Language (ad interim), University of Idaho, 1907-08; Assistant Professor of the English Language, 1909-11; Associate Professor of the English Language, 1911—.

CHARLES HENRY WILBER, J.D., *Associate Professor of Law, and Secretary of the College of Law.*

Ph.B., University of Chicago, 1905; J.D., 1907; Admitted to the Bar of Illinois, 1907; Member of the law firm of Seitz, Bryan, and Wilber, Chicago, 1907-10; Assistant Professor of Law, and Secretary of the College of Law, University of Idaho, 1910-11; Associate Professor of Law, and Secretary of the College of Law, 1911—.

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*On leave of absence in Europe, 1912-13.

LYMAN P. WILSON, J.D., *Associate Professor of Law.*

B.S., Knox College, 1904; J.D., University of Chicago, 1907; Admitted to the Bar of Illinois, 1907; City Attorney of Galesburg, Ill., 1908-11; Associate Professor of Law, University of Idaho, 1911—.

SHIRLEY GALE PATTERSON, PH.D., *Associate Professor (in charge) of Romance Languages.*

A.B., Amherst College, 1906; A.M., Cornell University, 1909; Ph.D., 1911; College Tutor in Modern Languages and Psychology, Amherst College, 1904-06; summers spent in Italy, France and Germany; Instructor in French, German, and Spanish, High School, New York City, 1906-08; Graduate Student in Romance Languages and Philosophy, Columbia University, 1906-08; Resident Fellow in Romance Languages, Cornell University, 1908-09; Foreign Fellow, *ibid.*, at Sorbonne, Ecole des Hautes Etudes, and Universidad de Madrid, 1909-10; Instructor in French and Italian, University of Chicago, 1910-11; Associate Professor (in charge) of Romance Languages, University of Idaho, 1911—.

DOUGLAS CLERMONT LIVINGSTON, B.S.(M.E.), *Associate Professor of Mining Engineering.*

Special Student, Stanford University, 1905; B.S.(M.E.), McGill University, 1906; Associate Member, Canadian Society of Civil Engineers; U. S. Mineral Surveyor for Arizona; Practical Mining Work, B. C., 1897-1901; Instructor in Field Surveying, Summer School, McGill, 1905 and 1906; Examination Work, Cobalt, Ontario, 1906; Engineer and Assayer, Tigre Mining Co., S. A., Sonora, Mexico, 1906-08; Superintendent Fortuna and North Tigre Mining Co., Sonora, Mexico, 1908-10; Private Engineering and Examination Work in Arizona and Mexico, 1910-11; Engineer, Montezuma Copper Co., 1911; Associate Professor of Mining Engineering, University of Idaho, 1911—.

CHARLES ARTHUR STEWART, PH.D., *Associate Professor (in charge) of Geology and Mineralogy.*

A.B., Columbia University, 1906; A.M., 1907; Ph.D., 1912; Assistant in Mineralogy, Columbia University, 1907-08; Instructor in Geology, Cornell University, 1908-11; Associate Professor (in charge) of Geology and Mineralogy, University of Idaho, 1911—.

DAVID BERNARD STEINMAN, C.E., PH.D., *Associate Professor of Civil Engineering.* 1 years leave of absence

B.S., College of the City of New York, 1906; A.M., Columbia University, 1909; C.E., 1909; Ph.D., 1911; Fellow in Applied Mathematics, College of the City of New York, 1906-09; James Scholar in Applied Science, Columbia University, 1907-09; University Scholar in Civil Engineering, 1909-10; Instructor in Manual Training, New York Public Schools, 1905-06; Instructor in Surveying and Mathematics, College of the City of New York, 1907-10; Instructor in Applied Physics, Stuyvesant Trade School, New York, 1909-10; Surveyor, 1907-10; Structural Draftsman and Designer, New York Public Service Commission, 1909; Inspector in Concrete Masonry and Tunnel Work, New York Board of Water Supply, 1910; Instructor in Civil Engineering, University of Idaho, 1910-11; Engineering Inspector New York Board of Water Supply, 1911; Assistant Professor of Civil Engineering, University of Idaho, 1911-12; Associate Professor of Civil Engineering, 1912—.

CLARENCE CORNELIUS VINCENT, M.S.A., *Associate Professor of Horticulture.*

B.S.A., Oregon Agricultural College, 1907; M.S., 1909; M.S.A., Cornell University, 1910; Assistant in Horticulture, Oregon Agricultural College, 1907-09; Graduate Student in Horticulture, Cornell University, 1909-10; Assistant Horticulturist, University of Idaho, 1910-11; Associate Professor of Horticulture, Clemson Agricultural and Mechanical College, 1911-12; Associate Professor of Horticulture, University of Idaho, 1912—.

FRANK LESLIE KENNARD, B.S., *Associate Professor (in charge) of Field Crops and Farm Management.*

B.S., South Dakota State College, 1906; Special Agent, Dry Land Agricultural Investigations, U. S. Department of Agriculture, 1906-07; Assistant Agriculturist, Same Department, 1907-08; Superintendent, U. S. Experiment Station, Dalhart, Texas, 1908-11; Assistant Professor of Agronomy, 1911-12; Agronomist, Idaho Experiment Station, 1911; Associate Professor of Field Crops and Farm Management, 1912—.

MARY BELLE SWEET, B.L.S., *Librarian, and Instructor in Library Science.*

B.L.S., University of Illinois, 1904; Assistant Cataloguer, Cincinnati Public Library, 1903; Librarian, Clinton (Iowa) Public Library, 1904-05; Librarian, and Instructor in Library Science, University of Idaho, 1905—.

HARRY PROCTOR FISHBURN, M.A., *Assistant Professor of Agricultural Chemistry, and Assistant Chemist of the Experiment Station.*

B.A., University of Virginia, 1904; M.A., 1907; Assistant Chemist, Pennsylvania State College, 1907-09; Assistant Chemist of the Experiment Station, University of Idaho, 1909-11; Assistant Professor of Agricultural Chemistry and Assistant Chemist of the Experiment Station, 1911—.

CHARLES WILLIAM COLVER, M.S., *Assistant Professor of Agricultural Chemistry, and Assistant Chemist of the Experiment Station.*

B.S., University of Idaho, 1909; M.S., 1911; Assistant Chemist of the Experiment Station, 1909-11; Assistant Professor of Agricultural Chemistry, and Assistant Chemist of the Experiment Station, 1911—.

GUSTAV EDWARD FREVERT, B.S.A., *Assistant Professor of Dairying (in charge of Dairy Manufactures).*

B.S.A., Iowa State College, 1909; Expert in Dairying, U. S. Department of Agriculture, Headquarters, Manhattan, Kan., June to September, 1908; Instructor in Butter Making, Iowa State College, April to June, 1909; Instructor in Dairying, University of Idaho, 1909-11; Assistant Professor of Dairying (in charge of Dairy Manufactures), 1911—.

ELMER VERNE ELLINGTON, B.S.(AGR.), *Assistant Professor of Dairying (in charge of Dairy Production).*

B.S.(Agr.), University of Missouri, 1910; Student Assistant in Milk Production, University of Missouri, 1909-10; Dairy Fieldman in U. S. Department of Agriculture, stationed in Colorado, summer

of 1910; Dairy Fieldman, University of Idaho, in cooperation with the U. S. Dairy Division, Department of Agriculture, 1910-12; Assistant Professor of Dairying (in charge of Dairy Production) 1912—.

MARGARET AMELIA SWEET, *Assistant Professor of Home Economics, and Instructor in Drawing.*

Student, Art Institute, Chicago, 1900; Student, University of Chicago, 1900-01; Teacher, Grammar School, Clinton, Iowa, 1901-04; Principal, Grangeville High School, Idaho, 1904-06; Special Mathematics and History, Public Schools, Dayton, Wash., 1906-07; Special English and Art, Public Schools, Lewiston, Idaho, 1907-08; Courses Domestic Science and Domestic Arts, Pratt Institute, Brooklyn, N. Y., 1908-10; Instructor Domestic Arts, Academy of Idaho, 1910-12; Assistant Professor of Home Economics, and Instructor in Drawing, University of Idaho, 1912—.

WINFRED RULISON WRIGHT, B.S., *Assistant Professor of Bacteriology.*

B.S., Michigan Agricultural College, 1902; Assistant in Bacteriology, Michigan Agricultural College, 1903-05; Assistant Bacteriologist, Oklahoma Agricultural College and Experiment Station, 1905-09; First Assistant Dairy Bacteriologist, Purdue University, 1909-12; Assistant Professor of Bacteriology, University of Idaho, 1912—.

JOHN ANTON KOSTALEK, PH.D., *Assistant Professor of Chemistry.*

B.A., University of Wisconsin, 1908; Ph.D., University of Illinois, 1910; Research Chemist for B. F. Goodrich Rubber Co., Akron, Ohio, 1910-11; Instructor in Organic Chemistry, University of Idaho, 1911-12; Assistant Professor of Chemistry, 1912—.

CAROLINE CHRISTINE ISAACSON, A.B., *Assistant Professor of German.*

Illinois Woman's College, 1902-05; A.B., Northwestern University, 1907; Summer Student at Marburg University, Germany, 1907; Instructor at Grand Prairie Seminary, Onarga, Ill., 1907-10; Student at Berlin University, 1910-11; Instructor in German, University of Idaho, 1911-12; Assistant Professor of German, 1912—.

BENJAMIN HARRISON LEHMAN, A.B., *Assistant Professor of English.*

A.B., Harvard University, 1911; Instructor in English, University of Idaho, 1911-12; Assistant Professor of English, 1912—.

GRACE SCHERMERHORN, B.S., *Assistant Professor of Home Economics.*

B.S., Columbia University, 1912; Special Work, Teachers' Training School, Springfield, Ill., 1905; Oberlin College, 1902-03, 1905-06; Chicago University, Summer quarter, 1907; Critic Teacher, Springfield Training School, 1907-08; Instructor, Normal School, Valley City, N. D., 1908-11; Assistant Professor of Home Economics, University of Idaho, 1912—.

ISABEL MARY STEPHENS, B.S., *Assistant Professor of Physical Education.*

B.S., Columbia University, 1909; Bachelor's Diploma in Physical Education, Teachers' College, Columbia University, 1909; Director of Physical Education, Speyer School, Teachers' College, 1909-12; Assistant Professor of Physical Education, University of Idaho, 1912—.

*INSTRUCTORS AND OTHER OFFICERS

LOUIS CORNELIUS AICHER, B.S.A., *Superintendent of Aberdeen Demonstration Farm.* Aberdeen, Idaho.

B.S.A., Kansas State Agricultural College, 1910; Assistant in Agronomy, Colorado Experiment Station, 1907-08; Instructor in Agricultural Engineering, and Superintendent of Caldwell Substation, University of Idaho, 1910-11; Superintendent of Aberdeen Demonstration Farm, 1911—.

EDWARD JOHN CAREY, *Instructor in Cornet-Playing, and Leader of the Cadet Military Band.*

Graduate of Queen's Military Academy of Music, Liverpool, England, 1895; Trumpeter on R. M. S. "Campania" between New York and Liverpool, 1895-96; Solo Cornetist and Chief Musician with various Concert Bands; Director Portage la Prairie Concert Band, Manitoba, Canada, 1898-99; Director Snohomish Concert Band, Snohomish, Wash., 1900-03; Director Sedro-Woolley Merchants' Band, Sedro-Woolley, Wash., 1904-06; Leader of the Cadet Military Band, University of Idaho, 1908—.

EDWARD HELLIER-COLLENS, A.V.C.M., *Instructor in Violin-Playing, and Leader of the Orchestra.*

For three years pupil of Dr. Adolph Brodsky, Royal College of Music, England; Graduate and Gold Medalist of the Victoria College of Music, London, England; Recipient of the silver medal given by the Musical Exhibition, Manchester, England, 1901; Instructor in Violin, and Leader of the Orchestra, University of Idaho, 1910—.

SYLVIA SMITH COLLENS, B.DI., *Instructor in Preparatory English.*

B.Di., Iowa State Normal School, 1900; Instructor in English, High School, Orange City, Ia., 1900-05; Instructor in English, High School, Le Mars, Ia., 1905-06; Instructor in English, High School, Golden, Colorado, 1906-07; Instructor in English, State Preparatory School, University of Idaho, 1907-11 and 1912—.

IRWIN WYCLIFFE COOK, M.S.F., *Instructor in Forestry.*

B.S., Washburn College, 1907; M.S.F., University of Michigan, 1910; Student Assistant in Chemistry, Washburn College, 1906-07; with Forest Service, 1909; Forest Assistant, Forest Service, 1910-12; Instructor in Forestry, University of Idaho, 1912—.

CLARENCE SINCLAIR EDMUNDSON, B.S.(AGR.), *Principal of the School of Practical Agriculture.*

B.S.(Agr.), University of Idaho, 1910; Instructor in High School, Coeur d'Alene, Idaho, 1910-11; Coach High School Athletics, Broadway High School, Seattle, Wash., 1911-12; Instructor in the School of Practical Agriculture, University of Idaho, 1912—.

†DEWITT CLINTON GARDNER, *Instructor in Forge Work.*

Foreman of Forge Shop, Knapp, Stout & Co., Menomonie,

*Arranged alphabetically.
†Died December 27, 1912.

Wis., Foreman of Forge Shop, Vonn Plow Factory, Naperville, Ill.; Eighn & Larson Wagon and Carriage Shop, Alma, Wis.; Instructor in Forge Work, University of Idaho, 1909—.

JOHN GEORGE GRIFFITH, B.S., *Coach in Athletics.*

B.S., State University of Iowa, 1901; Instructor in Science, and Physical Director, Simpson College, 1901-02; Instructor in Mathematics and Science in the State Preparatory School, and Coach in Athletics, University of Idaho, 1902-06; Assistant in Zoology, and Coach in Football and Basketball, University of Iowa, 1906-10; Coach in Athletics, University of Idaho, 1910—.

GEORGE HALL, *Instructor in Machine Shop Practice and Wood Working.*

Student, Technical College, Sunderland, England; Instructor in Wood Work and Pattern Making, Washington State College, 1909-10; Instructor in Machine Shop Practice and Wood Working, University of Idaho, 1910—.

HORACE ASA HOLADAY, B.A., *Instructor in Chemistry.*

B.A., University of Colorado, 1911; Dispenser, Department of Chemistry, 1909-10; Instructor in Chemistry, Summer Session, 1910; Assistant in Chemistry, University of Idaho, 1910-12; Instructor in Chemistry, 1912—.

FAY HOSTETTER, *Instructor in Piano-Playing and Harmony.*

Graduate New England Conservatory of Music, Boston, Mass., 1909; Instructor in Special Normal Department, New England Conservatory of Music, 1908-09; Private Teaching, Denver, Col., 1909-10; Instructor in Piano Playing and Harmony, University of Idaho, 1910—.

*JAMES AGNEW HUGHES, B.S., *Assistant of the Dean of the College of Agriculture, and Principal of Short Courses in Agriculture.*

Graduate of Virginia Polytechnic Institute, 1900; B.S., University of Virginia, 1904; Agricultural Extension Work, Virginia, 1904-06; Studying Fruit Conditions in Atlantic and Mississippi Valley States, 1906-08; Manager of U. S. Government Orchards, Deer Flat, Idaho, 1908-10; Principal of Agriculture, Meridian High School, and Assistant Superintendent of Public Instruction of Ada County, 1910-11; Superintendent of Consolidated Agricultural High School of Fruitland, Idaho, 1911-12; Assistant to the Dean of the College of Agriculture, and Principal of Short Courses in Agriculture, University of Idaho, 1912—.

JOHN CALVIN KINZER, B.S.(AGR.), *Instructor in Animal Husbandry.*

B.S.(Agr.), University of Idaho, 1912; Instructor in Animal Husbandry, University of Idaho, 1912.

CLIFFORD LESLIE MACARTHUR, M.S., *Instructor in Bacteriology.*

B.S., Oklahoma Agricultural and Mechanical College, 1911; M.S., University of Idaho, 1912; Teaching Fellow in Bacteriology, University of Idaho, 1911-12; Instructor in Bacteriology, 1912—.

FRANK LATHAM MOORE, LL.B., *Instructor in Law.*

LL.B., University of Michigan, 1888; Admitted to the Bar of Michigan, 1888; of Idaho, 1896; Instructor in Law, University of Idaho, 1909—.

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*Resigned January, 1913.

ORLO ASHLEY PRATT, B.A., *Instructor in Botany, and Assistant Plant Pathologist.*

B.A., University of Texas, 1912; Instructor in Botany, and Assistant Plant Pathologist, University of Idaho, 1912—.

FRANK STANTON, *Auditor in Bursar's Office.*

LL.B., Drake University, 1899; Admitted to Bar of Iowa, 1899; University Auditor, 1911—.

EUGENE HAMILTON STORER, *Instructor in Vocal Culture, Choral Work, and Public School Music.*

Under Private Instruction of George J. Parker, 1895-99, and of Charles A. White, 1901-05, Boston, Mass.; Graduate of New England Conservatory, 1905; Director Vocal Department, Salem College, North Carolina, 1905-08; Director Oratorio Society, Winston-Salem, North Carolina, 1905-08; European trips for Musical Instruction, summers of 1899, 1906, and 1908; Private Teaching, Spokane, Wash., 1908-09; Director Coeur d'Alene Choral Club, 1908-09; Concert and Oratorio Work, 1909-11; Instructor in Vocal Culture, Choral Work, and Public School Music, University of Idaho, 1911—.

JOHN SHAW WELCH, B.S.(AGR.), *Superintendent Gooding Demonstration Farm, and in charge of Irrigation Investigations.* Gooding, Idaho.

B.S.(Agr.), Utah Agricultural College, 1911; Superintendent Gooding Demonstration Farm, and in charge of Irrigation Investigations, 1911—.

ASSISTANTS

IRWIN JOHN BIBBY, B.S.A., *Teaching Fellow in Dairy Manufactures.*

B.S.A., South Dakota Agricultural College, 1912; Teaching Fellow in Dairy Manufactures, University of Idaho, 1912—.

RUTH BREWER, *Assistant Librarian.*

Greenville College for Women, Greenville, South Carolina, 1904-06; Temple University, Philadelphia, 1906-07; Indiana Library School, Indianapolis, 1909-10; Assistant Librarian, University of Idaho, 1910—.

CLAUDE JACQUES HAYDEN, B.S., *Teaching Fellow in Horticulture.*

B.S., South Carolina Agricultural College, 1912; Teaching Fellow in Horticulture, University of Idaho, 1912—.

JOHN RAYMOND MAUGHAN, *Assistant in Dairy Manufactures.*

Student, University of Idaho, 1909—; Assistant in Dairy Manufactures, 1912—.

VIRGINIA SHEARER, *Assistant in Home Economics.*

Pratt Institute, Brooklyn, N. Y., 1910-12; Assistant in Home Economics, University of Idaho, 1912—.

SPECIAL LECTURERS

JAMES FRANKLIN AILSHIE, LL.D., *Special Lecturer in Legal Ethics and the Conflict of Laws.* Boise, Idaho.

Ph. B., Willamette University; LL.B., *ibid.;* LL.D., *ibid.;* 1909; Admitted to Bar of Oregon, 1891; of Idaho, 1892; Justice of the Supreme Court of Idaho, 1902—; Chief Justice, 1907-08; Special Lecturer in Legal Ethics and the Conflict of Laws, University of Idaho, 1910—.

JAMES ELISHA BABB, B.S., LL.B., *Special Lecturer in the Law of Eminent Domain.* Lewiston, Idaho.

B.S., Illinois College, 1882; LLB., Northwestern University, Chicago, 1884; Admitted to Bar of Illinois, 1885; of Idaho, 1892; Member of the law firm of Fry & Babb, Chicago, 1885-1892; Instructor in Law of Sales of Personal Property, Northwestern University, 1892; Special Lecturer in the Law of Eminent Domain, University of Idaho, 1910—.

FRANK SIGEL DIETRICH, A.M., *Special Lecturer in Bankruptcy and Federal Practice.* Boise, Idaho.

A.B., Brown University, 1887; A.M., 1890; Admitted to the Bar of Idaho in 1892; United States District Judge for the District of Idaho, 1907—; Special Lecturer in Bankruptcy and Federal Practice, University of Idaho, 1910—.

Major FRANK ALFRED FENN, *Special Lecturer in Forest Management.* Kooskia, Idaho.

Forest Supervisor of the Clearwater National Forest, 1901—; Special Lecturer in Forest Management, University of Idaho, 1910—.

JOHN FISHER MACLANE, B.A., LL.B., *Lecturer in Law.* Boise, Idaho.

B.A., Yale University, 1900; LL.B., University of Minnesota, 1902; Member Minnesota Bar, and Editor National Reporter System, 1902-06; Member Idaho Bar, 1906—; Code Commissioner, State of Idaho, 1907-08; Assistant Attorney-General, 1909; District Judge, Boise, 1911—; Professor of Law, University of Idaho, 1909-11; Lecturer in Law, 1911—.

THOMAS C. SPAULDING, M.S.F., *Special Lecturer in Logging Engineering.* St. Maries, Idaho.

B.S., University of Montana, 1907; M.S.F., University of Michgan, 1909; Forest Service, 1907—; Forest Supervisor, St. Joe National Forest, 1911—; Special Lecturer in Logging Engineering, University of Idaho, 1912—.

STANDING COMMITTEES OF THE FACULTY

Admissions: Professors Soulen, Hulme, Nicholson, Axtell, Wilber, Larson, Shattuck, and Hoover.

Courses and Scholarship: Dean Eldridge, Profesors Aldrich, von Ende, Shattuck, Stewart, and Corbett.

College of Agriculture: Dean Carlyle, Professors Jones, Shattuck, Nicholson, Wicks, Childers, Iddings, Baker, Temple, Hamilton, Peterson, Frevert, and Ellington.

College of Engineering: Dean Little, Professors von Ende, McCaffery, Larson, Corbett, Livingston, and Steinman.

College of Law: Dean McCutcheon, Professors Wilber, and Wilson.

Graduate Instruction and Degrees: Deans Little, Eldridge, Carlyle, and McCutcheon.

Discipline and Attendance: Professors Morley, McCaffery, Carlyle, Soulen, and Dean French.

Library: Miss Sweet, Professors Shattuck, Patterson, von Ende, and Livingston.

Athletics: Professors Larson, McCaffery, Wilson, and Director Van der Veer.

Public Events: Professor Morley and Dean McCutcheon.

Student Events and Calendar: Deans Eldridge and French, Professor Hulme, and Mr. Hellier-Collens.

Student Organizations: Deans Eldridge and French, Professors Patterson, and Stewart.

Publications: Professors Axtell, Livingston, Shattuck, Wilson, von Ende, and Iddings.

Secondary Schools and Recommendations: Professors Hulme, Soulen, Nicholson, Larson, Iddings, Patterson, Lehman, and Olin.

Relation of the University to the State: Professors Gurney and McCaffery, and Dean French.

Exhibits and Museums: Dean Carlyle.

GENERAL INFORMATION

ESTABLISHMENT The University of Idaho, as a part of the educational system of the State of Idaho, completes the work begun in the public schools, by furnishing ample facilities for liberal higher education in the arts, the sciences, and law, and for thorough technical training. Through aid received from the United States and from the State of Idaho the advantages of the University are offered, without charge for tuition, to all residents of Idaho, of either sex, who are qualified for admission to its courses.

In 1889, by an act of the Territorial Legislature, the University was established. Its government was vested in a board of nine Regents, appointed biennially by the Governor for terms of two years. By legislative enactment in 1890, the term of office of the Regents was lengthened to six years, and the appointments were so arranged that one-third of the Board should be renewed biennially. By legislative enactment in 1901 the number of Regents was reduced from nine to five.

The institution was opened for the reception of students on October 3, 1892; since that time its growth has been steady and substantial.

ORGANIZATION The Act of 1889 for the establishment of the University provided:

"The College or Department of Arts shall embrace courses of instruction in mathematical, physical, and natural sciences, with their application to the industrial arts, such as agriculture, mechanics, engineering, mining and metallurgy, manufactures, architecture, and commerce; and such branches included in the College of Letters as shall be necessary to a proper fitness of the pupils in the scientific and practical courses for their chosen pursuits; and as soon as the income of the University will allow, in such order as the wants of the public shall seem to require, the said courses in the sciences and their application to the practical arts shall be expanded into distinct colleges of the University, each with its own faculty and appropriate title. The College of

Letters shall be co-existent with the College of Arts, and shall embrace a liberal course of instruction in language, literature, and philosophy, together with such courses or parts of courses in the College of Arts as the Regents of the University shall prescribe."

The Act further provided:

"Professional or other colleges or departments * * may from time to time be added thereto or connected therewith."

COURSES LEADING TO DEGREES The following courses are offered, leading to the respective degrees:

IN THE COLLEGE OF LETTERS AND SCIENCES

The classical course leads to the degree of Bachelor of Arts, B.A.

The scientific course leads to the degree of Bachelor of Science, B.S.

The course in music and allied subjects leads to the degree of Bachelor of Music, B.M.*

The course in home economics and allied subjects leads to the degree of Bachelor of Science in Home Economics, B.S.(H.Ec.)

The course in forestry and allied subjects leads to the degree of Bachelor of Science in Forestry, B.S.(For.)

IN THE COLLEGE OF AGRICULTURE

The courses in agriculture lead to the degree of Bachelor of Science in Agriculture, B.S.(Agr.)

IN THE COLLEGE OF ENGINEERING

The course in civil engineering leads to the degree of Bachelor of Science in Civil Engineering, B.S.(C.E.)

The course in mining engineering leads to the degree of Bachelor of Science in Mining Engineering, B.S.(Mng.E.)

The course in electrical engineering leads to the degree of Bachelor of Science in Electrical Engineering, B.S.(E.E.)

The course in mechanical engineering leads to the degree of Bachelor of Science in Mechanical Engineering, B.S.(Mech.E.)

The course in chemical engineering leads to the degree of Bachelor of Science in Chemical Engineering, B.S.(Chem.E.)

IN THE COLLEGE OF LAW

The course in law leads to the degree of Bachelor of Laws, LL.B.

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*Degree not to be conferred after 1914. Course consolidated with B.A. and B.S. courses.

REQUIREMENTS FOR MASTER'S DEGREES The following rules concerning advanced degrees are now in force:

1. Conditions of Candidacy: A graduate of one of the colleges of this University, or of another institution in which the requirements for the first degree are equivalent, may become a candidate for the corresponding master's degree by making application on a blank form provided for the purpose. The application must be submitted for approval to the Committee on Graduate Instruction and Degrees not later than October 15th.

2. Nature and Amount of Work: The minimum requirement shall be twenty-four credits in addition to the thesis, at least one-half to be graduate in character. Not less than twelve credits shall be in the major department.

3. Residence: One year's resident work is required of every candidate who has not received a first degree at this University. Graduates of the University of Idaho may be permitted in special cases to spend one semester at some other approved institution.

4. Examinations: Final examinations are required upon the completion of each subject.

5. Thesis: A thesis upon some subject connected with the major study is required, unless waived by the Committee upon the recommendation of the major professor. This subject must be submitted for approval to the chairman of the Committee on Graduate Instruction and Degrees before November 15th. Two typewritten copies of the thesis in specified form shall be deposited in the University Library.

6. Degrees: The degrees offered are: Master of Arts, M.A., Master of Science, M.S., Master of Science in Agriculture, M.S. (Agr.), and Master of Science in the respective branches of engineering, e.g. M.S.(C.E.), etc.

7. Fees: Before receiving his degree the candidate shall pay a diploma fee of ten dollars and any unpaid laboratory fees.

STATE TEACHER'S CERTIFICATES An Idaho State Teacher's Certificate, valid for eight years, will be issued to students in Education who satisfactorily fulfil the requirements described under the Department of Education. (See also under the Department of Education for State Specialists' Certificates.)

LOCATION The University is located at Moscow, in the northern part of Idaho, on the Palouse and Lewiston branch of the Northern Pacific Railway, at the terminus of the Moscow branch of the Oregon-Washington Railroad and Navigation system, and at the terminus of the Spokane and Inland Empire Railway (electric). The city has a population of five thousand, is supplied with exceptionally pure artesian water, and has well sustained churches and excellent public schools. *There are no saloons.* The moderate altitude of 2,600 feet makes the climate of Moscow a desirable change both for students coming from the more humid climate of the coast, and for those from the high, arid regions. The air is pure and invigorating. The locality enjoys the cool summers of the semi-mountain elevation and the mild winters of the region west of the Rocky Mountains. The University is situated on an eminence to the southwest of the city of Moscow and overlooks one of the most attractive prospects of mountain and valley in the Palouse country. The campus, a wide sweep of lawn dotted here and there by tennis courts, a monument, and a grove of trees, is crossed from the city by a winding driveway.

BUILDINGS The ADMINISTRATION BUILDING, which replaces the building destroyed by fire, March 30, 1906, is now complete in the central portion and north wing. The south wing is yet to be erected. It is an absolutely fireproof, three-story structure in Collegiate Gothic style and contains the library, offices, many class and lecture rooms, as well as an auditorium with a seating capacity of 900.

The ENGINEERING BUILDING (1902) is of brick, three stories high, with a ground floor of 60x108 feet. At present Mechanical and Electrical Engineering, as well as Chemistry, Geology, and Physics, are taught in it. It also contains the machine and woodworking shops and the boilers and engines which supply heat and power to this building and to Ridenbaugh Hall.

LISZT HALL (1897), a two-story wooden structure, formerly the Horticultural Building, was refitted in 1907 and is now the home of the Department of Music.

RIDENBAUGH HALL (1902), the women's dormitory, is a three-story brick building finished and furnished according to the most approved plans. It contains two reception halls, thirty-five dormers, study halls, a dining hall for 100 boarders, and apartments for the Dean of Women. The building is steam-heated.

May 22—Professor Wilber—*Legal Reforms.*
Piano Solo, Miss Verna Smith.

Sept. 18—President MacLean—*Various Ideas of a College Education.*
Piano and Violin Ensemble—Professors Maguire and Collens.

Sept. 25—Professor Aldrich—*Agencies Working for Universal Peace.*
Violin Solo, Miss Fox.

Oct. 2—Student Assembly.

Oct. 9—P. Monroe Smock—*The Three P's in Education.*
Violin Solo, Mr. E. Hellier-Collens.

Oct. 16—Student Assembly.

Oct. 23—Dean Eldridge—*The Main Purpose.*
Piano Solo, Miss Marguerite Jones.

Oct. 30—Professor Corbett—*Electrical and Other Engineers.*

Nov. 6—Professor Hulme—*Some Impediments to Social Progress.*
Violin Quintet.

Nov. 13—Student Assembly.

Nov. 20—Hon. Burton L. French, '01—*Our National Capitol.*
Vocal Solo, Miss Mary Petcina.

Dec. 4—Senator George H. Fields—*Great Men at Washington.*
Piano Solo, Miss Ella Olesen.

Dec. 11—Student Assembly.

Dec. 18—Professor McCaffery—*Mine Taxation.*
Piano Solo, Miss Hostetter
Williams' Jubilee Male Quartet.

DISCIPLINE The discipline of the University is administered upon the theory that the greatest favor the State can bestow upon its youth is to give them free tuition in its University, and that the greatest penalty for the abuse of the favor thus bestowed is to withdraw it from unappreciative and unworthy students. Whenever the Faculty is convinced that a student is not fulfilling or likely to fulfil the purpose of his attendance at the University, or is for any cause an unfit member thereof, the student will be dismissed for an indefinite or a stated time.

The young women of the University are surrounded by the most healthful influences. The Dean of Women gives counsel freely; and every care is taken to develop the most desirable traits of character in the young women. At the Dormitory and sorority

Assemblies are addressed by visitors of prominence or by members of the University Faculty. All students are expected to be in attendance.

Assembly Programs, 1912

Jan. 10—Student Assembly.

Jan. 17—Rev. Oscar Lowry, Evangelist.
Male Quartette and Vocal Solo by Mr. Moody.

Jan. 24—Student Assembly.

Feb. 7—Commissioner Fassett of Spokane—*Commission Form of Government.*

Feb. 14—Professor Shattuck—*Forestry Conditions in Idaho.*

Feb. 21—Mr. Chas. D. Hurrey—*The Y. M. C. A. in the Universities of the World.*
Piano Solo, Professor Maguire.

Feb. 28—Professor Gurney—*Research Work: What It Is; Who Does It.*
Men's Glee Club.

Mar. 6—Professor Aldrich—Illustrated Lecture on Trip to Utah, *Nevada, and California.*
Mixed Quartet.

Mar. 13—Professor Nicholson—*Bacteriology.*
Vocal Solo, Professor Hulme.

Mar. 20—Dean Hicks of Spokane—*Loyalty.*
String Quartet.

Mar. 27—Professor Axtell—*Greek Universities.*
Piano Solo, Miss Lois Rowley.

Apr. 3—Professor Stewart—*Practical Value of Geology to the State.*
Vocal Solo, Dean Eldridge.

Apr. 10—Professor Livingston—*Mexico.*
College Orchestra.

Apr. 17—Student Assembly.

May 1—Student Assembly.

May 8—Mr. Jordan, Northern Pacific Agent—*Pictures of Yellowstone National Park.*

May 15—Student Assembly.

holdings to the extent of $58,000 for the purpose of erecting a Forestry Building at the University of Idaho, was unanimously passed. At the present time approximately $29,000 has been subscribed.

The preliminary plans call for a three-story brick structure, 63x100 feet, provided with museum, library, offices, lecture rooms, and laboratories suitable to meet the urgent needs of the School of Forestry. Also a mill annex, 63x123 feet, where woodworking machinery will be installed for laboratory work in lumbering and other forms of utilization. The building when completed will be one of the most complete of its kind in the United States.

LIBRARY The University Library occupies a large room on the second floor of the Administration Building. The room is well lighted and as now arranged provides chairs and table space for one hundred readers and shelving for 22,000 volumes. In addition to this, a storage room in the basement contains about 5,000 volumes.

The Library consists of about 28,000 volumes and several hundred pamphlets. Books of general interest and usefulness are kept in the main library, where readers have direct access to them. The books are arranged by subject according to the decimal classification. A dictionary card catalog listing all material by author, title, and subject, is being made. For convenience certain collections are deposited in the departments to which they are of especial use. The law library is kept in the general library, where it is easily accessible.

As a designated depository the library receives all publications of the United States Government. The library receives regularly about 140 of the leading periodicals, both general and technical, American and foreign. These are on file in the reading room or in the department libraries, and completed volumes are bound. This material is all available for quick reference through excellent periodical indexes. About one hundred Idaho newspapers donated by the publishers for the use of the students are filed in the newspaper room.

Any one, whether directly connected with the University or not, is welcome to the use of the library for both reference and reading.

ASSEMBLY The Assembly occupies one period every Wednesday morning. Occasionally the hour is given to discussion of student affairs, athletics, debates, etc. In general,

The ARMORY AND GYMNASIUM (1904) is a large rectangular structure of red brick, with a ground floor of 129x64 feet. It was constructed at an approximate cost of $25,000, and is one of the most attractive of the University buildings.

LEWIS COURT (1911), an annex to the Gymnasium built by private subscription, is a one-story wooden structure 60x180 feet in dimensions. It stands immediately north of the Gymnasium. The floor is of cinders and contains eight hand-ball courts, three basket-ball courts, tennis, volley-ball, and hockey courts, a fifty-yard dash stretch for sprinters, and a running track one-twelfth mile long. It is also used for military drill during the winter months.

The ASSAY BUILDING (1906) is of one story, 110x52 feet, of selected brick with rubble foundations, and is fully equipped for assaying and small scale metallurgical experiments. It contains a furnace room, 70x50 feet, a chemical laboratory, an office, a parting-room, a balance room, and a laboratory.

The METALLURGICAL LABORATORY (1906) occupies a red pressed-brick building with ground-floor plan of 84x96 feet and is the best in the Northwest, representing with its present equipment an expenditure of about $40,000. It is built upon sloping ground and has the different floors or levels common to all mills constructed on a hillside.

MORRILL HALL (1906), constructed of brick and stone at a cost of about $50,000, is designed to meet the needs of the College of Agriculture and the Agricultural Experiment Station.

The FLOUR MILL (1907) is equipped for experimental work in the improvement of wheat. One end of it is used for the investigation of fruit by-products.

The FORGE SHOP (1907) is a temporary wooden building, 30x34 feet, used by the Department of Mechanical Engineering. Eight Buffalo down-draft forges with power blower and exhauster have been installed, together with an emery-wheel grinder and the necessary small tools, vises, mandrel, etc.

The GREENHOUSES (1908) are situated west of the Flour Mill.

The CENTRAL HEATING PLANT (1909) is of brick structure and furnishes steam heat to most of the University buildings.

NEW FORESTRY BUILDING

At a meeting of the North Idaho Forestry Association, December 16, 1911, a motion that the members of the Association pro-rate their

houses the wholesome and homelike environment facilitates the exercise of influence and authority.

MILITARY SCIENCE Pursuant to the act of Congress creating the land grant on which the University is founded and the act of the Legislature of the State of Idaho assigning the land grant, instruction is provided for in Military Science and Tactics and is required of all male students except college Juniors and Seniors, third-year students in the School of Practical Agriculture, and those physically disqualified.

Juniors and Seniors may be required to take the course of instruction, for cause.

EXPENSES

NO TUITION According to Section IV. of the law by which the University was created, "No student who shall have been a resident of the state for one year next preceding his admission shall be required to pay any fees for his tuition in the University, except in a professional department or for extra studies." At present no tuition is charged at the University of Idaho to students from other states (except the regular tuition fees in the College of Law and in the Department of Music).

ANNUAL EXPENSES The necessary expenses of residence include the A. S. U. I. fee ($8), room ($27 to $72), and board ($144 to $198). In addition to these, a student's expenses will include charges which vary with the means and habits of the individual—as, for example, laundry ($18 to $30), books and stationery ($10 to $30), laboratory fees, clothing, membership in societies, and subscriptions.

EMPLOYMENT There are the usual opportunities for making money to be found in a small town, and many students earn a portion of their expenses during their college courses. The Y. M. C. A. has a committee organized to assist students in finding remunerative employment. It is, however, strongly advised that before entering on his course the student have means sufficient to meet his first year's expenses.

ROOMS The cost for rooms, occupied by two students, in private house is from $4 per person per month up, the average, with fuel and light included, being $5. Many men live in the Greek-letter fraternity houses, the price per month for board and room averaging $24. Board and room in private families can be occasionally arranged for, the minimum cost being, perhaps, $20 per month. The Y. M. C. A. prepares a list of available rooms at the opening of the college year, and aids students in finding a satisfactory home. These lists may be obtained from the Bursar about September 10.

GIRLS' DORMITORY Ridenbaugh Hall, the dormitory for young women, accommodates thirty-eight students. The rooms are arranged, partly in suites of two, comprising a study and bedroom intended for two occupants, and partly in single rooms for one student. Rooms are lighted with electricity and heated with steam and supplied with necessary furniture, neat and tasteful in design.

Students are required to provide the following articles: One pillow, four pillow slips, four sheets, two bedspreads, one pair of blankets, one comforter for three-quarter bed, four towels, two bath towels, and table napkins, all articles to be plainly marked with name of owner. To avoid confusion and delay all trunks should be carefully labeled with name and destination. Students are advised, but not required, to provide rugs for their rooms. Each student is expected to take care of her own room, which must be ready for inspection at nine o'clock each morning. Once a week a general cleaning is required. The rooms in Ridenbaugh Hall rent at one dollar per week. A deposit of ten dollars, which is asked at the time that rooms are engaged, is forfeited, if notice of cancellation is received later than two weeks before college opens.

Rooms are rented only to *bona fide* students of the University. Application may be made at any time to the Dean of Women and rooms will be assigned in the order thereof. Students occupying rooms are expected to board in the Hall. If for any reason one of the occupants of a suite is obliged to give up her place in a suite, the remaining occupant may be asked to take a single room. The regulations of the Hall are few and simple and appeal to the student's self-respect and personal responsibility. The Hall is under the immediate supervision of the Dean of Women.

The Hall has, in addition to its dormers, a reception hall, music room, library, class-room for domestic science, dining room, kitchen, bathrooms, and lavatories.

The *dining room* is open to all members of the University. The rate for board is four dollars per week.

LABORATORY FEES To cover a portion of the actual cost of materials used in laboratory courses, fees are required, the amount of which will be noted in connection with the various courses.

A. S. U. I. FEES A fee of four dollars per semester is collected from each student for the support of the various enterprises of the student body, known as the Associated Students of the University of Idaho. This entitles the student to a free copy of the weekly student paper, "The Argonaut."

DIPLOMA FEE At the end of the Senior year, a fee of five dollars must be paid by the student to the Bursar to cover the cost of the diploma. For a Master's degree the fee is ten dollars.

LECTURE TICKETS Each year the student has opportunities of hearing noted speakers and musicians at very slight expense. In order to avail himself of these opportunities he should set aside from three dollars to five dollars.

SCHOLARSHIPS AND PRIZES

RHODES SCHOLARSHIP No bequest for education made in modern times has attracted such world-wide attention as have the provisions of the will of the late Cecil Rhodes relating to the establishment of scholarships in Oxford University. Under this bequest two scholarships are appropriated to each of the present states of the United States. Each scholarship has a yearly value of $1,500, and is tenable in Oxford University for three successive academic years.

"In the election of a student to a scholarship regard will be had to (1) his literary and scholastic attainments, (2) his fondness for and success in manly outdoor sports, such as cricket, football, and the like, (3) his qualities of manhood, truth, courage,

devotion to duty, sympathy for and protection of the weak, kindliness, unselfishness and fellowship, and (4) his exhibition during school days of moral force of character and of instincts to lead and to take an interest in his schoolmates."

Examinations are held in each state to which scholarships are assigned, at centers to be fixed by the local Committee of Selection. In this state examinations are held at the University. This committee appoints a suitable person to supervise the examination, and arrange for its impartial conduct. It should be clearly understood that this examination is not competitive, but simply qualifying, and is merely intended to give assurance that every elected scholar is able to pass the first examination which Oxford University demands of all candidates for the B.A. degree.

The Rhodes scholars are selected from candidates who have successfully passed this examination. One scholar is chosen for each state to which scholarships are assigned.

Candidates must be unmarried, must be citizens of the United States, and must be not younger than nineteen nor older than twenty-five years of age on October first of the year in which they are elected.

It has been decided that all scholars shall have reached, before going into residence, at least the end of their Sophomore or second-year work at some recognized degree-granting university or college of the United States.

Candidates may elect whether they will apply for the scholarship of the state in which they have acquired any large part of their educational qualification, or for that of the state in which they have their ordinary private domicile, home, or residence. They may pass the qualifying examination at any center, but they must be prepared to present themselves before election to the committee in the state they select. No candidate may compete in more than one state.

To meet the requirements of the responsions examinations, candidates are examined in the following subjects: Translation from Latin into English, Latin Prose Composition, Arithmetic, Translation from Greek into English, Latin Grammar, Greek Grammar, and Algebra or Geometry. By a recent provision it is possible to postpone the examinations in Greek until reaching Oxford, but this is not recommended.

Oxford University has agreed to accept in lieu of responsions

the certificates of its examiners that students have passed this examination, so that all scholars elected will be excused from that test when they come into residence at Oxford. As a certificate of exemption from responsions holds good permanently, persons who have passed in previous years, if otherwise eligible, need not take the examinations a second time in order to become qualified as candidates.

The examinations occur but twice in every three years. They are held at the University in October, and the papers are forwarded to Oxford. From the list of those who pass, the faculty Committee of Selection, under the authority of the Trustees of the Rhodes will, nominates the scholar. The next qualifying examination occurs in October, 1913.

The Rhodes scholars for Idaho thus far have been:

1904—Lawrence Henry Gipson, '03.....Caldwell
Lincoln College—*Modern History.*

1905—Carol Howe Foster, '06.....Weiser
Brasenose College—*English Literature.*

1907—McKeen Fitch Morrow, '08.....Boise
Worcester College—*Jurisprudence.*

1908—George Henry Curtis, '09.....Boise
Worcester College—*Literae Humaniores.*

1910—Toney Taylor Crooks, '09.....Fredonia, Kan.
Hertford College—*Medicine.*

1911—Ludwig Sherman Gerlough, '09.....Boise
Jesus College—*Modern Languages.*

1912—Ralph Baxter Foster, '13.....Valley Falls, Kan.
Jurisprudence.

ENGINEERING SCHOLARSHIPS

An anonymous friend of the University of Idaho has given the money for two scholarships of $75 each for one year, to be given each year to students of the Engineering College of the University. The following rules govern the award of these scholarships: They are awarded at the end of the Junior year, and are paid at the beginning of the Senior year, but only in case the recipient returns for the work of that year. They are rewards for high scholastic standing and in appreciation of the high personal honor of the recipient, and are awarded on the basis of the record in the Dean's office of all college work up to the

end of the Junior year, confirmed by the action of the Committee on the College of Engineering.

The scholarships thus far have been awarded as follows:

1910—Loren Lewis Brown.....Spokane, Washington
Leo Walston Maguire.....Moscow, Idaho

Extra awards of $75 were made in September, 1910, to:
Harry Hirsh Daus.....Weiser, Idaho
George Alexander Rember.....Hailey, Idaho

1911—Clinton Fiske Bessee.....Moscow, Idaho
Jesse Pierce.....Boise, Idaho

1912—Ray Donald Bistline.....Pocatello, Idaho
Hallard Washington Foester.....Nampa, Idaho

LOAN SCHOLARSHIP FUND

At the first biennial meeting of the State Federation of Women's Clubs, held in Boise, October, 1906, it was decided to establish a scholarship fund for the State University, to be loaned to deserving students in amounts varying to suit individual needs. About $200 was raised at once, which sum has been added to from time to time by the clubs. An applicant must be recommended by a club belonging to the State Federation and by his high school principal or city superintendent. The money thus loaned is to be returned to the fund at the borrower's convenience without interest. Students desiring to take advantage of this offer will apply with the above recommendations to Mrs. G. F. Hansbrough, Blackfoot, Idaho.

DEWEY MEMORIAL PRIZE

The prize of $25 was established in 1904 by Mr. Edward Dewey, of Nampa, Idaho, in memory of his father, Col. W. H. Dewey. It is awarded to the student who secures the first place in the trial debate held for the purpose of selecting a team to represent the University in an intercollegiate debate. The following students have thus far gained the prize:

1904—James William Galloway.....'06
1905—Thomas R. Jones.....'05
1906—Victor Emmanuel Price.....'06
1907—McKeen Fitch Morrow.....'07
1908—Guy Holman.....'08
1909—Robert Oscar Jones.....'09
1910—Paul McTeer Clemens.....'11
1911—Charles Edwin Horning.....'14
1912—Parker Vincent Lucas.....'13

THE VICTOR PRICE DEBATE FUND

In 1910 Mrs. Mabel E. Price, '03, established an annual fund of thirty dollars in memory of her husband, Victor Emmanuel Price, '06. It is to be devoted to the purchase of books that will be helpful to the work of the Victor Price Debating Society and to the other debate work of the University. Each book purchased with the fund contains a label that denotes its source and the date of its acquisition. Because of the fact that they deal with vital problems, the books obtained by means of the fund will, in a few years, become one of the most valuable parts of the library.

BORAH DEBATE PRIZE

In 1908 Senator William E. Borah established an annual debate prize of $50. A debate is held at the University each year, all of the contestants having been chosen in a preliminary debate that is open to all the students of the University. The prize is used in building up a special debate library which is known as the Borah Debate Library. The names of the contestants who secure the three highest places are placed in the books. The subjects debated thus far are as follows:

1907—*Employers' Liability for Industrial Accidents.*
Ira Tweedy, John A. Rock, and Guy Holman.

1908—*A Graduated Federal Income Tax.*
Ira Tweedy, Jewett D. Matthews, and Robert O. Jones.

1909—*Federal Incorporation for Interstate Commerce Corporations.*
Ransom Mackie, Paul M. Clemens, and John A. Rock.

1910—*Old Age Pensions in England.*
Ira Tweedy, Paul Durrie, and Ralph Foster.

1911—*The Settlement of Industrial Disputes.*
Ralph Foster, Parker V. Lucas, and John McEvers.

