CATALOGUE

OF THE

University of Washington

FOR 1913-1914

AND

ANNOUNCEMENTS

FOR 1914-1915

SEATTLE
WASHINGTON

OLYMPIA:
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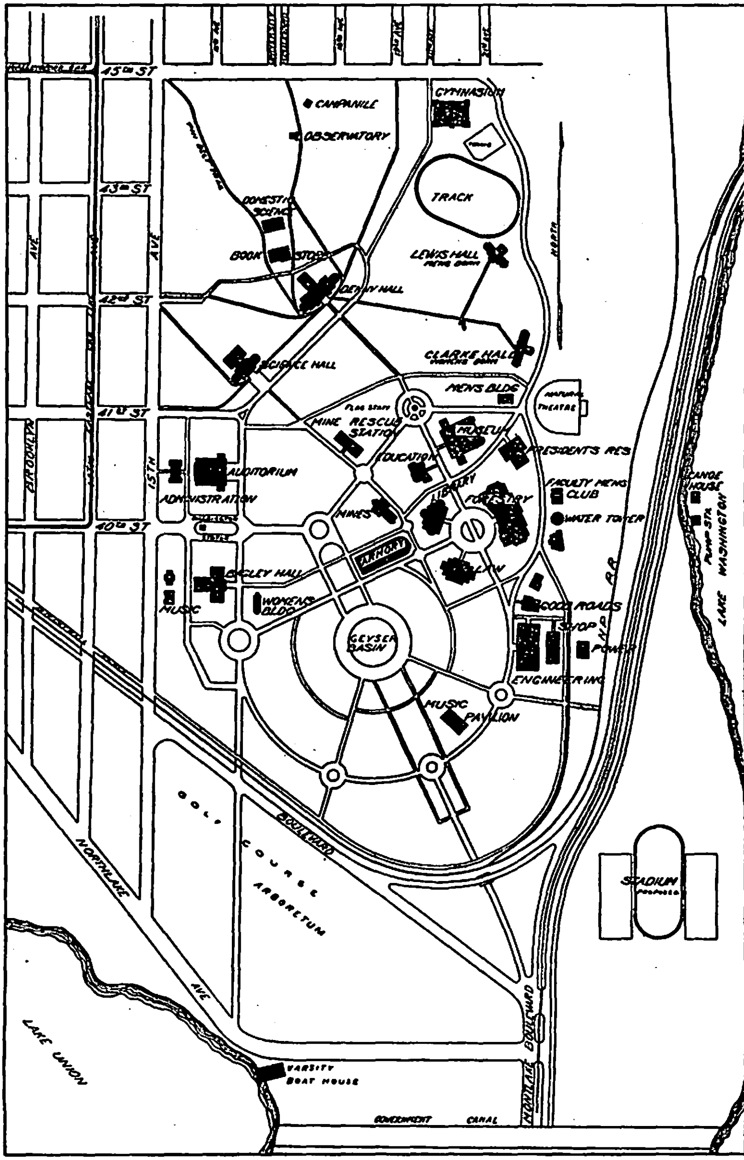
1914


45TH ST
43RD ST
42ND ST
41ST ST
40TH ST
BROOKLYN AVE
15TH AVE
CAMPANILE
OBSERVATORY
GYMNASIUM
TRACK
DOMESTIC SCIENCE
BOOK STORE
DENNY HALL
LEWIS HALL
CLARKE HALL
SCIENCE HALL
MENS BLDG
NATURAL THEATRE
MINE RESCUE STATION
MUSEUM
EDUCATION
PRESIDENTS RES
AUDITORIUM
ADMINISTRATION
LIBRARY
FORESTRY
FACULTY MENS CLUB
WATER TOWER
MINES
ARMORY
BAGLEY HALL
WOMENS BLDG
MUSIC
GOOD ROADS
SHOP
POWER
ENGINEERING
GEYSER BASIN
MUSIC PAVILION
N.P. R.R.
CANOE HOUSE
PUMP STA.
LAKE WASHINGTON
NORTHLAKE AVE
BOULEVARD
GOLF COURSE ARBORETUM
STADIUM
PROPOSED
LAKE UNION
VARSITY BOAT HOUSE
GOVERNMENT CANAL
MONTLAKE BOULEVARD

CONTENTS

UNIVERSITY CALENDAR

1914-1915

FIRST SEMESTER

Examinations for admission.....
.....Friday and Saturday, September 11 and 12
Registration days....Monday and Tuesday, September 14 and 15
Instruction begins .....Wednesday, September, 16
President's annual address.....10 o'clock, Friday, September 18
Tranksgiving vacation..... { Wednesday, November 25, 6 p. m., to Monday, November 30, 8 a. m.
Christmas vacation..... { Friday, December 18, 6 p. m., to Monday, January 4, 8 a. m.
Semester examinations.. { Monday, Tuesday, Wednesday, Thursday, Friday, January 25, 26, 27, 28, 29.

SECOND SEMESTER

Registration days.....Monday and Tuesday, February 1 and 2
Instruction begins .....Wednesday, February 3
Washington's birthday (holiday).....Monday, February 22
Spring vacation..... { Friday, April 2, 6 p. m., to Monday, April 12, 8 a. m.
Campus day .....Friday, April 30
Junior day .....Saturday, May 8
Memorial day (holiday).....Monday, May 31
Semester examinations, in the Colleges of Liberal Arts, Science, the School of Education, and the Division of Fine Arts, Tuesday, June 1, to Friday, June 11. *All other* colleges and schools, Monday, June 7, to Friday, June 11.
Baccalaureate Sunday .....June 13
Class day and President's reception.....Monday, June 14
Alumni day .....Tuesday, June 15
Commencement .....Wednesday, June 16

THE BOARD OF REGENTS

*Alex. F. McEwan, term ending March, 1917.....Seattle
President, August, 1913-December, 1913.

†Howard G. Cosgrove, term ending March, 1915.....Seattle

*John C. Higgins, term ending March, 1914.....Seattle

‡Charles P. Spooner, term ending March, 1914.....Seattle

John A. Rea, term ending 1916.....Tacoma

*A. L. Rogers, term ending March, 1916.....Waterville

*F. A. Hazeltine, term ending March, 1917.....South Bend

*George H. Walker, term ending March, 1914.....Seattle

Eldridge Wheeler, term ending March, 1915.....Montesano

Oscar A. Fechter, term ending March, 1916.....North Yakima
President from January, 1914.

Winlock W. Miller, term ending March, 1920.....Seattle

William T. Perkins, term ending March, 1920.....Seattle

Charles E. Gaches, term ending March, 1917....Mount Vernon

William A. Shannon, term ending March, 1917.....Seattle

William Markham, Secretary to the Board.

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* Resigned January 1, 1914.
† Resigned December 1, 1913.
‡ Resigned November 1, 1913.

ADMINISTRATIVE OFFICERS

THE UNIVERSITY

* Thomas Franklin Kane, Ph. D., LL. D., President, Administration Building.

Henry Landes, A. M., Acting President, Administration Building.

Herbert Thomas