1912—*Incorporation of Labor Unions.*
Parker V. Lucas, Harry McAdams, and Homer Barton.

WATKINS MEDAL

A gold medal offered in memory of the late W. W. Watkins, M.D., of Moscow, is awarded annually to the student winning the first place in the oratorical contest held in March.

This medal has been awarded as follows:

1894—Florence May Corbett.....'96
1895—Arthur Prentiss Adair.....'96
1896—Peter La Dow Orcutt.....ex-'00
1897—Marcus Whitman Barnett.....'98
1898—Jennie Eva Hughes.....'99

1899—Glen Peter McKinley.....ex-'01
1900—John Reavley McConnel.....ex-'03
1901—Aubrey Irl Eagle.....'01
1902—William Erwin Lee.....'03
1903—Charles Dennis Saxton.....'04
1904—James Loyal Adkison.....'04
1905—Thomas R. Jones.....'05
1906—James William Galloway.....'06
1907—James Henry Frazier.....'07
1908—William Kanada Gwin.....'09
1909—Robert Oscar Jones.....'09
1910—Ransom A. Mackie.....Special
1911—(No award.)
1912—Ralph Baxter Foster.....'13

RIDENBAUGH PRIZE

In 1903 Mrs. W. H. Ridenbaugh, at that time Vice-President of the Board of Regents, established an annual prize of $25. This is awarded to the student who receives first place in the trial debate held for the purpose of selecting an intercollegiate debate team. The following students have thus far won the prize:

1903—Reuben W. Overman.....'04
1904—Victor Emmanuel Price.....'06
1905—Charles Armand Montandon.....'06
1906—Guy Holman.....'08
1907—Robert Oscar Jones.....'09
1908—Ralph Williams.....ex-'13
1909—Paul McTeer Clemens.....'11
1910—Ralph Baxter Foster.....'13
1911—Parker Vincent Lucas.....'13
1912—Harry McAdams.....'14

MOODY PRIZE

A prize provided by J. E. Moody, of the class of 1901, consisting of copies of library editions of Wait's *"Engineering and Architectural Jurisprudence"* and *"The Law of Operations Preliminary to Construction in Engineering and Architecture,"* offered to the student in the University of Idaho making the best record in the Senior class in the engineering course in Contracts and Specifications.

The following students have thus far won the prize:

1910—Marshall Roy LeBaron, B.S.(C.E.)
1911—William Wesley Ream, B.S.(C.E.)
1912—{ Clinton Fiske Bessee, B.S.(C.E.)
{ Jesse Pierce, B.S.(C.E.)

STUDENT ORGANIZATIONS

A. S. U. I. The Associated Students of the University of Idaho is an organization of the whole collegiate body, formed for the purpose of controlling and directing student activities. The organization recognizes three principal departments: athletics, debate and oratory, and the college paper, each of which is under the direct control of a particular board, subject to the general supervision of the executive committee of the Associated Students.

The department of athletics is managed by the Athletic Board. Contests in football, basketball, and on track and field are arranged annually with the University of Oregon, the University of Washington, Whitman College, Washington State College, and Oregon Agricultural College.

The intercollegiate contests in debate are under the control of the Debate Council, which is composed of six members elected by the student body and two faculty advisory members elected by the Council. Annual dual debates, making a total of six intercollegiate contests each year, are held with Pacific University, Gonzaga University, and Willamette University.

MUSICAL SOCIETIES The musical organizations maintained under the supervision of the Department of Music are as follows:

The Treble Clef Club.
The University Glee Club.
The Cecilian Choral Society of mixed voices.
The University Orchestra.
The Violin Quartet Club.
The Cadet Military Band.

CHRISTIAN ASSOCIATION The Young Men's Christian Association and the Young Women's Christian Association stand for the highest type of manhood and, womanhood, and have for their purpose the development of Christian character among the students of the University. Regular weekly meetings are held for prayer, conference, and study, and occasional social meetings are held.

The Bible study department is emphasized and earnest efforts are made to induce the students to take up the systematic, personal study of the Bible.

Representatives are sent annually to the Pacific Coast Student Conferences at Columbia Beach, Oregon, and Gearhart Park, Oregon.

DE SMET CLUB The DeSmet Club is an organization of the Catholic students of the University, which meets biweekly for study and social purposes.

ASSOCIATED MINERS The Associated Miners is an organization of the students in mining engineering before which papers are read by members of the Faculty, students, visiting mining men, and alumni. It is affiliated with the American Institute of Mining Engineers.

CIVIL ENGINEERING SOCIETY The University of Idaho Society of Civil Engineers was organized in 1911. The object of the society is to conduct a systematic review of the engineering magazines, with addresses and papers by members and also prominent visiting civil engineers.

AGRICULTURAL CLUB The students and instructors of the College of Agriculture are organized into a club holding regular biweekly meetings with a program of special reports, essays, and debates. Whenever possible, specialists and experts in agriculture are secured to address the club.

ENGLISH CLUB The English Club is composed of students whose interests are centered chiefly in the department of the English Language and Literature. The purpose of the club is two-fold: The stimulation of effort toward original verse and prose compositions, and the development and direction of interest in the acted drama. Toward the fulfillment of the former purpose, a literary magazine was founded in the spring of 1912, entitled *"The Quill."*

The second purpose has been well carried out by the presentation of *As You Like It, The Merchant of Venice,* and *Twelfth Night,* as well as by modern plays, such as Ibsen's *A Doll's House* and Shaw's *Arms and the Man.* Evenings devoted to Shakespearian music, the Elizabethan theater, reading of original farces, and college verse add to the pleasures of membership.

BIOLOGY CLUB This is a voluntary organization of students interested in biological subjects. Its purpose is partly social and partly scientific. In the latter department it promotes biological field work by organizing trips to Moscow Mountain and other places of scientific interest in the vicinity.

THE VICTOR PRICE DEBATE SOCIETY In 1910, the Victor Price Debate Society was organized for the purpose of furthering the work in debate and other forms of public speaking. The society was named in memory of Victor Emmanuel Price, '06, who was one of the most active and one of the ablest of Idaho's debaters. Among the subjects debated have been employers' liability, asset currency, old-age pensions, an eight-hour law, federal incorporation of corporations engaged in interstate commerce, compulsory insurance for workmen, the abolition of the University Preparatory Department, the federal income tax, ship subsidies, the single tax on land, the abolition of intercollegiate football, workmen's compensation, the commission form of government, Chinese immigration, raising the A. S. U. I. fee so as to include a pass to all student activities, and tolls on ships passing through the Panama Canal.

ASSOCIATED FORESTERS This is an organization of the students in forestry in which the current literature on forestry and lumbering is reviewed each week. Lectures by Forest Service officials and others are sometimes given.

UNIVERSITY PUBLICATIONS

THE UNIVERSITY OF IDAHO BULLETIN—This is published at least quarterly and consists of the following separate issues:

(1) The University Catalog.

(2) The Commencement Number.

(3) The Announcement of the College of Law.

(4) The Announcement of the Department of Forestry, and similar occasional announcements by the Departments of Dairying, Mining, etc.

THE ANNUAL REPORT OF THE PRESIDENT OF THE BOARD OF

REGENTS TO THE GOVERNOR—The report includes an account of the general affairs and interests of the University for the year.

THE ANNUAL REPORT OF THE EXPERIMENT STATION—The annual report of the Director is made to the National Director of Experiment Stations, setting forth in detail the results, progress, and plans of the station.

THE BULLETINS OF THE EXPERIMENT STATIONS—These are popular accounts of the results of the station work which relate directly to farm practice.

THE IDAHO AGRICULTURAL NEWS-LETTER—There is issued by the Agricultural Department of the University a semi-monthly publication treating upon various timely topics pertaining to the interests of farmers and horticulturists. This publication is issued to the press of the state and the agricultural publications of the nation that request it. All the divisions of the Station and College are represented in each issue. The press of the state makes very general use of these articles and is very appreciative of the *News-Letter.*

Student Publications

THE UNIVERSITY ARGONAUT—A weekly paper published during the school year by an association of students.

IDAHO COUNTRY LIFE—A monthly, illustrated publication, managed by the students of the College of Agriculture, to circulate matter of special agricultural interest.

THE QUILL—A literary magazine published occasionally.

THE GEM OF THE MOUNTAINS—An illustrated book published annually by the Junior class.

ADMISSION TO THE UNIVERSITY

CREDENTIALS Applicants for admission to the Freshman Class must be at least sixteen years of age, and must present satisfactory evidence of good moral character. *They must submit to the Committee on Admissions credentials from their last principal, or from the institution last attended.* The University will furnish blank certificates upon application to the "Bursar of

the University of Idaho, Moscow, Idaho." If these are returned to the Committee on Admissions *before September tenth,* it will facilitate the admission of candidates on the registration days. Diplomas are not necessary, if these certificates are presented.

Applicants from accredited schools, having the principal's certificate covering the University requirements for a certain course, will be admitted to such course without examination.

Students coming from schools not accredited, or from other states, are advised to bring full, authenticated statements of work done, which will be considered on their merits, and will facilitate the classification of the student. Unless admitted on certificate, the candidate will be required to take examination in the work outlined below for the course he wishes to enter.

UNIT DEFINED

"A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work."—Definition adopted 1909 by the College Entrance Board. It takes the four-year high-school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length and that the study is pursued for four or five periods a week; but, under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute hours or their equivalent.

REVISED ENTRANCE REQUIREMENTS

In conformity with the present movement toward a more flexible course in high schools and desiring a more effective cooperation with the secondary schools of the State, the University Faculty in 1912 revised the entrance requirements. As before, the standard of admission is based upon a four-year high-school course, but the specified requirements are in some respects less rigid. This closer articulation should bring about the result that practically no students will be admitted with entrance "conditions," which always constitute a troublesome handicap.

The new requirements permit a student to decide upon a college course somewhat later in his high-school course than has been possible heretofore. It is recognized that a great majority of students in high school will not attend college. The discrepancy between what is considered preparation for life and preparation for college has been reduced to a minimum. It is believed that the nine units required of all matriculants may properly constitute a part of the work of any high-school graduate; two additional

academic units will be governed by the course to be pursued; and the four remaining units are entirely without restriction, and may consist of any academic or vocational subjects properly taught.

Outline ot New Admission Requirements For All Courses

	Subjects	Units
Group 1.	English	3 (note 1)
Group 2.	Social Science including History	1
Group 3.	Natural Science	1 (note 2)
Group 4.	Mathematics	2 (note 3)
	a. Elementary Algebra, 1 unit.	
	b. Plane Geometry, 1 unit.	
Group 5.	Foreign Language (Latin, German, French or Spanish)	2 (note 4)
Group 6.	Additional academic units	2 (note 5)
Group 7.	Elective	4
	Total	15

It is further required that not less than *three* units be offered in some one group besides English.

A comparison of the above with the former admission requirements will show that only Group 3, Natural Science, is new.

NOTES

Note 1. For admission to the B.A. and Law courses *four* units of English are required.

Note 2. Under this requirement will be accepted Physics, Chemistry, Botany, Zoology, or Agriculture. For admission to Engineering courses Physics is required.

Note 3. For admission to Engineering courses the further requirement is made of Solid Geometry, one-half unit, and Advanced Algebra, one-half unit.

Note 4. Less than two years in some *one* foreign language will not be accepted. For admission to the B.A. course *three* units of Latin are required.

Note 5. (a) For the B.A. course these must be additional English and Latin, as indicated in Notes 1 and 4.

(b) For the Engineering courses these consist of one additional unit in Mathematics (see note 3) and one additional unit in either English, Foreign Language, Social Science, Botany, Zoology, or Chemistry.

(c) For the Law course these consist of one additional unit of English (note 1) and one additional unit in Foreign Language or Social Science.

(d) In the remaining courses nothing is specified regarding these additional academic units except that, as above stated, when added to Groups 1-5, they must afford at least one subject besides English which totals *three* units. This is to insure advanced work along at least two lines of study.

ENTRANCE DEFICIENCY A student who presents fourteen units may be conditionally admitted by the Committee on Admissions, but the deficiency must be made up as soon as possible, and in any case before the beginning of the Junior year. Subjects of the twelfth grade may be taken in special classes, upon application.

SUGGESTIONS FOR PREPARATION

English—Three or Four Years.

1. COMPOSITION AND RHETORIC—Each applicant should be able to write clear and correct English, and no applicant is acceptable whose work is seriously defective in spelling, punctuation, grammar, and sentence and paragraph structure. The proper preparation for this part of the requirement is practice in composition through the four preparatory years, with correction of themes by the teacher and revision by the pupil. Subjects for themes should be taken from the books prescribed for general reading below, as well as from the pupil's observation and experience. Practice should be afforded in writing narration, description, and exposition. Applicants should be familiar with those principles of Rhetoric which are most helpful in elementary composition, viz: the principles of sentence structure, outlining, paragraphing, and choice of words.

2. ENGLISH CLASSICS—(a) A thorough knowledge of the subject matter, form, and structure of Shakespeare's *Macbeth;* Milton's *Comus, L'Allegro,* and *Il Penseroso;* Burke's *Speech on Conciliation With America,* or both Washington's *Farewell Address* and Webster's *First Bunker Hill Oration;* Macaulay's *Life of Johnson,* or Carlyle's *Essay on Burns.*

(b) A general knowledge of the substance of the following books: Shakespeare's *Merchant of Venice* and *Julius Caesar;* the *Sir Roger de Coverley Papers* in the *Spectator;* Franklin's *Autobiography;* Macaulay's *Lays of Ancient Rome;* Scott's *Ivanhoe* and

Lady of the Lake; Tennyson's *Gareth and Lynette, Launcelot and Elaine* and *Passing of Arthur;* Hawthorne's *House of the Seven Gables;* Dickens' *Tale of Two Cities.*

Mathematics

a. ELEMENTARY ALGEBRA—*To Quadratics*—One year.

The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and lowest common multiple by factoring; fractions, including complex fractions, ratio and proportion; linear equations, both numerical and literal, containing one or more unknown quantities; problems depending on linear equations; radicals, including the extraction of the square root of polynomials and of numbers; exponents, including the fractional and negative.

b. PLANE GEOMETRY—One year.

The usual theorems and constructions of good textbooks, including the general properties of plane rectilinear figures; the circle and the measurements of angles; similar polygons; areas; regular polygons and the measurement of the circle.

The solution of numerous original exercises, including loci problems.

Application to the mensuration of line and plane surfaces.

c. SOLID GEOMETRY—One-half year.

The usual theorems and constructions of good textbooks, including the relations of planes and lines in space; the properties and measurements of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle.

The solution of numerous original exercises, including loci problems.

d. ADVANCED ALGEBRA—*Quadratic Equations, Binomial Theorem, and Progressions*—One-half year.

Simple cases of equations with one or more unknown quantities that can be solved by the methods of linear or quadratic equations.

Problems depending upon quadratic equations.

The binomial theorem for positive integral exponents.

The formulas for the *n*th term and the sum of the terms of arithmetic and geometric progressions, with applications.

Languages

a. LATIN (1) *Grammar and Composition*—One year.

The inflections; the simpler rules for composition and derivation of words; syntax of cases and the verbs; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive. Translation into easy Latin of detached sentences and very easy continuous prose based upon Caesar and Cicero.

(2) *Caesar*—One year.

Any four books on the Gallic War, or the equivalent.

(3) *Cicero*—One year.

Any six orations from the following list, or equivalents: The four orations against Catiline, Archias, the Manilian Law, Marcellus, Roscius, Milo, Sestius, Ligarius, the fourteenth Philippic.

(4) *Virgil*—One year.

The first six books of the Aeneid, and so much prosody as relates to accent, versification in general and dactylic hexameter.

b. GERMAN—Two years.

During the *first year* the work should comprise: (1) careful drill upon pronunciation; (2) the memorizing and frequent repetition of easy colloquial sentences; (3) drill upon the rudiments of grammar, that is, upon the inflection of the articles, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs and the more usual strong verbs; also upon the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word-order; (4) abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (5) the reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translation into German easy variations upon

American Government. Clark, *Outlines of Civics.* Bryce, *The American Commonwealth* (abridged edition). Fiske, *Civil Government in the United States* (revised edition). Forman, *Advanced Civics.* Flickinger, *Civil Government.* Dunn, *The Community and the Citizen.* Kaye, *Readings in Civil Government.*

Natural Sciences

a. PHYSICS—One year.

The requirement represents a daily exercise for one school year in high-school Physics, including both laboratory and text-book work. The applicant will be required to show a knowledge of Physics as given in the better high-school textbooks and to present a laboratory note-book covering experiments performed by himself.

b. CHEMISTRY—One year.

The preparation in Chemistry should include individual laboratory work, comprising at least forty exercises selected from a list of sixty or more; instruction by lecture-table demonstrations, to be used mainly as a basis for questioning upon the general principles involved in the pupil's laboratory investigations; the study of at least one standard textbook, to the end that the pupil may gain a comprehensive and connected view of the most important facts and laws of elementary chemistry. The applicant should present his laboratory note-book.

c. BOTANY—One year.
d. ZOOLOGY—One year.

A year's work in the high school in either of these sciences should consist mainly of laboratory work, much of which must be done with the compound microscope. One or two periods each week may be given to recitation from textbook, with which lectures or informal talks by the teacher may be intermingled; of the latter the student should take notes and write them out for preservation. Several excursions in the fall and spring should be taken, in which the class is kept together and the teacher points out the botanical or zoological features of the vicinity, each student writing up the excursion carefully and receiving credit the same as for laboratory work. The student's note-book thus kept will contain drawings and descriptions of the plants or animals

studied, notes on lectures, and descriptions of field trips; it will be in itself the best index of what the student has done.

Courses differently arranged will be considered, and full credit given, if the time has been sufficiently extended and the facilities adequate.

The combination of botany and zoology in a single year's work is not advised.

The selection of forms for study in high-school work will depend somewhat on local conditions; if possible, most of the large groups should be represented by types. A study of only the types found in the locality may under skilled management be made satisfactory.

Correspondence with the University professor of biology is solicited in cases where the teacher has difficulty in procuring material.

ACCREDITED AND OTHER SCHOOLS

In the past ten years members of the Committee on Secondary Schools have visited the various high schools of the state together with the other institutions that offer secondary work. Upon the recommendations of the Committee some of the schools have been accredited with various totals of entrance "units." The definition of a unit is to be found on page 43. Because of the fact that the visits of the members of the Committee to the schools are made late in the college year, the catalog contains only the results of the visits and recommendations of the previous college year. Only those schools that give four years of secondary work are accredited schools; and only those schools that prepare for entrance to all the courses of the University are fully accredited schools. The schools have been divided into three groups: (1) state schools; (2) four-year high schools; (3) private schools and colleges.

State Schools

Name	Town	President
Academy of Idaho	Pocatello	Miles F. Reed
Normal School	Albion	G. A. Axline
Normal School	Lewiston	G. H. Black

Four-Year High Schools

Town	County
American Falls	Oneida
Bellevue	Blaine
Blackfoot	Bingham
Boise	Ada
Bonner's Ferry	Bonner
Buhl	Twin Falls
Burke	Shoshone
Coeur d'Alene	Kootenai
Caldwell	Canyon
Cambridge	Washington
Cottonwood	Idaho
Culdesac	Nez Perce
Emmett	Canyon
Fruitland	Canyon
Genesee	Latah
Glenn's Ferry	Elmore
Gooding	Lincoln
Grangeville	Idaho
Hailey	Blaine
Harrison	Kootenai
Idaho Falls	Bonneville
Lewiston	Nez Perce
Mace	Shoshone
Meridian	Ada
Midvale	Washington
Moscow	Latah
Mountain Home	Elmore
Mullan	Shoshone
Nampa	Canyon
Nez Perce	Lewis
Parma	Canyon
Pocatello	Bannock
Post Falls	Kootenai
Payette	Canyon
Potlatch	Latah
Rathdrum	Kootenai
Rigby	Fremont
Rupert	Lincoln
St. Anthony	Fremont

Sandpoint	Bonner
Shoshone	Lincoln
Spirit Lake	Kootenai
Star	Ada
Twin Falls	Twin Falls
Wallace	Shoshone
Wardner-Kellogg	Shoshone
Weiser	Washington

Private Schools and Colleges Giving Four Years of Secondary School Work

Name	Town	Principal (or President.)
Coeur d'Alene College	Coeur d'Alene	Rev. J. J. Jesperson
College of Idaho	Caldwell	Rev. W. J. Boone
Fielding Academy	Paris	W. E. Morgan
Idaho Industrial Institute	Weiser	Rev. E. A. Paddock
Oneida Stake Academy	Preston	John Johnson
Ricks Academy	Rexburg	Ezra C. Dalby
St. Margaret's Academy	Boise	Lucy Hester
St. Teresa's Academy	Boise	Sister Mary Amatus
Ursuline Convent	Moscow	Mother Mary Rose

ADMISSION FROM IDAHO STATE SCHOOLS

By arrangement with the State Normal Schools at Lewiston and Albion and the Academy of Idaho at Pocatello, students from these institutions will be admitted into the University without examination and receive credit for all work which is the equivalent of courses offered by the University either for admission or for a degree.

ADMISSION TO ADVANCED STANDING

Students who have completed work of college grade in other institutions of recognized standing may receive credit for the same on entering this University, by submitting (a) a statement of honorable dismissal; (b) a certificate of high school subjects, and (c) full, authenticated statements concerning the college studies pursued, including the ground covered and the time occupied by each. Students seeking advanced standing without certificates (b) and (c) will be required to take examinations.

ADULT UNCLASSED STUDENTS

Persons twenty-one years of age, who are unable to meet the admission requirements and who desire to take special studies, may be admitted as

unclassed students upon presentation of satisfactory evidence that they are fully qualified to enter upon the work. Their study lists must receive the approval of the Committee on courses and the instructors in charge of the desired work. Their registration in any subsequent semester is dependent upon the record made at the University.

UNIVERSITY REGULATIONS

MATRICULATION AND REGISTRATION A student entering the University for the first time in any regular college course presents his high-school credentials to the Committee on Admission. Having matriculated in the course chosen, he arranges his study-list after consultation with the Committee on Courses or the head of his respective department. When this has been countersigned by the Dean of his respective college, he receives a card of admission from the President.

A student entering a special or short course registers with the head of the respective department.

PENALTY FOR LATE REGISTRATION Registration is required on the appointed days at the beginning of each semester. A penalty of two dollars is imposed for later registration, except in the case of a student entering for the first time.

CHANGE IN STUDY LIST When a student's study-list has been filed, he may not change his course, or add or drop any subject except by permission of the Dean of his College and of the instructors concerned. A special form of petition may be obtained at the Dean's office. No changes are permitted later than one month after the opening of the semester, except for extraordinary reasons. No credit is given for a subject not properly registered for and approved.

WARNINGS Mid-semester warnings are sent about November 20th and April 1st to students who are reported by their instructors as doing unsatisfactory work up to that time. Upon request, duplicates of these will be sent to parents; also special reports of a student's progress at any time.

SEMESTER REPORTS Final grades are reported to the Dean's office shortly after the close of each semester. As soon as possible thereafter, reports are sent to parents and guardians, except that the work of Juniors and Seniors is reported direct to themselves.

CONDITIONS Conditions incurred in any subject must be removed at or before the time of the next condition examinations in September or February. If a condition examination is waived or not passed, credit can be received for the subject only by repeating it in class. In the case of a required subject this repetition is compulsory and immediate, unless an extension of time, signed by the instructor, is filed with the Dean.

FINAL LIMIT FOR REMOVING CONDITIONS A student who has not completed by the beginning of Junior year all his entrance requirements is rated down in a lower class until such entrance conditions are removed. A student who has not removed by the beginning of Senior year all conditions and failures in required subjects up to the end of Sophomore year, is not registered as a Senior until these are removed. A student who has not, by the beginning of the second semester of Senior year, removed in required subjects all conditions up to the end of Junior year, and all failures up to the middle of Junior year, is not considered a candidate for a degree.

CLASS RATING To be rated with an advanced class in college a student must not be more than eight credits behind the catalog requirements for entering that class at that time. (See also the preceding rule.) For B.A., B.S., and B.S. (H.Ec.) students the catalog requirements amount to an average of 34 credits at the end of the first year; 68 at the end of the second, and 100 at the end of the third. For students in other courses the requirements are fully stated in the catalog. Thus, for example, a B.A. student to be classed as a Sophomore must have obtained at least twenty-six credits (34—8), as a Junior, sixty, and as a Senior ninety-two.

MINIMUM CREDITS Students regularly take work amounting to from sixteen to twenty credits a semester. No student is allowed to register for work amounting to less than twelve credits, except in special cases with the approval of the Dean. A student must receive an average of 3.000 (i. e. an average passing grade) in all registered subjects in order to continue at the University the following semester.

SYSTEM OF GRADING The following is the system used in marking grades:

A	(excellent)	90-100
B	(good)	80-89
C	(fair)	70-79
D	(passed)	60-69
E	(condition)	50-59
F	(failure)	below 50

Incomplete work, unexcused, is graded E or F at the discretion of the instructor. Absence from the final examination in a course, unexcused, gives the grade F. Absence from the final examination, if excused, must be made up at the earliest opportunity and in any case within a year.

HONORS In order to promote scholarship the Faculty has adopted a system of classified honors with the following rules: Honors are of two kinds: (1) *Yearly Honors,* given at the close of each year and known as First-Year Honors, Second-Year Honors, and Third-Year Honors; and (2) *Final Honors,* based upon the work of the entire course. Yearly Honors are divided into two groups, known as *Class A* and *Class B.* Final Honors are divided into three groups, known as *Honors, High Honors,* and *Highest Honors.*

Honors are determined in accordance with the following numerical system:

Each	semester-hour	with	grade	A	counts	as	6,
"	"	"	"	B	"	"	5,
"	"	"	"	C	"	"	4,
"	"	"	"	D	"	"	3,
"	"	"	"	E	"	"	2,
"	"	"	"	F	"	"	1.

Numerical equivalents are attached to the above honor groups as follows:

First-Year, Second-Year, and Third-Year Honor Lists:—

Class B, an average of 5.000 or over.

Class A, an average of 5.333 or over.

Final Honor List:—

Honors, an average of 5.000 or over.

High Honors, an average of 5.333 or over.

Highest Honors, an average of 5.666 or over.

The award of Highest Honors is conferred by vote of the University Faculty only upon candidates who (a) have attained the required grade of 5.666, (b) have performed the work of the Junior and Senior years in residence at the University of Idaho, and (c) have shown capacity for intensive work.

The arrangement of names with each group is alphabetical.

(For honor-lists issued in August, 1912, see the latter part of this catalog).

I. COLLEGE OF LETTERS AND SCIENCES

FACULTY

*James Alexander MacLean, Ph.D., LL.D., President, *and Professor of Political Science*

Jay Glover Eldridge, Ph.D., Dean, *and Professor of the German Language and Literature*

John Merton Aldrich, Ph.D., *Professor of Biology*

†Isaac Jackson Cogswell, Mus.Doc., *Professor of Music*

William Sands Morley, A.M., Sc.D., *Professor of Mathematics*

Edward Maslin Hulme, A.M., *Professor of History*

Henrietta Evangeline Moore, Ph.D., *Professor of English Literature*

Lawrence Emery Gurney, Ph.D., *Professor of Physics*

Harold Lucius Axtell, Ph.D., *Professor of Greek and Latin*

Carl Leopold von Ende, Ph.D., *Professor of Chemistry*

Charles Houston Shattuck, Ph.D., *Professor of Forestry*

Permeal Jane French, *Dean of Women, and Instructor in Public Speaking*

J. Francis Maguire, *Professor of Music, (ad interim)*

Jessie M. Hoover, B.S., *Professor of Home Economics*

Philip Hendrick Soulen, M.A., *Associate Professor of Education*

†Clarence Clyde Tull, M.A., *Associate Professor of the English Language*

Shirley Gale Patterson, Ph.D., *Associate Professor (in charge) of Romance Languages*

Charles Arthur Stewart, Ph.D., *Associate Professor (in charge) of Geology and Mineralogy*

*Resigned February, 1913.
†Absent on leave.

———— ————, *Associate Professor of Economics*

MARGARET AMELIA SWEET, *Assistant Professor of Home Economics, and Instructor in Drawing*

CAROLINE CHRISTINE ISAACSON, A.B., *Assistant Professor of German*

JOHN ANTON KOSTALEK, PH.D., *Assistant Professor of Chemistry*

BENJAMIN HARRISON LEHMAN, B.A., *Assistant Professor of English*

GRACE SCHERMERHORN, B.S., *Assistant Professor of Home Economics*

ISABEL MARY STEPHENS, B.S., *Assistant Professor of Physical Education*

MARY BELLE SWEET, B.L.S., *Instructor in Library Science*

EDWARD HELLIER-COLLENS, A.V.C.M., *Instructor in Violin-Playing*

FAY HOSTETTER, *Instructor in Piano-Playing and Harmony*

EUGENE HAMILTON STORER, *Instructor in Vocal Culture, Choral Work, and Public School Music*

EDWARD JOHN CAREY, *Instructor in Cornet-Playing, and Leader of the Cadet Military Band*

IRWIN WYCLIFFE COOK, M.S.F., *Instructor in Forestry*

HORACE ASA HOLADAY, B.A., *Instructor in Chemistry*

VIRGINIA SHEARER, *Assistant in Home Economics*

ADDITIONAL INSTRUCTORS

JOHN FREDERICK NICHOLSON, M.S., *Professor of Bacteriology*

Lieut. JOHN FRANCIS FRANKLIN, 7th Inf., U.S.A., *Professor of Military Science and Tactics*

CHARLES EDWARD TEMPLE, M.A., *Professor of Botany*

CHARLES WILCOX VAN DER VEER, *Director of the Gymnasium*

CHARLES HENRY WILBER, J.D., *Associate Professor of Law*

LYMAN P. WILSON, J.D., *Associate Professor of Law*

WINFRED RULISON WRIGHT, B.S., *Assistant Professor of Bacteriology*

CLIFFORD LESLIE MCARTHUR, B.S., *Teaching Fellow in Bacteriology*

ADMISSION Courses are offered in the College of Letters and Sciences leading to the degrees of Bachelor of Arts, B.A.; Bachelor of Science, B.S.; Bachelor of Music, B.M.;

Bachelor of Science in Home Economics, B.S.(H.Ec.); Bachelor of Science in Forestry, B.S.(For.); Master of Arts, M.A.; and Master of Science, M.S. For the requirements of admission to these courses see page 46, and for detailed information, pages 44-56.

REQUIREMENTS FOR GRADUATION

To obtain the recommendation of the Faculty for a Bachelor's Degree in the College of Letters and Sciences a student is required to obtain at least 132 credits. A "credit" is given for the satisfactory completion of one hour-period a week of regular class room work for one semester. In laboratory work, drawing, field work, etc., two or more hours' attendance is necessary to secure one credit.

B.A. AND B.S. COURSES

It will be noted from the following conspectus of studies that the B.A. and B.S. courses are parallel but not identical. The "basic" or required subjects are nearly the same for each, but the subject which is "characteristic" of the degree varies; in the B.A. course it is a language pursued for three full years, while in the B.S. course some one natural science must be taken for three years. The "major," "minor," and "free" electives may or may not coincide in the two courses. The requirements for these degrees have been specified as follows:

FOR B. A.

BASIC CREDITS	
English	16
Latin, French, or German	16
*Mathematics	8
Mil. Sci. or Phys. Ed.	4
CHARACTERISTIC	
Greek, Latin, French, or German	24
ELECTIVE	
Major Elective	24
Minor Elective	16
Free Electives	24
Total	132

FOR B. S.

BASIC CREDITS	
English	16
Latin, French, or German	16
*Mathematics	8
Mil. Sci. or Phys. Ed.	4
CHARACTERISTIC	
Physics, Chemistry, or †Biology	24
ELECTIVE	
Major Elective	24
Minor Elective	16
Free Electives	24
Total	132

A student is allowed to choose as major elective a study which is already one of his basics, but compensation must be made for the latter by his choosing a second minor.

Required studies must precede electives in order of time.

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*Substitutes in History or Science may be allowed by the Committee on Courses at its discretion, but see note immediately below the outline of the B.A. course on the next page.

†Botany and Bacteriology may be combined with Biology.

B.A. COURSE A student pursuing the course leading to the B.A. degree will therefore arrange his course as follows:

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 1. Comp. and Rhetoric	2	Eng. 2. Comp. and Rhetoric	2
Eng. 101. Hist. of Eng. Lit.	2	Eng. 102. Hist. of Eng. Lit.	2
*Math. 1. College Algebra	4	†Math. 2. Trigonometery	4
(Basic language)	(5) 4	(Basic language)	(5) 4
(Characteristic language)	(4) 5	(Characteristic language)	(4) 5
Phys. Ed. 1. Gymnastics, or Mil. 1. Regulations	..1	Phys. Ed. 2. Gymnastics, or Mil. 2. Regulations	..1

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 3. Composition	2	Eng. 4. Composition	2
Eng. 103. Shakespeare	2	Eng. 104. Shakespeare	2
(Basic language)	4	(Basic language)	4
(Characteristic language)	4	(Characteristic language)	4
(Major elective)	4	(Major elective)	4
Phys. Ed. 3. Gymnastics, or Mil. 3. Military Science	..1	Phys. Ed. 4. Gymnastics, or Mil. 4. Military Science	..1

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
(Characteristic language)	(3) 4	(Characteristic language)	(3) 4
(Major elective)	4	(Major elective)	4
(Minor elective)	4	(Minor elective)	4
(Free electives)	4	(Free electives)	4

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
(Major elective)	4	(Major elective)	4
(Minor elective)	4	(Minor elective)	4
(Free electives)	8	(Free electives)	8
		Total credits required	132

Note.—One year of mathematics or natural science will be required for graduation of the Class of 1913 and succeeding classes.

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*Or Hist. 1, Early Middle Ages, 3 credits, or a science.

†Or Hist. 2, Later Middle Ages, 3 credits, and two additional credits in an elective subject, or the continuation of the science taken the first semester.

B.S. COURSE A student pursuing the course leading to the B.S. degree will arrange his course as follows:

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 1. Comp. and Rhetoric	2	Eng. 2. Comp. and Rhetoric	2
Eng. 101. Hist. of Eng. Lit.	2	Eng. 102. Hist. of Eng. Lit.	2
*Math. 1. College Algebra	4	†Math. 2. Trigonometry	4
(Basic language)	(5) 4	(Basic language)	(5) 4
(Characteristic Science)	4	(Characteristic language)	4
Phys. Ed. 3. Gymnastics, or Mil. 1. Regulations	1	Phys. Ed. 2. Gymnastics, or Mil. 2. Regulations	1

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 3. Composition	2	Eng. 4. Composition	2
Eng. 103. Shakespeare	2	Eng. 104. Shakespeare	2
(Basic language)	4	(Basic language)	4
(Characteristic science)	4	(Characteristic science)	4
(Major elective)	4	(Major elective)	4
Phys. Ed. 1. Gymnastics, or Mil. 3. Military Science	1	Phys. Ed. 4. Gymnastics, or Mil. 4. Military Science	1

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
(Characteristic science)	4	(Characteristic science)	4
(Major elective)	4	(Major elective)	4
(Minor elective)	4	(Minor elective)	4
(Free electives)	4	(Free electives)	4

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
(Major elective)	4	(Major elective)	4
(Minor elective)	4	(Minor elective)	4
(Free electives)	8	(Free electives)	8
		Total credits required	132

*Or Hist. 1, Early Middle Ages, 3 credits, or a science.

†Or Hist. 2, Later Middle Ages, 3 credits, and two additional credits in an elective subject, or the continuation of the science taken in the first semester.

***B.M. COURSE** To obtain the recommendation of the Faculty for the degree of Bachelor of Music, the student must complete the following courses:

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
[Course	Credits	Course	Credits
Eng. 1. Comp. and Rhetoric....	2	Eng. 2. Comp. and Rhetoric....	2
Eng. 101. Hist. of Eng. Lit...	2	Eng. 102. Hist. of Eng. Lit.....	2
Ger. 3. Intermediate German...	4	Ger. 4. Intermediate German....	4
Mus. 1a. Piano.....	4	Mus. 2a. Piano.....	4
Mus. 1b. Harmony.....	2	Mus. 2b. Harmony.....	2
Mus. 1c. Theory of Notation...	1	Mus. 2c. Theory of Notation...	1
Dom. Ec. 1a or 1b.....	2	Dom. Ec. 2a or 2b.....	2
Phys. Ed. 1. Gymnastics.....	1	Phys. Ed. 2. Gymnastics.....	1
Total	18	Total	18

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 3. Composition.....	2	Eng. 4. Composition.....	2
Eng. 103. Shakespeare.....	2	Eng. 104. Shakespeare.....	2
Ger. 5. Schiller.....	3	Ger. 6. Schiller.....	3
Fr. 1. Elementary French.....	5	Fr. 2. Elementary French.....	5
Mus. 3a. Piano.....	4	Mus. 4a. Piano.....	4
Mus. 3b. Harmony.....	2	Mus. 4b. Harmony.....	2
Total	18	Total	18

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. (Elective).....	3	Eng. (Elective).....	3
Ger. (Elective).....	2	Ger. (Elective).....	2
Fr. 3. Intermediate French....	4	Fr. 4. Intermediate French....	4
Mus. 5a. Piano.....	4	Mus. 6a. Piano.....	4
Mus. 5b. Melody-Writing.....	2	Mus. 6b. Melody-Writing and Counterpoint	2
Mus. 5c. History of Music.....	2	Mus. 6c. History of Music.....	2
		Junior Recital.....	
Total	17	Total	17]

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Mus. 7a. Piano.....	4	Mus. 8a. Piano.....	4
Mus. 7b. Counterpoint, Fugue and Composition.....	3	Mus. 8b. Counterpoint, Fugue and Composition.....	3
Ed. 3. Educ. Psychology.....	3	Electives	7
Electives	4	Senior Recital.....	
Total	14	Total	14
		Total credits required.....	134

*Degree not given after 1914. Music courses, both theoretical and practical, may be taken to count towards the B.A. or the B.S. degree.

B.S. (H.Ec.) COURSE

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Home Economics, the student must complete the following courses:

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 1. Composition and Rhetoric	2	Eng. 2. Composition and Rhetoric	2
*German or French	4 (5)	*German or French	4 (5)
Chem. 1. General Chemistry	4	H. Ec. 102. Elementary Sewing	2
H. Ec. 101. Elementary Sewing	2	Chem. 2. General Chemistry	4
Bot. 1. General Botany	3	Bot. 2. General Botany	3
Phys. Ed. 1. Gymnastics	1	Phys. Ed. 2. Gymnastics	1
Total	16 (17)	Total	16 (17)

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 3. Composition and Rhetoric	2	Eng. 4. Composition and Rhetoric	2
Eng. 101. History of English Lit.	2	Eng. 102. History of English Lit.	2
*German or French	3 (4)	*German or French	3 (4)
Chem. 5a. Organic Chemistry	4	Chem. 10. Quantitative and Applied Chemistry	3
Bac. 1. General Bacteriology	2	Bac. 2. General Bacteriology	2
H. Ec. 1. Elementary Cooking	3	H. Ec. 2. Elementary Cooking	3
Phys. Ed. 3. Gymnastics	1	H. Ec. 106. Domestic Art Design	1
Total	17 (18)	Phys. Ed. 4. Gymnastics	1
		Total	17 (18)

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Biol. 7. Vertebrate Histology and Physiology	4	Biol. 8. Vertebrate Histology and Physiology	2
Chem. 17. Chemistry of Foods	5	Chem. 18. Physiological Chemistry (lectures only)	3
H. Ec. 3. Advanced Cookery	3	H. Ec. 4. Food Products	2
H. Ec. 201. House Management and Sanitation	2	H. Ec. 104. Advanced Sewing	2
†Electives	4 (3)	†Electives	9 (8)
Total	18 (17)	Total	18 (17)

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
H. Ec. 203. House Construction	2	H. Ec. 6. Home Nursing and Invalid Cookery	2
H. Ec. 5. Dietetics	4	H. Ec. 108. Dressmaking	2
H. Ec. 107. Costume and Millinery Design	2	H. Ec. 112. Millinery	2
†Electives	9 (8)	H. Ec. 204. House Decoration	2
Total	17 (16)	†Electives	9 (8)
		Total	17 (16)
		Total credits required	136

*Students may elect either German or French. Consult the head of the Department.

†For suggested electives see *infra* (close of department.) The number to be chosen will depend upon whether French or German was taken in the Freshman and Sophomore years. In any case the total number of credits required for graduation is 136.

B.S. (For.) COURSE

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Forestry, a student must complete the following courses:

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 1. Comp. and Rhetoric	2	Eng. 2. Comp. and Rhetoric	2
Eng. 101. Hist. of Eng. Lit	2	Eng. 102. Hist. of Eng. Lit	2
Math. 1. College Algebra	4	Math. 2. Trigonometry	4
*Ger. 3. Intermediate German	4	*Ger. 4. Intermediate German	4
Chem. 1. General Chemistry	4	Chem. 2. General Chemistry	4
C. E. 1. Engineering Drafting	1	C. E. 2. Engineering Drafting	1
Shop 1. Wood Working	1	Shop 2. Wood Working	1
Mil. 1. Regulations	1	Mil. 2. Regulations	1
Total	19	Total	19

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 3. Composition	2	Eng. 4. Composition	2
Chem. 3. Qualitative Analysis	3	Chem. 4. Quantitative Analysis	3
Bot. 1. General Botany	3	Bot. 2. General Botany	3
C. E. 15. Surveying	4	C. E. 16. Surveying	4
For. 1. General Forestry	3	For. 2. General Forestry	4
For. 3. Dendrology	3	For. 4. Silviculture	3
Mil. 3. Military Science	1	Mil. 4. Military Science	1
Total	19	Total	20

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Biol. 3. General Zoology	4	Bot. 4. Plant Physiology	3
Bot. 3. Plant Anatomy	3	Soils 2. Soil Fertility	5
Geol. 5. General Geology	3	For. 6. Forest Mensuration	3
E. E. 17. Telephone Construction	1	For. 12. Forest Law	2
Vet. 5. Sanitary Science	1	For. 14. Forest Physiography	3
For. 5. Forest Mensuration	3	For. 16. Forest History and Economics	3
For. 9. Forest Engineering	3	Total	19
For. 13. Forest Protection	3		
Total	21		

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Bot. 7. Plant Diseases	4	Biol. 10a. Forest Entomology	4
C. E. 21. Testing Laboratory	3	Bot. 6. Morphology and Classification of Seed Plants	4
For. 7. Forest Management	2	For. 8. Forest Management	3
For. 11. Lumbering	5	For. 20. Thesis	4
For. 15. Timber Physics	4	Elective	2
For. 17. Forest Utilization	3	Total	17
Total	21	Total credits required	155

*Those who present no German for entrance take Ger. 1-2, Elementary German, 5 credits; those who have had one year of high-school German take Ger. A1-A2, Supplementary German, 3 credits.

DEPARTMENTS OF INSTRUCTION

Note—Courses with odd numbers are given in the first semester; those with even numbers, in the second semester; courses numbered 1-2, 3-4, etc., continue through the year.

GREEK

Professor AXTELL

Greek may be begun in any year as a basic or characteristic study, or as a major or minor elective. Students who have taken this study in high school may continue it in those courses for which they are prepared. Those who do not wish to learn the language, but desire to know something of the literature in order to gain a better appreciation of history and English literature are advised to elect course 13.

First Year

1-2 ELEMENTARY GREEK *4 credits* Each semester

First lessons comprising the main features of inflection and syntax are learned, simple sentences are translated from English into Greek, and the first book of Xenophon's *Anabasis* is read.

Second Year

3 XENOPHON *4 credits* First semester

Books II-IV of the *Anabasis* are read by prepared translation, and passages from Colson's *Stories and Legends of the Greeks* are frequently used for sight-reading. Bonner's *Greek Composition* is used for drill on forms and syntax.

4 HOMER *4 credits* Second semester

Selections from the most celebrated passages of the *Iliad* or *Odyssey* are translated and read metrically. Epic poetry, the Homeric Question, the Mycenean Age, the influence of Homer upon English literature, and other topics are investigated.

Third Year

5 PLATO *3 credits* First semester

The *Apology* and the *Crito*. Analyses of other Socratic dialogs. Introduction to Greek philosophy. Study of Plato's life and thought.

6 THE GREEK DRAMA *3 credits* Second semester

Translation of a representative tragedy, such as the *Antigone, Prometheus Bound,* or *Alcestis.* Lectures and papers on the evolution of classical tragedy. Study of lyric choruses.

Advanced Courses

One or two of the following courses will be given each semester and will be selected after consultation with the classes that are formed. The History of Greek Literature (course 13) is usually one of the courses chosen. In the second semester Latin 14 will be accepted in lieu of credits in basic or characteristic Greek.

7 HERODOTUS *3 credits* First semester

Selections from the *Histories,* especially Books VII and VIII. General survey of Greek historians. Rapid review of early Hellenic history. The Ionic dialect.

8 DEMOSTHENES *3 credits* Second semester

Translation of the *De Corona* and rapid reading in English version of the *Philippics.* Review of events during the ascendancy of Philip of Macedon. Investigation of the stylistic features of Demosthenes.

9 ADVANCED COURSE IN TRAGEDY *3 credits* First semester

Careful translation and critical study of a tragic masterpiece, such as the *Agamemnon,* with rapid reading of other plays. Comparison of the works of Aeschylus, Sophocles, and Euripides.

10 LUCIAN *3 credits* Second semester

Selected dialogs. Studies in late Greek philosophy and literature.

11 GREEK ORATORY *3 credits* First semester

Selected specimens of oratory from Antiphon, Isaeus, Aeschines, Lysias, Isocrates, and others. Parallel study in the laws and government of Athens.

12 GREEK COMEDY *3 credits* Second semester

The *Birds* or the *Clouds* of Aristophanes will be used as the basis of study of the development, form, and style of ancient comedy.

13 HISTORY OF GREEK LITERATURE *2 credits* First semester

A general lecture and reading course, intended for students of English literature as well as of the classics. Ability to translate Greek is not required. Credits in this will be accepted as equivalent to advanced credits in Latin.

LATIN

Professor AXTELL

The following courses are intended for the student who wishes to know the language as well as the literature of the Romans. Latin 12 and 14 are intended also for those who desire a general acquaintance with the most important Latin institutions and writings. Students who have had at least three years of elementary Latin may enter the Freshman courses.

Freshman Year

1 LIVY AND VERGIL *4 credits* First semester

Selected passages from Livy's account of the early traditions of Rome or from the narrative of the war with Hannibal are read. Selections from Vergil's *Eclogues* and *Georgics.*

1a. PROSE COMPOSITION *1 credit* First semester

Connected exercises on themes of modern interest are translated into idiomatic Latin. Elmore's *Book of Latin Composition.*

2 ROMAN COMEDY *4 credits* Second semester

One of the comedies of Plautus or Terence, usually either the *Captivi* or *Phormio,* is read. Papers and reports on topics connected with the Roman drama. Study of the metres of comedy.

2a. PROSE COMPOSITION *1 credit* Second semester

Continuation of 1a.

Sophomore Year

3 HORACE *3 credits* First semester

Selected *Satires* and *Odes,* setting forth Horace's career, literary development, and philosophy are translated. Metrical reading of the *Odes.*

3a ADVANCED COMPOSITION *2 credits* First semester

Intensive study of Latin grammar and practice in rendering English into Latin at sight are features of this course. Prerequisites: Latin 1a and 2a.

4 TACITUS *3 credits* Second semester

Translation and study of the *Germania* and *Agricola,* the earliest monographs on Germany and England. Early Teutonic and British institutions are compared with Roman. Characteristics of the literature of the Silver Age of Rome.

4a ADVANCED COMPOSITION *2 credits* Second semester

Continuation of 3a.

Advanced Courses

Only one or two of the following subjects will be given in each semester. These will be chosen after the needs and desires of those who form the classes have been consulted. The History of Latin Literature (course 14) is usually one of the courses selected. Credits in Greek 13 will be accepted in lieu of "basic" or "characteristic" Latin.

5 PLINY *3 credits* First semester

Selected letters. Life in Rome in the first century of the Empire.

6 CATULLUS *3 credits* Second semester

Selected *Carmina.* Lectures on Greek and Latin lyric poetry.

7 LUCRETIUS *3 credits* First semester

The *De Rerum Natura.* Lectures on Roman religion and philosophy.

8 PETRONIUS *3 credits* Second semester

Translation of the *Cena Trimalchionis.* Investigation of ancient romantic stories.

9 CICERO'S LETTERS *3 credits* First semester

Selected epistles, touching Roman politics between the conspiracy of Catiline and the death of Caesar. Study of the vexed question of Cicero's position in history.

10 JUVENAL and MARTIAL *3 credits* Second semester

Selected *Satires* and *Epigrams.*

11-12 TEACHERS' COURSE *2 credits* Each semester

Comprehensive and advanced work in syntax. Ideals, means, and methods of teaching Latin especially in the high school.

In the second semester, as the course will be devoted to a study of the civilization of the Romans—their government, religion, public and private life, architecture, art, and other topics—it is open to all students. Required for a recommendation to teach Latin.

14 HISTORY OF LATIN LITERATURE *2 credits* Second semester

A general lecture and reading course with the aid of standard translations. Open to all students. Ability to translate is not required. The influence of Latin upon English classics is emphasized.

GERMAN

Professor ELDRIDGE, Assistant Professor ISAACSON

Students who present two years of high school German for entrance continue in course 3-4. Those who have had no German take course 1-2. A special course, German A1-A2, has been arranged for those who have had *one* year of high-school German and wish to complete their entrance requirements or to fit themselves to take German 3-4.

Courses 5-6, 7-8, 9-10, and 11-12 are parallel and may be taken together or in successive years.

Those who wish a recommendation to teach German in secondary schools are required to take courses 17-18 and 23-24 in addition to one or more literary courses in advance of course 3-4.

A1-A2 SUPPLEMENTARY GERMAN *3 credits* Each semester

Review of grammar. Translation. Composition.

When taken to complete admission requirements no credit will be given. Open only to those who have had one year of German in high school. Mrs. ISAACSON

1-2 ELEMENTARY GERMAN *5 credits* Each semester

The essentials of German grammar, with constant practice in pronunciation, simple translation from English into German; and the reading of easy narrative German. Professor ELDRIDGE

3-4 INTERMEDIATE GERMAN *4 credits* Each semester

Reading from modern and classic authors. Novel, epic, and

drama from such authors as Baumbach, Eichendorff, Heine, Goethe, Ludwig, Freytag, and Ernst are studied. German composition and German idioms by means of prose composition. Text, Pope's *German Composition.* Special study of German lyrics with the *Deutsches Liederbuch* as a basis of study. *Two sections.*

Prerequisites: course 2, A1-A2, or two years of high-school German. Mrs. ISAACSON

5-6 SCHILLER *3 credits* Each semester

Schiller's biography (Sime, with reference to Thomas). Selected lyrics and ballads. *Die Jungfrau von Orleans, Wilhelm Tell, Die Braut von Messina, Geschichte des dreissigjährigen Krieges,* and the *Wallenstein* complete. Professor ELDRIDGE

7-8 MODERN NOVELS *2 credits* Each semester

Selected works of Kleist, Hauff, Scheffel, Freytag, Immermann, Ludwig, Meyer, Storm, Keller, Heyse, Sudermann, Frenssen. Given in alternation with course 9-10. [Given in 1913-14.] Mrs. ISAACSON

9-10 MODERN DRAMAS *2 credits* Each semester

Selected dramas of Kleist, Grillparzer, Hebbel, Anzengruber, Fulda, Sudermann, Hauptmann. Given in alternation with course 7-8. [Given in 1912-13.] Mrs. ISAACSON

11-12 SCIENTIFIC GERMAN *4 credits* Each semester

A special course in scientific German, open to those who have completed course 3-4. Wait's *German Science Reader,* followed by short monographs. Professor ELDRIDGE

13-14 ADVANCED SCIENTIFIC GERMAN *2 credits* Each semester

Works are read which meet the special needs of the class. For the year 1912-13 Tigerstedt's *Lehrbuch der Physiologie* is used. Dr. KOSTALEK

15-16 GOETHE: LIFE AND WORKS *3 credits* Each semester

Study of Goethe's life and development, in connection with his lyric poems; *Dichtung und Wahrheit, Götz von Berlichingen, Werther, Egmont, Tasso, Iphigenie.* Prerequisites: courses 5-6, 7-8, or 9-10. Mrs. ISAACSON

17-18 HISTORY OF GERMAN LITERATURE *3 credits* Each semester

Selected readings, reports, and lectures. Priest's *History of German Literature,* Thomas's *Anthology,* and *Mueller's German*

Classics. A general survey of German literature from the earliest times. Open to those who have completed any of the following courses: 5-6, 7-8, 9-10. Required for a recommendation to teach German.

Professor ELDRIDGE and Mrs. ISAACSON

19 LESSING *4 credits* First semester

Study of Lessing's life and place in literature and of the following works: *Minna von Barnhelm, Emilia Galotti, Nathan der Weise,* and *Laokoon,* or *Hamburgische Dramaturgie,* or prose selection. [Not given in 1912-13.] Professor ELDRIDGE

20 FAUST *4 credits* Second semester

Reading, interpretation, and discussion of *Faust I* and *II,* with collateral reading in Faust literature.
Prerequisites: course 13-14. [Given in 1913-14.]

Professor ELDRIDGE

21-22 MIDDLE HIGH GERMAN *3 credits* Each semester

Grammar, Michels: *Mittelhochdeutsches Elementarbuch,* or Paul: *Mittelhochdeutsche Grammatik;* Reading of Hartmann's *Der arme Heinrich;* the *Nibelungenlied;* selected poems of Walther von der Vogelweide; and selections from Wolfram von Eschenbach's *Parzival.* [Not given in 1912-13.]

Professor ELDRIDGE

23-24 TEACHERS' COURSE *3 credits* Each semester

The basis of the course is work in advanced grammar (Curme: *Grammar of the German Language as Spoken and Written Today);* composition (von Jagemann: *Syntax* and *Prose Composition);* and conversation based upon Kron: *German Daily Life.* Special attention is given to phonetics, the geography of Germany, and the discussion of text-books. Open only to those who have done superior work in advanced German courses. Required for a recommendation to teach German.

Professor ELDRIDGE and Mrs. ISAACSON

ROMANCE LANGUAGES

Associate Professor PATTERSON

French

1-2 ELEMENTARY FRENCH *5 credits* Each semester

The essentials of French grammar: Fraser and Squair's *French Grammar.* Pronunciation, translation, and the elements

of composition. Guerber's *Contes et Légendes* will be studied for vocabulary and drill in easy sentence-construction. Afterwards, selections from Guy de Maupassant, and Mérimée's *Colomba.* Marique and Gilson's *Elementary Composition* will complete the work of the year. Dictation, drill in irregular verbs, and easy conversation.

3-4 INTERMEDIATE FRENCH *4 credits* Each semester

Translation, syntax, and composition. Translation from the works of Daudet, Guy de Maupassant, Balzac; *Contes des Romanciers Naturalistes;* Hugo, *Ruy Blas* and *Hernani;* Rostand, *Cyrano de Bergerac;* Sand, *La Mare au diable.* A review of French grammar, with conversation and drill based upon Cameron's *French Composition.* Occasional talks will be given upon the Romantic and Realistic movements in French literature. The class will be conducted in French.

5-6 THE SEVENTEENTH CENTURY *3 credits* Each semester

The first semester will be devoted to a study of the great prose writers, especially Descartes and Pascal. A study of their French philosophical works will be made, with reference to the *esprit* of the century, and to the subsequent philosophy of England and Germany, based upon the Cartesian system. The second semester will be spent in a study of the tragedies of Corneille and Racine, and the comedies of Molière. Lectures on the origin and technique of French drama, and on the relation of the contemporary philosophic movements to dramatic thought. Reports on outside reading.

7-8 ADVANCED PROSE COMPOSITION *2 credits* Each semester

Based on Francois, *Advanced French Prose Composition* and Pellissier, *Précis de l'Histoire de la Littérature Francaise.* It is thought to combine an introduction to French literary history with practical exercise in composition and conversation. The course is conducted wholly in French. Students of French 5-6 are advised to add this course as supplementary.

9 THE EIGHTEENTH CENTURY *2 credits* First semester

This course will deal mainly with the life and works of J. J. Rousseau, Voltaire, and the Encyclopedists. The literary and philosophic role of Rousseau will be studied, in so far as his work may be considered one of the agencies contributing to the French Revolution. *Emile, La Nouvelle Héloise, Contrat*

social; tragedies, *contes*, and letters of Voltaire. Lectures, readings, and reports. [Given in 1913-14.]

10 FRENCH LITERATURE FROM MAROT TO MALHERBE

2 credits Second semester

History of ideas during the Renaissance. Darmesteter-Hatzfeld, *Le seizième siècle en France*. The poetic theories of the Pleiade and the origins of classicism. Lectures, readings, and reports dealing with the Italian Renaissance and the subsequent influence of Petrarchism upon France and England. [Given in 1913-14.]

11-12 OLD FRENCH *2 credits* Each semester

The *Chanson de Roland, Aucassin et Nicolette*, and some reading from the romances of Chrétien de Troyes. Text-book drill in Old French phonology and morphology. Lectures and text-book work on the history of Old French literature. Prerequisite: course 5-6, and an accurate pronunciation of Latin. Though primarily for graduate students of the Romance Languages, the course is meant to be of value to specialists in Latin and English. Those who intend to pursue graduate work in English, including Early and Middle English, or English Philology, will find a knowledge of Old French indispensable. The course will be scheduled upon the petition of two students.

Spanish

1-2 ELEMENTARY SPANISH *3 credits* Each semester

Pronunciation, sentence drill, translation. Text-books: Olmstead and Gordon's *Spanish Grammar* (Holt & Co.), Fontaine's *Flores de España* (American Book Co.), Giese's Alarcon's *Novelas cortas* (Ginn & Co.), Morrison's *Tres Comedias modernas* (Holt & Co.); Ford's *Selections From Don Quijote* (Heath & Co.). [Given in 1913-14.]

3-4 INTERMEDIATE SPANISH *2 credits* Each semester

Translation of novels and dramas. Compositions. Text-books: Alarcon's *El Niño de la bola; Galdos' Electra, Marianela, Doña Perfecta;* Valdés' *El Capitan Ribot* and *José;* Valera's *Pepita Jiménez;* Gutierrez's *El Trovador;* Umphrey's *Spanish Prose Composition;* Remy's *Spanish Composition.* The course is conducted in Spanish. [Given in 1912-13].

Italian

1-2 ELEMENTARY ITALIAN *3 credits* Each semester

Grandgent's *Italian Grammar.* Bowen's *Italian Reader.* Goldoni's *La Locandiera, Un curioso Accidente, Il vero Amico.* In the second semester Grandgent's edition of Dante's *Purgatorio* will be read. The courses in Italian are designed to meet the needs of students desiring to specialize in History or English of the Renaissance period.

3-4 INTERMEDIATE ITALIAN *2 credits* Each semester

Review of grammar; composition; reading of modern drama, prose, and poetry from the works of *Alfieri, Foscolo, Leopardi, Carducci, D'Annunzio, Fogazzaro,* etc. [Given in 1913-14].

5-6 EARLY ITALIAN *2 credits* Each semester

Lectures on Italian phonology and morphology. Readings in the earliest monuments of Italian literature. (Monaci's *Crestomazia italiana*). The second semester will be devoted to the reading of Fornaciari's *Novelle scelte di Giovanni Boccaccio* and Ferarri's *Le Rime di Francesco Petrarca,* and to text-book study in the history of early Italian literature.

ENGLISH

Professor MOORE, Associate Professor TULL, Assistant Professor LEHMAN

1-2 COMPOSITION AND RHETORIC *2 credits* Each semester

Section I and II. Required of Freshmen in the College of Letters and Sciences. Recitations, weekly themes, and conferences. Some classics are read in class and current events are studied and discussed. Collateral reading is required. Text-book: Woolley's *Mechanics of Writing.*

Section III. Required of the Freshmen students in the Colleges of Engineering and Agriculture. Recitations, weekly themes, and conferences. Waddell and Harrington's *Addresses to Engineering Students* is studied in class, and current events are discussed. Collateral reading is required. Text-book: Woolley's *Mechanics of Writing.*

Professors TULL and LEHMAN

3-4 COMPOSITION *2 credits* Each semester

Required of Sophomores in the College of Letters and Sciences. Recitations, weekly themes, and conferences. Dis-

cussion of current events. *The Atlantic Monthly* is made the basis of critical and constructive work. Collateral reading in the novel is required. Professors TULL and LEHMAN

5-6 COMPOSITION *2 credits* Each semester

Required of Sophomore students in the College of Engineering. Recitations, themes, and conferences. Collateral reading in current events and books of interest to engineers. A thesis based on library or original research in some engineering subject Professors TULL and LEHMAN

7 ADVANCED COMPOSITION *2 credits* First semester

Courses 3 and 4 are prerequisites. Practice in theme writing to develop correct, fluent, and effective expression. The study of literary models and literary forms, and discussion of the theory of literary art. Lectures. Professor LEHMAN

8 ADVANCED COMPOSITION *2 credits* Second semester

Continuation of course 5. Intensive practice in the Essay, the Short-story, and Play-writing. Professor TULL

9 ANGLO-SAXON *3 credits* First semester

Grammar and practice reading; the history of the language. Bright's *Anglo-Saxon Reader.* (Course 9 requires no previous knowledge of Anglo-Saxon.) Professor LEHMAN

10 BEOWULF *3 credits* Second semester

Course 9 is prerequisite. Professor LEHMAN

11 CHAUCER *3 credits* First semester

Study of the forms of Middle English; collateral reading on the life and thought of Chaucer's time; the reading of the prologue, the Knight's Tale, and the Marriage group of tales. Professor LEHMAN

13 ENGLISH GRAMMAR AND COMPOSITION FOR TEACHERS *2 credits* First semester

Grammar: lectures on the history of teaching of English grammar; methods of teaching; examination of the best text-books; discussion of cases of divided usage.

Composition: discussion of aims and methods of teaching, of class-work themes, and conferences; collateral reading; examination of text-books. Professors TULL and LEHMAN

101-102 GENERAL HISTORY OF ENGLISH LITERATURE
2 credits Each semester

Required of Freshmen. An outline of the development of poetry and prose from the *Beowulf* to the death of Scott. Lectures, recitations, and discussions. Professor MOORE

103-104 SHAKESPEARE *2 credits* Each semester

Required of Sophomores in the College of Letters and Sciences. Twelve selected plays. Lectures, recitations, written reports, and vocal interpretation. Professor MOORE

105 THE DEVELOPMENT OF THE ENGLISH DRAMA
3 credits First semester

A study of the growth of the English drama from the earliest medieval times to the beginning of the nineteenth century.
Professor MOORE

106 EPIC POETRY *3 credits* Second semester

A course in Comparative Literature. Lectures upon the epic as a poetic form, supplemented by a study of Dante's *Divine Comedy,* Ariosto's *Orlando Furioso,* Tasso's *Jerusalem Delivered,* and Camoens' *Lusiad.* Professor MOORE

107 POETICS *2 credits* First semester

A study of the forms of English verse. Lectures.
Professor MOORE

108 MILTON *3 credits* Second semester

A critical study of all of Milton's English poems, supplemented by lectures upon the poet's relation to his times. Class discussions and written reports. Professor MOORE

109-110 THE ENGLISH NOVEL *3 credits* Each semester

A rapid historical survey of the origin and development of the English novel and the critical discussion of one novel each of Jane Austen, Scott, Dickens, Thackeray, George Eliot, Hardy, Meredith, Stevenson, and Kipling. Professor MOORE

111-112 ENGLISH POETRY OF THE NINETEENTH CENTURY
2 credits Each semester

Wordsworth, Coleridge, Scott, Byron, Shelley, Keats, Tennyson, Browning, Arnold, Rossetti, Morris, and Swinburne.
Professor MOORE

113 AMERICAN LITERATURE *2 credits* First semester

A general view of its history, illustrated by copious reading. Lectures and reports. Professor MOORE

114 ENGLISH LITERATURE FOR TEACHERS
2 credits Second semester

A study of typical masterpieces, with special reference to selection of texts, and the aims and methods of teaching literature. Professor MOORE

115 GREAT BOOKS *2 credits* First semester

A discussion of certain representative masterpieces such as the *Iliad,* the *Odyssey,* the *Aeneid,* the *Nibelungenlied,* the *Cid,* the *Divine Comedy,* and others. Professor MOORE

116 BROWNING *2 credits* Second semester

A study of the dramas, *Christmas Eve and Easter Day,* and *The Ring and the Book.* Professor MOORE

118 CARLYLE AND RUSKIN *2 credits* Second semester

Study of the lives and writings of these two representative nineteenth century thinkers. Professor LEHMAN

119-120 SHAKESPEARE: ADVANCED COURSE
3 credits Each semester

Seminar. Open only to Juniors and Seniors.
Professor MOORE

121 THE LITERATURE OF THE BIBLE *2 credits* First semester

The Bible is studied from a purely literary point of view, with no reference to theological questions. The various literary forms, the short-story, drama, ode, etc., are examined in detail. Lectures, assigned readings, and papers.
Professor TULL

123 POLITICAL SATIRE *2 credits* First semester

A study of the rise, development, and decline of political satire as a distinctively literary form, with discussion of the work of the great satirists from biblical times to the American Civil war. Lectures, assigned reading, and one thesis.
Professor TULL

LIBRARY SCIENCE

MISS BELLE SWEET

ELEMENTARY REFERENCE *1 credit* First semester

This course is intended to teach the proper and effective use of the library and of general reference books in connection with

other college work. It does not aim to fit students for library positions of any kind. The work consists of lectures, recitations, and the study of reference books. Problems will be given which require the use of the books studied. The course is open to any student in the University but it is specially recommended to members of the Freshman class. It will not be given for less than ten students.

3-4 LIBRARY APPRENTICE WORK *3 credits* Each semester

This work is intended to be of special benefit to those wishing to do library work in the small libraries or to be assistants in the large libraries. Additional reference books will be used and the care and management of a small library will be studied. This will include ordering, accessioning, shelf-listing, simple cataloguing, and loan systems. Practice work will be given. Two hours' class work and not more than four hours' practice work per week will be required.

Open to students who have taken course 1. Not given to less than five students.

PUBLIC SPEAKING

Miss FRENCH and Assistant Professor LEHMAN

1-2 DRAMATIC READING *3 credits* Each semester

Training in the use of the voice in reading and speaking, and in the elements of interpretative reading. Plays by Shakespeare, Browning, Tennyson, Stephen Phillips, Pinero, and other authors will be read. Attention will be paid to the action of the imagination in the vocal interpretation of literature.

3-4 ARGUMENTATION *2 credits* Each semester

Work in analysis, evidence, original brief-drawing, and presentation of argument. Careful attention will be given to source-work and arrangements of material. Some oral training will be included in course 4.

5-6 DEBATE *3 credits* Each semester

Practical training in oral debate. Weekly debates will be held, chiefly upon current public questions. Instruction will be given in the gathering and handling of material, in the construction of briefs, and in oral debate. Course 6 is open only to students who have taken course 5.

HISTORY

Professor HULME

1 THE EARLY MIDDLE AGES *3 credits* First semester

Beginning with the decay of the Roman Empire, the development of early medieval life and institutions will be studied. The course is designed not only to acquaint the student with the important facts of the time, but also to afford training in systematic study. The work consists of lectures by the instructor and weekly written exercises by the students based upon their collateral reading. Instruction is given in note-taking and in the systematic use of books.

2 THE LATER MIDDLE AGES *3 credits* Second semester

This course deals with the history of Western Europe from the dissolution of the Frankish Realm to the Renaissance. It is a study of life under feudal conditions; feudalism crescent, feudalism militant, and feudalism decadent. Special attention is paid to the medieval church as the controlling force influencing every element of European life.

3 THE RENAISSANCE *3 credits* First semester

The development of the new humanism in its relations to the political, social, and religious life of the time. The lectures will deal with the sources as well as the development of the new and broadening thought of this critical and formative period; with the revival of nationality and individuality, of literature, of art, of science, and of conscience; with the results of travel and discovery; with the changing industrial, commercial, and economic conditions; with the development of political theory and the transformation of law.

4 THE REFORMATION *3 credits* Second semester

A study of the ecclesiastical, political, economic, and social causes of the Protestant Revolution, of the progress of the movement in various phases, of its more immediate results, and of its bearings upon the life and thought of our own day; of the Catholic Reformation; and of the continuance of the Renaissance movement in political and social life.

5-6 ENGLISH HISTORY *2 credits* Both semesters

This course, like that in the Early Middle Ages, has for its purposes the teaching of students how to do college work in

history, to stimulate their interest, and to lead them to know something of the development of an important nation. [Given in 1913-14.]

7 THE EVE OF THE FRENCH REVOLUTION

2 credits First semester

Because of the fact that no great and general movement of the human mind can be understood without careful analysis of the forces that have combined to produce it, one semester is devoted to a study of the political, industrial, and social conditions in France in the eighteenth century, and the development of the ideas that caused the Revolution. The course is open to those students who have taken courses 1 and 2, and to other advanced students with the permission of the instructor. The ability to read French is very desirable. [Alternates with History 13. Given in 1913-14.]

8 THE FRENCH REVOLUTION *2 credits* Second semester

A study of the Revolution with special reference to its constitutional experiments. Open only to students who have taken the preceding course. [Alternates with History 14. [Given in 1913-14.]

9 AMERICAN COLONIAL HISTORY *3 credits* First semester

The British colonies in North America; their origins; and their political, industrial, and social development. [Alternates with History 15. Given in 1913-14.]

10 THE AMERICAN NATION *3 credits* Second semester

A survey of the growth of the United States. Chief emphasis is placed upon constitutional history, but a considerable part of the time will be devoted to the influence of the West upon the development of the nation.

11-12 THE PACIFIC NORTHWEST *2 credits* Each semester

Selected topics in the history of the Pacific Northwest, especially in the history of our own state. The course is conducted as an historical seminar. It has for its chief purpose training in investigation. [These courses alternate with History 5 and 6. Not given in 1913-14.]

13 HISTORICAL METHOD *2 credits* First semester

A course preparatory to historical research and to the teaching of history. It will discuss what history is, what it is

for, what are its materials, what are its methods, what are its relations to neighbor studies, how to read history, how to study it, and how to write it. It will also provide for introductory studies of many of the sciences that are auxiliary to history. The course will be open only to students of sufficient maturity and experience. [Alternates with History 7. Not given in 1913-14.]

14 THE TEACHING OF HISTORY *2 credits* Second semester

A course intended for those students who expect to teach history in intermediate or secondary schools. The purpose of the course is to make the student acquainted with the aims, the methods, and the apparatus of the work of teaching history. Open only to students who have taken the preceding course. [Alternates with History 8. Not given in 1913-14.]

15 AMERICAN STATESMEN *3 credits* First semester

A study of nation-building through the lives of its builders, and of causation, the historical process, through the development of personality. Among the men studied are Roger Williams, James Otis, Patrick Henry, Samuel Adams, Robert Morris, Benjamin Franklin, George Washington, Alexander Hamilton, Thomas Jefferson, John Marshall, James Monroe, John Quincy Adams, Andrew Jackson, Henry Clay, Daniel Webster, Charles Sumner, and Abraham Lincoln. The course is conducted as a seminar. [Alternates with History 9. Not given in 1913-14.]

17-18 THESIS Both semesters

Credits to be arranged according to the need of the individual graduate student.

POLITICAL SCIENCE

Associate Professor ————

1 CONSTITUTIONAL LAW OF ENGLAND *3 credits* First semester

The lectures in this course will deal with the following topics: the hundred and the county courts; the Witenagemot; the feudal system; the Angevin administrative system; the system of estates; the growth of taxation; the growth of Parliament; Lancastrian constitutionalism; the Yorkist and Tudor strong government; the struggle between the *Jure*

Divino monarchy and the estate; the constitutional experiments of the interregnum; the growth of the cabinet; parliamentary government; the liberty of the subject.

2 THE POLITICAL AND CONSTITUTIONAL HISTORY OF THE UNITED STATES *3 credits* Second semester

This course of lectures deals with the sources of the Constitution of the United States; the connection of the colonies with England; the history of the Revolution; the formation and dissolution of the Constitution of the Confederation; the formation of the Constitution of 1787, its application down to the Civil War and the Reconstruction period.

3 HISTORY AND CRITICISM OF THE THEORIES OF THE STATE *2 credits* First semester

This course will deal with the political theories of Plato, Aristotle, Aquinas, Dante, Machiavelli, Bodin, Hobbes, Locke, Rousseau, Montesquieu, Burke, Bentham, Spencer, and Green.

4 PUBLIC INTERNATIONAL LAW *2 credits* Second semester

The principles of international law. The relation of international law to the public and private law. The law of peace, the law of war, and the law of neutrality.

5 ELEMENTS OF ECONOMICS *2 credits* First semester

A course intended (1) as a basis for students electing advanced work in the departments of history and political science, and (2) to afford an opportunity to students who wish to obtain a general knowledge of the science of economics. This course is prerequisite to course 6.

6 HISTORY AND CRITICISM OF ECONOMIC THEORIES *2 credits* Second semester

Ingram's *History of Political Economy* and selected numbers of *Economic Classics* (edited by Prof. Ashley). This course of lectures will deal with the economic ideas of Plato and Aristotle, the influence of the Roman law, the economic doctrines of the Canonists, the Mercantilists, the Physiocrats, Adam Smith, Ricardo, Malthus, John Stuart Mill, the Historical School, Jevons, and the Austrian School.

7 PUBLIC FINANCE *2 credits* First semester

Public revenues, principles and methods of taxation, public

expenditure, public debt, the budget, and methods of fiscal administration.

8 EUROPEAN LEGAL HISTORY *1½ credits* Second semester

This course deals with the history of the *jus civile,* the development of the *jus gentium,* the juristic literature of the early Empire, Justinian's codification, early Germanic law, the reception of Roman law, the codification movement, schools of jurisprudence. Three lectures weekly for the first half of the second semester.

LAW

Professor MCCUTCHEON, Associate Professors WILBER and WILSON

The following law courses are open to students in other departments, and will be credited in the College of Letters and Sciences, and in the other Colleges, according to their regulations:

Law 1a	ELEMENTARY LAW	*1 credit*	First semester
1b	PROPERTY I.	*2 credits*	First semester
3	CONTRACTS I.	*3 credits*	First semester
4	CONTRACTS II.	*2 credits*	Second semester
25	CONSTITUTIONAL LAW I.	*2 credits*	First semester
26	CONSTITUTIONAL LAW II.	*2 credits*	Second semester

To engineering students, the following further course is open:

Law 48b MINING LAW *1 credit* Second semester

To engineering and agricultural students:

Law 48a IRRIGATION LAW *1 credit* Second semester

For a particular description of the foregoing courses see the bulletin of the College of Law. No student will be allowed to elect more than two of such courses in any one semester. A combined six-year B.A. or B.S. and LL.B. course is also provided for, the particulars of which are given under the College of Law.

PHILOSOPHY

Professor MORLEY

1 PSYCHOLOGY *4 credits* First semester

A general course, giving a survey of conscious processes and the methods of scientific investigation of these processes.

2 ETHICS *4 credits* Second semester

An introduction to theories of morals and their practical application.

3 HISTORY OF PHILOSOPHY *4 credits* First semester

A general course in the history of philosophy, treating of the principal philosophical systems from the early Greeks to the present day.

4 MODERN PHILOSOPHY *4 credits* Second semester

A careful study of the systems of some of the greatest modern philosophers.

5 INTRODUCTION TO PHILOSOPHY *4 credits* First semester

A general survey of the field of philosophy, with a discussion of its fundamental problems.

6 PHILOSOPHY OF RELIGION *3 credits* Second semester

An investigation of the grounds of religious belief, with a study of the history of the great religious systems.

8 LOGIC *2 credits* Second semester

The methods of induction and deduction. Exercise in the detection of fallacies, and in the expression of arguments.

EDUCATION

Associate Professor SOULEN

STATE TEACHER'S CERTIFICATE—(Extract from the Session Laws, 1905): "Every graduate from the University of Idaho, receiving either the degree of B.A. or B.S., who has finished a two years' course in the department of Pedagogy * * * and who is recommended by the professor of Pedagogy of said institution, shall receive from the State Superintendent of Public Instruction a State Teacher's Certificate." To meet the requirements of the above legislative enactment students are required to make at least sixteen credits in Education, of which the following are required: History of Education, three; Educational Psychology, three; School Management and Practice Teaching, two to four. The remainder may be taken in special methods. Inasmuch as beginners in secondary teaching are expected to teach more than one subject, it is advisable for college students, in addition to their course in Education, to select a major and a minor in such departments as will specially qualify them for the subjects which they expect to teach.

For students who cannot complete the above requirements a special course including School Management, Educational Psychology, Observation and Practice, and Special Methods, totaling ten credits, will be offered. This course, taken concurrently with Freshman and Sophomore work will entitle one to a special certificate.

1 HISTORY OF EDUCATION *3 credits* First semester

This course involves a study of the evolution of educational systems and principles during the ancient and medieval times. The aim of the course is to acquaint the student with the essential features of the educational thought of the past as a basis for the more detailed study of the educational systems and principles of the present.

2 HISTORY OF EDUCATION IN MODERN TIMES *3 credits* Second semester

A continuation of the historical study begun in course 1. It aims to trace the development of the modern conception of education from the Renaissance to the present time. Special attention is given to the development of educational systems in the United States, including the principal foreign influences which have affected the same.

This course may be taken independently of course 1.

3 EDUCATIONAL PSYCHOLOGY *3 credits* First semester

This course is designed (1) to give the student a knowledge of the essential facts and fundamental laws of mental phenomena, and (2) to present the psychological basis of general educational theory and practice.

4 SCHOOL ADMINISTRATION *2 credits* Second semester

This course deals with the following topics: the school as a social organization, the teacher, forms of educational control, school supervision, school management, school buildings and surroundings, courses of study.

5 SCHOOL MANAGEMENT *2 credits* First semester

In this course the attempt is made to define clearly the principles upon which sound educational practice is based, to formulate a scientific method of teaching, and to apply the principles of method to the subjects commonly taught in grammar and secondary schools.

6-7 OBSERVATION AND PRACTICE TEACHING

2 to 4 credits Both semesters

This course is designed to supplement courses 3 and 5. The conclusions reached in these courses will be tested by observation of recitations and practice in teaching under supervision.

Also the following courses offered by the respective departments, for description of which see under the respective departments:

English 13 ENGLISH GRAMMAR AND COMPOSITION FOR TEACHERS
1 credit First semester
Professors TULL and LEHMAN

English 114 ENGLISH LITERATURE FOR TEACHERS
2 credits Second semester
Professor MOORE

History 14 THE TEACHING OF HISTORY
2 credits Second semester
Professor HULME

Latin 11-12 TEACHERS' COURSE IN LATIN
2 credits Each semester
Professor AXTELL

German 23-24 TEACHERS' COURSE IN GERMAN
3 credits Each semester
Professor ELDRIDGE and Mrs. ISAACSON

Biology 5 THE TEACHING OF BIOLOGY
2 credits First semester
Professor ALDRICH

Physics 3 (or 4) PEDAGOGY OF PHYSICS
3 credits Either semester
Professor GURNEY

Chemistry 20 THE TEACHING OF CHEMISTRY
2 credits Second semester
Mr. HOLADAY

THE TEACHING OF AGRICULTURE—See the Dean of the College of Agriculture.

SPECIALISTS' STATE CERTIFICATES

To meet a growing demand for college-trained teachers of special subjects the following courses will be offered. They meet the requirements of the Idaho School Law and lead to a Specialist's State Teacher's Certificate in any of the following subjects: Music, Drawing, Manual Training, Home Economics, Physical Education, and Agriculture. This certificate is valid for eight years.

Specialist Teacher's Course

First Year	Credits	Second Year	Credits
Specialty	8	Specialty	8
Education	5	Education	5
English	8	English	8
*Subjects allied to Specialty	8	Subjects allied to Specialty	8
Elective	4	Elective	4

*1 AGRICULTURE: Bacteriology, Soil Chemistry, Shopwork, or Farm Machines.

2 HOME ECONOMICS: Chemistry, Bacteriology, Biology.

3 MANUAL TRAINING: Drafting, Machine Design, Elements of Mechanism.

4 PHYSICAL EDUCATION: Biology, Dietetics, Communicable Diseases.

5 MUSIC: French, German, Italian.

MATHEMATICS

Professor MORLEY

1 COLLEGE ALGEBRA *4 credits* First semester

Quadratic equations, arithmetical, harmonical, and geometrical progressions; the binomial theorem; logarithms and exponential equations; properties of series and the development of simple functions into series; permutations and combinations; introduction to the theory of equations.

2 TRIGONOMETRY *4 credits* Second semester

This course includes the elements of plane and spherical trigonometry. The student is expected to become familiar with the various trigonometrical formulae, and proficient in the solution of problems involving plane triangles.

21 PLANE TRIGONOMETRY *2 credits* First semester

A short course in plane trigonometry intended primarily for students in agriculture.

101-102 ENGINEERING MATHEMATICS

5 credits Each semester

Elements of plane and spherical trigonometry; the essentials of college algebra; the locus and its equation; the straight line; the conic sections; tangents and normals; higher plane curves; differentiation of algebraic functions; graphs.

103-104 ENGINEERING MATHEMATICS

5 credits Each semester

Differentiation of transcendental functions; expansion of functions into series; indeterminate forms; integration considered as the inverse of differentiation; definite integral the limit of a sum; reduction formulae; double and multiple integration; application to geometry and mechanics; elementary differential equations.

3 ANALYTICAL GEOMETRY *4 credits* First semester

Rectangular and polar coordinates; transformation of co-ordinates; straight line, circle, parabola, ellipse and hyperbola; the discussion of the general equation of the second degree in two variables; higher plane curves.

4 CALCULUS *4 credits* Second semester

Differentiation of algebraic and transcendental functions; expansion of functions into series; indeterminate forms; maxima and minima; integration; definite integrals; application to geometry and mechanics.

5 THEORY OF EQUATIONS *3 credits* First semester

The properties of rational integral functions and their graphical representation; method of approximating to the roots of equations; the roots of unity; the solution of the cubic and bi-quadratic; symmetric functions of the roots.

6 DIFFERENTIAL EQUATIONS *3 credits* Second semester

An elementary course devoted to the methods of solution of ordinary differential equations, and their application to physics and mechanics.

7 SOLID ANALYTICAL GEOMETRY *3 credits* First semester

Co-ordinates and direction cosines; straight line; plane; conicoids; transformation of co-ordinates; general equation of the second degree.

8 GENERAL ASTRONOMY *3 credits* Second semester

This is essentially a culture course for those desiring a general knowledge of descriptive astronomy. Very little mathematics is introduced, course 2 being the only prerequisite.

PHYSICS

Professor GURNEY

The work of the department is planned with special reference to the needs of three classes of students:

(a) Engineering students and others who require Physics as a part of their technical preparation. For their benefit the Courses for Engineering Students are given as described below:

Courses 101 and 102, which are required of all engineering students, devote much attention to those parts of the subject specially related to the engineering professions. In the class-room the mathematical side of Physics will be emphasized and numerous problems assigned. In the laboratory quantitative experiments will be set which have a practical bearing on engineering practice and which will at the same time bring out fundamental physical truths, develop skill in handling instruments, in making precise measurements, in detecting and providing against the errors of experimentation, and in making the best use of data. High-school physics is required for admission to these courses.

(b) Those who desire Physics for its cultural value.

Courses 1 and 2 cover the whole field of Physics in one year and are specially designed to meet this demand. A rigid mathematical treatment of the subject will be avoided and more attention paid to its historical development. Emphasis will be laid on a clear understanding of the physical properties of bodies and of the nature of physical forces and the laws they obey with special reference to the part they play in every day life and experience. They will be illustrated in the class-room by numerous experimental demonstrations and in the laboratory by qualitative as well as quantitative experiments. These courses may be taken by a student during any year of his college course, and there is no prerequisite beyond a knowledge of high-school algebra.

A number of the more advanced courses will also be found of interest to students who may desire a wider knowledge of Physics for its own sake.

(c) Those who propose to teach Physics or who desire to specialize in this field.

The three courses 101, 102, and 3, or 1, 2, and 3, taken together, constitute a thorough preparation for teaching Physics in the secondary schools. The University will not recommend any student for work of this sort who has not had these courses or their equivalent.

Students who desire to specialize in Physics may take either 101 and 102 or 1 and 2 as introductory courses, although the former are recommended for this purpose. All the more advanced courses will then be open to them, as described below.

Courses For Engineering Students

101-102 GENERAL PHYSICS *4 credits* Each semester

Experimental lectures, recitations, and laboratory work in mechanics and the properties of matter, heat, sound, and light. Laboratory work in magnetism and electricity, with references for outside reading. Two lectures and five laboratory hours a week.

Prerequisites: high-school physics and mathematics.

104 ELEMENTARY ELECTRICITY, MAGNETISM, AND HEAT *3 credits* Second semester

A general course in elementary electricity and magnetism, to which is added a review of heat as given in the first year. One lecture and four laboratory hours a week.

Prerequisites: courses 101-102.

105-106 ANALYTIC MECHANICS *3 credits* Each semester

Statics, kinematics, and kinetics.

Prerequisites: courses 101-102 or 1-2, and knowledge of differential and integral calculus.

107 ELECTRICAL MEASUREMENTS *3 credits* First semester

A more advanced laboratory course in electrical and electromagnetic experiments, measurements, and tests. The standardization and calibration of electrical instruments.

Prerequisite: course 104.

Courses For Non-Engineering Students

1-2 GENERAL PHYSICS *3 credits* Each semester

Experimental lectures, recitations, and laboratory work in

mechanics and the properties of matter, heat, sound, light, electricity, and magnetism. Two lectures and two laboratory hours a week.

Prerequisites: high-school mathematics.

3 (or 4) PEDAGOGY OF PHYSICS *3 credits* Either semester

A course intended for those who desire to teach Physics in the high schools, consisting of lectures and discussions upon the choice of subject matter and the method of presentation best suited to elementary courses. The choice of textbooks, reference books, suitable equipment, how to order apparatus, useful laboratory procedures, and other practical matters will be considered.

Prerequisites: courses 1-2 or 101-102.

5 HEAT *2 credits* First semester

A general course in heat radiation and thermodynamics.

Prerequisites: courses 1-2 or 101-102 and a knowledge of calculus.

6 LIGHT *3 credits* Second semester

A general course in theoretical and experimental optics.

Prerequisites: courses 1-2 or 101-102 and a knowledge of calculus.

7 CONDUCTION OF ELECTRICITY IN GASES, AND RADIO-ACTIVITY *3 credits* First semester

This course will be given with special reference to the modern theories of the constitution of matter.

Prerequisites: courses 1-2, or 101-102, and a knowledge of calculus.

8 SOUND *2 credits* Second semester

A general course in wave motion, resonance, and the properties of sounding bodies. Special attention is paid to the theory of musical tones and the construction of musical instruments.

10 MOLECULAR PHYSICS *2 credits* Second semester

A general treatment of the kinetic theory of fluids.

Prerequisites: courses 1-2 and 101-102 and a knowledge of calculus.

13-14 ADVANCED PHYSICS *3 credits* Each semester

An advanced experimental and theoretical course for students prepared to take it. Primarily intended as an introduction to graduate work. The course will be arranged to meet the needs of those who are registered in it.

CHEMISTRY

Professor VON ENDE, Assistant Professor KOSTALEK, Mr. HOLADAY

(For outline of course in Chemical Engineering see under College of Engineering.)

(For courses in Agricultural Chemistry see under College of Agriculture.)

A laboratory period consists of three consecutive hours.

1 GENERAL CHEMISTRY *4 credits* First semester

Experimental lectures, recitations, and laboratory work. The laboratory work consists of a selection of representative experiments, including quantitative from Alex. Smith and Hale's *Laboratory Outline;* followed by a selection of preparations from raw materials, using Blanchard's *Synthetic Inorganic Chemistry.* Text-book, Alex. Smith's *General Chemistry for Colleges.**

Two lectures, one quiz, and two laboratory periods per week. Laboratory Sections: I and II. Quiz Sections: A, B, and C.

Professor VON ENDE, Assistant Professor KOSTALEK, Mr. HOLADAY

2 GENERAL CHEMISTRY *4 credits* Second semester

Continuation of course 1. The laboratory work consists of the completion of preparations, followed by an introduction to qualitative analysis, using W. A. Noyes' *Elements of Qualitative Analysis.* Sections as in Chemistry I.

Professor VON ENDE, Assistant Professor KOSTALEK, Mr. HOLADAY

3 QUALITATIVE ANALYSIS *3 or 4 credits* First semester

Lectures, laboratory, and recitations.

Text-books: W. A. Noyes's *Elements of Qualitative Analysis,*

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*Chemical Engineers are advised to get in place of this the larger work by the same author, entitled "General Inorganic Chemistry."

Prescott and Johnson's *Qualitative Chemical Analysis,* and Stieglitz's *Theoretical Qualitative Analysis.*

Prerequisites: courses 1 and 2. One class and two or three laboratory periods per week.

Assistant Professor KOSTALEK

4 QUANTITATIVE ANALYSIS *3 or 4 credits* Second semester

Introduction to the fundamentals, theory and practice, of gravimetric and volumetric analysis; Talbot's *Quantitative Chemical Analysis,* and Stieglitz's *Theoretical Qualitative Analysis.*

Prerequisites: courses 1, 2, and 3. Periods per week the same as 3. Assistant Professor KOSTALEK

5 ORGANIC CHEMISTRY *5 credits* First semester

Three lectures per week on the general principles and theories of organic chemistry, covering the entire aliphatic series. The lectures are accompanied by a two-period course in organic laboratory practice which includes the familiar operations involved in organic work, the preparation of 12-15 aliphatic compounds, and oral recitations on the chemistry of the same.

Prerequisites: courses 1, 2, 3, and 4.

Assistant Professor KOSTALEK

5a ORGANIC CHEMISTRY *4 credits* First semester

Lectures, recitations, and laboratory work. A condensation of courses 5 and 6, intended for students in Home Economics. Text-books: Moore's *Outlines of Organic Chemistry,* and Lauder W. Jones's *Laboratory Outline of Organic Chemistry.*

Prerequisites: courses 1 and 2. Two class and two laboratory periods per week. Mr. HOLADAY

6 ORGANIC CHEMISTRY *3 credits* Second semester

Continuation of course 5. Two lectures per week on the aromatic compounds, with one period of laboratory work, including the preparation of 6-8 aromatic compounds, and a systematic study of the characteristic reactions involved in organic qualitative analysis, with supplementary work on the identification of unknown compounds and mixtures.

Assistant Professor KOSTALEK

7 ADVANCED QUANTITATIVE ANALYSIS

3 or 4 credits First semester

Continuation of course 4. Laboratory work designed for students in Mining Engineering, Chemical Engineering, and such students as may desire to continue quantitative analysis beyond course 4. Three or four laboratory periods per week.

Prerequisites: courses 1, 2, 3, and 4. Professor VON ENDE

8 SPECIAL QUANTITATIVE ANALYSIS

2 or 4 credits Second semester

Laboratory work two or four periods per week.

Prerequisites: courses 1, 2, 3, and 4. Professor VON ENDE

9 HISTORY OF CHEMICAL THEORIES

1 credit First semester

Lectures on the development of chemical theory.

Prerequisites: courses 1 and 2. Professor VON ENDE

10 QUANTITATIVE AND APPLIED CHEMISTRY

3 credits Second semester

A course of lectures and laboratory work for students in Home Economics. The course deals with the following subjects: metals and alloys, glass, pottery, porcelain, fuels, air, water, cleaning and cleansing agents. In connection with these the fundamentals of quantitative analysis are introduced.

Prerequisites: 1, 2, and 5 or 5a. One class and two laboratory periods per week. Mr. HOLADAY

11-12 INDUSTRIAL CHEMISTRY *3 credits* Each semester

Lecturers and laboratory work on the more important technical operations and analyses. Prerequisites: courses 1, 2, 3, 4, 5, and 6. Two lectures and one laboratory period per week.

Assistant Professor KOSTALEK

13-14 THEORETICAL AND PHYSICAL CHEMISTRY

3 credits Each semester

Lectures treating states of aggregation, molecular and atomic hypotheses, solutions, chemical statics and kinetics, electrochemistry, and thermo-chemistry.

Laboratory work includes determinations of molecular weight, electrolytic conductivity, electrolytic potential, transference, rate of reaction, chemical action of the electric current,

and calorimetry. Prerequisites: courses 1, 2, 3, and 4; at least Physics 1 and 2; and Math. 103 and 104. Two lectures and one laboratory period per week. Professor VON ENDE

15-16 THESIS *2 or 4 credits* Each semester

17 CHEMISTRY OF FOODS *5 credits* First semester

Lectures and laboratory work dealing with the composition, properties, and analysis of foods; also food preservatives, adulterants, and their detection.

Prerequisites: courses 1, 2, 5 or 5a, and 10. Two class and three laboratory periods per week. Mr. HOLADAY

18 PHYSIOLOGICAL CHEMISTRY *5 credits* Second semester

Three lectures per week, covering briefly the entire field of Physiological Chemistry. Laboratory two periods per week. In the laboratory the following subjects are taken up: sugars, proteins, salivary digestion, gastric digestion, pancreatic digestion, and also a qualitative study of most of the tissues and body fluids. Hawk's text-book, *Practical Physiological Chemistry.* Prerequisites: courses 1, 2, and 5 or 5a.

Assistant Professor KOSTALEK

20 THE TEACHING OF CHEMISTRY

2 credits Second semester

A course designed for those who expect to teach Chemistry in secondary schools. By means of lectures, reports, and discussions the following are considered: aims, method, principles of selection and emphasis, sources of material, laboratory equipment, and instruction, modern text-books and laboratory manuals. Prerequisites: courses 1, 2, 3, 4, 5, 6, or 1, 2, 5a, 10, 17, 18, and Education 3. Mr. HOLADAY

22 MINERS' SHORT COURSE January to March

Three lectures each week on the essential fundamental chemical concepts and most important types of chemical elements and compounds, accompanied by two laboratory periods. The laboratory course consists of an introductory series of experiments which is merged into a brief outline of qualitative analysis. The text-books used are McPherson and Henderson's *Elementary Chemistry,* and Newth's *A Smaller Chemical Analysis.* Mr. HOLADAY

CHEMISTRY JOURNAL CLUB An informal organization of students and instructors interested in Chemistry. The object is to discuss current chemical literature and matters of general chemical interest. Junior and Senior chemical engineers are expected to take an active part; all others are welcome to do so.

DEPOSITS Deposits for laboratory courses are required as follows: Two-credit courses, $3.00; three- four- and five-credit courses, $5.00.

EQUIPMENT The department occupies seven rooms on the second and third floors of the Engineering Building. A large room in the basement is equipped for Industrial Chemistry, and one of the small rooms on the second floor for Physical Chemistry. The large laboratory on the third floor accommodates about eighty students in two sections, and the smaller quantitative laboratory on the second floor accommodates about twenty-eight students in two sections.

The lecture-room and preparation-room are on the third floor, adjoining the large laboratory. All these rooms are equipped with the necessary water, gas, reagents and apparatus.

The balance-room adjoining the quantitative laboratory is fitted with analytical balances of the following makes: Sartorius, Becker, long and short arm; Bunge, and Spoerhase.

The library of the University receives the following periodicals: *Chemical News, Analyst, American Chemical Journal, Journal of the American Chemical Society, Chemical Engineer, Zeitschrift für Untersuchung der Nahrungs-und Genussmittel, Zeitschrift für angewandte Chemie, Chemiker Zeitung, Journal of Agricultural Science, Berichte der deutschen Chemischen Gesellschaft, Transactions of the American Institute of Mining Engineers, Journal of Biological Chemistry, Chemical Abstracts, Journal of Industrial and Engineering Chemistry, Chemical and Metallurgical Engineering, Journal of the Chemical and Metallurgical Societies of South Africa, Metallurgie (Metall und Erz* and *Ferrum.)* It also has complete files of *Transactions of the Institute of Chemical Engineers, Chemical Society Annual Reports, Mineral Industry, Proceedings of the Institution of Mining and Metallurgy (London), Transactions of the American Electro-Chemical Society,* and the last eight journals, including the *Berichte,* named in the above list. The files of the other journals are more or less extended. There are also available for reference

limited sets of the *Journal of the Society of Chemical Industry, Zeitschrift fur anorganische Chemie,* and *Zeitschrift fur physikalische Chemie.*

The laboratories and chemical library are open Saturday mornings.

GEOLOGY AND MINERALOGY

Associate Professor STEWART

1 GENERAL GEOLOGY *2 credits* First semester

Designed for students in the College of Letters and Sciences who desire a general knowledge of the principles of geology. For the benefit of those preparing to teach in elementary or high schools emphasis will be placed on the physiographic side. Historical geology is not discussed in this course, which should be followed by Geol. 2.

2 HISTORICAL GEOLOGY *2 credits* Second semester

Lectures tracing the development of the earth from the Pre-Cambrian time to the present. Prerequisites: Geol. 1 or 5.

3 CRYSTALLOGRAPHY AND BLOWPIPE ANALYSIS *2 credits* First semester

Lectures on crystallography, with practice in identifying the common crystal forms on models and natural crystals. Laboratory work in blowpiping, including qualitative analysis of unknown substances. Prerequisites: Chem. 1-2. A laboratory fee of $1.00 is required.

4 DETERMINATIVE MINERALOGY *2 credits* Second semester

Lectures and laboratory practice in mineral identification. Prerequisites: Geol. 5.

5 GENERAL GEOLOGY *3 credits* First semester

Lectures, recitations, and occasional laboratory work in structural, dynamic, and historical geology. Emphasis is placed upon the structural details of importance to engineering students. Prerequisites: Chem. 1-2, Phys. 101-102.

7 PALEONTOLOGY *2 credits* First semester

Lectures and laboratory work dealing with invertebrate index fossils. Prerequisites: Geol. 2 or 5. A knowledge of general biology is also desirable.

9 ECONOMIC GEOLOGY *2 credits* First semester

Study of the non-metallic mineral products with reference to their origin and mode of occurence. Prerequisites: Geol. 3, 4, 5.

10 ECONOMIC GEOLOGY *3 credits* Second semester

Study of the metallic mineral products with reference to their origin and mode of occurrence. Prerequisites: Geol. 3, 4, 5.

11 ELEMENTARY PETROGRAPHY *2 credits* First semester

Study of rock classification, and practice in megascopic and microscopic identification. Includes the elements of optical mineralogy. Prerequisites: Geol. 3, 4, and 5 or 1.

12 GEOLOGIC INVESTIGATIONS *2 credits* Second semester

Largely laboratory work, including practice in the use of literature, interpretation of topographic and geologic maps, cross-section making, and the solution of fault problems. Supplementary lectures are given to illustrate the application of geology to mining in specific instances. All students taking this course are required to spend at least six whole days in the field mapping geology. Prerequisites: Geol. 3, 4, and 5. Geol. 10 must precede or accompany this course.

13-14 ADVANCED PETROLOGY *3 credits* Each semester

Lectures, laboratory work, and collateral reading. A study of the occurrence and origin of rocks, and their careful identification with the microscope. Prerequisites: Geol. 3, 4, and 5.

15-16 ADVANCED ECONOMIC GEOLOGY *3 credits* Each semester

A careful study of the theories of ore-deposition, followed by detailed consideration of some of the important mining districts of the United States and Canada. Lectures, conferences, and extensive collateral reading with study of ores in reflected light. Prerequisites: Geol. 9, 10, and 11.

18 GEOLOGY OF IDAHO *1 credit* Second semester

A description of the geology and mineral resources of Idaho. Prerequisites: Geol. 9, 10. Open only to students who are taking at least four hours of other work in the department at the same time.

19-20 THESIS

Required of all candidates for the degree of M.S. in Mining

Engineering who take the geological option. All students intending to register for this course should confer with the instructor the preceding June in regard to field work.

EQUIPMENT The laboratory equipment includes apparatus for blowpipe work, and for making thin sections of rocks. There are seven high-grade microscopes with accessories, including a vertical illuminator. The collections are arranged so that they are easily accessible to all students, and include the following:

MINERALOGICAL COLLECTIONS. A set of celluloid crystal models for lecture purposes, wooden crystal models, natural crystals for identification; 800 museum specimens illustrating all of the important minerals; about 500 hand specimens kept in drawers where they may be handled by students at any time; over 600 mineral specimens used for practice in sight identification; over 1,000 small, massive specimens suitable for blowpipe tests.

PETROGRAPHIC COLLECTIONS. Over 400 labeled rock specimens illustrating rock structure and classification, including the U. S. Geological Survey Educational Series; collections illustrating the rocks of Idaho and special districts, aggregating 200 specimens; about 250 thin sections for microscopic study; over 500 unlabeled specimens for practice in sight identification.

ECONOMIC GEOLOGY COLLECTION. Over 1,000 specimens illustrating the structural features of ore-deposits, and the ores and associated rocks of important mining districts.

PALEONTOLOGY. A representative collection of fossils and casts, including the Krantz and Ward collections.

The department is also equipped with a projecting lantern and several hundred slides; models illustrating faulting, erosion, etc.; and several hundred topographical and geological maps for class work.

The library includes all of the U. S. Geological Survey publications, the publications of the State Surveys relating to economic geology, and the latest and best books on geology and mineralogy. The more important periodicals are received regularly and bound for future use.

BIOLOGY

Professor ALDRICH

1 PRINCIPLES OF BIOLOGY *4 credits* First semester

Four lectures a week, dealing with the structure and

physiology of the cell, the principal phenomena of plant and animal life, the factors of evolution, recent investigations in evolutionary problems, and eugenics. Some outside reading and writing, but no laboratory work. May be taken by students who have had no laboratory courses in biology, but will be more profitable to those who have had a year or more in biology or botany.

3 GENERAL ZOOLOGY *4 credits* First semester

A brief course in the laboratory study of animal life, using a series of type forms from the main branches of the animal kingdom. One lecture and three laboratory periods a week.

4 EMBRYOLOGY *4 credits* Second semester

The course begins with some of the simpler invertebrate forms, but most of the time is occupied with vertebrates. The laboratory work deals with fertilization and segmentation, and with serial sections and entire embryos, having especial reference to the origin of the various types of tissue and the development of the organs. Prerequisites: course 4, or courses 7 and 8.

5 THE TEACHING OF BIOLOGY *2 credits* First semester

Secondary school teaching is considered in regard to aim, content, method, etc. One lecture a week; in addition the student will take notes on actual high-school teaching, review text-books and laboratory guides, plan a laboratory, and write papers on assigned topics. Must be preceded by at least one year of laboratory work in zoology or botany, and the student expecting to teach should take a major in biology or botany.

7 VERTEBRATE HISTOLOGY AND PHYSIOLOGY *4 credits* First semester

A study of the various tissues of man and the higher vertebrates, as a means of understanding the physiology of the organs, which is discussed in lectures accompanying the laboratory work. The course is intended to extend and make more fundamental the student's knowledge of human physiology. Two lectures and two laboratory periods a week.

8 VERTEBRATE HISTOLOGY AND PHYSIOLOGY *2 credits* Second semester

A continuation of the preceding, following the same plan. One lecture and one laboratory period a week.

9 PRACTICAL HISTOLOGY *2 credits* Second semester

A short course consisting mostly of laboratory exercises, covering the preparation and sectioning of tissues, and the staining and permanent mounting of sections. The student is allowed to make a valuable set of slides for himself. Can only be taken in conjunction with course 8, and should generally be taken by students in that course.

10 GENERAL ENTOMOLOGY *4 credits* Second semester

An introductory study of insects, treating of their external and internal structure, physiology, transformations, habits, and relations to man. Two lectures and two laboratory periods a week. Species injurious to farm and orchard receive special attention. A classified collection is required.

10a FOREST ENTOMOLOGY *4 credits* Second semester

In the first half of the semester this is the same as the preceding, but the remainder is given to the study of the insects of the forests, the various bark-beetles, borers, leaf-devourers, etc. Students are required to collect with reference to this branch of the subject, or may be allowed to undertake some investigation in lieu of making a collection. Two lectures and two laboratory periods a week.

11-12 ADVANCED ENTOMOLOGY *4 credits* Either semester

A continuation of entomology for students who have completed either of the two preceding courses. The student may arrange for economic, histological, or taxonomic work; the surrounding region and the facilities of the department offer material and means for investigation of a wide range. Results if found worthy will be published in some scientific journal. Four laboratory periods a week; half the amount may be taken for two credits if desired.

EQUIPMENT The department occupies three rooms in the fireproof Administration Building. Among the more important items of equipment are twenty-three compound microscopes, twenty dissecting microscopes, two Zeiss binocular dissecting microscopes with Porro prisms, a Bausch and Lomb rotary microtome, and a universal balopticon with large microscope. The collections of the department are extensive in fishes, marine invertebrates, and especially in insects; sufficient material in other groups is at hand to illustrate the more essential features of each. A

large collection of microscope slides prepared by the late C. B. Simpson of the class of 1898 has been presented to the department by his parents; it is especially valuable in material illustrating the neurology and general histology of vertebrates. In addition to this a series of slides in plant and animal histology, numbering about 2,000, has been made in recent years. Several periodicals in entomology and general biology are taken.

BOTANY

Professor TEMPLE, Mr. PRATT

(For courses in Botany see under College of Agriculture.)

BACTERIOLOGY

Professor NICHOLSON, Assistant Professor WRIGHT, Mr. MCARTHUR

1 GENERAL BACTERIOLOGY *4 credits* First semester

Lectures and laboratory work. A general survey of the entire field of bacteriology from the biological side. This course is prerequisite to special courses in the applied sciences, as veterinary medicine, sanitation, or agriculture, and dairy bacteriology. Open to all students prepared in chemistry and biology. Two recitations and four hours laboratory per week.

7 BACTERIOLOGY OF THE HOME *2 credits* First semester

Four hours laboratory work per week. The bacteria in their relation to the home will be studied. Attention will be paid to the preservation of food, sanitation, fermentation, etc. Course 1 is prerequisite.

8 MEDICAL BACTERIOLOGY *3 credits* Second semester

Six hours per week of laboratory work with Frost's *Laboratory Guide, Part II.* Designed particularly for those students contemplating the study of medicine. Bact. 1 is prerequisite.

10 RURAL HYGIENE *2 credits* Second semester

Lectures and demonstrations along the lines of practical sanitation in the country. Non-technical and open to all students. Ogden's *Rural Hygiene* is the text.

11 COMMUNICABLE DISEASES *1 credit* First semester

This course is non-technical and consists of one lecture a week on the subject of infectious diseases. Things that everyone should know are treated. Open to all students. No prerequisites.

13-14 RESEARCH WORK IN BACTERIOLOGY
Credits on consultation Each semester

Opportunities are given to advanced students for research work along special bacteriological lines. Subjects assigned upon consultation with head of the department. Courses 1 and 7 or 8 are prerequisite. A reading knowledge of French and German is also necessary.

15-16 THESIS *2 credits* Each semester

(For other courses in Bacteriology see College of Agriculture.)

EQUIPMENT The Department of Bacteriology is equipped with three large laboratories, a class-room, and an office on the third floor of Morrill Hall. The department has an adequate supply of glassware and chemicals for all work. There are two large autoclavs, two dry air sterilizers, six Arnold sterilizers, three large electrically heated incubators, ice chests, stills, Purdy centrifuges, a rotary microtome, and ten fully equipped compound microscopes for student use. The laboratories are completely equipped with cold and hot water, gas and steam. There is an abundant supply of charts and illustrative material as well as a complete library of the latest books on bacteriological science, for class use. The department also receives a half dozen of the best hygienic and medical journals.

Besides giving instruction in bacteriology the department is the northern laboratory for the Idaho State Board of Health, and the student can become familiar with the work carried on in that laboratory. This also furnishes an abundant amount of fresh material for class work along medical lines. Experiment Station work is going on continually in the department, and the student derives much benefit from this work.

DEPOSITS Deposits for laboratory courses are required as follows: $3.00 for one- and two-credit courses and $5.00 for three- and four-credit courses.

FORESTRY

Professor SHATTUCK, Mr. COOK; Major F. A. FENN and T. C. SPAULDING, M. S. F., Lecturers on Forest Management and Lumbering

1 GENERAL FORESTRY *3 credits* First semester

A general course in Forestry dealing with the subject both

in Europe and the United States. An introductory study of the subjects of the entire Forestry course is made as a preparatory training for the advanced work taken up later. Throughout the entire course, as in all others where field work may be introduced, special emphasis is placed on field practice. Two lectures and one laboratory or field period per week.

This course may be taken by students in other departments as a two-credit lecture course without laboratory.

2 GENERAL FORESTRY *3 credits* Second semester

This is a continuation of Forestry 1.

3 DENDROLOGY *3 credits* First semester

The object of this course is to enable the student to identify trees and shrubs in the field and laboratory. Various manuals and methods of classification are available for laboratory and field work. An herbarium of the flowers, fruits, seeds, and seedlings of trees is required of each student. This course is given very largely in the field. One lecture and two laboratory or field periods per week.

4 SILVICULTURE *3 credits* Second semester

This course includes the study of the methods of creation, regeneration, and tending of forests until they are ready for market. Lectures and field work cover the following subjects: Seeds; their production, collection, care and germination. Seedbeds; location, preparation, and tending. Planting-plans; depth and spacing. Seedlings; shading, mulching, lifting and transplanting of wild and nursery stock. Woodlands; natural and artificial regeneration, reinforcing, thinning, pruning, weeding and improvement cutting. Forms of forest; seeds, coppice, composite, etc. A greenhouse, nursery, and demonstration plot containing many species will supplement the field work in the natural forests in this vicinity. Two lectures and one laboratory or field period per week.

This course may be taken by students in other departments as a two-credit lecture course without laboratory.

5-6 FOREST MENSURATION *3 credits* Each semester

A course in which the various methods of making forest measurements are studied, such as the determination of the contents of logs in board feet and cordwood, study and application of log rules; timber cruising by the most approved

methods, determination of form factors, preparation of yield and volume table, and training in the most useful graphic methods of making growth, height, and stand charts. Much of this work must be done in the field and many instruments employed, among which are the compass, tape and chain, transit, plane table, tallying machine, log and board scales, altimeters, clinometers, various hypsometers, the accretion borer, aneroid barometer, etc. Two lectures and one laboratory or field period per week.

7 FOREST MANAGEMENT *3 credits* Each semester

A course dealing with the most approved methods of forest administration in this country and Europe. It includes a study of forest working-plans for large and small tracts; silvicultural methods as applied to virgin and cut-over lands; and methods of lumbering under various conditions; reforestation; afforestation. Two lectures and one field period per week.

Major F. A. Fenn, Supervisor of the Clearwater National Forest, and Mr. T. C. Spaulding, M.S.F., Supervisor of the St. Joe National Forest, will give a number of lectures on forest management to the students in this course.

9 FOREST ENGINEERING *3 credits* First semester

This course is a more extended application of the principles of surveying to forest land. The work includes practice in the forest in using the various instruments which a forest engineer must use, such as the Brunton pocket transit, the plane table, aneroid barometer, traverse board, Abney hand level, transit, compass, etc.; use of conventional signs adopted by the Forest Service in making contour maps and working-plans; methods of locating corners, running old lines and making new surveys; laying out of trails, fire lines, logging roads, simple bridge construction and stump and rock blasting. One lecture and two laboratory periods per week.

10 FOREST ENTOMOLOGY *4 credits* Second semester

Deals with the various insects injurious to forest trees. Special attention is given to identification and to the life histories of the most important species. The most approved methods of combating insects in their various stages are studied both in the laboratory and in the field. Two lectures and two laboratory periods per week. Professor ALDRICH

11 LUMBERING *5 credits* Second semester

Lumbering is by far the greatest branch of forest utilization. Much emphasis is placed on this work. This course includes the history of lumbering in the United States; the study of labor conditions, cutting operations, and transportation methods, as driving, rafting, fluming, skidding by horse and steam power; study of saw-mills, and logging and mill-machinery; the grading of lumber; methods and machinery for manufacturing the rough and finished products; and the disposition of waste. Located as we are, close to some of the largest mills in the world, it is comparatively easy to give excellent practical field work in this course. The work in lumber grading will be in charge of an official grade inspector for the Western Pine Manufecturers' Association. Two lectures and four laboratory or field periods per week.

12 FOREST LAW *2 credits* Second semester

A course dealing with the elements of contracts, and laws relating to public lands and national forests. Special attention is given to the laws applying to grazing, timber cutting, mining, timber claims, leases, homesteads, etc. Two lectures per week.

13 FOREST PROTECTION *3 credits* First semester

This course deals with the methods of protecting the forest from its enemies, and includes a study of insects and fungi injurious to trees. Damage by natural elements; wind, heat, frost, and snow. Injury by animals; sheep, goats, cattle, deer, and rodents. Wasteful and injurious methods practiced by man, and the ravages of fire. The various methods employed by the Forest Service in combating these enemies are discussed, explained, and, where possible, practiced in the field work. Two lectures and two laboratory periods per week.

14 FOREST PHYSIOGRAPHY *3 credits* Second semester

A course designed to give a working knowledge of the principal physiographic regions of the United States. Special attention is given to climate, soil, topography, drainage, and their effect on silvicultural and lumbering operations; also on forest administration. No forester can draw up a practical working plan for forests in a given region without the knowledge to be acquired in this course. A knowledge of elementary geology is required. Two lectures and one field period per week.

15 TIMBER PHYSICS AND TECHNOLOGY
3 credits First semester

A study of the physical and mechanical properties of different species of woody plants. The relation of moisture to density, swelling, warping, shrinking, and strength, the effects of proper and improper seasoning on lumber, the importance of texture, grain, color, and rate of growth to the value of woods; the uses to which various woods are best suited; the effects of different wood preservatives and methods of application; the primary causes of decay and the effect of paints, oils, and various impregnating substances in preventing it. One lecture and two laboratory periods per week.

16 FOREST HISTORY AND ECONOMICS
2 credits Second semester

A lecture course dealing with the history of forestry from early times to the present day. It is especially valuable in that the mistakes of the older countries in forest management are emphasized and practical lessons applicable to our own forests are derived from this study. Special attention is given to the history of the Forest Service in the United States.

The work in Economics deals with the forest as a financial proposition as well as with its relation to all natural resources.

17 FOREST UTILIZATION *3 credits* First semester

A detailed study of the uses of the forest and its products. This includes grazing, logging, and cutting operations; means of transportation, power sites, technical qualities of various species of trees, and the uses to which they are put. A study of the wood-manufacturing industries, such as veneer, box and basket factories; tar, pitch, and turpentine operations; novelty, shingle, lath, and excelsior mills; cooperage, wagon, and tool-handle works; chemical products, such as various acids, alcohols, oils, etc. Two lectures per week.

19-20 FOREST SEMINAR *½ credit* Each semester

Once during each week the entire Forestry Department assembles for the discussion of trade journals and the review of important bulletins and work relating to Forestry. The programs for the meetings are arranged by the head of the department, and each student is required, at regular intervals to contribute papers or reviews.

22 THESIS *4 credits* Second semester

Each student before graduation must prepare as a thesis a carefully drawn working-plan of some assigned timber tract. In this he must give a clearly outlined plan of forest management acceptable to the head of the department. This plan must include a careful forest survey, with maps drawn after the plan of the United States Forest Service, showing contours, streams, roads, trails, fire lines, burns, cuttings, number of board feet per acre on various parts, minerals, grass and agricultural lands, together with practicable suggestions as to present and future methods of operation.

FOREST CRAFT Throughout the entire course the students are taught the ways of woodsmen, such as taking natural trail observations, observing game signs, orientation at night or on cloudy or smoky days, packing, cooking, making and breaking camp, care of horses, camp equipment, care of health, and means of protection against wild animals, insects, and fire; also method of camping and sleeping in deep snow, first aid to injured, and simple remedies for colds and other ailments.

EQUIPMENT Our laboratories are equipped with ample apparatus for thorough work in such courses as require indoor study. A very full line of miscroscopes and miscroscopic and lantern slides is available for use in the study of plant tissues—mechanical and other structures peculiar to different woods, as well as for the study of pathology of woody stems and leaves and the life histories of insects injurious to trees. A collection of several hundred species of the most valuable woods, both native and foreign, is also available. A great variety of logging, lumbering, and foresters' tools and instruments is at the disposal of the students of the department.

Students in wood testing have access to a 200,000-lb. capacity Olsen universal testing machine in the department of Civil Engineering. This machine is completely equipped for tension and compression tests with beam extensions for transverse tests of full sized beams up to sixteen feet in length.

An arboretum and demonstration plot of about five acres has been set apart for work in silviculture, where about one hundred and thirty species of forest and park trees are growing. A nursery and excellent greenhouses are also available for use of the students in silviculture. The University has secured six hundred and forty acres of excellent timber land near Moscow and the students will

spend part of each school year at practical work in this forest. The library is supplied with the best works on forestry and related subjects, and our reading tables contain the leading periodicals and trade journals on lumbering and other phases of forestry.

DEPOSITS Deposits for laboratory and field courses are required as follows: Sophomores, $1.00; Juniors, $3.50; Seniors, $2.00.

MUSIC

Professor MAGUIRE, Mr. STORER, Mr. COLLENS, Miss HOSTETTER, Mr. CAREY

Piano and Theory

Professor MAGUIRE, Miss HOSTETTER

Candidates for this course must have studied the piano for three years and, on examination, must be able to play scales and arpeggios in all keys and forms, read at sight third-grade music, transpose to enharmonic keys, and play one selection from memory.

1a-2a PIANO *4 credits* Each semester
Cramer's *Etudes,* or equivalent, with selections of corresponding difficulty.

1b-2b HARMONY *2 credits* Each semester
Through Modulation.

1c-2c ANALYSIS *1 credit* Each semester

3a-4a PIANO *4 credits* Each semester
Clementi's *Gradus;* Bach's *Two- and Three-part Inventions.* Corresponding selections.

3b-4b HARMONY *2 credits* Each semester
To finish.

5a-6a PIANO *4 credits* Each semester
Moscheles' *Op. 70;* Bach's *Preludes and Fugues;* Turner's *Octaves;* Chopin's *Etudes;* Kullak's *Octaves;* selections.

5b-6b MELODY-WRITING, FORM, AND COUNTERPOINT *2 credits* Each semester
Goetschius; Mathews; Haupt.

5c-6c HISTORY OF MUSIC *2 credits* Each semester
Baltzell.

7a-8a PIANO *4 credits* Each semester
Chopin's *Etudes;* Bach's *Fugues;* selected *Etudes* of Henselt and Liszt; selections.

7b-8b COUNTERPOINT, FUGUE, AND COMPOSITION *3 credits* Each semester
Goetschius; Prout.

Piano-forte Normal

Professor MAGUIRE

The object of the normal department is to train teachers in correct pedagogical methods. Mere proficiency as an executant does not insure ability to teach. The methods are directed toward the formation of pedagogical proficiency as recognized by the foremost schools of music in Europe and America.

The full course in this department covers a period of two years, but any student having the necessary time and strength may complete the full course in one year.

Training is given embracing the entire range of piano-forte teaching and the various supplementary branches, of which a knowledge is necessary in order to be a successful teacher of music.

Theoretical instruction is combined with practical experience. The most modern ideas in piano touch and technic, analysis of musical forms, the general principles of interpretation, memorizing, which includes a special training for thought concentration, are included in this course.

Teachers' certificates are conferred upon students who complete this course.

Vocal Instruction

EUGENE H. STORER, Instructor.

A thorough and systematic course in voice training is given by the Vocal Department, including the principles of breathing and breath control as applied to tone production, voice placing, execution, and interpretation. The method of development is adapted to each voice. The following is a general outline of the course:

Preparatory Course

Breathing and voice-placing exercises; sustained tones and scale

work; vocalizes selected from Concone's *Fifty Lessons;* Abt's *Singing Tutor,* and Marzo's *Preparatory Course.*

Advanced Course

First Year—Voice-placing exercises; scales, sustained notes and articulation exercises; Concone's *Twenty-five Lessons;* Vacai's *Studies,* Marchesi's *Studies,* Elementary songs from English, American, and Italian composers.

Second Year—Voice-placing exercises continued, scales, etc. Marzo's *Art of Vocalization,* Concone's *Fifty Lessons,* Songs from Schubert, Schumann, Franz, Handel, Chadwick, and other standard foreign or American composers.

Third Year—Advanced studies and exercises, solos from the standard oratorios and operas. Selections from Handel, Haydn, Mozart, and Italian, French, and German composers.

Fourth Year—Review of arias from Handel, Gluck, Mozart, Wagner, and other operatic composers. Modern songs of Wolf, Strauss, Brahms, Chadwick, and Franz.

Choral Instruction

EUGENE H. STORER

UNIVERSITY GLEE CLUB The University Glee Club is an organization of men under the leadership of the Vocal Instructor. Membership is decided by competition and is limited in number. Weekly rehearsals are held of two hours' duration. Membership in the organization involves a special fee of $1 a semester. Each student receives one credit per semester.

TREBLE CLEF CLUB The Treble Clef Club is an organization of women. The same rules apply to this organization as apply to the University Glee Club, and it is under the same leadership.

THE CECILIAN CHORAL SOCIETY The membership of this society consists of members of the Glee Clubs, other singers of the University, and townspeople who can pass a satisfactory examination. A membership fee of $1 is charged to those who are not members of either Glee Club. Weekly rehearsals are held for the study of cantatas, oratorios, or operas, under the leadership of the Vocal Instructor.

Public School Music

EUGENE H. STORER

Recognizing the growing need for trained teachers of music in the public schools throughout the state, the Vocal Department offers a course in Public School Music. It is the purpose of this department to graduate teachers from this course thoroughly equipped with a practical knowledge of Public School Music Methods and ability to organize and supervise the teaching of music in public schools and high schools.

THE COURSE The course as arranged covers two years. To students who have done some of the required studies before entering the course, credit will be given if such work is satisfactory to the faculty. Pupils taking the course are required to visit the graded schools to observe practical application of their studies, and also to attend the Cecilian Choral Society as an essential of their study, that they may gain experience in part singing and become acquainted with the masterpieces of vocal music.

As a majority of the applications by superintendents for Public School Music supervisors request that the prospective teacher be prepared to teach a secondary subject, it is advisable that students in this course fit themselves to meet this requirement in order to secure positions more readily.

The course in Music Appreciation is free to members of Public School Music classes.

REQUIREMENTS FOR ADMISSION The course involves a special fee of $40 a semester. Instruction is given in classes of six, two or more times a week. In accordance with the state law, applicants for this course must have completed a four-year high school course. A Specialist's State Certificate will be given on satisfactory completion of the course.

Public School Music Course

FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
*Piano	2	*Piano	2
Harmony	2	Harmony	2
Solfeggio, Ear Training, and Dictation	2	Solfeggio, Ear Training, and Dictation	2
Chorus Work	1	Chorus Work	1
History of Music	2	History of Music	2
Theory of Notation	1	Theory of Notation	1
*Voice	1	*Voice	1
School Management	2	School Administration	2
Physical Education	1	Physical Education	1
Total	14	Total	14

SECOND YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
*Piano	2	*Piano	2
Theory	2	Theory	2
Chorus Work	1	Chorus Work	1
Public School Music Methods	3	Public School Music Methods	3
Educational Psychology	3	Observation and Practice Teaching	3
Music Appreciation	2	Music Appreciation	2
*Voice	1	*Voice	1
Physical Education	1	Physical Education	1
Total	15	Total	15

MUSIC APPRECIATION *2 credits* Each semester

This is a lecture course illustrated by the piano, pianola, and Victrola which is especially intended for those who desire to know how to appreciate the best in music. It is intended to show the cultural side of music from several standpoints and to popularize it so as to make intelligent, appreciative listeners of music. A special fee of $10 a semester is required. Students of Public School Music are admitted free to these lectures.

The Orchestra

E. HELLIER-COLLENS, Director

To gain admittance into the Orchestra students are required to pass an elementary examination in sight reading and to be able to answer simple questions in orchestral playing.

Rehearsals are held weekly for two hours, and each student will receive one credit per semester.

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*Lessons given at the usual rates of tuition.

The orchestra library consists of works by the following composers: Haydn, Beethoven, Mozart, Sullivan, Puccini, Mendelssohn, Suppe, Flotow, Strauss, Keler-Bela, etc.

Violin

Mr. COLLENS

SCHOOLS FOR VIOLIN

Schubert; Alard; Sevcik; Joachim.

ETUDES

Hime; Kayser; Dancla; Deut; Hermann; Kreutzer; Fiorello; Rhode; Singer; etc.

COMPOSITIONS FOR VIOLIN WITH ACCOMPANIMENT

Dancla; DeBeriot; Rhode; Raff; Ernst; Brahms; Wieniawski; Sarasate; and others.

SONATAS FOR VIOLIN AND PIANO

Mozart; Beethoven; Handel; Schumann; Raff; etc.

Cornet

Mr. CAREY

Otto Langey's *Elementary Studies.*
Arban's *Studies on the Art of Tonguing and Phrasing.*
Arban's *School for Cornet.*
Herbert L. Clarke's *Advanced Studies for the Cornet.*
Interpretation of all standard cornet solos.

Organ

Professor MAGUIRE

Pedal Technic.
Manuals and Pedals combined.
Registration.
Chorals. Fugues.
Works of Carl, Buck, Bach, Mendelssohn, Guilmant, etc.
Accompanying.

Departmental Regulations

SPECIAL INSTRUCTION

Courses 1 to 8 in Piano and Theory are free to students pursuing the regular course leading to the degree of Bachelor of Music. All others are charged the regular tuition for private piano instruction.

Piano students not sufficiently advanced to enter Music 1a are rated as special pupils of the department and *receive no credits.*

Advanced students receive two or three or four credits in Piano, according to the amount of practice.

Students in any department may take any course in Music as an elective and receive corresponding credits for it.

Students who have studied at least one year may secure a certificate of proficiency. Those who have completed the course in Piano and Theory only may receive a diploma of graduation.

RECITALS Recitals are required from B.M. students as follows: In Junior year, a Preliminary Recital; at the close of Senior year, a Graduation Recital and the playing of a concerto movement at the Commencement Concert; also a production of a simple fugue, a quartet for mixed voices, and a short composition for the piano in the binary song or rondo form.

RULES 1. No student is permited to register for a shorter time than the full semester, but all entering a session must register for the rest of that semester.

2. No student is permitted to take part in public performance without the consent of the instructor.

3. No deduction will be made for absence from lessons, except in case of sickness, when half the loss will be sustained by the department. Instruments for practice will be furnished at the student's expense. Students must provide sheet music and books at their own expense; they may be obtained at the music store at the usual discount.

4. Tuition is payable in advance for the semester or unexpired portion of it. Students entering after the opening of the semester are charged pro rata, except that no allowance will be made on account of absence from the first week of any semester.

TUITION The following are the prices of tuition (payable in advance) for one semester for those not registered for the B.M. degree:

Piano

Professor MAGUIRE

Private	60	minutes,	two	lessons a week	$60.00
"	30	"	"	" " "	45.00
"	30	"	one	" " "	22.50

Miss HOSTETTER

Private	30	minutes,	two	lessons a week	$30.00
"	30	"	one	" " "	15.00

Voice

Mr. STORER

Private.....30 minutes, two lessons a week.....$30.00
" .....30 " one " " " 15.00

Violin

Mr. COLLENS

Private.....30 minutes, two lessons a week.....$30.00
" .....30 " one " " " 15.00

Cornet

Mr. CAREY

Private.....60 minutes, two lessons a week.....$30.00
" .....60 " one " " " 15.00

Rent of Piano for Practice

One hour a day per semester.....$3.75
Two hours a day per semester..... 6.00
Three hours a day per semester..... 7.00

HOME ECONOMICS

Professor HOOVER, Assistant Professor SWEET, Assistant Professor SCHERMERHORN, Miss SHEARER

The purpose of this course is to give instruction in the economic, sanitary, and esthetic aspects of food, shelter, and clothing as connected with the selection, preparation, and use by the family in the home or by other groups of people. The Department of Home Economics aims to prepare students to teach in secondary schools, colleges, and universities, to become extension and Chautauqua lecturers, hospital dietitians or carters, or to fill civil service positions. The chief aim, however, is to prepare young women for their life work in the home.

On satisfactory completion of the course outlined on page 66 the degree of Bachelor of Science in Home Economics is granted.

A course in Cooking and House Management is open to students not candidates for the B.S.(H.Ec.) degree. Other courses may be elected by the B.A. and B.S. students subject to the written approval of the head of the Department.

FEES A fee of fifty cents per credit is charged for all laboratory courses in Home Economics.

Food

1-2 ELEMENTARY COOKING *3 credits* Each semester

This course includes a study of the methods of cooking and a general survey of foods as to classification, composition, and value in diet. The underlying principles involved in the cookery of each class of food are carefully studied. Care and construction of cooking apparatus. One lecture and two two-hour laboratory periods a week.

3 ADVANCED COOKERY *3 credits* First semester

This course includes preparation of food in family portions, also marketing, planning, and serving of meals. With the practical work laundering of linens will be included. It is intended to have a very direct bearing on home problems. Prerequisites: Chemistry 1, 2, 5a, 10, H.Ec. 1-2, Bacteriology 1-2. Three three-hour periods a week.

4 FOOD PRODUCTS *2 credits* Second semester

This course in food products gives a knowledge of the source, use, and production of the various foodstuffs. Canning-factory and packing-house industries are considered. Two one-hour periods a week.

5 DIETETICS *4 credits* First semester

This course includes the study of food composition and metabolism; diets as influenced by age, occupation, habits of life, climate, and season; balanced rations, and computation of caloric values. Two two-hour periods a week. Prerequisites: Chemistry 18, H.Ec. 3, Biology 7, and Bacteriology 1-2.

6 HOME NURSING AND INVALID COOKERY *2 credits* Second semester

This course includes the care and feeding of the invalid under home conditions and the administration of medicines under the physician's direction; the use and care of useful nursing devices; the preparation of the invalid tray. One lecture and one laboratory period a week. Prerequisites: H. Ec. 5, Biol. 7, Bacteriology 1-2.

7-8 COOKING AND HOUSE MANAGEMENT *2 credits* Each semester

For students in other courses, this general course is offered as

an elective. This will include briefly the preparation and serving of meals, the care and management of the house, marketing, etc. Two three-hour periods a week.

9-10 METHODS OF TEACHING HOME ECONOMICS
3 credits Each semester

The method of recitation is studied and applied to the teaching of domestic science and art in secondary schools. Also a typical course of study is made after a careful study of the relation of Home Economics to other subjects in the curriculum. The subject of equipment is studied in detail. Practice teaching is required. Two lectures and one laboratory period a week. This course must be elected by those who wish a recommendation to teach Home Economics.

Clothing

101-102 ELEMENTARY SEWING *2 credits* Each semester

Plain sewing as applied to useful household articles; mending; use and care of the sewing machine; making of plain undergarments; and a plain shirt-waist suit. Development of personal taste and judgment in buying. Two two-hour periods a week.

104 ADVANCED SEWING *2 credits* Second semester

Advanced hand and machine sewing. Making of trimmed princess slip and summer dress of thin cotton material. Two two-hour periods a week. Prerequisites: course 101-102.

106 DOMESTIC ART DESIGN *1 credit* Second semester

Freehand drawing and general design as applied to house furnishings and wearing apparel. The general development of good taste is the aim of the course. One three-hour period a week.

107 COSTUME AND MILLINERY DESIGN
2 credits First semester

A study of color, line, and proportion as applied to the various types of figures. Actual materials are used to teach textile and color combinations, and water colors for making original designs. A simple drafting system is used. Two two-hour periods a week.

108 DRESSMAKING *2 credits* Second semester

Making of a heavy woolen skirt and a gown of some rich material. Two three-hour periods a week.

109 ART NEEDLEWORK *2 credits* First semester

Hemstitching, embroidery, and fine hand sewing as applied to household articles. Two two-hour periods a week.

110 HAND WORK *2 credits* Second semester

A study of heavy embroidery, weaving, basketry, and caning This course is planned especially for those desiring to teach. Two two-hour periods a week.

112 MILLINERY *2 credits* Second semester

Fall and spring millinery: making frames and covering them; making rosettes, bows, flowers, etc. Trimming hats and renovating old hats. Two two-hour periods a week. Prerequisites: courses 101 and 107.

Shelter

201 HOUSE MANAGEMENT AND SANITATION *2 credits* First semester

Organization of the household; the hygiene of the home; the division of the income; household accounts and business points; care and use of modern conveniences. Two lecture periods a week. Prerequisites: Bacteriology 1-2, and Chemistry 1-2, 10.

203-204 HOUSE CONSTRUCTION AND DECORATION *2 credits* Each semester

Location of house; study of architectural plans; terms used by architects; building materials; the making of original plans; lectures on the theory of color and design as applied to interior decoration; types of furniture, rugs, etc. Two three-hour periods a week.

Suggested Electives

English courses
History of Education
Educational Psychology
School Administration
School Management
Methods of Teaching Home Economics
Hand Work

Art Needlework
History
Sociology
Landscape Gardening
Languages
Music
Cooking and House Management. (Open to students in B.A. and B.S. courses.)
Domestic Dairying.

All prospective teachers should elect sixteen credits in Education as follows: History of Education, 3-6 credits; Educational Psychology, 3 credits; Theory and Practice, 2-4 credits; Methods of Teaching Home Economics, 6 credits.

PHYSICAL EDUCATION

Mr. VAN DER VEER, Director of the Gymnasium
Miss STEPHENS, Director of Women

The department of physical training endeavors to meet the needs of the students in four ways: First, to give each student a thorough physical examination and to advise in matters of well-being; second, to offer a means of systematic exercise and body building; and third, to offer instruction suitable for teachers who may desire to carry on the work in the graded schools, in the high schools, or in the public play-grounds.

Provision is made for the study and practice of the hygiene of exercise in the classes organized for that purpose in the Gymnasium. These classes are intended to check and correct abnormal tendencies and to promote the general health of the students.

The Gymnasium is unusually well equipped for this work. All students have access to the classes.

Courses for Women

Work in this department is required of Freshmen and Sophomores. Juniors and Seniors are encouraged to continue by receiving credits toward graduation for the courses elected. Those desiring a Specialist's State Teacher's Certificate are required to take all the courses.

1-2 ELEMENTARY COURSE *1 credit* Each semester

Two hours per week. The work of this course is arranged

with reference to the needs of the individual student as indicated by the physical examination and study of personal tendencies. It includes free exercises with and without hand apparatus, social and folk dancing, gymnastic games, games of skill. Required of Freshmen.

3-4 ADVANCED COURSE *1 credit* Each semester

Two hours per week. This is a continuation of 1-2, the work being of an intermediate and advanced character. The course includes instruction in gymnastics, competitive games, athletic sports, field and track athletics, elementary classic dancing. Required of Sophomores.

5-6 PLAYGROUND SUPERVISION *1 credit* Each semester

One hour per week. Lectures and practical work. In addition to the technical knowledge and skill required by the director of a playground, this course is designed to give a broad view of the other influences at work in this field and to show the possibilities of play as a social force in the community.

7-8 ADVANCED CLASSIC DANCING AND PANTOMIME *½ credit* Each semester

One hour per week.

9 PERSONAL HYGIENE *1 credit* First semester

One hour per week. Lectures, collateral reading, and reports. This course considers the human body as an organic machine, and the aim of personal hygiene to be the provision of the most efficient body mechanism for the life needs of the individual.

10 SCHOOL HYGIENE *1 credit* Second semester

One hour per week. Lectures, collateral reading, and reports. This course embraces a consideration of the physical organization of the child, school environment, the conditions favorable to health, and methods of health instruction suitable to different grades.

Courses for Men

1-2 INTRODUCTORY COURSE *1 credit* Each semester

Three hours per week. Light apparatus work, including dumb-bells, Indian-clubs, bar-bells, and tactics.

3-4 ADVANCED WORK *1 credit* Each semester

Two hours per week. Light and heavy gymnastics, athletics, field sports, etc.

MILITARY SCIENCE AND TACTICS

Lieutenant FRANKLIN

Four hours of practical work and one hour of theoretical work are required of all able-bodied male students in the Sophomore, Freshman, First-Year Law, and First- and Second-Year School of Agriculture classes, and of special students, unless excused; optional for Seniors and Juniors, except that they may be required to take practical or theoretical work, for cause. Special registration does not exempt students from military instruction.

Absences or excuses from practical instruction and all offenses of a purely military nature, and those of which the military instructor may take cognizance, as bearing on the military discipline of the cadets, shall be dealt with by him in accordance with the regulations of the department, which regulations are made and promulgated by the military instructor, subject to the approval of the President of the University as executive.

Delinquencies in theoretical instruction not strictly military in their nature shall be dealt with in accordance with the standing rules of the Faculty.

Each cadet is required to provide himself with the prescribed uniform. This is similar to the blue uniform of the United States Army, with a black stripe on the trousers and as insignia on the cap a laurel wreath enclosing the letters "U.I." A tailor-made uniform costs about $20. Students on first entering the University will economize by deferring the purchase of new clothing, as the cadet uniform may be worn at all times.

Cadet officers are, in general, selected from the Junior class, and non-commissioned officers from the Sophomore and Freshman classes. Members of the Senior and Junior classes receive two credits a semester when serving as cadet officers.

A cadet band is maintained, which appears at dress parades, reviews, etc. Appointments are made to the band in accordance with merit.

Practical

Infantry drill regulations through the school of the battalion in close and extended order; ceremonies of guard-mounting, parade,

review, inspection, escort of the colors, target practice, first aid to the injured, guard duty, advance and rear guard, outposts, and signal drill.

Theoretical

1-2 REGULATIONS *1 credit* Each semester

Infantry drill regulations. Guard manual, firing regulations, and first aid to injured.

For Freshmen.

3-4 MILITARY SCIENCE *1 credit* Each semester

Review of drill; field service regulations. Lectures covering the essential principles and details of the subjects which a company officer of infantry, volunteers or militia, should know.

For Sophomores.

5 MINOR TACTICS *1 credit* First semester

Lectures on security and information.

Elective for Juniors.

6 FIELD ENGINEERING *1 credit* Second semester

Elective for Juniors.

7 MILITARY LAW *1 credit* First semester

Elective for Seniors.

8 INTERNATIONAL LAW *1 credit* Second semester

Elective for Seniors.

EQUIPMENT AND SUPPLIES Two hundred Krag-Jorgensen rifles, four 22-calibre gallery practice rifles, and a suitable amount of ammunition and target materials are ment owns three 3-inch field guns; one, a relic of the War of the Rebellion, was presented by the G. A. R. post of Moscow.

ANNUAL ENCAMPMENT The above courses are supplemented by an annual encampment during which the instruction is entirely military and practical, and the cadets are furnished by the United States Government. The military depart- put through all the duties of camp life. They conduct their own commissary and quartermaster departments, perform the duties of sentinels, patrols, etc., and are given all the drills and ceremonies prescribed in the two years' course.

SPECIAL MENTION TO WASHINGTON The cadets in the graduating class who have shown special aptitude for military service are reported to the War Department at Washington, where their names are recorded in the Military Secretary's office. In making appointments to the Regular and Volunteer Army from civil life, preference is given to those who have their names so recorded.

BATTALION ORGANIZATION, NOVEMBER 1, 1912

Commandant

1st Lieutenant JOHN FRANCIS FRANKLIN, 7th U. S. Infantry

Cadet Commissioned Staff

L. T. Jessup.....Major Commanding Battalion
H. J. Adams.....1st Lieutenant and Battalion Adjutant
H. S. Youngs.....
.....Captain and Battalion Quartermaster and Commissary

Cadet Non-Commissioned Staff

F. W. Theriault.....Sergeant Major
Color Sergeant
Color Sergeant

Band

Mr. E. J. Carey.....Chief Musician and Leader

BAND SERGEANT

Cadet C. E. Melugin

Company A

OFFICERS

S. L. Denning.....Cadet Captain
A. R. Anderson.....Cadet 1st Lieutenant
F. J. Babcock.....Cadet 2nd Lieutenant

NON-COMMISSIONED OFFICERS

A. L. Johnson.....Cadet 1st Sergeant
H. H. Beier.....Cadet Sergeant
C. M. Eklof.....Cadet Sergeant
P. C. Mitchell.....Cadet Sergeant
C. E. Harris.....Cadet Sergeant
M. Anderson.....Cadet Corporal
H. Hughart.....Cadet Corporal
J. R. Mitchell.....Cadet Corporal
P. I. Peterson.....Cadet Corporal

Company B

OFFICERS

F. O. Carlson.....Cadet Captain
L. F. Stone.....Cadet 1st Lieutenant
F. S. Gregory.....Cadet 2nd Lieutenant

NON-COMMISSIONED OFFICERS

A. M. Christenson.....Cadet 1st Sergeant
H. E. Lattig.....Cadet Sergeant
L. M. Rowell.....Cadet Sergeant
E. J. Coram.....Cadet Sergeant
H. C. Nuffer.....Cadet Sergeant
J. H. McEvers.....Cadet Sergeant
D. W. Albert.....Cadet Corporal
E. Hawley.....Cadet Corporal
F. H. Lafrenz.....Cadet Corporal
P. G. Ostroot.....Cadet Corporal

Company C

OFFICERS

H. S. Youngs.....Cadet Captain
R. O. Burns.....Cadet 1st Lieutenant
H. W. Holaday.....Cadet 2nd Lieutenant

NON-COMMISSIONED OFFICERS

H. L. Booth.....Cadet 1st Sergeant
A. F. Kinnison.....Cadet Sergeant
C. H. Lingenfelter.....Cadet Sergeant
W. Waters.....Cadet Sergeant
J. F. Krom.....Cadet Sergeant
F. H. Meyer.....Cadet Corporal
J. P. McCroskey.....Cadet Corporal
C. J. Johnson.....Cadet Corporal
F. F. Crandall.....Cadet Corporal

II. COLLEGE OF AGRICULTURE

FACULTY

WILLIAM LEVI CARLYLE, M.S., DEAN, *and Director of Experiment Station*

WALTER HERBERT OLIN, M.S., *Director of Agricultural Extension*

J. SHIRLEY JONES, B.S., *Professor of Agricultural Chemistry*

CHARLES HOUSTON SHATTUCK, PH.D., *Professor of Forestry*

JOHN FREDERICK NICHOLSON, M.S., *Professor of Bacteriology*

WILLIAM HALE WICKS, M.S.(AGR.), *Professor of Horticulture*

EDWARD JOHN IDDINGS, B.S.(AGR.), *Professor of Animal Husbandry*

CHARLES EDWARD TEMPLE, M.A., *Professor of Botany*

EVERETT WALTER HAMILTON, B.S.A., *Professor of Agricultural Engineering*

EUSTACE THURMAN BAKER, D.V.M., *Professor of Veterinary Science*

PETER POWELL PETERSON, PH.D., *Professor of Soils*

FRANK LESLIE KENNARD, B.S., *Associate Professor of Field Crops and Farm Management*

CLARENCE CORNELIUS VINCENT, M.S., *Associate Professor of Horticulture*

GUSTAV EDWARD FREVERT, B.S.A., *Assistant Professor of Dairy Manufactures*

ELMER VERNE ELLINGTON, B.S.(AGR.), *Assistant Professor of Dairy Production*

HARRY PROCTOR FISHBURN, M.A., *Assistant Professor of Agricultural Chemistry*

CHARLES WILLIAM COLVER, M.S., *Assistant Professor of Agricultural Chemistry*

WINIFRED RULISON WRIGHT, B.S., *Assistant Professor of Bacteriology*

IRWIN WYCLIFFE COOK, M.S.F., *Assistant Professor of Forestry*

CLIFFORD LESLIE MACARTHUR, M.S., *Instructor in Bacteriology*

ORLO ASHLEY PRATT, B.S., *Plant Pathologist*

JOHN CALVIN KINZER, B.S.(AGR.), *Instructor in Animal Husbandry*
CLARENCE SINCLAIR EDMUNDSON, B.S.,(AGR.), *Principal of School of Practical Agriculture*
IRWIN JOHN BIBBY, B.S.A., *Teaching Fellow in Dairy Manufactures*
CLAUDE JACQUES HAYDEN, B.S., *Teaching Fellow in Horticulture*
PREN MOORE, *Superintendent of the University Farm*

ADDITIONAL INSTRUCTORS

JOHN MERTON ALDRICH, PH.D., *Professor of Biology*
JAY GLOVER ELDRIDGE, PH.D., *Professor of the German Language and Literature*
CHARLES NEWTON LITTLE, PH.D., *Professor of Civil Enginering*
WILLIAM SANDS MORLEY, SC.D., *Professor of Mathematics*
CARL LEOPOLD VON ENDE, PH.D., *Professor of Chemistry*
OTIS EDDY MCCUTCHEON, B.A., *Lecturer on Irrigation Law*
GUSTUS LUDWIG LARSON, B.S.(E.E.), *Professor of Mechanical Engineering*
JOHN FRANCIS FRANKLIN, 1st. Lieut., U. S. A., *Professor of Military Science and Tactics*
CHARLES ARTHUR STEWART, PH.D., *Associate Professor of Geology and Mineralogy*
CHARLES VAN DER VEER, *Director of the Gymnasium*
*CLARENCE CLYDE TULL, M.A., *Associate Professor of English Language*
DAVID BERNARD STEINMAN, C.E., PH.D., *Associate Professor of Civil Engineering*
JOHN ANTON KOSTALEK, PH.D., *Assistant Professor of Chemistry*
MRS. CAROLINE CHRISTINE ISAACSON, B.A., *Assistant Professor of German*
BENJAMIN HARRISON LEHMAN, B.A., *Assistant Professor of English*
HORACE ASA HOLADAY, B.A., *Instructor in Chemistry*
†DEWITT CLINTON GARDNER, *Instructor in Forge Work*
GEORGE HALL, *Instructor in Machine Shop Practice and Wood Working*

*On leave of absence, 1912-13.
†Died, December 27, 1912.

ADMISSION For requirements for admission to all courses in the College of Agriculture, see page 46, and for further details pages 44-56. The requirements for admission to the School of Practical Agriculture are stated under that section, below.

Common Freshman and Sophomore Years

(Except Forestry)

Students in all four-year courses in the College of Agriculture except Forestry take the same work in the Freshman and Sophomore years.

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 1. Composition and Rhet.	2	Eng. 2. Composition and Rhet..	2
*Ger. 3. Intermediate German..	4	*Ger. 4. Intermediate German..	4
Chem. 1. General Chemistry..	4	Chem. 2. General Chemistry..	4
Bot. 1. General Botany.....	3	Bot. 2. General Botany.....	3
Agron. 1. Field Crops and Grain Judging.....	4	An. Hus. 2. Market Types Live Stock	3
C. E. 1. Engineering Drafting..	1	Dairy Pro. 2. Milk Production	3
Shop 1. Woodworking.....	1	Mil. 2. Regulations.....	1
Mil. 1. Regulations.....	1		
Total	20	Total	20

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Chem. 3. Qualitative Analysis..	3	Chem. 4. Quantitative Analysis	3
Biol. 3. General Zoology.....	4	Shop 4. Forge Work.....	1
Bac. 1. General Bacteriology..	4	Ag. Eng. 2. Farm Machinery..	2
For. 1. General Forestry.....	2	An. Hus. 4. Breed Types.....	3
Hort. 1. Orchard and Garden Craft	2	Soils 2. Soil Fertility.....	5
Vet. 1. Anatomy.....	3	Dairy Man. 2. Farm Dairying..	3
Mil. 3. Military Science.....	1	Hort. 2. Orchard and Garden Craft	2
		Mil. 4. Military Science.....	1
Total	19	Total	20

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Agriculture, B.S.(Agr.), the student must, in addition to completing the regular courses of study prescribed by the department in which his major lies, present evidence of having spent at least one summer after his first year in residence at the University in practical farm work on an approved farm. This requirement will take effect with the class of 1915.

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*Those who present no German for entrance take Ger. 1 and 2; those who have had one year of high-school German take Ger. A-1 and A-2.

COURSE IN AGRONOMY

To obtain the recommendation of the Faculty for degree of Bachelor of Science in Agriculture, B.S.(Agr.), with major in Agronomy, a student must complete the following courses in addition to the common Freshman and Sophomore years outlined on page 131.

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Ag. Eng. 3. Farm Motors	3	Ag. Chem. 2. Gen. Ag. Chem.	3
Agron. 3. General Farm Man.	3	Agron. 2. Forage Crops	3
Bot. 3. Plant Anatomy	3	Agron. 4. Plant Breeding	3
Soils 3. Soil Physics	3	Ag. Eng. 4. Irrigation Practice	3
Vet. 5. Veterinary Sanitation	1	Bot. 4. Plant Physiology	3
Geol. 1. General Geology	3	Soils 4. Soil Management	2
Electives	3	Electives	2
Total	19	Total	19

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Ag. Eng. 5. Farm Drainage	2	Ag. Eng. 6. Farm Structures	3
Bac. 9. Soil Bacteriology	3	Bot. 10. Plant Diseases	3
Dairy Pro. 1. Dairy Farm Econ.	3	*Agron. 8. or Soils 6. Thesis	2
Soils 3. Soil Chemistry	3	Biol. 10. General Entomology	4
*Agron 7. or Soils 5. Thesis	2	Agron. 10. Seminar	1
Agron. 9. Seminar	1	Electives	6
Electives	5	Total	19
Total	19	Total credits required for graduation	155

*Students majoring in Soils take Soils 5-6, those majoring in Agronomy take Agron. 7-8.

COURSE IN ANIMAL HUSBANDRY

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Agriculture, B.S.(Agr.), with major in Animal Husbandry, a student must complete the following courses in addition to the common Freshman and Sophomore years outlined on page 131.

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Ag. Eng. 3. Farm Motors	2	Ag. Chem. 2. General Ag. Chem.	3
Agron. 3. Farm Management	3	Ag. Chem. 2a. Quan. Ag. Anal.	2
An. Hus. 5. Live Stock Judging	2	Ag. Eng. 4. Irrigation Practice	3
An. Hus. 7. Animal Nutrition	3	Agron. 2. Forage Crops	3
Vet. 3. Materia Medica	2	Soils 4. Soil Management	2
Pol. Sci. 5. Elements of Econ.	2	Vet. 2. Comparative Physiology	3
Elective	5	Elective	3
Total	19	Total	19

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Ag. Eng. 5. Farm Drainage	2	Ag. Eng. 6. Farm Structures	3
An. Hus. 9. Advanced Live Stock Judging	2	An. Hus. 10. Animal Breeding	3
An. Hus. 15. Practicums	1	An. Hus. 12. Live Stock Man.	3
An. Hus. 17. Thesis	2	An. Hus. 14. History of Breeds	2
Bac. 3. Bac. of Animal Diseases	1	An. Hus. 16. Practicums	1
Dairy Pro. 1. Dairy Farm Man.	3	An. Hus. 18. Thesis	2
Vet. 7. Animal Diseases	2	Bac. 4. Bacteriology of Ani. Dis.	1
Vet. 9. Obstetrics	2	Vet. 8. Animal Diseases	2
Vet. 11. Clinics	1	Vet. 12. Clinics	1
Elective	3	Elective	1
Total	19	Total	19
		Total credits required	155

COURSE IN DAIRYING

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Agriculture, B.S.(Agr.), with major in Dairying, a student must complete the following courses in addition to the common Freshman and Sophomore years outlined on page 131.

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Ag. Eng. 7. Dairy Engineering	2	Ag. Chem. 2. Gen. Ag. Chem.	3
An. Hus. 7. Animal Nutrition..	3	Ag. Chem. 2a. Quantit. Anal.	2
Bact. 5. Dairy Bacteriology in its Relation to Public Health..	3	Ag. Eng. 4. Irrigation Practice	3
Dairy Man. 9. Ice Cream and Ices	1	Dairy Man. 4. Cheese Making..	3
Dairy Man. 15. Milk Testing and Milk Inspecting	3	Dairy Pro. 4. Dairy Herd Books	3
Dairy Pro. 1. Dairy Farm Econ.	3	Vet. 2. Comparative Physiology	3
Dairy Pro. 5. Judging Dairy Cat.	1	Electives	2
Pol. Sci. 5. Elements of Econ.	2	Total	19
Electives	5		
Total	19		

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Ag. Chem. 5. Dairy Chemistry	3	Ag. Eng. 6. Farm Structures..	3
Bac. 3. Bacteriology of Animal Diseases	1	An. Hus. 10. Animal Breeding..	3
Dairy Man. 3. Advanced Butter Making	3	An. Hus. 12. Live Stock Man.	3
Dairy Man. 5. Dairy Seminar..	1	Bac. 4. Bacteriology of Animal Diseases	1
Dairy Man. 11. Factory Management	3	Dairy Man. 8. Judg. Dairy Pro.	2
Dairy Man. 13. Thesis	2	Dairy Man. 12. Milk Technol.	1
Vet. 7. Animal Diseases	2	Dairy Man. 14. Thesis	2
Vet. 9. Veterinary Obstetrics...	2	Dairy Pro. 8. Dairy Seminar....	1
Electives	2	Vet. 8. Animal Diseases	2
Total	19	Electives	2
		Total	20
		Total credits required	156

COURSE IN FORESTRY

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Forestry B.S.(For.), a student must complete the following courses:

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 1. Comp. and Rhetoric	2	Eng. 2. Comp. and Rhetoric	2
Eng. 101. Hist. of Eng. Lit.	2	Eng. 102. Hist. of Eng. Lit.	2
Math. 1. College Algebra	4	Math. 2. Trigonometry	4
*Ger. 3. Intermediate German	4	*Ger. 4. Intermediate German	4
Chem. 1. General Chemistry	4	Chem. 2. General Chemistry	4
C. E. 1. Engineering Drafting	1	C. E. 2. Engineering Drafting	1
Shop 1. Wood Working	1	Shop 2. Wood Working	1
Mil. 1. Regulations	1	Mil. 2. Regulations	1
Total	19	Total	19

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 3. Composition	2	Eng. 4. Composition	2
Chem. 3. Qualitative Analysis	3	Chem. 4. Quantitative Analysis	3
Bot. 1. General Botany	3	Bot. 2. General Botany	3
For. 1. General Forestry	3	For. 2. General Forestry	4
For. 3. Dendrology	3	For. 4. Silviculture	3
C. E. 15. Surveying	4	C. E. 16. Surveying	4
Mil. 3. Military Science	1	Mil. 4. Military Science	1
Total	19	Total	20

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Biol. 4. General Zoology	4	Bot. 4. Plant Physiology	3
Bot. 3. Plant Anatomy	3	For. 6. Forest Mensuration	3
Geol. 5. General Geology	3	For. 12. Forest Law	2
For. 13. Forest Protection	3	For. 14. Forest Physiography	3
For. 9. Forest Engineering	3	For. 16. Forest Economics and History	3
For. 5. Forest Mensuration	3	Soils 2. Soil Fertility	5
E. E. 17. Telephone Construction	1		
Vet. 5. Sanitary Science	1	Total	19
Total	21		

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Bot. 7. Plant Diseases	4	Biol. 10a. Forest Entomology	4
For. 7. Forest Management	2	Bot. 6. Morphology and Classification of Seed Plants	4
For. 11. Lumbering	5	For. 8. Forest Management	3
For. 15. Timber Physics	4	For. 20. Thesis	4
For. 17. Forest Utilization	3	Electives	2
C. E. 21. Testing Laboratory	2		
Total	20	Total	17
		Total credits required	154

*Those who present no German for entrance take Ger. 1 and 2; those who have had one year of high-school German take Ger. A1 and A2.

COURSE IN HORTICULTURE

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Agriculture, B.S.(Agr.), with major in Horticulture, a student must complete the following courses in addition to the common Freshman and Sophomore years outlined on page 131.

EXCURSIONS

Two excursions are required of students in Horticulture during the year.

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Ag. Eng. 3. Farm Motors	2	Ag. Chem. 2. Gen. Ag. Chemistry	3
Bot. 3. Plant Anatomy	3	Ag. Eng. 4. Irrigation Practice	3
Geol. 1. General Geology	3	Biol. 10. General Entomology	4
Hort. 3. Practical Pomology	3	Bot. 4. Plant Physiology	3
Hort. 5. Small Fruit Culture	3	Hort. 4. Practical Pomology	3
Hort. 13. Systematic Pomology	2	Hort. 8. Vegetable Gardening	2
Electives	3	Soils 4. Soil Management	2
Total	19	Total	20

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Ag. Eng. 5. Farm Drainage	2	Agron. 4. Forage Crops	3
Biol. 11. Advanced Entomology	4	Biol. 12. Advanced Entomology	4
Dairy Pro. 1. Dairy Farm Econ.	3	Bot. 7. Plant Diseases	3
Hort. 9. Seminar	1	Hort. 6. Spraying	3
Hort. 11. Commercial Pomology	2	Hort. 10. Seminar	1
Hort. 15. Thesis	2	Hort. 14. Landscape Gardening	2
Vet. 5. Veterinary Sanitation	1	Hort. 16. Thesis	2
Electives	4	Electives	1
Total	19	Total	19

Total required for graduation 156

DEPARTMENTS OF INSTRUCTION

AGRICULTURAL CHEMISTRY

Professor JONES, Assistant Professor FISHBURN

Liberal room and laboratory facilities have been provided for those who take the laboratory courses offered in Agricultural Chemistry. In the department library may be found standard reference books, technical bulletins, and journals of pure and applied chemistry. In all courses the student will be required to make such use of reference books and original articles on the various phases of Agricultural Chemistry as occasion demands.

Quantitative Analysis, Chemistry 4, is prerequisite to all laboratory courses in Agricultural Chemistry.

2 GENERAL AGRICULTURAL CHEMISTRY

3 credits Second semester

A lecture course which deals with various applications of Chemistry to Agriculture. Particular attention is given to: (1) The chemical principles which underlie the growth and nutrition of farm crops, (2) The ultimate composition, economical importance, and utilization of farm crops, (3) The chemistry of certain manufactured products which find extensive use in farm practice.

Text used in part: Snyder's *Chemistry of Plant and Animal Life.*

Professor JONES

2a QUANTITATIVE AGRICULTURAL ANALYSIS

2 credits Second semester

This laboratory course supplements Course 2. The work will be varied to meet the requirements of the student in Agronomy, Animal Husbandry, Dairying, and Horticulture. The student in Animal Husbandry and Dairying will give particular attention to the analysis of forage plants and other stock foods, and to the interpretation of the analytical data secured. The student in Horticulture will give particular attention to the examination of insecticides and fungicides.

Texts used: *Bulletins of the Bureau of Chemistry, U. S. D. A.*

Assistant Professor FISHBURN

4 FOOD AND WATER ANALYSIS *3 credits* Second semester

This laboratory course, supplemented by lectures, is designed

to acquaint the student with the composition and properties of human foods, and the methods employed in sanitary water analysis with interpretation of analytical data. A discussion of the more common adulterants of food materials and methods of detecting them, is a prominent feature of this course.

Assistant Professor FISHBURN

5 CHEMISTRY OF DAIRY PRODUCTS

2 credits First semester

A laboratory course in the analysis of milk, butter, and cheese, and the detection of adulterants and preservatives sometimes used in dairy products. Designed to meet the needs of advanced students in dairying. Assistant Professor FISHBURN

DEPOSITS To insure reasonable care in the use of laboratory apparatus, a deposit of from three to five dollars per student will be required in all laboratory courses.

AGRICULTURAL ENGINEERING

Professor HAMILTON

2 FARM MACHINERY *2 credits* Second semester

Includes the elements of machines, the measurement and transmission of power, the development, construction, use, adjustment, and repair of farm machinery. One recitation and one laboratory period per week. Textbook: *Farm Machinery and Farm Motors* by Davidson and Chase.

3 FARM MOTORS *3 credits* First semester

Production of power for agricultural purposes. Includes the study of the horse as a motor, wind mills, gasoline and steam engines, and tractors. The aim of the course will be to train the students that they may become successful operators of the different farm motors. The work in gas engines will include the automobile. Two hours' recitation and one laboratory period per week. Text-book: *Farm Machinery and Farm Motors* by Davidson and Chase.

4 IRRIGATION PRACTICE *3 credits* Second semester

A practical course in irrigation, based on a knowledge of the nature of soils and the action of water upon them. Includes duty of water, construction of ditches, flumes, and laterals, leveling and preparing the ground, methods of applying and measuring water. Irrigation of special crops and their behavior

under irrigation. Students will be required to make a study of some of the best irrigation systems within easy reach of the University.

5 FARM DRAINAGE *2 credits* First semester

This course covers a general study of the principles and practice of draining lands. Special attention will be given the reclamation and improvement of swamp lands, swales, and mountain meadows, the control and removal of alkali from arid lands, control of rise of ground water in irrigated lands, and the reclamation of seeped lands.

6 FARM STRUCTURES *3 credits* Second semester

A course devoted to the study of the construction, lighting, ventilation, convenience, and cost of the different farm buildings, and practice in preparing plans, specifications, and estimates. The use of cement on the farm, concrete materials, mixtures, reenforcing, and construction of forms. One lecture and two laboratory periods per week.

AGRONOMY

Associate Professor KENNARD

1 CEREALS *4 credits* First semester

A study of the cereal crops. Their production and improvement, classification, culture, uses, harvesting, history, and geographical distribution. Judging of wheat, oats, barley, corn, potatoes, etc., together with methods of cleaning, grading, and general care of stored seeds. Two recitations and two laboratory periods per week.

2 FORAGE CROPS *3 credits* Second semester

This embraces a study of the principal forage and fiber crops, with particular attention given to those adapted to the various sections of the state. Required of Juniors in Agronomy. Three recitations per week.

3 GENERAL FARM MANAGEMENT *3 credits* First semester

The selection, laying out, and general management of farms, systems of farming, planning rotation schemes for these systems. Distribution of labor and market problems. Required of Juniors in Agronomy.

4 PLANT BREEDING *3 credits* Second semester

A study of the general principles of plant breeding, the evolution of plants under the hand of man. Methods followed by the plant breeder in the improvement of existing varieties and creation of new ones. Prerequisites: Bot. 1 and 2; Agron. 1.

Required of Juniors in Agronomy.

5-6 METHODS OF INVESTIGATION

3 credits Either semester

For graduate students. Opportunity is given along agronomy lines for advanced work. Studies of investigation work carried on in the state. Special work assigned upon consultation.

7-8 THESIS *2 credits* Each semester

All subjects for theses must be selected and filed with the head of the department by the first Monday in November preceding graduation, and the completed copy of the thesis must be filed with the librarian by five o'clock on the third Monday in May. Required for graduation in Agronomy.

9-10 SEMINAR *1 credit* Either semester

Students will be required to present papers upon recent research work in agronomy, the object being to keep the student thoroughly informed and up-to-date on all problems under investigation.

ANIMAL HUSBANDRY

Professor CARLYLE, Professor IDDINGS, Assistant Professor ELLINGTON, Mr. KINZER

2 MARKET TYPES OF LIVE STOCK

3 credits Second semester

A study of the various types of horses, cattle, sheep, and swine from a market and producer's standpoint. The classes and grades of animals recognized by the market are outlined in lectures, and in connection laboratory work is given in the scoring of individuals and judging of groups representing the more important market classes. Two lectures and one two-hour judging period per week. Required of Freshmen in Agriculture.

4 BREED TYPES OF LIVE STOCK *3 credits* Second semester

Includes a brief study of the early history, development, and

breed characteristics of the various improved breeds of domestic animals. Considerable time is given to practice work in judging representatives of the various breeds according to standards set by breed associations and by the show ring. One lecture and two two-hour judging periods per week. Required of Sophomores in Agriculture. Prerequisite: Animal Husbandry 2.

5 LIVE STOCK JUDGING *2 credits* First semester

A practical course aimed to train the student to careful work and proficiency in live stock judging. The major portion of the work is done by the method of comparative judging, using rings of from three to six animals for this purpose. Two two-hour judging periods per week. Required of Juniors in Animal Husbandry and Dairying. Prerequisites: Animal Husbandry 2 and 4.

7 ANIMAL NUTRITION *3 credits* First semester

A study of the composition and feeding value of the various grains, grasses, fodders, root crops, etc., following which the compounding of rations is fully explained and practice work in determining the nutritive value of a large number of rations is given. The principles and practice of feeding the different classes of live stock for growth, maintenance, and fattening is fully explained and discussed. Three recitation periods per week. Required of Juniors in Animal Husbandry and Dairying.

8 FEEDING PRACTICE *2 credits* Second semester

A continuation of the work given in 7, dealing especially with the results secured by the experiment stations and methods followed by most successful breeders and feeders. Students are required to obtain and summarize feeding data from all possible sources. Two recitation periods per week. Elective for Juniors in Animal Husbandry and Dairying. Prerequisite: Animal Husbandry 7.

9 ADVANCED LIVE STOCK JUDGING

2 credits First semester

A continuation of the work given in 6, especially planned for Senior students in Animal Husbandry. Methods of judging at fairs are considered and the student is prepared for judging in the show ring. So far as possible in this course excursions are made to live stock farms and shows within reach of the

University. Four hours' judging work per week. Required of Seniors in Animal Husbandry. Prerequisite: Animal Husbandry 5.

10 ANIMAL BREEDING *3 credits* Second semester

A critical study of the principles of breeding, including variation, heredity, correlation, atavism, etc. Attention is given to grading, inbreeding, cross breeding, and the practice of the most successful breeders is carefully studied and lessons drawn therefrom. Three recitation periods per week. Required of Seniors in Animal Husbandry and Dairying.

12 LIVE STOCK MANAGEMENT *3 credits* Second semester

Study of the housing, care, and management of the various classes of live stock in maintaining them for breeding purposes. Successful methods of managing stock farms and handling registered breeding herds are considered. Particular attention will be paid to those phases of animal production that most concern the farmers and stockmen of the Northwest. Three recitation periods per week. Required of Seniors in Animal Husbandry and Dairying.

14 HISTORY OF BREEDS *2 credits* Second semester

A study of the history and development of the leading pure bred strains of domestic animals. Considerable time is devoted to tabulation of pedigrees, to consideration of the influence of families, to practice in the use of herd books, and to study of the work of breed and advanced registry associations. One recitation and one two-hour laboratory period per week. Required of Seniors in Animal Husbandry.

15-16 PRACTICUMS *1 credit* Each semester

The practical feeding and management of horses, beef cattle, dairy cattle, sheep, and swine, is given in the barns, and each student is required to do the scheduled amount of this kind of work. Thorough drill is given in the grooming, feeding, fitting, and training for show and exhibition purposes of those animals. The aim of the course is to aid the student to become a thoroughly practical and expert stockman. Three hours' laboratory work per week. Required of Seniors in Animal Husbandry.

17-18 THESIS *2 credits* Each semester

Subjects for theses must be chosen and filed with the head

of the department on or before the first Monday in November preceding graduation, and typewritten copies must be filed with the librarian on or before the third Monday in May. Required for graduation in Animal Husbandry.

BACTERIOLOGY

Professor NICHOLSON, Assistant Professor WRIGHT, Mr. MCARTHUR

1 GENERAL BACTERIOLOGY *4 credits* First semester

A general survey of the entire field of bacteriology from the biological side. This course is prerequisite to special courses in the applied sciences, as veterinary medicine, sanitation, or agricultural and dairy bacteriology. Open to all students who are properly prepared in chemistry and general biology. Two recitations and four hours' laboratory work per week.

3-4 BACTERIOLOGY OF ANIMAL DISEASES

1 credit Each semester

Laboratory course designed to supplement the course in Animal Diseases given by the Veterinary Department. Methods of laboratory diagnosis and preparations of vaccines, bacterins, and sera will be taken up. Bac. 1 is prerequisite. Those taking Vet. 3 and 4 must take this course.

5 DAIRY BACTERIOLOGY AND ITS RELATION TO PUBLIC HEALTH

3 credits First semester

A study of the bacteria in their general relation to the dairy and public health. Course 1 is prerequisite. Three recitations per week.

6 BACTERIOLOGY OF SPECIAL DAIRY PROBLEMS

3 credits Second semester

Six hours' laboratory per week in practical problems arising in the dairy. Each student will be assigned a special problem after consultation with instructor. Bac. 1 and 5 are prerequisite.

7 BACTERIOLOGY IN THE HOME

2 credits First semester

A laboratory course. The bacteria will be studied in their relation to the home. The preservation of food, sanitation, fermentation, etc. Course 1 is prerequisite.

8 MEDICAL BACTERIOLOGY *3 credits* Second semester

A laboratory course of six hours per week, using Frost's

Laboratory Guide, Part II. Designed particularly for pre-medical men. Bac. 1 is prerequisite.

9 SOIL BACTERIOLOGY *3 credits* First semester

Six hours' laboratory work per week. A study of the bacteria of the soil and their relation to fertility, including a study of the bacteria of legumes and the nitrogen-fixing species. Course 1 is prerequisite. Lipman's *Manual* is used as a laboratory guide.

10 RURAL HYGIENE *2 credits* Second semester

Lectures and demonstrations along the lines of practical sanitation in the country. Non-technical, and open to all students. Text, Ogden's *Rural Hygiene.*

11 COMMUNICABLE DISEASES *1 credit* First semester

This course is non-technical and consists of one lecture a week on the subject of infectious diseases. Things that everyone should know. Open to all students. No prerequisites.

12-13 RESEARCH WORK IN BACTERIOLOGY Each semester

Opportunities are given to advanced students for research work along special bacteriological lines. Subjects are assigned upon consultation with instructor. Courses 1, 5, 6, 7, 8, or 9 are prerequisite. A reading knowledge of French and German is also necessary. Credits on consultation.

14-15 THESIS *2 credits* Each semester

BOTANY

Professor TEMPLE, Mr. PRATT

1-2 GENERAL BOTANY *3 credits* Each semester

This course begins with the study of the lowest forms of plants and progresses from the simpler to the more complex, covering the algae, fungi, and liverworts the first semester, and the mosses, ferns, and seed plants the second semester. In addition to the study of the morphology, histology, and reproduction of representative species, the underlying principles of plant nutrition, growth, development, and disease are studied. One lecture and two laboratory periods per week.

Lecture, Th. at 2:55; Lab. Sec. I., M. and F. 2:00-3:50; Lab. Sec. II., Tu. and Th., 1:00-2:50.

3 PLANT ANATOMY *3 credits* First semester

Training is given in this course in the technique for making permanent stained mounts of plant sections for microscopic study. A series of these mounts is made showing the structure of roots, stems, leaves and reproductive organs, including the development of the embryo in at least one seed plant. Special attention is given to the study of the origin, development and function of all the tissues in the higher plants. This is followed by a comparative study of the structure of conifers and hardwoods. One lecture and three laboratory periods per week.

4 PLANT PHYSIOLOGY *3 credits* Second semester

This course covers the various life processes of the seed plants such as the absorption and disposition of water, nutrient salts and gases; the manufacture of organic food materials and the digestion and the assimilation of these; respiration; growth; reproduction; heredity and variability; and the responses of the plant to various kinds of external stimuli, as light, heat, gravity, electricity and fertility of soil. The students will perform experiments in the greenhouse, laboratory, or field to demonstrate these life processes. Wherever possible the experiments will deal with practical agricultural problems. Two lectures and two laboratory periods per week. Prerequisites: Botany 1, 2, and 3.

5 GENERAL BOTANY *5 credits* First semester

This course consists of a general survey of the plant kingdom, with special emphasis placed on the nutrition, growth, reproduction, and classification of plants, together with a study of the fungous diseases which are of most economic importance in Idaho. This course is designed for those students taking the Teachers' Training Course in agriculture, but may be elected by others after consultation with the instructor in charge. Three lectures and two laboratory periods per week.

6 MORPHOLOGY AND CLASSIFICATION OF SEED PLANTS *4 credits* Second semester

The first part of the semester will be given to a study of the morphology of flowers, seeds, stems and leaves. The remainder of the semester will be given to the study of the principles and methods of classification. Field trips will be taken in order to learn the names of the plants in the vicinity

of Moscow. At least one trip will be made to Moscow Mountain. No prerequisites. Two lectures and two laboratory periods per week. Laboratory, Wednesday, 1:00-4:40. Lectures to be arranged.

8 ECOLOGY *4 credits* Second semester

The first half of the semester will be devoted to the study of the principles of plant ecology. Numerous plant sections will be used to study the adjustment of the structure of the plant to its habitat. The second half of the semester will be given to field work in which the principles of ecology will be applied to the vegetation about Moscow and Moscow Mountain. Prerequisite: Botany 6. Two lectures and two laboratory periods per week. Laboratory, W., 1:00-4:40. Lectures to be arranged. [This course will be given in 1913 and on alternate years.]

9 FUNGI *4 credits* First semester

This course is devoted to the classification of fungi and to the study of certain life histories. Special emphasis is placed upon those forms of economic importance. Opportunity is given to learn the identification of edible and non-edible fleshy forms, parasitic on cultivated plants. One lecture and three laboratory periods per week. Prerequisites: Botany 1 and 2.

10 PLANT DISEASES *4 credits* First semester

This course gives training along two lines: (1) the technique methods of attacking and studying plant diseases, including methods of sterilization, and of making pure cultures and culture media; (2) the most serious diseases of economic plants will be studied from the standpoint of identification and methods of control and prevention. Occasional field trips will be taken to study plant diseases in the vicinity of Moscow. Primarily for Seniors in agriculture, but may be elected by others after consultation with the instructor. Two lectures and two laboratory periods per week. Prerequisites: Botany 1 and 2.

12 ORGANIC EVOLUTION *2 credits* Second semester

This is a lecture course, giving a discussion of the facts as well as the theories of evolution. An immense amount of data and literature are available on the development of both plants and animals, and a number of lantern slides are used for

illustrative purposes. Opportunity will be given the students to enter the discussions, if they so desire, and to draw their own conclusions, after the pros and cons have been given. Two lectures a week and an occasional conference.

16 SEMINAR *2 credits* Second semester

This is intended for Seniors and Graduates who anticipate teaching Botany. One lecture and one conference a week, time to be arranged. Prerequisites: Botany 1 and 2.

17-18 THESIS Each semester

Students who have had considerable training in Botany may, after consultation with the instructor, elect a thesis in this department. For undergraduates, 2 to 4 credits; for graduates, 2, 3, 4 or 5 credits, according to the time required by the problems selected. Opportunity will be given to do research.

DAIRY MANUFACTURES

Assistant Professor FREVERT, Mr. BIBBY

1 FARM DAIRYING *3 credits* First semester

Required in the Sophomore year of all Agricultural courses. It includes a study of the composition of dairy products, separation and acidity of milk. The preparation of starters, ripening of cream, churning, and the packing of butter. Two recitations and one laboratory period.

3 ADVANCED BUTTER MAKING *3 credits* First semester

Required in the Senior year of the Dairy course, and elective in the first semester of the Senior year of all other Agricultural courses. This course includes a study of the modern methods of butter making with special references to factory conditions.

4 CHEESE MAKING *3 credits* Second semester

Required in the Senior year of the Dairy course. This course includes a study of the importance of the quality and composition of milk for the manufacture of the leading kind of cheese found on the American market.

5 DAIRY SEMINAR *1 credit* First semester

Required in the Senior year of the Dairy course. It consists of the work along dairy lines accomplished by the various Experiment Stations of this country.

8 JUDGING DAIRY PRODUCTS *2 credits* Second semester

Required in the Senior year of the Dairy course. Consists of a study of quality in dairy products, and the market requirements. It includes practice in the scoring of milk, cream, butter, cheese, and ice cream.

9 ICE CREAMS AND ICES *1 credit* First semester

Required in the Junior year of all Dairy students. This course is elective in the home economics course to those who have had Dairy Man. 16. The course consists in the study of the manufacture of ice creams and ices.

11 FACTORY MANAGEMENT *3 credits* First semester

Required in the Senior year of the Dairy course. Consists of study of location and construction of factories. A study of by-products, also lectures on general management of creameries. This course is to fit the student for creamery management.

12 MILK TECHNOLOGY *1 credit* Second semester

Required in the Senior year of the Dairy course. Lectures are given in the use of milk and the preparation of condensed, certified, modified, and hygienic milk, the manufacture of milk sugar and casein.

13-14 THESIS *2 credits* Each semester

15 MILK TESTING AND MILK INSPECTION *3 credits* First semester

Required in the Sophomore year of the Agricultural course. A study of the Babcock test for milk and cream. It includes work with various tests for moisture in butter, also a study of methods for detecting the more common preservatives and adulterations of dairy products. A study is made of the sanitary conditions of stables and dairy houses and their effect upon the production of clean milk.

16 DOMESTIC DAIRYING *2 credits* Second semester

This course is especially designed for the students of Home Economics, and is a prerequisite for Dairy Man. 9. The object of this course is to give the student some practical as well as scientific knowledge concerning the care and preparation of dairy products for food purposes. It includes lectures and laboratory work on the care of milk and cream in the home.

Some work is also given in the manufacture of butter and cheese.

DAIRY PRODUCTION

Assistant Professor ELLINGTON

1 DAIRY FARM ECONOMICS *3 credits* First semester

Study of the relation of dairy farming to the maintenance of soil fertility, intensive dairying, suitable crop rotation, soiling and other systems, dairy farm buildings, silos, and yards. Required in all courses in Senior year.

2 MILK PRODUCTION *3 credits* Second semester

This course covers the field of Dairy Husbandry in its relation to the producer rather than to the manufacturer. It consists of three lectures a week and one period judging dairy cattle. The lectures include leading breeds of dairy cattle, their characteristics and adaptation for dairy purposes; the selection, breeding, and building up of a dairy herd; selection of dairy sire; calf raising; proper care of dairy cattle under different conditions; use of silo; special problems of feeding for milk production; use of by-products from the dairy. The instruction in judging dairy cattle will be a study of the dairy type and of the characteristics of the various dairy herds. Required in Freshman year.

4 PURE-BRED HERDS *3 credits* Second semester

Study of the management of registered breeding herd; advanced registry systems and their influence; a study of the performance and breeding of the leading families of the various dairy herds. Feeding for records. Interpretation of pedigrees involving the tabulation and study of pedigrees of famous breeding animals. Required of Juniors in the Dairy course.

6 JUDGING DAIRY CATTLE *1 credit* Second semester

Consists of a study of the dairy types, characteristics, and types of various breeds, with special reference to preparing students for judging in this class of live stock. Comparative judging. Required of Juniors in the Dairy course.

7 DAIRY ENGINEERING *2 credits* First semester

A course devoted to a study of the principles, care, and operation of steam engines and boilers, including a brief study

of gas engines and refrigerating machinery. One recitation and one laboratory per week. Text-book: *Instruction for Traction and Stationary Engines, by Wm. Boss.*

8 SEMINAR *1 credit* Second semester

Special investigation and study along selected lines of dairy research and discussion of recent works. Required in the Dairy course, Senior year.

FORESTRY

Professor SHATTUCK, Mr. COOK

Major F. A. FENN and T. C. SPAULDING, M. S. F., Special Lecturers on Forest Management

For a complete statement of the courses in Forestry, see under the College of Letters and Sciences.

1 GENERAL FORESTRY *3 credits* First semester

A general course in forestry, dealing with the subject both in Europe and the United States. An introductory study of the subjects of the entire Forestry course is made as a preparatory training for the advanced work taken up later. Throughout this course, as in all others where field work may be introduced, special emphasis is placed on field practice. Required of Sophomore students in Forestry in the College of Agriculture. Two lectures and one laboratory or field period per week.

3 DENDROLOGY *2 credits* First semester

The object of this course is to enable the student to identify trees and shrubs in the field and laboratory. Various manuals, and methods of classification are available for laboratory and field work. An herbarium of flowers, fruits, seeds, and seedlings of trees is required of each student. This course is given very largely in the field. One lecture and one laboratory or field period per week.

HORTICULTURE

Professor WICKS, Associate Professor VINCENT, Mr. HAYDEN

1-2 ORCHARD AND GARDEN CRAFT

2 credits Each semester

A course dealing with the practical phases of fruit and vegetable growing. The student is expected to become familiar

with common practices and problems of orchard, garden, and greenhouse. Sophomore year, one recitation and one laboratory.

3-4 PRACTICAL POMOLOGY *3 credits* Each semester

A study of general and fundamental principles of fruit growing. The student is expected to become skillful in planting, pruning, thinning, harvesting, and packing. Practical problems in growing and handling commercial orchards are made a prominent feature of this course. Junior year, two lectures, one laboratory.

5 SMALL FRUIT CULTURE *3 credits* First semester

A study of small fruits, such as the strawberry, blackberry, raspberry, currant, gooseberry, dewberry, and Loganberry. Each is studied with reference to the following essential points: history, classification, propagation, planting, pruning, enemies, harvesting, and marketing. Junior year, three recitations.

6 SPRAYING *3 credits* Second semester

The work of this course covers the essential subjects relative to spraying. Special attention is given to history, materials, apparatus, and various methods employed in combating insects and fungi. Ample time is given for the student to become efficient in spraying by practice in the college orchard. Senior year, two recitations, one laboratory.

8 VEGETABLE GARDENING *2 credits* Second semester

This course consists of work in classification, culture, handling, and marketing of vegetables. Special attention is given to western conditions and markets. Lectures, recitations, reference reading, and laboratory work. Junior year, one recitation, one laboratory.

9-10 HORTICULTURAL SEMINAR *1 credit* Each semester

The study of advanced problems in horticulture. This work is specially arranged for Seniors and Graduate Students. The student is given practice in planning and conducting experiments in horticulture. Initiative ability and a true investigational spirit are given an opportunity for development in this work. Senior year.

11 COMMERCIAL POMOLOGY *2 credits* First semester

This course deals with problems of packing, marketing, transportation, storage, and storage-house construction, markets,

formation of fruit growers' associations, and handling by-products. Senior year, two recitations, one laboratory, and reference reading.

13 SYSTEMATIC POMOLOGY *2 credits* First semester

The description, nomenclature, and classification of our common fruits are carefully studied. An opportunity is given the student for practice in fruit judging and displaying. A large collection of fruits from Idaho and other states enables the student to become skilful in recognizing types. Junior year, one recitation, one laboratory period. Work consists of lectures, reference reading, and laboratory work. Senior year.

14 LANDSCAPE GARDENING *2 credits* Second semester

A study of the elementary principles underlying the use of plants for beautifying private and public grounds. Senior year, one recitation, one laboratory.

15-16 THESIS *2 credits* Each semester

SOILS

Professor PETERSON

1 SOIL PHYSICS *3 credits* First semester

An advanced course covering in detail the mechanics of soil moisture, temperature, tilth, etc. This course also includes mechanical analysis of soils. Two lectures and one laboratory period.

2 SOIL PHYSICS AND FERTILITY *5 credits* Second semester

An elementary course dealing with the physics and chemistry of the soil in relation to its fertility.

3 SOIL CHEMISTRY *3 credits* First semester

This is an advanced course in soil fertility. Careful analyses of different types of soils will be made. One lecture and two laboratory periods. Prerequisite: Quantitative Analysis.

4 SOIL MANAGEMENT *2 credits* Second semester

The management of the different types of soil. The rotation of crops and the use of fertilizers.

5 ORIGIN AND CLASSIFICATION OF SOILS *2 credits* First semester

This is primarily a lecture course.

6-7 THESIS *2 credits* Each semester

Theses in Soil Physics and Soil Chemistry. Lectures, assigned reading, and laboratory work.

9-11 RESEARCH IN SOIL CHEMISTRY AND FERTILITY

Credits to be arranged Each semester

Graduate students having sufficient knowledge of soils and chemistry will be assigned special problems.

11 ADVANCED SOIL CHEMISTRY

Credits to be arranged First semester

A course of lectures designed especially for those desiring to prepare themselves for station work.

VETERINARY SCIENCE

Professor BAKER

1 COMPARATIVE ANATOMY *3 credits* First semester

Required of all Sophomores in the College of Agriculture, except Forestry students. A systematic study of the bones, articulations, muscles, digestive, respiratory, genito-urinary, circulatory, and nervous systems, and the organs of special sense, is taken up. Three recitations per week.

2 COMPARATIVE PHYSIOLOGY *3 credits* Second semester

Required of Juniors in Animal Husbandry and Dairying. The various functions of the animal body, including a study of the protoplasm, cell and tissues, the blood and lymph, respiration and digestion, absorption and nutrition, generation and development, are considered. Prerequisite: Vet. 1. Three recitations per week.

3 MATERIA MEDICA *2 credits* First semester

Elective for Juniors. Common medicines used on the farm in the treatment of diseased live stock are studied. Poisons and their antidotes, administration of medicines, and the indications for the various biological products are also considered. Two recitations per week.

5 SANITARY SCIENCE *1 credit* First semester

Required of Juniors in Forestry. This course embraces the common diseases and accidents of live stock found in national forests, with modes of prevention. Clinics will be required and

will supplement in a practical manner the lecture work. One recitation per week.

7-8 ANIMAL DISEASES *2 credits* Each semester

Required of Seniors in Animal Husbandry and Dairying. Given with Bac. 3. The diseases of domestic animals, including their cause, symptoms, and management, are studied. Special attention is given hygiene and sanitation, emphasizing their importance in the prevention of disease. Given in connection with the clinics, it is designed to familiarize the student with veterinary science to an extent sufficient for his own needs as an agriculturist. Prerequisite: Vet. 2. Two hours:' recitation per week.

9 VETERINARY OBSTETRICS *2 credits* First semester

Required of Seniors in Animal Husbandry and Dairying. The common diseases and accidents of pregnancy and parturition in live stock will be considered from the standpoint of the stock breeder. Prerequisite: Vet. 2. Two hours' recitation per week.

10 FARM SURGERY *2 credits* Second semester

Elective for Seniors. Lectures will be supplemented by practical work in the clinics. Simple operations, with lameness and soundness in its relation to live stock judging discussed. Two hours' recitation per week.

11-12 CLINICS *1 credit* Each semester

Required of Seniors in Animal Husbandry and Dairying. Free clinics are given Saturday forenoons, ten to twelve. These give the student practical instruction in various surgical and dental operations, medical treatment and care of sick animals, under the direction of a veterinarian. The University herd gives an opportunity to become familiar with tuberculin testing, examination for soundness, and other practical work useful for the needs of the live stock owner and manager. Prerequisite: Vet. 2.

Note—It is not the object to turn out professional veterinarians, as this is impossible with the time, equipment, and teaching force allotted this department. Students desiring to graduate in veterinary medicine will find it advantageous to complete the agricultural course, and then enter the veterinary medical department of some well-equipped school.

This course is designed as an adjunct to the Agricultural department. Its aim is to instruct students in the care of live stock in health and disease. Particular attention is given to the prevention of disease.

The course is as practical as can be made. The student first studies the structure of the animal body and its normal functions. The abnormal is next taken up, including the non-infectious and contagious diseases, together with lameness and soundness.

SPECIAL TEACHERS' COURSE IN AGRICULTURE

PURPOSE To meet the demand for teachers with some training in agriculture for rural high schools and grammar schools, a special course of one year was inaugurated in September, 1912.

REQUIREMENTS FOR ADMISSION This course is open to the following: (a) teachers holding state certificates, (b) graduates of colleges and normal schools, and (c) undergraduate students of the University of Idaho.

COURSE OF STUDY A detailed description of the full course of study to be given will be issued in a special circular, which may be obtained upon application to the Dean of the College of Agriculture.

ONE-YEAR COMMERCIAL COURSE IN DAIRYING

To meet the growing demand of those who want to acquire a knowledge of practical dairy methods, as well as something of the scientific principles underlying the work, but do not feel able to take a longer course, the University offers a one-year course in Dairying.

The Dairy department is located on the first floor of Morrill Hall; it is fitted up with the most modern apparatus for butter and cheese making. All the leading makes of the centrifugal separator are shown in operation. The most improved cream ripener and

pasteurizer are in use. All laboratory work is so arranged that each student has individual charge of all the different processes through which the cream goes before it reaches the finished product. This enables the student to fully see and realize the importance of each process.

The keeping qualities and general palatability of dairy products depend largely on bacteriological control. During this course the student has opportunity to become familiar with bacteriology as related to dairying.

The work of this course covers a period of two semesters, beginning in September and ending in June.

The laboratory is modern and is well equipped with apparatus. A thorough training in the use of Babcock's milk and cream test, Mann's acid test, and the various rapid tests for moisture in butter is given.

The University Creamery is in operation throughout the year. It receives cream from many patrons in the vicinity of Moscow, in addition to the entire supply of milk and cream from the University farm.

The purpose of operating the University Creamery on a commercial scale is that it may offer the largest possible opportunity for practical work. It enables the student to gain a thorough knowledge of the practical as well as the theoretical phases of dairy work. Throughout the entire course, the student is required to perform a certain amount of work in the University Creamery.

There are no special scholastic requirements for entrance to this course in Dairying, but at least a common-school education will be a great advantage to the student, and even a college training would not be out of place.

COURSE OF INSTRUCTION

One-Year Dairy Course

First semester

Butter Making	3 credits
Milk Testing	2 credits
Breeds and Types of Dairy Animals	2 credits
Dairy Bacteriology	2 credits
Dairy Engineering	1 credit
Dairy Practice	4 credits
Bookkeeping	2 credits
Total	16 credits

Second semester

Butter Making	3 credits
Cheese Making	4 credits
Breeding and Feeding Dairy Animals	3 credits
Scoring Butter	1 credit
Factory Management	1 credit
Dairy Practice	4 credits
Ice Cream and Ices	1 credit
Dairy Engineering	1 credit
Bookkeeping	1 credit
Total	19 credits

SCHOOL OF PRACTICAL AGRICULTURE

The School of Practical Agriculture was organized in 1910 for the purpose of providing practical industrial and agricultural training for those young men who are unable to take or do not care for such courses as the ordinary high school offers. The School also meets the needs of those who have taken high-school or collegiate courses and desire such practical agricultural training as can be immediately applied to farm life.

METHOD OF INSTRUCTION

The students are trained in class room and laboratory to understand and put into operation the most progressive and profitable practices having

to do with modern agriculture, and are taught to make the farm a pleasant and profitable place to live. Such cultural subjects are required as will fit for active and useful citizenship.

It is not intended to turn out university men from the School of Practical Agriculture, nor is it intended to compete with or supplant the high schools. This course is drawing those young men who feel that they have not time or inclination for the high school and university and is giving them thorough training along the lines of industrial education. Experience has made it possible to plan these courses of study and to provide the teaching force and apparatus for carrying them on in such an intensely practical way that ambitious young men cannot afford to miss the advantages offered.

The practical nature of the work offered in the School is emphasized wherever possible. Text-books are required in some courses. Others are given in lectures. A great deal of work, however, consists of practical exercises aimed to make the student skilful in handling live stock, grains, grasses, fruits, farm machinery, etc.

FIELD FOR GRADUATES

This course is so planned that students will find it complete as a training for those intending to return to the farm on leaving school. It is also a valuable training for those who desire to become managers of live stock ranches, fruit orchards, and other agricultural enterprises. At the same time it offers an excellent general education comparable to that to be obtained in the usual high-school course, particularly for the young men of the state who desire to follow farming as a vocation.

ADMISSION

Students fifteen years of age or older are accepted. Students who have completed the eighth grade are admitted without examination. Those who have not passed the eighth grade are accepted after taking an examination in arithmetic, United States history, grammar, geography, and reading. Those who have credit for work in accredited high schools or colleges will be able to arrange for advanced standing.

If the student is not sure that he possesses sufficient qualifications for entrance, he should confer with the Dean of the College of Agriculture before coming to the School. Practical experience and maturity of years are desirable qualifications. All students should bring, upon their first entrance into the School, eighth-grade diplomas and any advanced credits they may possess.

ENTERING FOR SECOND TERM A number of classes are usually organized at the opening of the second term in January. Students wishing to enter at that time should make arrangements in advance by correspondence.

ARRIVAL IN MOSCOW As soon as possible after their arrival in Moscow, students should present themselves at the Dean's office in Morrill Hall. There they will be registered and help will be given them in securing rooms and board.

COST The expenses connected with the course are small when compared with the benefits to be derived. The students attend during the winter months when the work on the farm is not pressing, and have the busy summer season in which to follow their usual vocations. No tuition will be charged. The necessary expenses will be for room, board, books, laundry, railroad fares, charges for apparatus broken and materials used in some departments, and incidentals. With reasonable economy the cost of one year's attendance should not exceed $160. There are some opportunities for earning money to pay part of the necessary expenses. An energetic young man can more than earn enough during the six months summer vacation to pay his expenses during the six months spent in school.

CERTIFICATES A regular certificate of the School of Practical Agriculture will be awarded upon the completion of the full three-year course.

ENTRANCE TO FOUR-YEAR COURSES Students having completed in a satisfactory manner the work of the School of Practical Agriculture and wishing to enter the regular University course in Scientific Agriculture will be required to take an additional year or intermediate year of nine months before they will be permitted to enter the four-year courses.

DATE OF OPENING The School of Practical Agriculture opens for the registration of students Monday, October 13th, 1913. Classes will be started Tuesday, October 14th. The Practical School year will close Friday, March 13th, 1914.

SPECIAL CATALOG Those who are especially interested in this School should write the Dean of the College of Agriculture, Moscow, Idaho, for special catalog.

SCHOOL OF PRACTICAL AGRICULTURE

COURSE OF STUDY

Agriculture

FIRST YEAR

FIRST TERM	Hrs. per Wk. Lec.	Lab.	SECOND TERM	Hrs. per Wk. Lec.	Lab.
Composition and Rhetoric	3		Composition and Rhetoric	3	
Arithmetic	3		Algebra	3	
Plant Life	5	1	Soils	2	1
Forge		2	Grain and Field Crops	3	2
Breeds of Live Stock	4	1	Veterinary Physiology	3	
Veterinary Anatomy	3		Milk Production	3	
Bench		2	Military Science	1	4
Military Science	1	4	Physical Education		2
Physical Education		2			
Total Hours	19	12	Total Hours	18	9

SECOND YEAR

FIRST TERM	Hrs. per Wk. Lec.	Lab.	SECOND TERM	Hrs. per Wk. Lec.	Lab.
English	3		Parliamentary Practice	3	
Physics	3	1	Physics	3	1
Chemistry	4	1	Chemistry	4	1
Irrigation	2	2	Farm Dairying	2	1
Stock Judging		2	Feeds and Feeding	3	
Farm Machinery	2	2	Orcharding	2	2
Bacteriology	3		Drainage	2	2
Military Science	1	4	Military Science	1	4
Total Hours	18	12	Total Hours	20	11

THIRD YEAR

FIRST TERM	Hrs. per Wk. Lec.	Lab.	SECOND TERM	Hrs. per Wk. Lec.	Lab.
Entomology	3		Farm Bookkeeping		2
Stock Judging B		3	Clinics		1
Clinics		1	Forage Crops	3	
Animal Diseases	3		Animal Breeding	3	
Farm Motors	2	1	Live Stock Management		2
Vegetable Gardening	3	1	Forestry	3	2
Orcharding	2	2	Farm Structures	2	2
Veterinary Obstetrics	1		Steam Engines	2	1
Rural Hygiene	3		Veterinary Surgery	1	
Total Hours	17	8	Total Hours	14	10

Of the above subjects 140 credit-hours are required.

SCHOOL OF HOME SCIENCE

The course in the School of Home Science parallels that offered to men in Agriculture. It has been established in order to meet frequent requests for training for young women similar to that offered to young men. A three-year course has been arranged, which offers class and laboratory work in some of the more practical natural sciences and in such agricultural studies as appeal most strongly to women, together with training in home science or home management. This course will be conducted with the School of Practical Agriculture.

Young women who cannot see their way to high school and college are offered lecture and laboratory courses in all the departments of the household arts and the sciences underlying them. The training of economical and artistic home makers and instruction in those things that make for better and more pleasant homes are considered most important in the School of Home Science. There is full opportunity, however, to take other industrial and cultural lines of work that have a general educational value and fit for efficient citizenship.

The general opportunities and advantages offered the young women for the home parallel those for the young men in the School of Practical Agriculture as applied to the farm. For information as to qualifications for admission, date of opening, cost of attendance, and for other general information, read carefully the requirements for the School of Practical Agriculture, as listed elsewhere in this catalog. Admission for women is upon the same basis as that for men, except that the age limit for the former has been placed at eighteen years.

Those who are especially interested in this School should write to the Dean of the College of Agriculture, Moscow, Idaho, for a special catalog.

SCHOOL OF HOME SCIENCE

COURSE OF STUDY

FIRST YEAR

FIRST TERM	Hrs. per Wk. Lec.	Lab.	SECOND TERM	Hrs. per Wk. Lec.	Lab.
Composition and Rhetoric I	3		Composition and Rhetoric II	3	
Vegetable Gardening I	2		Poultry Raising	2	2
Arithmetic	3		Algebra	3	
Drawing I	2		Drawing II	2	
Sewing I		2	Sewing II		2
Cooking I	1	2	Cooking II	1	2
Plant Life	5	1			
Total Hours	16	5	Total Hours	11	6

SECOND YEAR

FIRST TERM	Hrs. per Wk. Lec.	Lab.	SECOND TERM	Hrs. per Wk. Lec.	Lab.
English I	3		Parliamentary Practice	3	
General Chemistry	4	1	General Chemistry	4	1
House Management	2	1	Orcharding	2	2
Laundering	1	2	Cooking IV		3
Cooking III		3	Costume and Millinery Design		2
Textiles	2		Farm Dairying	2	1
Bacteriology	3		Physical Education		2
Physical Education		2			
Total Hours	15	9	Total Hours	11	11

THIRD YEAR

FIRST TERM	Hrs. per Wk. Lec.	Lab.	SECOND TERM	Hrs. per Wk. Lec.	Lab.
Chemistry of Foods	3	2	Chemistry of Foods	3	2
Household Mechanics	2		Household Mechanics	2	
House Planning	2		House Decorations	2	
Vegetable Gardening	3	1	Forestry	2	2
Millinery	2	2	Home Nursing and Invalid Cooking	1	1
Household Accounts		2	Dressmaking		4
Dressmaking		4	Millinery		4
Rural Hygiene	3				
Entomology	3				
Total Hours	18	11	Total Hours	10	13

Of the above subjects 140 credit-hours are required.

III. AGRICULTURAL EXPERIMENT STATION

STATION STAFF

The experiment work of the Station is conducted under the supervision of the Station Staff, consisting of the following officers:

W. L. CARLYLE, DIRECTOR
J. S. JONES, *Chemist*
W. H. WICKS, *Horticulturist*
J. F. NICHOLSON, *Bacteriologist*
E. J. IDDINGS, *Animal Husbandman*
P. P. PETERSON, *Soils*
G. E. FREVERT, *Dairy Manufactures*
E. V. ELLINGTON, *Dairy Production*
F. L. KENNARD, *Field Crops*
C. C. VINCENT, *Associate Horticulturist*
H. P. FISHBURN, *Assistant Chemist*
C. W. COLVER, *Assistant Chemist*
J. C. KINZER, *Assistant Animal Husbandman*
W. R. WRIGHT, *Assistant Bacteriologist*
C. L. MCARTHUR, *Assistant Bacteriologist*
O. A. PRATT, *Assistant Plant Pathologist*
C. V. SCHRACK, *Gardener*
W. H. OLIN, *Director Agricultural Sub-Stations*
J. S. WELCH, *Superintendent, Gooding Sub-Station*
L. C. AICHER, *Superintendent, Aberdeen Sub-Station*
W. H. HEIDEMAN, *Superintendent, Clagstone Sub-Station*
RHODA HOBSON, *Executive Clerk and Stenographer*

OBJECTS The objects of the Experiment Station, established by a provision of an Act of Congress, approved March 2, 1887, commonly known as the Hatch Act, entitled, "An Act to Establish Agricultural Experiment Stations, in connection with colleges established in the several states, under the provisions of

an Act approved July 2, 1862, and of the acts supplementary thereto," are defined in the second section of the Act as follows:

"That it shall be the object and duty of said Experiment Stations to conduct original researches, or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued in a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical compositions of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of different kinds of foods for domestic animals; the scientific and economic questions in the production of butter and cheese; and such researches or experiments bearing directly on the agricultural industry in the United States, as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories."

This act has been supplemented by the Adams Act, approved March 16, 1906, and which is designed to enlarge the scope and usefulness of these stations.

STATION COUNCIL. To carry forward more effectually the lines of work contemplated in these acts, as indicated by the regulations of the Department of Agriculture of the Federal Government, the Board of Regents has created the Station Council, consisting of two members of the Board of Regents, the President of the University, the Director of the Station, the Animal Husbandman, the Horticulturist, the Agronomist, the Bacteriologist, the Dairymen, the Agricultural Chemist, and the Soil Technologist.

The Station Council directs and conducts experiments in the various lines of scientific investigation, and enlists in this work the active and cordial cooperation of the scientific departments of the University.

The Station, in its broad sense, comprises the officers of the University, the Station staff, the laboratories of the University, and such other equipment as may be required to prosecute the scientific investigations contemplated in the Hatch-Adams Act.

The Station, therefore, is a regularly constituted department

of the University, with a function peculiarly its own, that of scientific investigation along purely agricultural lines.

FARM The citizens of Moscow and Latah County donated ninety-four acres of land, conveniently located within half a mile of the University, for experimental purposes. The original donation has been enlarged by the purchase of two hundred and sixty-six acres additional for farm purposes, and forty-five acres for gardening and horticulture, making a total of four hundred and five acres.

The farm comprises almost every variety of soil and slope to be found in the Palouse country and is an ideal tract for scientific experimentation. Suitable barns and other buildings have been erected and an extended series of investigations instituted.

Portions of the campus are also used for horticultural work.

A small flour mill has been erected and equipped for experimental work. These facilities will aid very materially in the efficiency of the Station work, particularly in studying wheat improvement.

The Station is well equipped with the necessary teams, improved farm machinery, and other appurtenances for well-conducted farm and scientific operations.

THE AUXILIARY SUBSTATIONS The people of Caldwell, Idaho, have secured for the University three hundred and twenty acres of land near that city for the purpose of carrying on investigations in irrigation and dry land farming. Ex-Governor Frank Gooding, of Gooding, has donated and equipped with buildings and fences forty acres of land near Gooding, to be used as an experiment station for that section. Hon. Paul Clagstone, of Clagstone Junction, in Bonner County, has donated two hundred acres of land in a cut-over timber district, to be used as an experiment station for investigation in the northern or Panhandle district. The citizens of Aberdeen have recently donated eighty acres of land near that city for a demonstration farm in dry-farming methods. These are all fairly well equipped and are rapidly becoming of great practical service to the farmers in these particular districts. Each farm is in the immediate charge of a superintendent, who carries on the various investigations, many of which are in co-operation with the officers of the central station at Moscow. The Department of Agriculture at Washington is cooperating in the work at Gooding and at Aberdeen.

FARMERS' INSTITUTES AND UNIVERSITY EXTENSION

Farmers' institutes have been conducted during the past few years, and it is the purpose of the Board of Regents of the University to extend this work as rapidly as the means at their command will permit. Institute work is being generally recognized as an important means of spreading among the farming classes information gained by the investigations of the Experiment Station and the Agricultural College. At these meetings papers are read and topics discussed by men having a wide practical knowledge of the subjects in hand, as well as by those who have a thorough scientific training in the various branches of agriculture and horticulture.

Forty or fifty two-day institutes have been held each year. Instruction in Domestic Science has become a popular and very interesting feature. Other meetings of this kind will be held in various sections of the state, thus giving farmers and orchardists and their wives and daughters the benefit of scientific investigations as applied to agriculture and the home.

An office for this division in Southern Idaho has been established in the State House in Boise and a Director appointed who has direct charge of the Auxiliary Experiment Stations and the Extension Work.

It was expected that the State would provide funds for some much needed instruction and demonstration work in horticulture and irrigation in the orchards and on the farms of Southern Idaho, and while the Legislature passed an appropriation bill making ample provision for this work, it appears that in the final action these provisions were reduced to such an extent that only the Field Dairyman and the general Agriculturist in charge of the work could be provided.

MOVABLE SCHOOLS OF AGRICULTURE

The Movable Schools of Agriculture established in a small way last year were very much appreciated when held, and these will be continued the present year, but owing to the cut in appropriations above mentioned, these also will have to be limited in number and the extent greatly reduced from what was planned. Localities in Southern Idaho desiring any form of agricultural work for their section, should communicate with the Director of Southern Idaho University Extension Work, State House, Boise, Idaho.

FIELD MEN Several new lines of much needed work have recently been planned by the Regents of the University. Those of importance to the agricultural interests of the State include provisions for three field men to devote their entire time during the spring, summer, and autumn months to work among the farmers, fruit growers, and dairymen of the State. It will be the duty of these men to do everything in their power by means of correspondence and personal visitation where needed, through the conduct of small neighborhood meetings, farmers' institutes, and short courses in practical agriculture, to give advice and conduct demonstrations in their various lines of work. One of these field men will be an expert in horticulture and entomology. He will visit every part of the State and give council and advice to any person concerning horticultural conditions, such as suitable soils, climatic conditions, varieties of fruit, planting, spraying, smudging for frost, packing the fruit, securing markets, and the organization of fruit growers' associations, where all the fruit growers of a locality may co-operate in securing a uniform product and may dispose of it through one channel. A second man will be an expert dairyman and will devote his time in a similar manner to the dairy interests of the State, giving aid and advice in securing better dairy stock, growing suitable crops, improving the methods of feeding dairy cows, in the care of milk and cream, the organization of cooperative and individual dairy and creamery companies, and in every way helping to build up the dairy indutsry in the state. A third man will be an expert soil and crop man as well as an irrigationist, with especial reference to potato, sugar beet, and alfalfa growing, and the proper use and application of water in irrigation. In this particular field the potato-growing interests will be given especial attention, as will also the growing of alfalfa for seed.

IV. COLLEGE OF ENGINEERING

1. Civil Engineering
2. Mining Engineering
3. Electrical Engineering
4. Mechanical Engineering
5. Chemical Engineering

FACULTY

*James Alexander MacLean, Ph.D., LL.D., President
Charles Newton Little, Ph.D., Dean, *and Professor of Civil Engineering*

Richard Stanislaus McCaffery, E.M., *Professor of Mining and Metallurgy*
Gustus Ludwig Larson, B.S.(E.E.), *Professor of Mechanical Engineering*
Laurence Jay Corbett, B.S.(E.E.), *Professor of Electrical Engineering*
Carl Leopold von Ende, Ph.D., *Professor of Chemistry*
Douglas Clermont Livingston, B.S.(Mng.E.), *Associate Professor of Mining Engineering*
David Bernard Steinman, C.E., Ph.D., *Associate Professor of Civil Engineering*

ADDITIONAL INSTRUCTORS

Jay Glover Eldridge, Ph.D., *Professor of the German Language and Literature*

*Resigned February, 1913.

WILLIAM SANDS MORLEY, A.M., SC.D., *Professor of Mathematics*
HENRIETTA EVANGELINE MOORE, PH.D., *Professor of English Literature*
LAWRENCE EMERY GURNEY, PH.D., *Professor of Physics*
Lieut. JOHN FRANCIS FRANKLIN, U.S.A., *Professor of Military Science and Tactics*
†CLARENCE CLYDE TULL, M.A., *Associate Professor of the English Language*
CHARLES ARTHUR STEWART, PH.D., *Associate Professor (in charge) of Geology and Mineralogy*
JOHN ANTON KOSTALEK, PH.D., *Assistant Professor of Chemistry*
BENJAMIN HARRISON LEHMAN, B.A., *Assistant Professor of English*
‡DEWITT CLINTON GARDNER, *Instructor in Forge Work*
GEORGE HALL, *Instructor in Machine Shop Practice and Wood Working*
HORACE ASA HOLADAY, B.A., *Instructor in Chemistry*

EQUIPMENT

CIVIL ENGINEERING

The department has an adequate equipment of field instruments. It includes a triangulation theodolite; five transits—one Heller & Brightly, one C. L. Berger & Sons, and one Gurley with Burt's solar attachment, one Dietzgen, one Sterling; three wye levels; dumpy level; architect's level; two plane tables; aneroid barometer; compasses; sextant; Price current meter, by Gurley; artificial horizon and chronometer.

There is a well equipped cement laboratory with two Fairbanks cement testing machines; slate damp closet; Vicat needles, standard steaming apparatus; and the usual accessories for cement testing. There is also an Olsen standard abrasion machine.

The department has a 200,000-lb. capacity Olsen universal testing machine, completely equipped for tension and compression

†On leave of absence 1912-13.
‡Died December 27, 1912.

tests, and with beam extension for transverse tests of full-sized beams up to sixteen feet in length.

MINING ENGINEERING

ASSAY LABORATORY.—In the central portion of this building is the furnace room, 70 feet by 50 feet, which contains ten double-muffle furnaces, besides gasoline and melting furnaces. In the east end there is a chemical laboratory for wet assays, a lavatory and change-room, and a large store-room, in which there is a dark-room for photographic work. In the west end there is an office, a parting-room, and a balance room. Fine assay, analytical, and pulp balances, together with bullion-rolls, and other assay and chemical apparatus, make a very complete equipment.

METALLURGICAL BUILDING.—Along the east or high side of this building are ten bins for the reception of ore. Running in front of the bins is a belt conveyor to take ore to a gyratory crusher, after passing which it is elevated to the sampling room on the floor above, sampled automatically, and delivered by conveyor to bins over the receiving bins. From these bins the ore is taken for treatment by any of the processes used in the plant.

In this building there is installed a steam-driven air-compressor, equipped for complete testing of steam and air efficiencies and affording facilities for the operation and testing of the various types of air-operated mining machinery, rock drills, etc.

ORE DRESSING LABORATORY.—This laboratory contains gyratory and jaw crushers, rolls, automatic samplers, screens, trommels, etc. The ore dressing machinery consists of full-size standard type machines, including one three- and one four-compartment double Hartz jigs, a three-compartment single Hartz jig, a three-compartment Hodge jig, a Hancock jig, a Wilfley table, a Card table, a convex and concave round table and a Frue vanner, with classifiers, dewatering cones and centrifugal pumps for supplying these machines. For small scale work, laboratory classifiers, laboratory jigs, and laboratory slime tables are provided.

METALLURGICAL LABORATORY.—The equipment includes LeChatelier and Fery pyrometers, Mahler and Parr calorimeters, as well as other instruments. For dry metallurgy, roasting and smelting funaces fired with crude oil give exact temperature regulation and an oxidizing, reducing or neutral atmosphere, and for wet metal-

lurgy tanks, agitators, a ball mill, and a filter press give very complete facilities. The department also has Sauveur and Leitz apparatus for the microscopic and photomicroscopic study of metals, alloys, slags, etc.

ELECTRICAL ENGINEERING

ELECTRICAL ENGINEERING.—The equipment of the electrical laboratory includes direct current shunt, series, and compound generators and motors, an interpole variable speed motor, capable of being connected to a special alternating current generator, thus yielding current at a wide range of frequency, a special laboratory machine consisting of one stationary armature for use as an alternating current generator or as induction motor field, one squirrel cage rotor with starting compensator, one wound rotor with slip rings and external resistance and controller, and one wound rotor with included starting resistance, this machine thus being available as an alternating current generator of one, two, three, six, or twelve phases, a synchronous motor, frequency changer, or induction motor of any of the above numbers of phases, and of any of the three well known types, single phase induction motor, a number of watt-hour meters, several commercial transformers, etc., and a prony brake, rheostats, lamp banks, etc., for loading and regulating.

The instrument equipment of the deparment includes various commercial and scientific instruments, galvanometers, ammeters, voltmeters, wattmeters, tachometer, power factor meters, frequency indicators, a photometer, and standard lamps, condensers, induction coils, etc. In conjunction with the Physics department a standardizing laboratory is being developed for instrument calibration and special tests, with standard cells, standard resistance, Wheatstone and other bridges, potentiometer, dynamometers, etc., and the necessary loading, controlling, and regulating devices.

One room is devoted to telephone equipment, which consists of models of the latest types of receivers, transmitters, ringers, and calling apparatus. Here is also installed a magneto switchboard with two subscribers' stations. This enables the student to study at first hand the action of such switchboards and the handling of incoming and outgoing calls. This switchboard is connected to various telephones in other buildings on the campus.

Besides our own power the electrical laboratory is supplied

with three-phase current from the mains of the Idaho-Washington Light and Power Company.

The mechanical engineering laboratory is supplied with the necessary apparatus for engine and boiler testing, including indicators, thermometers, guages, steam calorimeters, coal calorimeters, planimeters, etc.

MECHANICAL ENGINEERING

The Mechanical and Electrical Engineering departments share quarters in the Engineering Building. The department library, which is also located in this building, contains all the leading texts and reference books on the various branches of mechanical engineering. The leading journals on this branch of engineering are also received and kept here.

The steam laboratory is well equipped with steam apparatus, including automatic cut-off and throttling engines for testing and valve setting; boilers; surface condenser; pumps; indicators; injectors; steam calorimeters; various calibrating appliances; gas and oil engine; fuel testing apparatus, including Mahler bomb and Parr calorimeters. A compression plant, including boiler, feed water heater, single stage compressor, and receiver is also valuable for this work.

There are also a wood shop, a forge shop, and a machine shop, all well equipped. The wood shop is equipped with a sufficient number of work benches and turning lathes, circular saw, planer, and band saw. The forge shop is equipped with down-draft forges, power blower, exhauster, and a generous supply of the various blacksmithing tools. The machine shop is equipped with the leading makes of modern engine lathes, shaper, drill press, milling machine, universal tool grinder, emery wheel grinder, and bench and vise work equipment.

CHEMICAL ENGINEERING

For the courses and equipment of the Chemistry Department, see pages 95-100; for the work required in the different lines of engineering, note the equipment of the various departments concerned.

ADMISSION The requirements for admission to the Freshman class of all engineering courses are:

English ..... 3 units
Social Science, including History ..... 1 unit
Physics ..... 1 unit
Mathematics ..... 3 units
a. Elementary Algebra ..... 1 unit
b. Advanced Algebra ..... ½ unit
c. Plane Geometry ..... 1 unit
d. Solid Geometry ..... ½ unit
One Foreign Language ..... 2 units
One additional academic unit ..... 1 unit
(English, Foreign Language, Social Science, Botany, Zoology, or Chemistry)
Elective ..... 4 units

Total 15

DEGREES Courses are offered in the College of Engineering leading to the degrees of Bachelor of Science in Civil Engineering, B.S.(C.E.); Bachelor of Science in Mining Engineering, B.S.(Mng.E.); Bachelor of Science in Electrical Engineering, B.S.(E.E.); Bachelor of Science in Mechanical Engineering, B.S.(Mech.E.); Bachelor of Science in Chemical Engineering, B.S.(Chem.E.); also the advanced degrees of Master of Science in the respective branches of engineering, M.S. (C.E.), etc.

REQUIREMENTS FOR GRADUATION

Common Freshman Year

Students in all four-year courses in the College of Engineering take the same work in the Freshman year, as follows:

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 1. Comp. and Rhet.	2	Eng. 2. Comp. and Rhet.	2
Eng. 101. History of Eng. Lit.	2	Eng. 102. History of Eng. Lit.	2
Math. 101. Engineering Math.	5	Math. 102. Engineering Math.	5
Phys. 101. Gen. Physics	4	Phys. 102. General Physics	4
Chem. 1. General Chemistry	4	Chem. 2. General Chemistry	4
C. E. 1. Engineering Drafting	1	C. E. 2. Engineering Drafting	1
Shop. 1. Wood Working	1	Shop. 1. Wood Working	1
Mil. 1. Regulations	1	Mil. 1. Regulations	1
Total	20	Total	20

B.S.(C.E.) COURSE

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Civil Engineering, B.S.(C.E.), the student must complete the following courses in addition to the common Freshman year outlined on page 173.

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 5. Composition	2	Eng. 6. Composition	2
Math. 103. Engineering Math.	5	Math. 104. Engineering Math.	5
C. E. 11. Structural Drafting	1	C. E. 12. Stereotomy	1
C. E. 13. Descriptive Geom.	2	C. E. 14. Descriptive Geom.	2
C. E. 15. Surveying	4	C. E. 16. Surveying	4
Geol. 5. General Geology	3	Shop 4. Bench and Forge Work	2
Mil. 3. Military Science	1	Mil. 4. Military Science	1
Electives	2	Electives	2
Total	20	Total	19

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Phys. 105. Analytic Mech	3	Phys. 106. Analytic Mech	3
C. E. 21. Testing Laboratory	2	C. E. 22. Testing Laboratory	2
C. E. 23. Graphic Statics	2	C. E. 24. Mech. of Engineering	4
C. E. 25. R. R. Engineering	4	C. E. 26. R. R. Engineering	2
C. E. 27. Roads and Pavements	2	C. E. 28. Hydraulics	3
M. E. 3. Practical Thermodynamics	3	M. E. 4. Practical Thermodynamics	2
Electives	2	Electives	1
Total	18	Total	17

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Mng. 5. Earth and Rock Excavation	2	Mng. 6. Metallurgy of Iron and Steel	1
C. E. 31. Reinforced Concrete	2	C. E. 34. Steel Frame Design	1
C. E. 33. Roof Design	2	C. E. 36. Railroad Economics	2
C. E. 37. Sewers and Sewerage	2	C. E. 38. Irrigation	4
C. E. 41. Masonry and Foundations	3	C. E. 42. Arch Design	1
C. E. 43. Framed Structures	4	C. E. 48. Contracts and Specif.	2
Electives	3	C. E. 50. Thesis	4
Total	18	Electives	3
		Total	18
		Total credits required	150

B.S. (Mng.E.) COURSE

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Mining Engineering, B.S.(Mng.E.), a student must complete the following courses in addition to the common Freshman year outlined on page 173.

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 5. Composition	2	Eng. 6. Composition	2
Math. 103. Engineering Math.	5	Math. 104. Engineering Math.	5
Chem. 3. Qualitative Analysis	4	Chem. 4. Quantitative Analysis	4
Geol. 3. Crystallography and Blow Pipe Analysis	2	Geol. 4. Det. Mineralogy	2
C. E. 13. Descriptive Geom.	2	C. E. 14. Descriptive Geom	2
C. E. 15. Surveying	4	C. E. 16. Surveying	4
Mil. 3. Military Science	1	Mil. 4. Military Science	1
Total	20	Total	20

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Phys. 105. Analytic Mech	3	Phys. 106. Analytic Mech	3
Chem. 7. Adv. Quan. Analysis	3	M. E. 4. Practical Thermodynamics	2
Geol. 1. General Geology	3	E. E. 2. Alt. Cur. Mach	2
M. E. 3. Practical Thermodynamics	3	C. E. 24. Mech. of Engineering	4
E. E. 1. Direct Cur. Mach	2	C. E. 28. Hydraulics	3
C. E. 23. Graphical Statics	2	Mng. 2. Assaying	2
Mng. 1. Assaying	2	Mng. 4. Ore Dressing	3
Mng. 5. Excavation	2	Total	19
Total	20		

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Geol. 9. Economic Geology	2	Geol. 10. Economic Geology	3
Geol. 11. El. Petrography	2	Geol. 12. Geol. Investigation	2
Mng. 3. Thermo-Chemistry and Combustion	2	Mng. 6. Metallurgy of Iron and Steel	1
Mng. 7. Mining Methods	3	Mng. 8. Mining Machinery	3
Mng. 9. Mining Economics	2	Mng. 12. Metallurgy of Gold and Silver	2
Mng. 11. Metallurgy of Copper and Lead	2	Mng. 16. Underground Sur.	2
Mng. 13. Metallurgy Laboratory	3	Mng. 18. Mine Accounts	2
Mng. 15. Ore-Dressing Lab.	2	Mng. 20. Mine Plant Design	2
Total	18	Mng. 24. Thesis	2
		Total	19

Total credits required.....156

B.S.(E.E.) COURSE

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Electrical Engineering, B.S.(E.E.), the student must complete the following courses in addition to the common Freshman year outlined on page 173.

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 5. Composition	2	Eng. 6. Composition	2
Math. 103. Engineering Mathematics	5	Math. 104. Engineering Mathematics	5
M. D. 1. Mechanical Drawing	2	M. D. 2. Machine Design	2
C. E. 13. Descriptive Geometry	2	M. D. 4. Elements of Mechanics	2
C. E. 15. Surveying	4	Phys. 4. Heat, Electro-Mag.	3
M. E. 11. Elementary Mechanics	2	Shop. 4. Bench or Forge Work	2
Shop. 3. Pattern Making	1	Shop. 6. Machine Work in Iron	2
Mil. 3. Military Science	1	Mil. 4. Military Science	1
Total	19	Total	19

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Phys. 105. Analytic Mechanics	3	Phys. 106. Analytic Mechanics	3
Phys. 7. Electrical Measurements	3	E. E. 2. Alt. Current Machinery	2
E. E. 1. Direct Current Mach.	2	E. E. 2a. Elect. Prob. and Design	2
E. E. 1a. Elect. Prob. and Design	2	E. E. 4. Elect. Eng. Lab.	1
E. E. 3. Elect. Eng. Lab.	1	C. E. 24. Mechanics of Eng.	4
C. E. 23. Graphic Statics	2	C. E. 28. Hydraulics	3
M. E. 3. Prac. Thermodynamics	3	M. E. 4. Prac. Thermodynamics	2
*Approved Electives	3		
Total	19	Total	17

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
E. E. 5. Electrical Engineering	4	E. E. 6. Electrical Engineering	4
E. E. 7. Elect. Eng. Lab.	2	E. E. 8. Elect. Eng. Lab.	2
E. E. 9. Hydro-Elect. Plants	3	E. E. 10. Elect. R. Engineering	2
E. E. 13. Seminar	2	E. E. 14. Seminar	2
M. E. 11. Steam Power Plants	3	E. E. 16. Thesis	4
M. E. 17. Hydraulic Machinery	2	C. E. 16. Contracts and Spec.	2
E. E. 11. Telephony	2	*Approved Electives	2
Total	18	Total	18
		Total credits required	150

*Approved electives are such subjects in higher mathematics, general geology, physics, chemistry, engineering or other courses as may be suited to the time and preparation of the student.

B.S. (Mech.E.) COURSE

To obtain the recommendation of the Faculty for the degree of Bachelor of Science of Mechanical Engineering, B.S.(Mech.E.), the student must complete the following courses in addition to the common Freshman year outlined on page 173.

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Eng. 5. Composition	2	Eng. 6. Composition	2
Math. 103. Engineering Math.	5	Math. 104. Engineering Math.	5
C. E. 13. Descriptive Geom.	2	Phys. 4. Heat, Electricity and Magnetism	3
M. E. 1. Elementary Mechanics	2	C. E. 14. Descriptive Geom.	2
M. D. 1. Mechanical Drawing	2	M. D. 2. Machine Design	2
Shop. 3. Pattern Making	1	M. D. 4. Ele. of Mechanism	2
Shop. 5. Mach. Work in Iron	2	Shop. 4. Bench and Forge Work	2
Shop. 5a. Machine Shop Practice	2	Mil. 4. Military Science	1
Mil. 3. Military Science	1		
Total	19	Total	19

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Phys. 105. Anal. Mechanics	3	Phys. 106. Anal. Mechanics	3
C. E. 23. Graphic Statics	2	C. E. 22. Testing Laboratory	2
M. E. 3. Practical Thermodynamics	3	C. E. 24. Mechanics of Eng.	4
M. E. 5. Heating and Vent.	2	C. E. 28. Hydraulics	3
M. E. 7. Refrigeration	1	M. E. 4. Prac. Thermodynamics	2
M. E. 9. Mechanical Laboratory	1	E. E. 2. Alternating Current Machinery	2
M. D. 5. Machine Design	2	E. E. 4. Electrical Laboratory	1
E. E. 1. Direct Current Mch.	2	Total	17
E. E. 3. Electrical Laboratory	1		
Shop. 7. Mach. Work in Iron	2		
Total	19		

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
M. E. 11. Steam Power Plants	3	M. E. 12. Power Plant Design	3
M. E. 13. Steam Engine Design	3	M. E. 14. Mechanical Laboratory	2
M. E. 15. Steam Turbines	2	M. E. 16. Gas Engines	2
M. E. 17. Hydraulic Machinery	2	M. E. 18. Thesis	4
E. E. 7. Electrical Laboratory	2	C. E. 34. Steel Frame Design	1
E. E. 9. Hydro-Electric Plants	3	C. E. 48. Contracts and Specifications	2
E. E. 13. Seminar	2	Mng. 6. Metallurgy of Iron and Steel	1
Electives	0 or 2	E. E. 14. Seminar	2
Total	17 or 19	Electives	2 or 0
		Total	19 or 17

Total credits required.....150

B.S.(Chem.E.) COURSE

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Chemical Engineering, B.S.(Chem.E.), the student must complete the following courses in addition to the common Freshman year outlined on page 173.

SOPHOMORE YEAR

FIRST SEMESTER		FIRST SEMESTER	
Course	Credits	Course	Credits
Eng. 5. Composition	2	Eng. 6. Composition	2
Math. 103. Engineering Math.	5	Math. 104. Engineering Math.	5
Ger. 3. Intermediate German	4	Ger. 4. Intermediate German	4
Chem. 3. Qualitative Analysis	4	Chem. 4. Quantitative Analysis	4
C. E. 13. Descriptive Geom.	2	C. E. 14. Descriptive Geom.	2
M. D. 1. Mechanical Drawing	2	M. D. 2. Machine Design	2
Shop. 4. Forge Work	1	Mil. 4. Military Science	1
Mil. 3. Military Science	1		
Total	21	Total	20

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Ger. 11. Scientific German	4	Phys. 106. Anal. Mechanics	3
Phys. 105. Anal. Mechanics	3	Chem. 6. Organic Chemistry	3
Chem. 5. Organic Chemistry	5	Chem. 8. Special Quantitative Analysis	4
Chem. 7. Advanced Quantitative Analysis	4	C. E. 24. Mechanics of Engineering	4
E. E. 1. Direct Current Mach.	2	E. E. 2. Alternating Cur. Mach.	2
Total	18	M. D. 4. Elements of Mechanics	2
		Total	18

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
Chem. 11. Industrial Chemistry	3	Chem. 12. Industrial Chemistry	3
Chem. 13. Theoretical and Physical Chemistry	3	Chem. 14. Theoretical and Physical Chemistry	3
Chem. 15. Thesis	2	Chem. 16. Thesis	2
Geol. 3. Mineralogy	2	Geol. 4. Mineralogy	2
Mng. 1. Assaying	2	C. E. 21. Testing Laboratory	1
M. E. 3. Practical Thermodynamics	3	C. E. 28. Hydraulics	3
M. E. 9. Mechanical Laboratory	1	Mng. 14. Metallurgical Lab.	2
Shop. 5. Mach. Work in Iron	2	M. E. 4. Practical Thermodynamics	2
Total	18	Total	18
		Total credits required	153

DEPARTMENTS OF INSTRUCTION

CIVIL ENGINEERING

Professor LITTLE, Associate Professor STEINMAN

1-2 ENGINEERING DRAFTING *1 credit* Each semester

Use of drafting instruments; plane problems; freehand lettering; dimensioning. Conventional signs for materials of construction. Topographic conventional signs. Working drawings; sections; tracings; blue-prints. Three hours in drafting room. Associate Professor STEINMAN

11 STRUCTURAL DRAFTING *1 credit* First semester

Standard rolled sections; conventional riveting signs; standard connections; methods of framing and detailing structural work; beams; columns; plate girders; roof truss; bridge details. Three hours in drafting room.

Associate Professor STEINMAN

12 STEREOTOMY *1 credit* Second semester

Classification of masonry; standard specifications. Detailing of buttress, wing-wall; culverts; bridge-pier; arches; vaulted structures. Three hours in drafting room.

Associate Professor STEINMAN

13-14 DESCRIPTIVE GEOMETRY *2 credits* Each semester

Problems on point, line, and plane; classification of surfaces; tangent planes; sections; intersections; developments; warped surfaces. Applications to enginering problems. Theory of shades and shadows. Perspective. Isometric, cabinet, and trimetric projections. One recitation and three hours in drafting room. Associate Professor STEINMAN

15-16 SURVEYING *4 credits* Each semester

Theory and use of transit, level plane table, and minor instruments. Land surveying. Government method of laying out public lands. Topographic, hydrographic, city and mining surveying. Recitations, two hours; field work, computations, topographic drawing, and mapping, six hours. Prerequisites: Math. 101-102. Associate Professor STEINMAN

21-22 TESTING LABORATORY *2 credits* Each semester

Experimental study of strength and other qualities of cement, brick, stone, timber, iron, and steel. Professor LITTLE

23 GRAPHIC STATICS *2 credits* First semester

Graphic composition and resolution of forces. Equilibrium polygon. Graphic representations of shears and moments. Fixed and moving loads. Influence lines. Applications to bridge and roof trusses, plate girders, and six three-hinged arches. One recitation and three hours in drafting room.

Associate Professor STEINMAN

24 MECHANICS OF ENGINEERING *4 credits* Second semester

Theory of strength and elasticity of materials of construction; tension, compression, and shear; theory of flexure of beams and columns shock and resilience. Prerequisite: Phys. 105.

Professor LITTLE

25-26 RAILROAD ENGINEERING *4 credits* First semester
2 credits Second semester

Railroad field geometry: Simple curves, compound curves, spirals, earthwork, switches and crossings. Railroad construction and maintenance: Track, trestles, culverts, tunnels, yards and terminals, block signaling. The field work includes reconnaissance, topography, location surveys, cross-sectioning, special problems in curves and turnouts, practical work on track. The office work includes right-of-way mapping, profiles, estimates; detailing of trestles, culverts, and other special structures; design of terminal layouts. Prerequisites: C.E. 15-16.

Associate Professor STEINMAN

27 ROADS AND PAVEMENTS *2 credits* First semester

Earth, gravel, and stone roads. Wood, brick, stone, and asphalt pavements. Professor LITTLE

28 HYDRAULICS *3 credits* Second semester

Hydrostatics and hydrodynamics; orifices; weirs; flow in pipes, conduits, and canals. Stream measurement.

Professor LITTLE

Associate Professor STEINMAN

31 REINFORCED CONCRETE *2 credits* First semester

Theory of the reinforced concrete beam and column. Design of floor slabs and girders. Prerequisites: C.E. 24 and Phys. 105-106. Professor LITTLE

33 ROOF DESIGN *2 credits* First semester

Design of wooden roof truss and of one of steel. Prerequisites: C.E. 23-24, and Phys. 105-106. Professor LITTLE

34 STEEL FRAME DESIGN *1 credit* Second semester

Study of floor systems, roof construction, girders, columns, walls, foundations. Building laws and specifications. Complete design of fireproof building; column-schedule and detail drawings. One recitation and three hours in drafting room for eight weeks. Prerequisites: C.E. 23-24, and Phys. 105-106.

Associate Professor STEINMAN

36 RAILROAD ECONOMICS *2 credits* Second semester

Promotion of railroad projects. Cost of railroads. Operating expenses. Economic theory of railroad location. Train resistance. Cost of distance, curvature, rise and fall. Ruling and minor grades. Virtual profile. Pusher grades. Balance of grades for unequal traffic. Improvement of old lines. Railroad organization and maintenance. Lectures and recitations.

Associate Professor STEINMAN

37 SEWERS AND SEWERAGE *2 credits* First semester

The principles involved in the design, construction, and maintenance of sewers and sewerage systems. Prerequisite: Civ. 28. Professor LITTLE

38 IRRIGATION *4 credits* Second semester

Brief comparative study of the irrigation institutions and laws of the different states and foreign countries, with detailed consideration of irrigation laws of Idaho. General survey of irrigation practice. Detailed study of structures, as water wheels, pipes, flumes, head gates, and dams. Prerequisite: C.E. 28. Professor LITTLE

41 MASONRY AND FOUNDATIONS *3 credits* First semester

Plain and reinforced concrete; stone, artificial stone, and brick masonry. Ordinary pile and subaqueous foundations; coffer-dam , open-caisson, pneumatic, open-dredging, and freezing processes. Bridge-piers and abutments. Theory of retaining walls. Culverts. Arches. Complete design of bridge-pier and foundation. Design of retaining walls by analytic and graphic methods. Two recitations and three hours in drafting room. Associate Professor STEINMAN

42 ARCH DESIGN *1 credit* Second semester

Theory of arches. Complete design of masonry arch. Design of reinforced concrete arch by the elastic theory. One recitation and three hours in drafting room for eight weeks.

Associate Professor STEINMAN

43 FRAMED STRUCTURES *4 credits* First semester

Stress analysis and computations for framed structures. Bridge trusses. Prerequisites: C.E. 23-24, and Phys. 105-106.

Professor LITTLE

48 CONTRACTS AND SPECIFICATIONS *2 credits* Second semester

Brief statement of law of contracts, and consideration of examples of general and technical clauses in engineering specifications. Professor LITTLE

50 THESIS *4 credits* Second semester

Professor LITTLE

DEPARTMENT LIBRARY The department library of over 450 volumes includes the most useful texts, and bound volumes of engineering serials. The most important engineering journals and series in English are kept on file.

MINING AND METALLURGY

Professor MCCAFFERY, Associate Professor LIVINGSTON

1 FIRE ASSAYING *2 credits* First semester

Lectures and laboratory work. Action and use of the various fluxes employed; oxidation and reduction processes; constitution and calculation of assay slags; cupellation and parting; crucible assay of silicious and oxidized gold and silver ores; scorification assay of sulphide ores; fire assay for lead ores; assay of reagents. Two afternoons, first semester. Prerequisites: Chem. 1 and 2. Associate Professor LIVINGSTON

2 FIRE ASSAYING *2 credits* Second semester

Continuation of Mining 1. Comparison of standard methods in the assay of ores and metallurgical products containing impurities such as copper, arsenic, antimony, tellurium, etc.; assay of ores containing metallics; calculation of slag and cupel losses; assay of gold and silver bullion. The last half of the semester is planned with the idea of giving the student the

opportunity to acquire speed in handling a large amount of work and obtaining accurate results under similar conditions to those in actual practice, one whole day per week being spent in the laboratory, two afternoons per week or equivalent. Prerequisite: Mining 1. Associate Professor LIVINGSTON

3 THERMO-CHEMISTRY AND COMBUSTION
2 credits First semester

Calorimetry, pyrometry, etc. Heats of combustion and of decomposition; combustion; combustion temperatures; reduction and oxidation; fuels, solid, liquid and gaseous; furnaces; heat balances. Professor MCCAFFERY

4 ORE DRESSING *3 credits* Second semester

General principles, crushers, rolls, stamps, tube-mills, etc. Sizing, screens, sorting, classifiers, jigs and laws of jigging. Fine sand and slime concentration. Magnetic, electro-static, oil, and flotation methods. Mill outlines, testing of mill apparatus, determination of process of treatment. The mechanical preparation of coal. Professor MCCAFFERY

5 EARTH AND ROCK EXCAVATION
2 credits First semester

Methods and costs of handling earth and rock by hand, and mechanical excavations; construction of the different types of rock drills and their efficiency; composition of explosives and the principles of blasting; tunnel driving and shaft sinking in both rock and water-bearing formations; simple cost-keeping. Associate Professor LIVINGSTON

6 METALLURGY OF IRON AND STEEL
1 credit Second semester

Methods of manufacture and effects of heat treatment and mechanical excavations; construction of the different types of relation to physical properties; changes of structure by heat and mechanical treatment; standard specifications.
Professor MCCAFFERY

7 MINING METHODS *3 credits* First semester

Lectures, recitations and problems on the methods of prospecting and opening up ground; comparison of different methods of entry, by shafts, tunnels, etc.; classification of mine supports; methods of extraction of various types of deposits; coal-mining methods, etc. Associate Professor LIVINGSTON

8 MINING MACHINERY *3 credits* Second semester

Lectures, recitations, and problems; wire ropes; design of head frames, hoisting engines; underground and surface haulage; pumping machinery; compressors and air transmission; ventilation; rope tramways; bins and minor equipment. Prerequisites: Physics 105-106.

Associate Professor LIVINGSTON

9 MINING ECONOMICS *2 credits* First semester

Lectures and recitations on mine sampling, including the principles involved and the different methods used in sampling veins, disseminated deposits, coal, etc.; mine valuation; calculation of value in sight from widths and assays; probable and prospective ore; amortization of capital invested; cost of production; factors influencing the cost of production of gold, silver, copper, iron, lead, and coal in different parts of the world; the more important points in the mining law of the United States and a brief comparison with the mining laws of other countries; essential features of reports by mining engineers.

Associate Professor LIVINGSTON

10 ELECTRO-METALLURGY *2 credits* Second semester

Refractories, furnaces, arc, resistance, and induction types. Commercial products of electric furnace, industrial electrolytic processes, electrolysis of fused electrolytes, electrolytic refining of metals. Conferences and laboratory work. Elective.

Professor MCCAFFERY

11 METALLURGY OF COPPER AND LEAD *2 credits* First semester

Chemistry and methods of roasting copper ores. Reverberatory and blast furnace. Matte smelting, furnace products, slag, matte, black and blister copper, flue dust. Construction of furnaces and detail of accessory apparatus. Converting matte in reverberatory furnaces. Handling material to and from the furnaces. Copper refining. Cost of treatment, ore contracts and refining contracts. Chemistry and methods of roasting lead ores, pot or sintering roasting. Reverberatory, ore hearth, and blast smelting methods. Details of plant construction, calculation of charges, heat balances, and thermal efficiencies. Bedding ores and handling materials. Desilverization of base bullion, electrolytic refining, cupelling, treatment of doré.

Professor MCCAFFERY

12 METALLURGY OF GOLD AND SILVER
2 credits Second semester

Placer working, hydraulicking, dredging. Amalgamation, chlorination, cyaniding gold and silver ores, chemistry of process, methods of testing, slime treatment, critical description of the more recent plants and methods. Principles of design of apparatus and machinery employed in wet gold and silver processes; vats, tanks, agitators, settlers, filters, launders, etc. Retorting of amalgams and refining of precipitates from wet process. Parting gold and silver. Professor MCCAFFERY

13 METALLURGICAL LABORATORY *3 credits* First semester

Calibration of LeChatelier pyrometer. Heating and cooling curves of alloys, steel, etc. Determination of calorific power of fuels by Mahler calorimeter. Roasting of copper ore, pot roasting lead and copper ores. Chloridizing roasting of copper and silver ores, desilverization of base bullion by Park's process and electrolytic process. Fusibility of slags and their formation temperatures. Tests of cyanide solutions and cyaniding a gold and silver ore. Effect of heat treatment on steel. The pyrometer is used to control all temperature changes in the furnaces and metallographic methods used when possible to determine structure of alloys, steels and other materials.
Professor MCCAFFERY

14 METALLURGICAL LABORATORY *2 credits* Second semester

Calibration of pyrometers; calorimetry; metallography; heating and cooling curves of alloys, steel, etc. Required in the course in Chemical Engineering. Professor MCCAFFERY

15 ORE DRESSING LABORATORY *2 credits* First semester

Determination of the laws of classification and of jigging; laboratory testing of ores for the determination of processes; operation and adjustment of commercial sizes of ore-dressing machinery in testing of commercial machines; mill runs with full-sized machines to check results of laboratory determinations. Professor MCCAFFERY

16 MINE SURVEYING *2 credits* Second semester

Lectures on the standard methods of surveying practiced in the large mining districts of this country, including instruments and equipment; carrying the meridian underground; measurement of angles and distances; underground stations and

methods of marking; note-books and office records; maps required; stope surveying; mapping and calculation of tonnage extracted. Drafting room work consists of the calculation and reduction of notes from a mine survey and the plotting of same by co-ordinates. Claim surveying. Mine surveying on spring trip. Associate Professor LIVINGSTON

17 METALLURGY OF THE MINOR METALS
2 credits First semester

Zinc, calcination and roasting of zinc ores. Retorting furnaces, zinc refining. Metallurgy of aluminium, mercury, tin, nickel. Elective. Professor MCCAFFERY

18 MINE, MILL, AND SMELTER ACCOUNTS
2 credits Second semester

The principles of bookkeeping with ilustrations applying particularly to the mining industry. Business forms, cost keeping. Financial reports. A complete set of accounts for a typical month will be prepared and balanced.
Professor MCCAFFERY

19 MINE ADMINISTRATION *2 credits* First semester

Underlying principles of management and administration of mines. For graduate students.
Associate Professor LIVINGSTON

20 MINE PLANT DESIGN *2 credits* Second semester

The student either chooses or is assigned a mine with certain output and conditions, designs a plant and machinery necessary from this data. This includes design of shaft or entry, head frame, hoist, compressor, air pipe lines, pumps and connections, boilers, electric installation, method of mining, etc. A detailed drawing of the head frame and skip or cage is required, and complete specifications for the other machinery. Approximate cost of installation and probable operating cost is estimated. Two afternoons per week in the drafting room.
Associate Professor LIVINGSTON

21-22 METALLURGICAL DESIGN *3 credits* Each semester

The solution of problems in the design and construction of concentration and reduction works with working drawings, bills of materials, specifications and estimates. For graduate students. Professor MCCAFFERY

23 RESEARCH PROBLEMS *4 credits* First semester

Special problems and investigations in mining methods, mining machinery, equipment and design. For graduate students. Associate Professor LIVINGSTON

24 ANALYTICAL MINE PLANT DESIGN

4 credits Second semester

The object of the course is to point out the economic advantages of efficient design, and for this purpose critical comparisons are made of the methods, equipment, and efficiency of the machinery at different mines. The student designs a plant and the necessary machinery to fit the actual conditions at the mine and compares it with the plant and machinery in operation. Field work at the mines, drafting, and consultation. For graduate students.

Associate Professor LIVINGSTON

25 PHYSICAL CHEMISTRY OF METALS

2 credits Second semester

The application of the laws of aggregation, solution and ionization, chemical dynamics, and equilibrium to metallurgy.

Professor MCCAFFERY

26 MINE FINANCE *2 credits* Second semester

The principles governing the financing of mines and similar ventures. The application of mathematics to the probable and prospective value of a mine. Associate Professor LIVINGSTON

27-28 METALLURGICAL INVESTIGATIONS

3 credits Each semester

Laboratory work on some problem in the metallurgical treatment of gold, silver, copper, lead, or zinc ores. For graduate students.

30 THESIS *2 credits* Second semester

SPECIAL COURSES

Special courses will be arranged for students of mature years according to their individual needs and ability.

GRADUATE COURSES

To afford the student an opportunity to specialize in mining engineering, metallurgy, or geology, the following graduate courses are offered leading to the degree of Master of Science in Mining Engineering,

M.S.(Mng.E.). These courses are open to those who have received the bachelor's degree, or its equivalent, in Mining.

MINING ENGINEERING OPTION.	1st semester	2nd semester
Mng. 19. Mine Administration	2	
Mng. 23. Special Investigations	4	
Mng. 24. Anal. Mine Plant Design		4
Mng. 26. Mine Finance		2
Electives	6	6
Totals	12	12

METALLURGICAL OPTION.		
Mng. 21-22. Metallurgical Design	3	3
Mng. 27-28. Metallurgical Investigation	3	3
Mng. 25. Physical Chemistry of Metals	2	
Mng. 10. Electro-metallurgy		2
Electives	4	4
Totals	12	12

GEOLOGICAL OPTION.		
Geol. 13-14. Advanced Petrology	3	3
Geol. 15-16. Advanced Economic Geology	3	3
Geol. 7. Paleontology	2	
Geol. 8. Stratigraphy		2
Electives	4	4
Totals	12	12

The electives may be taken in any department of the University, but it is recommended that they be taken in Chemistry, Geology, or the Engineering departments.

PRACTICAL MINING Every student taking the regular mining course is required to spend at least three months of the summer vacation at mines, mills, or smelters. A written report with sketches and photographs must be submitted to the professor of mining the first week of the first semester, detailing the observations of the summer work regarding methods, machinery, and costs.

MINING TRIP During the spring vacation, a visit is made to one of the large mining districts for detailed study of mining and metallurgic practice. This trip is required of Junior and Senior students. During the spring vacations of 1910 and 1912, the class visited the Center Star, War Eagle, and Le-Roi mines at Rossland, B. C., and the copper and lead smelter and refinery at Trail, B. C.

In 1911 the spring mining trip was made to the Coeur d'Alene district, Idaho, visiting the Bunker Hill, Hecla, Hercules, and Morning mines and mills.

DEPARTMENT LIBRARY In addition to the standard works on mining and metallurgy, complete files of the transactions of mining and metallurgical societies and the more important periodicals on these subjects are accessible to the students at all times and new publications of value are added as fast as they appear.

MINING MUSEUM The mining museum contains models of mines, head frames, mine plant and timbering, tools, lamps, machine drills of both the reciprocating and air hammer types; drawings of mines, mine plant, mills, reduction works, furnaces, machinery, and specimens of metallurgical products and suites illustrating mill practice.

ELECTRICAL ENGINEERING

Professor CORBETT, Professor LARSON

1 DIRECT CURRENT MACHINERY AND DISTRIBUTION
2 credits First semester

A study of the theory, construction, and operation of direct current generators and motors, the calculation of distribution systems, for light and power. A general course suitable for all engineering students. Prerequisite: Junior standing in the College of Engineering.

1a ELECTRICAL PROBLEMS AND DESIGN
2 credits First semester

A parallel course with E.E. 1, consisting of one recitation or lecture and one drawing period per week, emphasizing details passed over in the general course. Required of students in Electrical Engineering. To be taken only in conjunction with E.E. 1.

2 ALTERNATING CURRENT MACHINERY AND DISTRIBUTION
2 credits Second semester

A general course in continuation of E.E. 1, treating of alternating current machinery and circuits. Prerequisite: E.E. 1.

2a ELECTRICAL PROBLEMS AND DESIGN
2 credits Second semester

A continuation of E.E. 1a. To be taken only in conjunction with E.E. 2.

3 ELECTRICAL ENGINEERING LABORATORY
1 credit First semester

The use of instruments, testing and operation of direct current machinery and apparatus. To be taken only in conjunction with E.E. 1.

4 ELECTRICAL ENGINEERING LABORATORY
1 credit Second semester

Continuation of E.E. 3, with tests on single phase alternating current apparatus in the latter part of the semester. To be taken only in conjunction with E.E. 2.

5 ELECTRICAL ENGINEERING *4 credits* First semester

An advanced course in direct and alternating current machinery, apparatus and transmission. The use of the complex quantity in the calculation of alternating current phenomena. Prerequisites: The completion of courses 1 to 4 inclusive.

6 ELECTRICAL ENGINEERING *4 credits* Second semester

A continuation of E.E. 5, taking up the theory of the synchronous motor, rotary converter, the induction motor, single phase induction, commutating and repulsion motors, and their operation in transmission systems.

7 ELECTRICAL ENGINEERING LABORATORY
2 credits First semester

A continuation of E.E. 4, with more extended tests on direct and alternating current equipment, illustrating the work of the class room. To be taken only in conjunction with E.E. 5.

8 ELECTRICAL ENGINEERING LABORATORY
2 credits Second semester

A continuation of E.E. 7, with tests on equipment studied in 6. To be taken only in conjunction with E.E. 6.

9 HYDRO-ELECTRIC PLANTS
2 or 3 credits First semester

A course in water power engineering, dealing with stream flow, reservoirs and their relation to power demands, selection of machinery and accessories, and the design of hydraulic plants with special reference to electric power. Two lectures and one drawing period per week.

10 ELECTRIC RAILWAY ENGINEERING
2 credits Second semester

A course in electric railway economics, construction and operation.

11 TELEPHONY *2 credits* First semester

The principles, design, construction, operation and testing of lines and apparatus used in telephony and telegraphy.

11a TELEPHONE CONSTRUCTION *1 credit* First semester

A special course for students in Forestry.

13 POWER SEMINAR *2 credits* First semester

Discussions of typical power stations and industrial applications, with problems and reviews of current articles in the technical press. The preparation of papers on assigned subjects. Prerequisite: Senior standing in electrical or mechanical engineering.

14 POWER SEMINAR *2 credits* Second semester

A continuation of E.E. 13, with trips to typical plants in the vicinity. Professor CORBETT

16 THESIS *4 credits* Second semester

An original investigation or dissertation upon some subject in electrical engineering.

MECHANICAL ENGINEERING

Professor LARSON, Professor CORBETT

1 ELEMENTARY MECHANICS *2 credits* First semester

An elementary treatise on the fundamental principles of mechanics, without the use of Calculus. Intended as a preparation for applied and theoretical mechanics. Instruction is given on the theory and use of the slide rule. Each student is required to purchase a slide rule and to use it in all his calculations in this course.

3 PRACTICAL THERMODYNAMICS
3 credits First semester

A course in the thermodynamics of perfect gases and vapors as applied to the study of steam engines, steam turbines, and boilers, followed by a study of fuels, the principles of com-

bustion, and engine and boiler auxiliaries. Prerequisite: Math. 104.

4 PRACTICAL THERMODYNAMICS
2 credits Second semester

A continuation of Course 3, taking up the study of the internal combustion engine, gaseous fuels, compressed air, refrigeration, and heating and ventilation. Prerequisite: M.E. 3.

5 HEATING AND VENTILATION *2 credits* First semester

Covers the theory and principles of modern systems of heating and ventilation of buildings of various types, and is accompanied by problems involving the design and specifications for such systems. Prerequisite: M.E. 3, or can be taken in conjunction with M.E. 3.

7 REFRIGERATION *1 credit* First semester

A study of the principles and methods of producing low temperatures artificially, together with the construction, operation, and application of refrigerating machinery. Prerequisite: M.E. 3, or can be taken in conjunction with M.E. 3.

9 MECHANICAL LABORATORY *1 credit* First semester

Calibration of engineering instruments and apparatus, steam calorimetry, fuel and gas analysis, calorific power of fuels, testing of lubricants, feed water, etc.

11 STEAM POWER PLANTS *3 credits* First semester

A study of the mechanical layout of modern power plants, covering the various arrangements of boilers, gas and steam engines, steam turbines, auxiliaries, and piping. Prerequisite: M.E. 4.

12 POWER PLANT DESIGN *3 credits* Second semester

Involves the complete design of a small power plant. The course consists largely of drawing room work and calculation, with such lectures given by members of the Mechanical and Electrical departments as may be needed from time to time. The work consists in making the working drawings necessary to show the location of boilers, engines, auxiliaries, piping, coal pockets, etc., for a power house, and also drawings and calculations of some of the details. Prerequisite: M.E. 11.

13 STEAM ENGINE DESIGN *3 credits* First semester

A course of lectures and drafting room work on steam engine design. The projection of theoretic indicator diagrams; the inertia effect of reciprocating parts; resultant forces on crank pin and main bearing; the development of the design to meet the conditions thus predicted. The cylinder and piston; castings, fastenings, adjustments, drainage. The mechanism; connecting rod, crank shaft, fly wheel and valve rods. The bed; rigidity, weight, convenience. Prerequisites: M.E. 3 and M.E. 4.

14 MECHANICAL LABORATORY *2 credits,* 6 hours Second semester

Drill in the running and care of engines, steam engine tests for water consumption and mechanical and thermal efficiency. Tests of gas engines and compressors, efficiency test of boiler plant. Sketches and reports on boiler and engine room piping. Prerequisites: M.E. 3 and M.E. 4.

15 STEAM TURBINES *2 credits* First semester

A study of the theory and design of the common types of steam turbines, and their methods of operation. Prerequisites: M.E. 3 and M.E. 4.

16 GAS ENGINES *2 credits* Second semester

The chief constructive features of gas engines; theory and principles of operation; general arrangement of valves, igniters, etc., methods of regulation, followed by a detailed study of the gas producer. Prerequisites: M.E. 3 and M.E. 4.

17 HYDRAULIC MACHINERY *2 credits* First semester

A study of hydraulic motors, pumps, and other machines with practical applications. Prerequisite: C.E. 28.

18 THESIS *4 credits* Second semester

MACHINE DESIGN

Professor LARSON, Professor CORBETT

1 MECHANICAL DRAWING *2 credits,* 4 hours First semester

Drawing of parts of machines from models and plates, third angle projection. Includes lettering, tracing, and blue printing. Prerequisites: C.E. 1-2, Engineering Drafting.

2 MACHINE DESIGN *2 credits* Second semester

The aim of this course is to familiarize the student with machine elements, such as bolts, keys, journals, bearings, couplings, gears, etc. Problems are given requiring simple calculations for strength. Four hours. Prerequisite: M.D. 1, Mechanical Drawing.

4 ELEMENTS OF MECHANISM *2 credits* Second semester

The object of the course in mechanism is to make the student familiar with typical mechanisms and mechanical movements and with the kinematic principles involved in laying out such mechanisms. The motion system is studied both by the method of instantaneous centers and by the method of velocity polygons. Special attention is given to parallel motions, valve gears, and epicyclic trains. Prerequisites: Phys. 101-102.

5 MACHINE DESIGN *2 credits,* 4 hours First semester

A continuation of Course 2. Lays special stress on toothed gearing and takes up engine details, such as the slide valve, piston, stuffing box, etc. Prerequisite: M.D. 2.

SHOP WORK

Mr. HALL

EXPENSES For all shop courses a fee of fifty cents per credit per semester is charged. The receipt for this fee must be presented to the instructor in charge before admission to classes.

1 WOOD WORKING *1 credit* First semester

Care and use of saw, plane, chisel, etc. Practice in the laying out of work, followed by joining and joint making, such as is involved in building construction. Three hours.

2 WOOD WORKING *1 credit* Second semester

A continuation of Course 1, with practice in wood turning and elementary pattern making. Prerequisite: Course 1. Three hours.

3 PATTERN MAKING *1 credit* First semester

Practice in pattern making. The patterns are so chosen as to illustrate the principles involved in their construction and in molding. Some instruction is also given in molding and core making. Three hours. Prerequisite: Course 2.

4 FORGE WORK *2 credits* Second semester

Practice in forge work in iron and steel. The ground covered includes instruction in the building and care of fires, heating, drawing, forming, bending and twisting, upsetting, punching, bolt making, tool making, etc. Careful instruction is given in welding and the scarfing used for various welds. Four hours.

4a BENCH WORK IN IRON *1 credit* Second semester

Work with the hammer, chisel, and file in wrought and cast iron. Practice in chipping and filing to dimension and fitting. Work with the file and scraper in the production of flat surfaces and straight edges. Two hours.

5 MACHINE WORK IN IRON *2 credits* First semester

Lathe work in metals. Instruction is given in the mechanism of the machine tools used and careful attention is paid to the various adjustments to the work in hand. The different measuring tools and devices, with the advantages, method of use, and limits of accuracy of each are considered. As each cutting tool is taken up, its cutting angles and general adjustments are discussed, together with the feeds and cutting speeds suitable for each material worked and for each machine. The course includes instruction in centering, squaring, straight and taper turning and fitting, outside and inside screw cutting, chucking, reaming, finishing and polishing, drilling, tapping, and boring. Four hours.

5a MACHINE SHOP PRACTICE *2 credits* First semester

A study of machine tools and shop practice. Two recitations a week taken in conjunction with Shop 5.

6 MACHINE WORK IN IRON *2 credits* Second semester

Same course as Shop 5, but given in the second semester for Electrical Engineers. Four hours.

7 MACHINE WORK IN IRON *2 credits* First semester

A continuation of Course 5. Work with the milling machine and universal grinding machine; gear cutting, tool making, including drills, taps, reamers, and milling cutters. Also work in the building of complete machines. Four hours.

10 MANUAL TRAINING FOR WOMEN

1 credit Second semester

A one credit course of two hours each Wednesday evening from seven-fifteen to nine o'clock will be given during the second semester, consisting of elementary exercises in wood working, followed by interesting and instructive work in art furniture, lamp shades, tables, tabourets, picture frames, shirt waist boxes, etc., in fumed oak, mahogany, walnut, cedar and fir, and instruction in wood finishes, fuming, staining, varnishing, and in polishing.

CHEMICAL ENGINEERING

For the outline of the course see page 178; for the description of the courses in chemistry see pages 95-100; for the description of the other required courses see the various departments concerned.

SHORT COURSES IN ENGINEERING

(a) MINER'S SHORT COURSES

The University of Idaho offers short courses extending over a period of ten weeks, combining both laboratory and lecture instruction in Mining, Geology, Chemistry, and allied subjects. These courses are designed primarily for men who are unable to take regular courses at the University. They are for the purpose of giving that special knowledge that will improve a man's work and be of assistance to him in obtaining and satisfactorily filling the higher positions of shift boss, foreman, etc., in the mines and mills of the State.

For miners and prospectors, the most convenient time for holding these courses is proven to be the winter. The third session will begin January 5th, 1914, and continuing for ten weeks, will terminate March 13th, 1914. There are no entrance requirements nor examinations, and while there are no age limits, the work is laid out for mature students who want to make the most of the time they spend at the University.

The expenses for attendance during the ten weeks are railway fare to and from Moscow, and room, board and incidentals during the session. In addition to the railway fare, the total expenses will run between $50 and $70, which will be for living expenses entirely, as there are no charges for tuition nor laboratory fees.

Supplementing the special work offered by the departments of

Mining and Geology, lectures of general interest will be given during the short session on subjects of real present importance, which will be treated in a non-technical way and will help to make attendance at the short courses of great benefit.

Courses Offered in the Department of Mining and Metallurgy

COURSE I—MINING MACHINERY

Lectures describing the different kinds of mining machinery and simple calculations for estimating the size and kind to order under certain working conditions. Five lectures per week. A knowledge of arithmetic required.

COURSE II—SIMPLE SURVEYING

Simple compass surveying, including the working out of notes and the use of tables. The object of the course is to enable a man taking it to be able to survey and figure out simple underground or surface connections. For instance, the distance and direction in which it would be necessary to drive a tunnel to meet another tunnel or shaft. Two afternoons per week. Some knowledge of arithmetic required.

COURSE III—GOLD MILLING AND AMALGAMATION

Three lectures a week on the milling of gold ores, the chemistry of the process, and machinery employed, coarse crushers, fine crushers, stamps, and rolls, study of the combinations of mercury and gold and the difficulties of securing high extractions.

COURSE IV—THE CYANIDE PROCESS FOR EXTRACTING GOLD

Three lectures a week; the chemistry of the process, the effect of other metals and impurities, methods of testing ores and solutions, sliming and slime treatment.

COURSE V—ORE DRESSING AND CONCENTRATION

Three lectures and three laboratory periods of three hours each, a week. The lectures cover the principles of concentration, crushing and concentration machinery, and the adjustment of the machines. The laboratory work is devoted to the experimental determination of the laws of sizing, classifying and jigging, the practical adjusting and testing of the machines, and tests for the determination of process.

COURSE VI—METALLURGICAL LABORATORY

A course of three laboratory periods weekly, each period of three hours' duration. Practical testing of ores by cyaniding, the

testing of solution and determination of losses. The sliming of an ore in a pebble mill and its treatment by aeration. The precipitation and filtration of solutions and treatment of precipitates.

COURSE VII—ASSAYING

A lecture and laboratory course of ten weeks is given in assaying. The lectures describe the operations and explain the chemistry in the assay of lead (fire assay only), gold and silver, and the laboratory work is the practical making of such assays on all types of ore. The course occupies three periods of three hours each, a week. A student so desiring may put in more time than this. A deposit of $5 will be required of all taking this course, which will be returned at the end of the course on receipt in good condition of all of the apparatus issued.

COURSE VIII—COPPER AND LEAD SMELTING

Chemistry and methods of roasting, converter or sintering roasting, copper matte smelting in reverberatory and blast furnaces, lead blast furnace smelting, details of plant construction, ore contracts, copper refining, desilverization of base bullion.

COURSE IX—MINE ACCOUNTING

Methods employed in mines and mills. A set of accounts for a small mine, showing a typical month's business will be made out and balanced.

COURSE X—PLACER MINING

Two lectures a week; alluvial deposits, prospecting and valuing ground, water supply, construction of water ways, flow of water in flumes, ditches, and pipes, reservoirs, hydraulic mining appliances, methods of work.

COURSE XI—ELECTIVE TOPICS

Those taking this course will elect the subjects of the lectures for the following week, (the list below is suggestive, but subjects chosen need not be confined to the list), thus giving a chance for a knowledge of subjects that are not given in any of the regular courses. The course will occupy one three-hour period, followed by time for discussion, each week for ten weeks.

SUGGESTIVE LIST OF SUBJECTS

Lead and copper refining, pyrometry and pyrometers, mining locomotives, mine pumps, gold dredges, aerial tramways, chlorination process, mine and mill accounts, etc.

Short Course in the Department of Geology and Minerology

MINERALOGY—A course consisting of lectures on the physical and chemical properties of minerals and descriptions of the more common minerals, and laboratory work on collections of labeled and unlabeled specimens, leading to a knowledge of the more common minerals and the methods used for the determination of minerals. One hour per day, to be replaced when occasion demands, by two hours of laboratory work.

MINING GEOLOGY—A course consisting of lectures on General Geology, in its relation to ore-bodies, and on the modes of occurrence and origin of ore-bodies. Special attention is paid to the ores of gold, silver, copper, lead, and zinc. One hour per day.

Short Course in the Department of Chemistry

A course of lectures, twice a week, discussing the essential fundamental chemical concepts, and the most important types of chemical elements and compounds. With this course will be laboratory work of one three-hour period per week, in which the student learns to manipulate glass, set up apparatus, generate, collect, and study gases, to be followed by the more important tests for metals and acids, a few qualitative separations, and the identification of unknown substances.

Advanced Courses

Advanced courses for those who have taken the work of one session will be given, continuing the treatment of the subjects and amplifying the details.

General Remarks

A selection should be made from the courses offered by the various departments, along the particular lines most desired and a full time schedule drawn up for ten weeks at the University. Generally it will be better to concentrate on a few subjects and spend all the session on them.

As an example, a man who wanted to study thoroughly the subject of Gold Milling would probably select the following courses:

Mining VII—Assaying
Chemistry I—Chemistry
Mining III—Gold Milling
Mining VI—Metallurgical Laboratory
Mining XI—Elective Topics.

A prospector would advantageously choose:

Geology I—Mineralogy
Geology II—Mining Geology
Mining VII—Assaying
Mining X—Placer Mining
Mining XI—Elective Topics

A course for millmen should take in:

Mining VII—Assaying
Mining V—Ore Dressing and Concentration
Mining III—Gold Milling
Mining XI—Elective Topics

And a course for miners would include:

Mining I—Mining Machinery
Mining II—Simple Surveying
Geology I—Mineralogy
Geology II—Mining Geology
Mining XI—Elective Topics

The outlines above are suggestive only, and while they take up the subjects which would prove the most useful in the particular lines indicated, the student should make his own selection of courses to fill his own individual requirements, after consultation with the Professor of Mining.

(b) GOOD ROADS SCHOOL

On January 30th and 31st, 1912, a Good Roads School for road overseers and others was held at the University by the Civil Engineering department of the College of Engineering, cooperating with the Office of Public Roads, U. S. Department of Agriculture, and the County Commissioners of Latah County. Dr. L. I. Hewes, of Washington, D. C., Senior Highway Engineer, represented the Office of Public Roads and gave four lectures. The other instructors were Professors Little and Steinman of the University. All lectures were freely illustrated with lantern slides. Four-fifths of the road overseers of Latah County as well as many others interested in road construction attended this school.

A similar school will be held March 12-14, 1913.

V. COLLEGE OF LAW

(Idaho Law School)

FACULTY

*James Alexander MacLean, Ph.D., LL.D., President, *and Professor of Political Science*

Otis Eddy McCutcheon, B.A., Dean, *and Professor of Law*

Charles Henry Wilber, Ph.B., J.D., *Associate Professor of Law, and Secretary of the Faculty*

Lyman P. Wilson, B.S., J.D., *Associate Professor of Law*

Frank Latham Moore, LL.B., *in charge of work in Practice*

Edward Maslin Hulme, A.M., *American Constitutional Law*

James Franklin Ailshie, LL.D., Justice, Supreme Court of Idaho, *Legal Ethics and Conflict of Laws*

James Elisha Babb, B.S., LL.B., Lewiston, *Law of Eminent Domain*

Frank Sigel Dietrich, A.M., United States District Judge, District of Idaho, *Bankruptcy and Federal Practice*

John Fisher MacLane, B.A., LL.B., *Public Land Law, Legal History, and Jurisprudence*

*Resigned February 1, 1913.

HISTORY AND PROSPECTS

The Idaho Law School was established by the Board of Regents of the University, at its April meeting in 1909, and is entering upon the fifth year of its existence. The attendance during the first years, and the interest shown by the students and public, have justified the action of the Regents in establishing the school.

The first year's course alone was offered during the academic year 1909-10; the school being under the direction and instruction of Hon. John F. MacLane; and much of the succeeding prosperity of the school may be attributed to his efficient personal efforts.

The school is now offering its instruction to students in all three classes. The courses offered as first- and third-year studies will be given during the years 1913-14 in accordance with the system hereinafter explained. Registration for the academic year 1913-14 will occur on the 15th and 16th of September, 1913. Late registration should be avoided.

ENTRANCE REQUIREMENTS

Applicants for admission, as candidates for a degree will be required to exhibit certified credentials, or to undergo examinations in the following subjects, which are the equivalent of a four-year high-school course:

English	4	*units
Mathematics	2	"
†Foreign Language	2	"
Social Science, including History	1	"
Natural Science	1	"
†Additional Foreign Language or Social Science	1	"
Electives	4	"
Total	15	units

No student will be allowed to present more than *four* units in any one subject. In addition to the requirement in English, each student will be required to present three units in one other of the above specified subjects. Students offering fourteen of the above

*A unit is not less than four recitations per week of not less than forty minutes each, during a school year of not less than thirty-six weeks.

†This requirement will not be satisfied by less than two years' work in any one language. In no instance should a single year of language be presented.

units will be admitted subject to condition in the remaining one, such condition to be removed before entering the second-year class. An applicant for admission to the Law School must be at least eighteen years of age. Notwithstanding compliance with the foregoing requirements, the faculty reserves the right to reject any applicant who from immaturity, physical, mental, or moral defects, appears not qualified to enter upon the study of law.

It is highly recommended that Latin be presented in satisfaction of the above Foreign Language requirement, and that the electives above mentioned shall be applied upon additional Latin, or other Foreign Language, or Mathematics.

SPECIAL STUDENTS

Persons unable to comply with the entrance requirements may apply for admission as special students, not candidates for a degree. Such applications will be received in the case of persons over twenty-one years of age, who appear to the faculty qualified by general training and business experience to pursue legal studies.

ADVANCED STANDING

Students having completed courses in law in standard law schools will be given credit towards a degree in such courses. Applicants for advanced standing must register by the beginning of the third year, and must furnish evidence of compliance with the entrance requirements. The time spent in other schools, when added to the time spent in this school, must equal three full academic years of nine months each.

No credit will be given for work completed elsewhere than in standard law schools, while in residence at such schools.

TUITION FEE AND EXPENSES

A tuition fee of twenty-five dollars per year, payable in advance for the full year, and not subject to rebate in case of failure from any cause to complete the year's work, is required of all students. While tuition in other departments of the University is free and it is the policy of the University to afford an opportunity for education free of cost, it is believed that for professional students the payment of a small fee, as an earnest of good faith and serious purpose, is advisable. The proceeds of these fees are devoted primarily to the purchase of case books for the use of the students, and to the expansion of the law library. Students are required to

furnish their own text-books; the average expense of a full set for each year is approximately thirty dollars, but they may, by making their purchases in pairs or trios, reduce such expense proportionately. A fee of four dollars per semester is collected for the support of the various enterprises of the student body known as the "Associated Students of the University of Idaho," and at the end of the Senior year a diploma fee of five dollars must be paid. The cost of board and room averages from four to six dollars per week. Other expenses are within the control of the individual student.

EQUIPMENT AND FACILITIES

The school occupies rooms, including a well designed court room, set apart for its use, near the Library, in the Administration Building, of the University. A portion of the Library is set aside for the use of the Law School and contains the standard digests, text-books, and cyclopedias; the reports and statute books of Idaho, California, Washington, Montana, and other western states; the reports of the Supreme Court of the United States; the leading sets of selected cases; and miscellaneous legal publications. In short, it is such a library as would be found in a well equipped office, with the addition of such works as are adapted to general legal instruction.

Moscow is the county seat of Latah County, Idaho, and is also the seat of the United States District Court for the Northern Division of the State. Students therefore have ample opportunity to observe the actual workings of the courts.

COURSE OF STUDY

The course of study covers three years, divided into semesters of eighteen weeks each. The class-room work, with the exception of the first semester of the first year, occupies fifteen hours per week, the unit of instruction and credit being one hour per week per semester. The following table gives the arrangement of the courses:

FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
1a. Elementary Law	1	2. Property II	3
1b. Property I	2	4a. Contracts II	2
3. Contracts I	4	4b. Agency	2
5. Torts I	2	6. Torts II	2
7. Persons	2	8. Criminal Law	3
9. English Const. History	3	10. American Const. History	3
Total	14	Total	15

SECOND YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
21. Property III	3	22. Property IV	3
23a. Negot. Instruments	1½	24a. Sales	1½
23b. Suretyship and Insurance	1½	24b. Partnership	1½
25. Constitutional Law I	2	26. Constitutional Law II	2
27. Evidence	4	28. Equity Jurisdiction	3
29. Common Law Pleading	3	30. Code Pleading	3
		32. Legal Method	1
Total	15	Total	15

THIRD YEAR

FIRST SEMESTER		SECOND SEMESTER	
Course	Credits	Course	Credits
41. Property V	3	42. Property VI	3
43. Corporations I	3	44a. Corporations II	1
45a. Irrigation	2	44b. Carriers	2
45b. Mining Law	2	46. Public Officers	2
47. Taxation and Commerce	2	48. Trusts	2
51. Practice I	3	50. Municipal Corporations	2
53. Lecture Courses	—	52. Practice II	3
		Lecture Courses	—
Total	15	Total	15

Until such time as the size of the classes makes the system impracticable, the work of the second and third years, with the exception of the courses in Evidence, Common Law Pleading, Code Pleading, Mining Law, Irrigation, and the courses in Practice, will be given interchangeably in alternate years; third-year courses will be given in 1913-14, and alternate years thereafter; second-year courses will be given in 1914-15 and alternate years thereafter. The courses in Evidence, Common Law Pleading, Code Pleading, Mining

Law, Irrigation, and the courses in Practice will be given every year.

Owing to a change in the order of courses, Common Law Pleading will not be given in 1913-14. Second-year students will during that year take the course on Persons in lieu of Common Law Pleading.

MILITARY SCIENCE AND TACTICS

All first-year law students will be required to take work in Military Science and Tactics, under the same conditions and at the same hours, which apply to students in other departments of the University.

DESCRIPTION OF COURSES

1a ELEMENTARY LAW *1 credit* First semester

Definition, origin, sources, and content of law; methods of legal study, the use of decisions, cases and texts, topical classification of law. Lectures and assigned readings. Smith's *Elementary Law; Brief Making and Use of Law Books.*

Professor MCCUTCHEON

1b PROPERTY I *2 credits* First semester

Nature and classes of property, real, personal, and chattels real; corporeal and incorporeal property. Personal property, acquisition of rights; possession, bailment, liens. Gray's *Cases on Property, Vol. 1, Parts 1 and 2,* and selected cases.

Professor WILSON

2 PROPERTY II *3 credits* Second semester

Real property: the feudal system; tenures; estates; rule in Shelley's case; perpetuities; elements of landlord and tenant. Tiffany's *Real Property, Vol. 1;* Kirchwey's *Reading;* Gray's *Cases.*

Professor WILSON

3 CONTRACTS I *4 credits* First semester

Formation of simple contracts: offer and acceptance, reality of consent; consideration; legality of object; statute of frauds; construction and operation. Anson's *Contracts,* and case book to be selected.

Professor WILBER

4a CONTRACTS II *2 credits* Second semester

Discharge of contracts; modes of enforcement; actions and

remedies; what law governs; quasi contracts. Anson's *Contracts,* and case book to be selected. Professor WILBER

4b AGENCY *2 credits* Second semester

The law of principal and agent, formation of the relation; liabilities of the parties inter se and to third persons; termination of agency. Mechem's *Outlines of Agency;* selected cases. Professor WILBER

5-6 TORTS I and II *2 credits* Each semester

The general principles of delictual liability, specific torts, negligence, nuisance, master and servant, quasi-torts. Bigelow's *Torts,* and Simpson's *Cases.* Professor WILBER

7 PERSONS *2 credits* First semester

Natural persons; aliens, infants, insane persons, married women, convicts, their powers and disabilities; husband and wife, parent and child, and guardian and ward. Woodruff's *Cases on Domestic Relations.* Professor MCCUTCHEON

8 CRIMINAL LAW *3 credits* Second semester

The general principles of the law of crimes; study of specific crimes; essentials of criminal procedure. Bigelow's May on *Crimes;* case book to be selected; *Idaho Penal Code,* and illustrative Idaho cases. Professor WILSON

9 ENGLISH CONSTITUTIONAL HISTORY *3 credits* First semester

The hundred and the county courts; the Witenagemot; the feudal system; the Angevin administrative system; the system of estates; the growth of taxation; the growth of Parliament; Lancastrian constitutionalism; the Yorkist and Tudor strong government; the struggle between the *Jure Divino* monarchy and the estates; the constitutional experiments of the interregnum; the growth of the cabinet; parliamentary government; the liberty of the subject.

10 AMERICAN CONSTITUTIONAL HISTORY *3 credits* Second semester

A survey of the growth of the United States. A considerable part of the time will be devoted to the influence of the West upon the development of the Nation. Professor HULME

21 PROPERTY III *3 credits* First semester

Real property: Rights of enjoyment, fixtures and improve-

ments, earth and minerals; vegetable products, profits a prendre, easements, covenants, and restrictions. Gray's *Cases, Vols. 1 and 2;* Tiffany's *Real Property, Vol. 1.*

Professor WILSON

22 PROPERTY IV *3 credits* Second semester

Real Property: Transfer of rights inter vivos, titles, abstracts, conveyancing, record and priorities. Gray's *Cases, Vol. 3;* Tiffany's *Real Property, Vol. 2, Part V.*

Professor MCCUTCHEON

23a NEGOTIABLE INSTRUMENTS

1½ credits First semester

The law of bills, notes and checks at Common Law and under the negotiable instruments law. Bigelow's *Cases on Bills and Notes.* Professor WILBER

23b SURETYSHIP AND INSURANCE

1½ credits First semester

Outline courses on the fundamental principles governing the law of Guaranty and Suretyship, and of Insurance. Bunker's *Cases on Suretyship;* Elliott's *Cases on Insurance.*

Professor WILBER

24a SALES *1½ credits* Second semester

The contract of sale, including the Seventeenth Section of the Statute of Frauds; conditions, warranties, remedies and damages. Case book to be selected. Professor WILBER

24b PARTNERSHIP *1½ credits* Second semester

Formations, rights and relations of partners inter se and towards third persons, dissolution; survivorship. Mechem's *Elements of Partnership and Cases.* Professor WILBER

25 CONSTITUTIONAL LAW *2 credits* First semester

Constitutional Law: Federal and state constitutions; adoption, operation, amendment and construction; relation between national governments, states, and territories, guaranty of republican government, constitutional comity between the states, admission of new states; distribution of powers, federal and state legislatures, powers, functions, and spheres of operation, and limitations thereon; the executive; federal and state

judiciary, orbits of jurisdiction; constitutional checks and balances. Black's *Constitutional Law;* McClain's *Cases.*

26 CONSTITUTIONAL LAW II *2 credits* Second semester

The bill of rights; the first ten and fourteenth amendments to the constitution of the United States, and the similar provisions of the state constitutions. Black's *Constitutional Law;* McClain's *Cases.*

27 EVIDENCE *4 credits* First semester

Origin, history, and logical nature of judicial evidence; witnesses, competency, duties and privileges; principal rules of evidence; practical exercises. Wigmore's *Cases.*

Professor WILSON

28 EQUITY *3 credits* Second semester

Historical development, rights and remedies, procedure, relato common law and Code. Maitland's *Lectures on Equity,* Ames' *Cases.* Professor WILSON

29 COMMON LAW PLEADING *3 credits* First semester

Courts and their jurisdiction, forms of action; principles of pleading and procedure at the common law. Perry's *Common Law Pleading;* Keen's *Cases.* Professor MCCUTCHEON

30 CODE PLEADING *3 credits* Second semester

Pleading under the Code; formal and substantial requirements of statement; complaint, answer, and demurrer; motions and amendments. Sunderland's *Cases on Code Pleading,* and selected cases. Professor MCCUTCHEON

32 LEGAL METHOD *1 credit* Second semester

Course on some particular topic chosen by the instructor for the purpose of training the student in the art of exhaustive legal research. Two hours per week, during one semester, *one* credit.

Professor MCCUTCHEON

41 PROPERTY V *3 credits* First semester

Real Property: Liens, mortgages, equitable and statutory liens. Wyman's *Cases on Mortgages.* Professor WILSON

42 PROPERTY VI *3 credits* Second semester

Title to property, real and personal, by will and intestate

succession; probate and administrative law. Gray's *Cases, Vol. 4;* Tiffany's *Real Property, Part 5; Idaho Probate Code.*

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43 and 44a CORPORATIONS I and II
3 credits and 1 credit First and Second semesters

Organization, management, powers of corporations; rights of stockholders; duties and liabilities of officers and directors. A theoretical and practical course in corporation law. In addition to the study of text and cases, the students will be formed into groups, each of which will organize, conduct, and wind up a corporation. Warren's *Cases on Private Corporations.*

Professor WILBER

44b CARRIERS AND PUBLIC SERVICE CORPORATIONS
2 credits Second semester

The law of carriers and public service corporations; their obligations to the public, and the mode of their enforcement at suit of the person injured. Green's *Cases on Carriers.*

Professor WILBER

45a IRRIGATION *2 credits* First semester

History of irrigation, appropriation of water and its incidents, means and accessories for conveying and holding water; state and federal control, irrigation companies, property and titles, contracts, sales, conveyances, remedies, eminent domain, taxation, *Idaho Code.* Professor MCCUTCHEON

45b MINING LAW *2 credits* First semester

Statutes of 1866 and 1872; possessory rights prior to location; location; mineral character; prior appropriation; lode and placer claims; tunnel and mill sites; extra-lateral rights; assessment work; adverse claims; patent. Costigan's *Cases.*

Professor WILSON

46 PUBLIC OFFICERS *2 credits* Second semester

Powers, duties and liabilities, mandamus and other remedies. Selected cases. Professor MCCUTCHEON

47 TAXATION AND COMMERCE *2 credits* First semester

The taxation and commerce clauses of the Federal Constitution; outlines of the state tax system. Black's *Constitutional Law;* McClain's *Cases on Constitutional Law; Idaho Revenue Act,* and Selected Cases.

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48 TRUSTS *2 credits* Second semester

Creation, construction and operation, liabilities of trustees and relation to cestui que trust; with reference to allied subjects. Ames' *Cases on Trusts.* Professor WILSON

50 MUNICIPAL CORPORATIONS *2 credits* Second semester

Governmental functions, powers and restrictions, liabilities for torts, bond issues and property rights. Smith's *Cases.* Professor MCCUTCHEON

51 and 52 PRACTICE I and II *3 credits* Each semester

Practice: (a) Theory of an action; choice of remedy; ascertainment of parties; drafting the pleadings; issuance of process; obtainment of provisional remedy; preparation for trial. First eight weeks of fall semester. (b) Four terms of District Court will be held, convening, respectively, in December, January, February, and March. Students will be required to prosecute and defend one case each term. (c) Appellate practice. A term of the Supreme Court will be held in May; each student will be required to appeal, and defend on appeal, one case in this court, in which appropriate transcripts and briefs must be prepared and filed. Mr. MOORE

IDAHO STATUTES AND DECISIONS

In connection with the courses on Practice, Dean McCutcheon will discuss, in lectures, the sources and historical development of Idaho Law.

53 and 54 LECTURE COURSES

The following lecture courses are offered during the term of each student's residence by the persons designated and will cover the phases of the law indicated by their titles:

Legal Ethics—Judge AILSHIE.
Conflict of Laws—Judge AILSHIE.
Eminent Domain—JAMES E. BABB, Esq.
Federal Practice—Judge DIETRICH.
Bankruptcy—Judge DIETRICH.
Public Land Law—Judge MACLANE.
Legal History and Judisprudence—Judge MACLANE.

METHOD OF INSTRUCTION

The method of instruction is eclectic, embracing text, case, and lecture, with frequent tests and recitations. Without entering

upon a discussion of the merits of the various methods of legal instruction, we find that a combination of the text and case systems is best adapted to meet the needs of the students whom we receive. The basis of class room instruction is the case; the text is assigned for collateral reading, and to give a continuity to the work assigned which the student might not otherwise grasp.

In the courses which admit of auxiliary practical work, such work is given. Contracts, conveyances, pleadings, and corporation papers are drawn in the appropriate courses, and wherever possible a student is helped to realize what a thing is by seeing a sample of the thing. On the other hand, an effort is made not to overlook the theory of law, and the history and reason of a subject are sought to be made clear. In short, it is our effort to supply educated lawyers, having sufficient practical knowledge to apply their education in the advice and assistance of such clients as young men may expect to receive in the opening years of their practice.

COURSES IN OTHER DEPARTMENTS

Law students may, with the approval of the faculty, take such courses in other departments of the University as they are able to carry without conflicting with their legal studies. No additional fee is required for such courses. Students are especially advised to take work in History, Political Science, English, and Public Speaking.

SIX-YEAR COLLEGE AND LAW COURSES

Students in the College of Letters and Sciences may combine work in that college with work in the Law School, and complete the requirements of both the B.A. (or B.S.) and LL.B. degrees in six years. A student desiring to pursue such a course must, upon entering the senior class in college, file with the law faculty a notice of his intention and pay the regular law school tuition. He must then complete law courses 1a, 1b, 3, 7, 4a, 4b, 8, and must also elect Political Science 1 and 2, (being the equivalent of Law 9 and 10). This combination will afford a total of twenty-six credits, which will be allowed towards both degrees, leaving a deficiency of eight credits in the first year's law work, which may be made up in the following years. Substitutions from the group of courses offered in the following paragraph may be allowed, when for some reason the student is unable to take the course as outlined in this paragraph.

FREE LAW COURSES

The following law courses, and no others, are open free of charge to Junior and Senior students in the other Colleges of the University: Law 1a, 1b, 2, 3, 4a, 4b, 22, 23a, 23b, 24a, 24b, 25, 26, 45a, 45b. No student will be permitted to elect to exceed eight credit-hours under the provisions of this paragraph, and no student will receive any credit towards a law degree, or certificate for use in another law school, for courses so taken, without complying with the requirements of the preceding paragraph. Students electing law under this paragraph are assumed to do so for purposes of a general education and culture, or to aid them in some other vocation, and not as professional courses.

GRADES AND SCHOLARSHIPS

Students are required to do satisfactory daily work and to pass written examinations in the various courses. For the present the general university system of grading is used. Those whose work appears deficient may be conditioned if they give promise of marked improvement, otherwise the course in which the failure is recorded must be repeated. Examinations to remove conditions must be taken by the opening of the fall semester in the succeeding year. Students must obtain at least ten credits in the work of each semester, and twenty-two credits in the work of the year, in order to continue with the class.

GRADUATION AND DEGREES

Matriculated students who have obtained eighty-nine credits as prescribed by the above courses, or equivalents from other schools, and who have spent three years in the study of law in residence at standard law schools, the last year at least being spent in this school, will receive the degree of Bachelor of Laws (LL.B.) from the University.

Special students whose work is satisfactory and who complete the whole or any part of the course will receive a certificate stating the work done. Students in other colleges of the University who elect law studies will receive appropriate credits toward their degrees under the regulations prescribed by the several Colleges.

CATALOGS AND INFORMATION

University or law catalogs, and special information concerning the Law School or the general University, may be had by addressing

either "The Bursar," or "Idaho Law School," Moscow, Idaho. Letters so addressed will receive prompt attention by the proper office, and will not be confused with private mail as personally addressed letters might be, especially in the summer during the absence of individual professors from Moscow.

VI. SUMMER SESSION

The second annual Summer School will be held at the University beginning June 16, 1913, and continuing for six weeks.

Last year's school passed all expectations in attendance and interest and clearly demonstrated the popularity of placing the large equipment of the University at the disposal of summer students.

PURPOSE The purpose of the Summer Session is primarily to afford teachers, principals, superintendents and any who may be interested in special lines of educational effort an opportunity to qualify themselves to meet the growing demand for better service.

It also admirably meets the needs of college or high-school students who wish to earn extra credits by doing summer work.

ADMISSION No entrance examination is required for admission to any of the courses. The school is open to all who have a serious purpose of advancing themselves educationally. The courses will be of the regular standard of the institution, and upon recommendation of the Faculty proportionate credit will be offered to all who satisfactorily complete the work.

Students who desire to have their Summer Session work recorded for credit in the University will be required to present evidence of having attained a standard equal to the admission requirements for the course in which credit is desired to be recorded.

EXPENSE The registration fee for the Summer Session will be $5.00. Tuition is free in all courses.

Room and board and light housekeeping rooms may be obtained in Moscow at reasonable rates, the price depending upon accommodations and number of students occupying a suite. Board may be had at $3.50 up and rooms $1.00 per week.

FACULTY The faculty for the Summer Session will be selected both from the regular staff of instructors in the University and from other educational institutions. Special lectures will

be given at stated intervals by prominent educators on special educational problems.

The Moscow Chautauqua, including unusually strong attractions in the lecture and concert field, will be held during the Summer Session. A model training school will be a feature of this school.

INFORMATION For detailed bulletin of announcements and other information of the Summer Session, address Professor PHILLIP SOULEN, Moscow, Idaho.

DEGREES CONFERRED IN JUNE, 1912

Commencement Address

Hon. FRANK T. POST, Spokane.

BACCALAUREATE DEGREES

College of Letters and Sciences

BACHELOR OF ARTS

Mabel May Kroh
Lydia Lahtinen
Bertha Leighton
Eva McFarland
George Hugh Roe O'Donnell
Linda Margaret Rae
Elizabeth Alice Redway
Charlotte Ella Tuttle

BACHELOR OF SCIENCE

Emil Arthur Anderson
Dell S. Garby
Virgil Martha Gilchrist
Elsie Marie Nelson
Floyd Richard Quinby
Harry Erwin Redeker
Todd Edwin Rudd
Eugenia Beatrice Swain

BACHELOR OF MUSIC

Mattie Estelle Heer
Gertrude Mary Stephenson

BACHELOR OF SCIENCE IN HOME ECONOMICS

Bessie Lula Perkins

BACHELOR OF SCIENCE IN AGRICULTURE

Earl Chauncy Hall
John Calvin Kinzer
Joseph Sudweeks
Alfred Demming Wicher

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Clinton Fiske Bessee
Orville Alva Faris
Lawrence Wiley Jordan
Jarl Taford Pauls
Jesse Pierce

BACHELOR OF SCIENCE IN MINING ENGINEERING

William Henry Casto, Jr.
Ernest William Ellis
Carl Herbert Loux
Hugh Joseph Maguire

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Lester Freeman Albert

BACHELOR OF LAWS

Harry Orlando Bond
Collier Hendrie Buffington
James Harris
Roy Oscar Johnson
LeRoy McCann
William Henry Mason
William John Nuffer
Hugh Sibbett Parker
Frederick Herman Rehberg

MASTER OF ARTS

Icy Smith Curtis
Vera Myrna Gray

MASTER OF SCIENCE

Clifford Leslie McArthur

MASTER OF SCIENCE IN AGRICULTURE

Clyde Harmon Heard

HONOR LIST, AUGUST, 1912

For the conditions upon which honors are awarded, see pages 58-59. Names are arranged in alphabetical order in each group. Only students carrying at least twelve credits each semester are eligible for the Honor List.

FINAL HONORS, CLASS OF 1912

HIGHEST HONORS

Mattie Estelle Heer, B.M., *Silver City*
Lydia Lahtinen, B.A., *Mountainhome*

HIGH HONORS.

Clinton Fiske Bessee, B.S.(C.E.), *Moscow*
Collier Hendrie Buffington, LL.B., *Glenwood, Iowa*
James Harris, LL.B., *Weiser*
Jesse Pierce, B.S.(C.E.), *Boise*
Joseph Sudweeks, B.S.(Agr.), *Kimberly*

HONORS.

Dell S. Garby, B.S., *Lewiston*
Roy Oscar Johnson, LL.B., *Gifford*
*John Calvin Kinzer, B.S.(Agr.), *Bangor, Iowa*
Eva McFarland, B.A., *Boise*
Bessie Lula Perkins, B.S.(H.Ec.), *Lewiston*
Linda Margaret Rae, B.A., *Moscow*
*Frederick Herman Rehberg, B.A., LL.B., *Moscow*
Eugenia Beatrice Swain, B.S., *Boise*

THIRD-YEAR HONORS, CLASS OF 1913

CLASS A

Jessie Irene Coram, *Grangeville*
Arlie Delos Decker, *Moscow*
Ralph Baxter Foster, *Westmoreland, Kansas*
Carl Edward Johnson, *Idaho Falls*
John Raymond Maughan, *Preston*
Baxter Merrill Mow, *Weiser*
Franklin Thorpe Osborn, *Hailey*

*Senior year only at University of Idaho.

CLASS B

Edna Bigelow, *Payette*
Iva Emmett, *Kellogg*
Hallard Washington Foester, *Nampa*
Charles Henry Herman, *Moscow*
Albert Weidel Buch Kjösness, *Spokane, Wash.*
Edna Elmira Larsen, *Boise*
Leon Henry Seymour, *Glen, Calif.*
Rosa Strohbehn, *Payette*
Ursel Edith Strohecker, *Garfield, Wash.*
Charles Edward Watts, *Juliaetta*

SECOND-YEAR HONORS, CLASS OF 1914

CLASS A

Nettie May Bauer, *Boise*
Harriet Marie Fairbanks, *Iowa City, Iowa*
Vernon Fawcett, *Moscow*
Gladys Lessinger, *Boise*
Stephen Alvin Regan, *Boise*
Chester Fowler Smith, *Caldwell*
Edward Elmer Smith, *Valley*
Lulu Emily Vance, *Boise*
Margit Anna Waale, *Nampa*
Josephine May Wayman, *Hanna*

CLASS B

Margaret Lowara Brandt, *Nampa*
Lorena Elizabeth Dartt, *Palouse, Wash.*
George Jackson Downing, *Spirit Lake*
Clarence Eugene Favre, *Cambridge*
Viola Claire Fluke, *Butte, Mont.*
Carl D. Garby, *Lewiston*
Elizabeth Hays, *Boise*
Carl Pierce Lewis, *Moscow*
Lawrence Guy Mason, *Spangle, Wash.*
Dottie Ella Mae Murray, *Moscow*
Margaret Neuman, *Sandpoint*
Mary Hazard Petcina, *Coeur d'Alene*

FIRST-YEAR HONORS, CLASS OF 1915

CLASS A

Ernest Alvin Emmanuel Beckman, *Troy*
Mary Elizabeth Burke, *Moscow*
June Avice Clark, *Boise*
Helen Louise Denecke, *Boise*
Maude Himes, *Sandpoint*
Robert Jens Leth, *Buhl*
Lesetta Mae Lubken, *Boise*
Marvin Manly Monroe, *Buhl*
Ella Letitia Olesen, *Moscow*
Henrietta Louisa Safford, *Moscow*

CLASS B

Russell Green Adams, *Moscow*
*Mark Anderson, *Pocatello*
Francis Ray Cammack, *Canyon City, Colo.*
Audrey Carr, *Moscow*
Beth Gerhart, *Weiser*
Arthur Leslie Heer, *Silver City*
Jessie Clara Holman, *Helena, Mont.*
Mary Cecil Jensen, *Moscow*
Alice Evelyn Meeks, *Viola*
Flora McConnel, *Boise*
Helen Pitcairn, *Twin Falls*
Elizabeth Helen Soulen, *Moscow*
Veda Stoddard, *Nampa*
Laurence Fielding Stone, *Boise*
Louise Mae Strohbehn, *Payette*
Dorothy Taylor, *Boise*
*Norma Lucile Taylor, *Lansing, Mich.*
Ruth Virgie Warner, *Moscow*

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*Unclassed student.

OFFICERS AND MEMBERS OF UNIVERSITY CONVOCATION, 1912-1913

OFFICERS

President.....Fred E. Lukens, '08, Potlatch
First Vice-President.....W. H. Mason, '12, Moscow
Second Vice-President.....P. S. Darlington, '07, Wenatchee, Wash.
Third Vice-President.....Ella Hawley, '10, Moscow
Secretary.....Ruth Broman, '09, Moscow
Treasurer.....Nellie Ireton, '03, Boise

GOVERNING BOARD

Acting President W. L. Carlyle, Moscow
E. H. Moffit, Wallace
Fred E. Lukens, '08, Potlatch
Miss Margaret E. Lauder, '06, Moscow
Hon. Burton L. French, '01, Moscow
Prof. G. L. Larson, '07, Moscow

MEMBERS

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The Faculty of the University
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Miss Grace M. Shepherd, *Boise*
Dr. W. C. Whitwell, *Salmon*
Supt. Charles Meek, *Boise*
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Hon. J. J. Day, *Moscow*
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Supt. Walter R. Siders, *Pocatello*
Mrs. S. E. Hutton, *Moscow*
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Hon. E. H. Dewey, *Nampa*
Mr. Timothy Regan, *Boise*
Bishop J. B. Funsten, *Boise*
Mr. F. A. Blackwell, *Spirit Lake*
Mr. William Thompson, *Lewiston*
Mr. Allen B. Eaton, *Mountainhome*
Mr. J. M. Bistline, *Pocatello*
Hon. Fremont Woods, *Boise*
Mr. F. J. Humbird, *Sandpoint*
Mrs. Ella Farmin, *Sandpoint*
Supt. O. P. Elliott, *Twin Falls*
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Hon. L. V. Patch, *Payette*

UNIVERSITY ALUMNI

OFFICERS OF THE ALUMNI ASSOCIATION, 1912-1913

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Joseph Adams, '11

TRIENNIAL ALUMNI DIRECTORY

It is planned to issue the Alumni Directory as a special bulletin before Commencement, 1913, and thereafter once in every three years. Graduates are requested to report corrections in their occupations and addresses to Dean J. G. Eldridge.

LIST OF STUDENTS

COLLEGE

GRADUATE STUDENTS

NAME	COURSE	RESIDENCE
Bibby, Irwin John B.S.A., South Dakota Agricultural College, 1912.	Dairying	Galesville, Wis.
Buffington, Collier Hendrie LL.B., University of Idaho, 1912.	Agriculture	Glenwood, Ia.
Bohannon, George Anderson A.B., Whitman College, 1911.	History, Literature	Wallace
Eichelberger, Charles B.S., University of Idaho, 1907.	Chemistry	Boise
Eichelberger, Roy B.S., University of Idaho, 1907.	Chemistry	Fern

Graduate Students, 5

SENIORS (Class of 1913)

NAME	COURSE	RESIDENCE
Annett, Anne Ruth	Arts	Boise
Armstrong, Ray Dean	Civil	Boise
Bigelow, Edna	Arts	Payette
Bistline, Ray Donald	Civil	Pocatello
Boyeson, Matthew George	Arts	Moscow
Brown, Winifred Caroline	Arts	Landore
Campbell, Edna Eve	Arts	Spokane, Wash.
Case, Leland Irving	Agriculture	Minneapolis, Minn.
Chamberlain, Horace Lorenzo	Law	Modesto, Calif.
Coram, Jessie Irene	Arts	Grangeville
Cornwall, Clyde Francis	Science	Moscow
Davis, Burton Ellsworth	Science	Roseberry
Davis, John DeWitt	Arts	Roseberry
Decker, Arlie Delos	Forestry	Moscow
Denning, Stewart Keifer	Forestry	Moscow
Donart, George	Arts	Cambridge
Duffey, James Grover	Law	Cove, Ore.
Emmett, Iva	Home Econ.	Kellogg
Foester, Hallard Washington	Mining	Nampa
Foster, Ralph Baxter	Arts	Valley Falls, Kan.

NAME	COURSE	RESIDENCE
Funsten, William Pratt	Agriculture	Boise
Gilkey, Lillian	Science	Eugene, Ore.
Griner, John Irwin	Law	Cashmere, Wash.
Hayden, Claude Jacques	Agriculture	Cope, S. Car.
B.S., South Carolina Agricultural College, 1912.		
Heard, Herman Claude	Agriculture	Moscow
Herman, Charles Henry	Forestry	Moscow
Hoobler, Lester	Law	Clarkston, Wash.
Jessup, Louie Theodore	Civil	Juliaetta
Johnson, Carl Edward	Agriculture	Idaho Falls
Kjösness, Albert Weidel Buch	Agriculture	Spokane, Wash.
Larsen, Edna Elmira	Home Econ.	Boise
Leeper, Robert Dwight	Law	Coeur d'Alene
Lucas, Parker Vincent	Law	Roseberry
Martin, Lewis	Science	Post Falls
Maughan, John Raymond	Agriculture	Preston
Minden, Chester Carl	Arts	Moscow
Mow, Anetta Cordula	Arts	Weiser
Mow, Baxter Merrill	Arts	Weiser
Osborn, Franklin Thorpe	Arts	Hailey
Ott, Althea Helen	Home Econ.	Boise
Paulsen, Carl Gustavus	Civil	Boise
Perkins, Enoch	Civil	Boise
Perkins, Proctor Knott	Law	Soldier
Peterson, Louis George	Law	Moscow
B.A., University of Idaho, 1904.		
Rice, Charles Allen	Law	Eagle
Schick, Marguerite Gwinn	Arts	Cook
Seymour, Leon Henry	Agriculture	Cleveland, Ohio
Smith, Kathryn Margaret	Home Econ.	Potlatch
Stillinger, Charles Roy	Arts	Moscow
Strate, Edwin Martin	Agric.	North Yakima, Wash.
Strohbehn, Rosa	Music	Payette
Strohecker, Ursel Edith	Arts	Garfield, Wash.
Suen Sze Fung	Electrical	Foochow City, China
Nan Yang University, 1912.		
Swanson, Theodore Abel	Law	Pocatello
Watts, Charles Edward	Science	Juliaetta
Whitten, Herbert Walter	Law	Blackfoot
Wood, Cartée	Law	Boise

Seniors, 57

JUNIORS (Class of 1914)

NAME	COURSE	RESIDENCE
Adams, Russell Green	Law	Silver City
Allen, Launa Marguerite	Science	Boise
Annett, Charles	Mining	Boise
Anthony, Florence Gladys	Science	Moscow
Bauer, Nettie Mae	Arts	Boise
Bigham, Zella	Science	Kendrick
Black, Carey Reign	Science	Moscow
Boyle, John Milton	Law	Blackfoot
Braham, Joseph Marion	Chemical	Spokane, Wash.
Brandt, Margaret Lowava	Arts	Nampa
Buffington, Donald Maxwell	Law	Mabton, Wash.
Cooper, Alice	Science	Walla Walla, Wash.
Curtis, Raymond Earl	Agriculture	Moscow
Dartt, Lorena Elizabeth	Arts	Palouse, Wash.
Downing, George Jackson	Agriculture	Spirit Lake
Doyle, Thomas Price	Civil	Moscow
Eskesen, Lillian	Arts	Akron, Ohio
Favre, Clarence Eugene	Forestry	Cambridge
Fawcett, Myrle Maurine	Science	Palouse, Wash.
Fawcett, Vernon Porter	Science	Palouse, Wash.
Fox, Jeannette Rachel	Arts	Hailey
Garby, Carl D.	Chemical	Lewiston
Hayden, John Francis	Agriculture	Stites
Hays, Elizabeth	Home Econ.	Boise
Heer, Arthur Leslie	Law	Silver City
Hockett, Clara Ransom	Music	Moscow
Hockett, Robert Vestal	Forestry	Moscow
Hughart, Harold H.	Science	Pocatello
Jensen, Samuel James	Agriculture	Moscow
Johnson, Charles Lyle	Agriculture	Moscow
Johnson, John William	Mining	Marysville
Kennedy, Merton Grant	Arts	Caldwell
Kettenbach, Marie	Music	Lewiston
Kinnison, Harvey Banks	Civil	Payette
Knudson, Albert Henry	Mechanical	Coeur d'Alene
Kroh, Stephen Jacob	Chemical	Moscow
Lessinger, Gladys Marie	Arts	South Boise
Lewis, Carl Pierce	Agriculture	Moscow
Martin, Othel Henrietta	Arts	Davenport, Wash.

NAME	COURSE	RESIDENCE
Mason, Howard Ward	Mechanical	New Plymouth
Mason, Lawrence Guy	Science	Spangle, Wash.
Mason, Margaret May	Science	New Plymouth
McAdams, Harry	Law	Corral
McIntosh, Andrew	Science	Grinnell, Ida.
Minden, Minnie	Science	Moscow
Mulkey, Marvin Enoch	Mechanical	Baker
Murray, Dottie Ella May	Arts	Mullan
Murray, William Arthur	Electrical	Mullan
Neuman, Margaret	Arts	Sandpoint
O'Neill, Lawrence Eugene	Law	Lewiston
Perkins, Ralph Emerson	Civil	Grangeville
Perkins, William Clough	Civil	Soldier
Petcina, Mary Hazard	Arts	Coeur d'Alene
Regan, Stephen Alvin	Agriculture	Boise
Robards, Lucile	Arts	Portland, Ore.
Robinson, Fay Childers	Agriculture	Boise
Rudesill, Mabelle	Arts	Sandpoint
Samms, Virgil William	Civil	Pocatello
Scofield, Mac	Science	Grangeville
Scott, George Alexander	Agriculture	Winnebago, Neb.
Scott, Walter Preston	Mining	Boise
Sieler, Rose	Arts	Spokane, Wash.
Sinclair, Susan	Arts	Moscow
Smith, Bert Ferdinand	Mining	Boise
Smith, Chester Fowler	Chemical	Caldwell
Smith, Edward Elmer	Chemical	Valley
Soulen, Harry Boone	Agriculture	Moscow
Sutton, Arthur Otto	Law	Boise
Taylor, Verne Lee	Law	Gooding
Tosney, Irene Theresa	Home Econ.	Mullan
Tuttle, Roy Frank	Civil	Cambridge
Waale, Margit Anna	Science	Nampa
Warren, George Theron	Arts	Weiser
Wayman, Josephine May	Arts	Emmett
White, Helen Hardman B.S., St. Joseph's, 1903.	Arts	Moscow
Woods, Hazel Luella	Science	Moscow
Woolridge, Bert Patrick	Science	Wallace

Juniors, 77

SOPHOMORES (Class of 1915)

NAME	COURSE	RESIDENCE
Allen, Vivian Mildred	Arts	Sandpoint
Andersen, Jacob Sigurt	Science	Parma
Anderson, Allen Richard	Science	Payette
Anderson, Mark	Forestry	Pocatello
Anthes, Mildred Louise	Science	Pocatello
Barton, Louise Emma	Science	Moscow
Beckman, Ernest Alvin Emanuel	Arts	Troy
Beier, Herbert Henry	Agriculture	Council
Bolger, Grace Louise	Home Econ.	Spokane, Wash.
Breslauer, Mirton B.	Mining	Spokane, Wash.
Burke, Mary Elizabeth	Arts	Moscow
Burns, Robert Owen	Forestry	Payette
Cammack, Francis Ray	Agriculture	Wendell
Carithers, Glenna Grace	Arts	Moscow
Carlson, Oscar Fred	Forestry	Spokane, Wash.
Carr, Audrey	Arts	Moscow
Christenson, Andrew Martin	Agriculture	Sandpoint
Clarke, Edna Alice	Science	Moscow
Collins, Gladys Marie	Home Econ.	Wardner
Coram, Edward John	Science	Grangeville
Cozier, Mary Helen	Arts	Moscow
Crandall, Frank Forrest	Civil	Shoshone
Curtis, Lulu	Science	Blackfoot
Denning, Stephen Louis	Agriculture	Moscow
Donart, Hugo Elwin	Agriculture	Coeur d'Alene
Eklof, Carl Martin	Agriculture	Lorenzo
Ellis, Dorothy Grace	Home Econ.	Wardner
Fallquist, Marie Helen	Arts	Troy
Fjeldsted, Ezra James	Agriculture	Preston
Freer, Seth Temple B.S., Carleton College, 1906.	Civil	Blue Earth, Minn.
Funaki, Yoshinori	Electrical	Kurayoshi, Japan
Gerlough, Robert Jacob	Agriculture	Boise
Greenwood, Lulu Edna	Arts	Moscow
Hawley, Eugene Estes	Agriculture	Moscow
Hawley, Ira Archie	Agriculture	Moscow
Himes, Maude	Arts	Sandpoint
Holman, Jessie Clara	Arts	Helena, Mont.
Humphries, Earl Kenneth	Civil	St. Anthony

NAME	COURSE	RESIDENCE
Isaman, George Reynolds	Agriculture	Lewiston
Jensen, Mary Cecil	Home Econ.	Moscow
Johnson, Albert Leroy	Agriculture	Idaho Falls
Johnson, Willard Barrow	Agriculture	Luverne, Minn.
Kaufman, Georgie	Arts	Boise
Keane, Kathryn	Science	Moscow
Kinnison, Allen Fisher	Agriculture	Payette
Lafrenz, Frank Henry	Agriculture	Coeur d'Alene
Lattig, Herbert Elmer	Agriculture	Payette
Lennox, Margaret Jean	Science	Moscow
Leth, Robert Jens	Agriculture	Buhl
Lockhart, James Andrew	Agriculture	Brookings, S. D.
Lubken, Lesetta Mae	Science	Boise
McConnel, Flora K.	Home Econ.	Boise
McCrossin, Ellen	Science	Emmett
McFarland, Gladys	Science	Boise
McGregor, Robert Roy	Civil	Boise
McHugh, Agnes Cathrine	Home Econ.	Spokane, Wash.
Means, Marguerite	Science	Lewiston
Meeks, Alice Evelyn	Science	Viola
Mitchell, Philip Charles	Electrical	Coeur d'Alene
Monroe, Marvin Manly	Arts	Buhl
Murray, Hattie Silva	Arts	Mullan
Nakanishi, Shimaji	Electrical	Aichiken, Japan
Nankervis, Gladys Lillian	Science	Moscow
Nelson, Nina Josephine	Home Econ.	Owanka, S. D.
Newlin, Peninah	Arts	Boise
Nisbet, Oliver Martin	Science	Genesee
Nordby, Julius Edward	Agriculture	Genesee
Nuffer, Herman Christopher	Civil	Preston
Olesen, Ella Letitia	Arts	Moscow
Ostroot, Paul Gerhard	Arts	Moscow
Perkins, John Nelson	Science	Lewiston
Pettijohn, Hester Smith	Science	Walla Walla, Wash.
Pitcairn, Helen	Science	Twin Falls
Pitcairn, Katharine	Home Econ.	Twin Falls
Pond, Joseph Martin	Science	Thatcher
Querry, Clara Clark	Arts	Boise
Safford, Henrietta Louisa	Arts	Moscow
Sakuma, Jiro	Arts	Nakabram, Japan
Soulen, Elizabeth Helen	Arts	Moscow

NAME	COURSE	RESIDENCE
Stephenson, Florence May	Home Econ.	Nampa
Stoddard, Veda	Arts	Nampa
Stone, Laurence Fielding	Science	Boise
Taylor, Dorothy Martin	Home Econ.	Boise
Theriault, Fred William	Mining	Avery
Tingley, Ray	Civil	Boise
Wallace, Martha Lucile	Arts	Council
Warner, Ruth Virgie	Arts	Moscow
Waters, Wilfred William	Agriculture	Nezperce
White, Vera Vivian	Arts	Moscow
Wildenthaler, Harriett Evangeline	Science	Lewiston
Wiley, Gladys Philena	Science	Spokane, Wash.
Woesner, Nina Evelyn	Arts	Boise
Youngs, Homer Smith	Forestry	Twin Falls

Sophomores, 93

FRESHMEN (Class of 1916*)

NAME	COURSE	RESIDENCE
Adams, Harold Jack	Electrical	Boise
Albert, David Worth	Mechanical	Payette
Alexander, Henrietta Mary	Science	Iron Mountain, Mich.
Anderson, Albert	Civil	Troy
Andrew, Alice Verna	Arts	Coeur d'Alene
Ankcorn, Charles Morris	Science	Palouse, Wash.
Babcock, Fred Jason	Law	Coeur d'Alene
Bailey, Agnes Louise	Home Econ.	Grand View
Bailey, Edith	Science	Walla Walla, Wash.
Barber, Alma	Arts	Cambridge
Barton, John Homer	Law	Mullan
Beamer, L. C.	Science	Wallace
Bennett, Earl Phillips	Civil	Boise
Bentley, Kenneth Wells	Chemical	Lewiston
Berry, Christine Ferne	Science	Rathdrum
Booth, William Henry	Agriculture	Nezperce
Borden, Ross Parker	Mechanical	Shoshone
Boyd, Julian Deigh	Electrical	Payette
Brookhart, Ray Francis	Science	Pocatello
Brown, Mary Caroline	Home Econ.	Kellogg
Burkland, Oscar Raymond	Arts	Deary
Campbell, Clara Gertrude	Arts	Coeur d'Alene
Carithers, Annis Lillian	Home Econ.	Moscow

*First-year Law, Class of 1915, classed as Freshmen.

NAME	COURSE	RESIDENCE
Carpenter, Margery Eva	Home Econ.	Merced, Calif.
Cartee, Ross Beckler	Science	Boise
Casey, William West	Law	Juneau, Alaska.
Chase, Florence	Science	Colfax, Wash.
Crater, Rollo Vincent	Arts	Twin Falls
Curtis, Rose Amy	Arts	Boise
Darnall, Glenn McClellan	Forestry	Payette
David, Donald Kirk	Science	Moscow
Denecke, Anna Gertrude	Home Econ.	Richfield
Dermott, Lucile Janette	Science	Everett, Wash.
Dingle, Thomas Hedley	Science	Coeur d'Alene
Eaves, David Austin	Mining	Lewiston
Edmundson, Emma Winifred	Home Econ.	Moscow
Elliott, Howard Everett	Mechanical	Weiser
Ellington, Lloyd Alvin	Agriculture	Holliday, Mo.
Fluharty, Arthur Lawrence	Agriculture	Culdesac
Ford, Pauline Constance	Arts	Moscow
French, Mildred Pearl	Home Econ.	Meridian
Friedman, Myrtle Helen	Home Econ.	Hailey
Gano, Ward Frank	Agriculture	Moscow
Gerlough, Jean Paul	Arts	Boise
Gillespie, Raymond Culver	Science	Orofino
Gowen, William Wasmer	Law	Caldwell
Gregg, Tima	Arts	Clarkston, Wash.
Gregory, Frederick Sherman	Civil	Boise
Groome, Cleve	Law	Caldwell
Gyde, Constance	Arts	Wallace
Hallam, Clyde Milton	Civil	Moscow
Hammermeister, Mrs. Hazel	Science	Blackfoot
Harris, Charles Eli	Science	Troy
Hartley, Esther Alice	Arts	Emmett
Hawkins, Elijah Rodes	Electrical	Bonners Ferry
Hawley, James Henry, Jr.	Law	Boise
Hill, Jessie Ruth	Home Econ.	Palouse, Wash.
Holaday, Howard Wesley	Forestry	Denver, Colo.
Homme, Olav Halversson	Electrical	Treungen, Norway
Horning, Charles Edwin	Law	Kamiah
Horton, Lucv	Arts	Moscow
Huff, Laurence Edwin	Arts	Cottonwood
Hughes, Ray	Agriculture	Twin Falls
Jackson, William Marion	Chemical	Aberdeen

NAME	COURSE	RESIDENCE
Jardine, Arthur Stewart	Law	Great Falls, Mont.
Johnson, Clarence Frithiof	Agriculture	Idaho Falls
Jones, Victor Emmanuel	Science	Kellogg
Kambitsch, Antone Joe	Forestry	Genesee
Keane, James Joseph	Science	Genesee
Keane, Theresa Isabel	Science	Moscow
Kelly, James Ralph	Chemical	Gooding
Kjösness, Valborg Margrethe	Science	Spokane, Wash.
Koelsch, Charles Clay	Law	Boise
Lauder, Ralph Emerson	Civil	Moscow
Leigh, Muriel Wilson	Science	Spokane, Wash.
Lingenfelter, C. Homer	Law	Boise
Lyon, Alfred Jefferson	Mechanical	Coeur d'Alene
Marsh, Frank	Agriculture	Moscow
Mason, Bernice Mary	Arts	New Plymouth
Maughan, Angus Marion	Science	Preston
McCormick, Gilbert Clark	Arts	Roswell
McDougall, Isaac Edwin	Law	Boise
McEvers, John Henry	Law	Grangeville
McMonigle, Anna Loretta	Home Econ.	Hailey
McNett, Gail	Forestry	Rathdrum
Mellison, Edna Josephine	Science	Everett, Wash.
Mellison, Mary	Science	Everett, Wash.
Melugin, Carl Emery	Arts	Helena, Mont.
Mickelwait, Claude Bayles	Agriculture	Twin Falls
Miller, Carey D.	Home Econ.	Boise
Miller, Robert Ronald	Science	Burke
Mitchell, Hugh	Civil	Moscow
Mitchell, Joseph Roy	Agriculture	Rathdrum
Mitchell, Neva Isobel	Science	Moscow
Montague, Robert Martin	Science	Genesee
Moody, Clarice	Home Econ.	Moscow
Morley, Naomi Pearl	Science	Colfax, Wash.
Morris, Leo Francis	Forestry	Weiser
Morrison, Thomas Samuel	Science	Colfax, Wash.
Motié, Ruth Grace	Arts	Spokane, Wash.
Musgrave, John Clyde	Agriculture	Twin Falls
Newbury, Joseph Benjamin	Electrical	Mullan
Numbers, Joseph Reno, Jr.	Science	Boise
Olson, Bertha Seraphia	Science	Firth
Owens, Charles Hayden	Electrical	Boise

NAME	COURSE	RESIDENCE
Patten, Helen Marie	Arts	Moscow
Peterson, Paul Theodore	Law	Idaho Falls
Phillips, John Lloyd	Law	Lewiston
Reavis, Charles Herbert	Arts	Midvale
Roberts, William Harry	Mining	Kellogg
Ross, Precious Sylvia	Arts	Moscow
Rowell, Dean Clayton	Agriculture	Boise
Rowell, Lyle Marshall	Civil	Boise
Rutledge, Walter Thompson	Forestry	Nyssa, Ore.
Safford, Raymond Jackson	Science	Moscow
Sato, Joichi	Electrical	Oita, Japan
Schofield, William Robert	Forestry	El Paso, Ill.
Schroeder, Bert H.	Forestry	Cottonwood
Scott, Benson Glenwood	Electrical	Idaho Falls
Shipkey, Carl Albert	Civil	Great Fall,s, Mont.
Sieler, Victor Christian	Science	Spokane, Wash.
Smith, Edith Ralston	Arts	Coeur d'Alene
Smith, Elbridge Case	Arts	Wallace
Starr, Jessie Columbia	Home Econ.	Kimberly
Sullivan, George Paul	Electrical	Lewiston
Sylvester, Bertha Birdie	Arts	Rathdrum
Sylvester, Clarence Albert	Mining	Rathdrum
Sylvester, George See	Law	Rathdrum
Tabor, George William	Agriculture	Wallace
Taylor, Alta May	Arts	Moscow
Taylor, Anita Nellie	Arts	Moscow
Terteling, Loyd Peter	Mechanical	Potlatch
Thomas, Penelope Fay	Arts	Coeur d'Alene
Tracy, Gwendolyn Elizabeth	Arts	Moscow
Turnbow, Gladys	Home Econ.	Garfield, Wash.
Turnbow, Grover Dean	Science	Palouse, Wash.
Vande Bogart, Paul Milo	Arts	Hillyard, Wash.
Varner, Irvin Merle	Agriculture	Roseberry
Vesser, Mary	Home Econ.	Coeur d'Alene
Watts, Nancy Ellen	Home Econ.	Mountainhome
Weaver, Robert Roy	Chemical	Twin Falls
Wenger, Paul Abram	Agriculture	Aberdeen
Wenz, Dorothea Katherine	Arts	Rathdrum
Wilmot, Anne Eleanor	Home Econ.	Wallace

NAME	COURSE	RESIDENCE
Yearian, Edwina Nelson	Science	Lemhi
Zumhof, Marjorie Beatrice	Arts	Moscow
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UNCLASSED

NAME	MAJOR STUDY	RESIDENCE
Almquist, Alma	Violin	Moscow
Aspray, Mrs. Joseph	Voice	Moscow
Brown, Stanley Theodore	Science	Palouse, Wash.
Burchill, Mrs. A. J.	Piano	Moscow
Byrns, Margaret	Piano	Moscow
Cander, Madeline	Piano	Moscow
Cameron, Christina	Piano	Moscow
Carlyle, Helen	Violin	Moscow
Casey, Lois	Voice	Daisy, Wash.
Cole, Mrs. Herbert	Voice	Moscow
Collens, Mrs. E. Hellier	Voice	Moscow
Cornwall, Vesta	Piano	Moscow
David, Mrs. Homer	Home Econ.	Moscow
Evans, Philip John	Law	Malad
Fallis, Edythe	Piano	Spokane, Wash.
Fallquist, Frank Arthur	Science	Troy
Fallquist, Hattie Virginia	Arts	Troy
Field, James Henry	Mining	Coeur d'Alene
Funk, Jennette Margaret	Education	Sunnyside, Wash.
Gibbons, Daniel W.	Agriculture	Cottonwood
Gossett, Clytis	Piano	Moscow
Griffin, Mrs. W. T.	Home Econ.	Moscow
Griffith, Mrs. M. W.	Home Econ.	Moscow
Gray, Ruth	Piano	Moscow
Hart, Daniel David	Mining	Boise
Hatfield, Howard	Piano	Moscow
Henderson, Edna	Piano	Moscow
Henderson, Jay	Piano	Moscow
Higgins, Willie Presley	Law	Boise
Holaday, Grace Elizabeth	Home Econ.	Denver, Colo.
Holaday, Mrs. Horace	Home Econ.	Denver, Colo.
Holaday, Olivia	Piano	Moscow
Hughes, James Agnew	Violin	Fruitland
Hulme, Edward Maslin	Voice	Moscow
Hutton, Mrs. S. E.	Horticulture	Moscow

NAME	COURSE	RESIDENCE
Jenkins, Margaret	Piano	Moscow
Johnson, Ray	Voice	Moscow
Isaacson, Mrs. Caroline	Voice	Minneapolis, Minn.
King, Bess	Piano	Spokane, Wash.
Kennard, Mrs. Frank Leslie	Violin	Moscow
Leuschel, Otto Herman	Forestry	Wallace
Lewis, Vaughn	Orchestra	Moscow
Marks, Florence	Home Econ.	Moscow
Marlott, Madge	Piano	Moscow
Mitling, Mayrus	Science	Moscow
Morton, Glen Arthur	Arts	Moscow
Parsons, Lois	Piano	Moscow
Probett, Mrs. G. H.	Home Econ.	Moscow
Rank, Lorraine	Piano	Lewiston
Rhodes, Lilah	Piano	Moscow
Lambert, Zella	Piano	Moscow
Shultz, J. M.	Violin	Moscow
Smith, Verna Grace	Piano	Kettle Falls, Wash.
Steltz, Lettie	Voice	Moscow
Stewart, Mrs. Anna	Voice	Moscow
Stewart, Edna	Piano	Moscow
Thomas, Elsie	Piano	Kendrick
Veatch, Mrs. Fred	Home Econ.	Moscow
Warner, Lois	Piano	Moscow
Willis, Belle	Piano	Moscow
Wright, Robert Ballard	Horticulture	Lewiston

Unclassed Students, 61

ONE-YEAR DAIRY STUDENTS

NAME	RESIDENCE
Fancher, Charles Henry	Spokane, Wash.
Foster, Richard M.	Jerome
Pearson, Axel L.	Moscow
Plummer, Howard A.	Moscow
Spreen, Paul	Medford, Wis.
Tiss, Nickolas	Wendell
Wright, Harry S.	Jerome

One-Year Dairy Students, 7

SCHOOL OF PRACTICAL AGRICULTURE

NAME	RESIDENCE
Abel, Hugh Boss	Moscow
Adams, Guilford Robins	Eugene, Ore.
Beck, Earl Arthur	Twin Falls
Booth, Herbert Leslie	Nezperce
Botts, Alton Richard	Caldwell
Bowman, Lewis Hull	Thorp
Burkhart, Frank Leo	Chicago, Ill.
Carr, William Clegg	McGraw, N. Y.
Cochrane, Harvie George	Hempstead, N. Y.
Conart, Parks Delbert	Thorp
Cook, Silvia Olof	Leland
Cook, Walter Auguste	Leland
Fauver, Coy Wilson	Viola
Fellers, Harlie G.	Rathdrum
Fox, George Vincent	Nezperce
Frevert, Wesley	Odebalt, Iowa
Gipson, Edwin Varney	Caldwell
Griswold, Frank Albert	Burley
Hogaboam, John	Lapwai
Holee, Edwin Louis	Lapwai
Horton, John	Moscow
Johann, Bennie	Genesee
Johann, George	Genesee
Johnson, Carl John	Archer
Jones, Heley Forest	Endicott, Wash.
Kennedy, Carl Sutton	Whitebird
Krom, Joe Frank	Spokane, Wash.
Litchfield, John	Elk City
Lockwood, Theodore Wheeler	Hamilton, Mont.
Loseth, Johnny Oliver	Orofino
McCroskey, Joseph Philander	Sprague, Wash.
McDade, Edward Daniel	Salmon
McKeever, Harry Valentine	Kendrick
McMaster, Willard Thompson	Twin Falls
Malin, Ralph Dolton	Hamilton, Mont.
Mariner, Claude Eugene	Hagerman
Meyer, Carl August	Thorp
Meyer, France Henry	Thays
Miller, Marshall Valentine	LaCrosse, Wash.

NAME	RESIDENCE
Musser, Lester Risser	Filer
Osborne, Floyd Earl	Filer
Page, Herbert Deforest	Boise
Pickett, Earl Morrison	Twin Falls
Powell, Russel	Richfield
Querry, Harwood Fitch	Boise
Reese, John McFerrin	Lewiston
Russell, Abner James	Ilio, Wash.
Rutlidge, Earl Everett	Nyssa, Ore.
Solberg, Nels	Kamiah
Sponsler, Willes	Moscow
Starn, Edgar Clifford	Boise
Story, Weslie Vernon	Valley, Wash.
Stowe, Harry Thomas	Carbin
Taylor, Glen	Buhl
Taylor, Stillman	Bowles
Thometz, George	Twin Falls
Thometz, John Lawrence	Twin Falls
Tobias, Edwin Socrates	Lemhi
Vinnigerholz, Bert	Moscow
Wade, Frank Edward	Moscow
Winegardner, Richard Calvin	Leland
Winters, Clarence Eddy	De Lamar
Wood, Frank Elbridge	Boise
Wood, Jesse Elmer	Buhl
Woolman, Bernard Leverne	Mansfield, Wash.
Wright, Francis Gordon	Coeur d'Alene

School of Practical Agriculture, 66

SCHOOL OF HOME SCIENCE

NAME	RESIDENCE
Bennett, Gladys	McCall
Driscoll, Mary	Moscow
Hansen, Agnes	Moscow
Kidwell, Olive	Garfield, Wash.
Querry, Florence	Boise
Scott, Effie Lillian	Roseberry
von Bargen, Clara	Thorp

School of Home Science, 7

MINERS' SHORT COURSE

NAME	RESIDENCE
Carson, Alfred Fred	Moscow
Colgore, Fred James	Orogrande
Egbert, Joseph Socrates	Elk City
Gregory, Albert Elmer	Big Pine
Hazeltine, Robert Ferman	White Horse, Canada
Hoke, Jacob Anton	Moscow
Ludwig, Arthur Caesar	Salmon
McConnell, Benjamin Franklin	Moscow
Montgomery, Zachariah	Porthill
Person, Nils	Hailey
Robinson, William Nicholas	Dixie
Sherwood, Victor Claudius	Chewelah
	Miners' Short Course, 12

FOREST RANGERS

Name.	Residence.
Fitting, Ray Rudolph	Kooskia
Henley, Clay Reegan	Moscow
Hohl, Oscar John	Wymore, Neb.
Moon, James Eugene	Boise
Seney, Byron Harris	Oakesdale, Wash.
Snow, Ralph Ainslee	Boise
	Forest Rangers, 6

PREPARATORY SCHOOL

Name.	Course	Residence
Beyersdorf, Guy	Special	Scotia, Wash.
Blomquist, Florence	Fourth Year	Moscow
Bloomquist, Harold	Special	Kellogg
Bumgarner, Robert	Third Year	Roseberry
Carter, Agnes	Special	Van Wyck
Chase, Alice	Fourth Year	Coeur d'Alene
Clark, Mary Willatowski	Third Year	Moscow
Cozier, Edna	Fourth Year	Moscow
Dart, William	Third Year	Chicago, Ill.
Davis, Genevieve	Third Year	Moscow
Gillespie, Agnes	Third Year	Orofino
Goetz, Charles	Special	Viola
Hunting, Kenneth	Special	Garfield, Wash.
Jayne, Frederick	Fourth Year	Kimberly

NAME	COURSE	RESIDENCE
Johnson, Eleanor	Special	Moscow
Johnson, Alice	Special	Moscow
Jones, Marguerite	Third Year	Moscow
Lewis, Charlotte	Fourth Year	Moscow
Lyon, Arlee	Special	Moscow
Merwin, Marjory	Third Year	Moscow
Mitling, Caroline	Special	Moscow
Munson, Goldie	Third Year	Moscow
Munson, Oscar	Fourth Year	Moscow
Munson, Vivian	Third Year	Moscow
Otter, Ruth	Third Year	Moscow
Patterson, Eva	Special	Moscow
Pendleton, Troy Waldorf	Special	Brookfield, Mo.
Randall, Juanita	Fourth Year	Peck
Richardson, Florence	Fourth Year	Moscow
Warlick, Agnes	Third Year	Peck
Waters, Florence	Special	Spokane, Wash.
Winegardner, James	Third Year	Leland

Preparatory School, 32

SUMMER SESSION, 1912

NAME	RESIDENCE
Adair, Iona	Moscow
Adkison, Elgren	Grangeville
Anderson, Anna M.	Troy
Augur, Amy H.	Middlefield, Conn.
Babcock, L. F.	Geneesee
Barnett, Thea May	Moscow
Barton, Louise E.	Moscow
Bean, Ida Louise	Elk River
Bledsoe, Mrs. Laura L.	Portland, Oregon
Bliss, Mae	Moscow
Booker, Mary V.	Troy
Bolger, Harriet H.	Spokane, Wash.
Bouton, Elizabeth	Long Beach, Calif.
Bowsher, Bonna	Grangeville
Boyd, Bell	Palouse, Wash.
Bratton, Elizabeth	Moscow
Bricks, Eunice A.	Troy
Briggs, Beth	Council
Brown, Myra Ella	Moscow
Bryden, Catherine T.	Moscow

Burton, Ruth	Moscow
Byrnes, Carol M.	Moscow
Campbell, F. H.	Trinidad, Colo.
Carithers, Grace	Moscow
Carper, Mrs. O. D.	Star
Chase, Helen Emeline	Salmon
Chilcote, Etta A.	Culdesac
Clark, A. Blanche	County Line
Clark, Marjorie	Moscow
Cole, June	Troy
Cole, Ollie	Troy
Colver, Helen E.	Idaho Falls
Colwell, Clara	Wyoming, Ill.
Cornelison, Bernice May	Moscow
Cox, Leona	Lewiston
Cummings, Julia	Moscow
Daubenspeck, Margaret	White Bird
Daubenspeck, Marion	White Bird
David, Donald	Moscow
Davis, Fae	White Bird
Decker, Mrs. Ida	Moscow
Deierling, Irene	Grangeville
DePartee, Stella	Gilbert
Dinsmore, Mrs. H. E.	Deary
Dougherty, Lawrence	Kendrick
Edward, Mary Frances	Vollmer
Edwards, Philip	Oberlin, Ohio
Edwin, Nellie	Moscow
Eikum, Synneve	Genesee
Enewoldsen, Grace	Clarkston, Wash.
Elliot, Anna	Wellsville, N. Y.
Elliott, Lenora	Moscow
Fairbanks, Harriet Marie	Waterloo, Iowa
Farmer, Gail M.	Minneapolis, Minn.
Farthing, Rachel	Sweet Water, N. C.
Fox, Lottie M.	Marcoline, Mo.
Francisco, Ethel E.	Fort Lapwai
Francisco, Mae	Fort Lapwai
Fryer, Fern	Gem
Fryer, Lotta	Gem
Fuld, Fern	Hailey

Gallaher, Ada G.	Harrisburg
Gerlough, Florence Rebecca	Boise
Gibbons, D. W.	Cottonwood
Gilchrist, Sybel Leola	Moscow
Gord, Ellen S.	Troy
Gordon, Audrey	Ferdinand
Gregg, Mrs. Eunice W.	Grangeville
Greely, Margaret	Lewiston
Green, Fanny	Juliaetta
Greenwood, Lulu	Moscow
Grube, Earle H.	Cottonwood
Hailey, Nellie	Kennewick, Wash.
Halvorsen, Tillie C.	Moscow
Hamlin, Anna	Green Creek
Hansen, Cora Mabel	Moscow
Harbke, Lillie	Nezperce
Hardie, Elizabeth M.	Grangeville
Harold, E. W.	Aberdeen
Harper, Grace	Gifford
Hasness, Pearl	Humbolt, Neb.
Haskins, George A.	Cottonwood
Head, Wanda	Deary
Heer, Mattie Estelle	Silver City
Herndon, Annie	Salmon
Hibard, Linda	Sandpoint
Holland, Anna	Orofino
Hooper, Zella Mae	Pullman, Wash.
House, Ruth	Rathdrum
Hussman, Bernard L.	Keuterville
Isbell, Mrs. Carrie L.	St. Joe
Jensen, Mary M.	Farmington, Wash.
Jillson, L. L.	Weiser
Johnson, Ruth	Moscow
Judge, Gabriel	Clarksfork, Wash.
Kadletz, Olive	Salmon
Kays, Florence	Moscow
Kays, Olive	Moscow
Keely, Alicia	Spokane, Wash.
Kelly, Mrs. Kate	Kendrick
Kenworthy, Rachel A.	Caribel
King, Vera	Harrisburg

Kitch, Pearl F.	Troy
Knott, Florence	Troy
Kroh, Beulah	Moscow
Lansing, Oscar J.	Woodland
Lauterbach, B. C.	Kendrick
Lee, Lewis A.	Iona
Leighton, Bertha	Weiser
Leland, Mabel E.	Peck
Lieske, Hilda L.	Moscow
Lindquist, Florence A.	Potlatch
Long, James Erskine	Avonmore, Penna.
Loseth, Ida M.	Orofino
Lowe, Gladys Glee	Spokane, Wash.
Lowrie, Pauline	Lewiston
Lukens, Fred E.	Potlatch
Marckel, Mary E.	Vollmer
Martin, Dolph	Juliaetta
McFarland, Florence A.	Bovill
McFarling, Gertrude E.	Princeton
McLaughlin, J. Stanton	Sandpoint
McKibbon, Jessie	Wallace
McPeak, Bettie Jane	Vollmer
Merwin, Evelyn	Moscow
Miller, Mary M.	Kansas City, Mo.
Mills, John J.	Potlatch
Mitchel, Anna	Wallace
Mitchel, Mrs. C. E.	Sandpoint
Mitchel, W. C.	Rupert
Moody, Myra I.	Moscow
Moore, Gladys	Moscow
Morton, Glen	Moscow
Morton, Herma	Cottonwood
Nichols, Otis	Viola
O'Donnell, George Hugh Roe	Moscow
O'Rourke, Julia	Burke
O'Rouke, Marguerite	Burke
Parkes, Hazel Claire	Grangeville
Parsons, Irene	Grangeville
Pederson, Anton	Idaho Falls
Peebles, Leola	Grangeville
Pentland, Jennette	Granite

Peterson, Anna	Blue Earth, Minn.
Peterson, Ellen	Moscow
Pierson, Matilda	Minneapolis, Minn.
Powell, Dora J.	Kendrick
Rae, Linda Margaret	Moscow
Ratcliff, Alma	Woodland
Ratcliff, Dosha	Woodland
Ratcliff, Orpha	Woodland
Redden, Mary D.	Lewiston
Reeves, Bertha E.	Oberlin, Ohio
Remington, Jerusha	Athol
Remington, Rhoda	Athol
Rhodes, Mrs. W. E.	Winchester
Richardson, Helen A.	Darlington
Richardson, Mae	Darlington
Ricketts, Nellie A.	Indian Valley
Ripley, Jesse	Canfield
Ritchey, Anna E	Agatha
Robinson, Beatrice	Salubria
Rode, May	Grangeville
Rogers, Hattie E.	White Bird
Ronholt, Clara	Moscow
Ronholt, Hannah	Moscow
Sherfey, Ruby	Moscow
Slenker, Nora	Lewiston
Smith, Mrs. Etta L.	Moscow
Smith, Estella J.	Garfield, Wash.
Spear, Ethel Lenore	Lenore
Spear, Blanche	Lenore
Spear, Mabel I.	Lenore
Sponsler, Nettie	Moscow
Taylor, Mrs. Walter	Bovill
Taylor, Walter I.	Bovill
Thomas, Chalice L.	Princeton
Thomas, Lelia D.	Rathdrum
Thompson, Mrs. C. L.	Moscow
Tissue, Agnes	Clarksfork, Wash.
Tidemann, Malvine G.	Genesee
Tidemann, Olivia J.	Genesee
Tosney, Irene T.	Mullan
Trial, Laura	Genesee

Trail, Vickie	Genesee
Vogell, Julia	Potlatch
Walker, Ida Mae	Alexandria, Minn.
Wamsley, Ellis R.	Ilo
Wasmund, Grace	Grangeville
Waterman, Mildred E.	Moscow
Webster, Edith L.	Garfield, Wash.
West, Alice	Banner, N. C.
Whitly, Bertha	Moscow
Whitmore, Lena A.	Moscow
Whitwell, Laura	Salmon
Wilson, Maude	Farmington, Wash.
Wilson, Metta	Emmett
Willets, L. L.	Idaho Falls
Wethered, Clara	St. Joe
Woelflen, Irene	Lewiston
Zackrison, Hannah	Kuln, S. D.
Zumhof, Gretchen	Moscow
	Summer Session, 202

SUMMARY OF STUDENTS

College of Letters and Sciences:		
Graduate Students	3	
B.A., 89 (Unclassed, 3)	92	
B.S., 76 (Unclassed, 3)	79	
Music (B.M., 3; Unclassed 39)	42	
Home Economics [B.S.(H.Ec.), 34; Unclassed, 8]	42	258
College of Agriculture:		
Graduate Students	2	
Four-Year Courses, 52 (Unclassed, 3)	55	
Forestry [B.S.(For.), 17, Unclassed, 1]	18	
Forest Rangers	6	
One-Year Dairy	7	
School of Practical Agriculture	73	161
College of Engineering:		
Civil Engineering	25	
Mining Engineering [B.S.(Mng.E.), 10; Unclassed, 2]	12	
Miners' Short Course	12	
Electrical Engineering	14	
Mechanical Engineering	8	
Chemical Engineering	9	80
College of Law:		
Third Year	12	
Second Year	8	
First Year	15	
Unclassed	2	37
Total Students under collegiate instruction		536
Attendance at the Summer Session, 1912		202
Preparatory Students		32
Total Attendance		770
Deduct Duplicates (Summer Session)		7
Total students in all departments		763

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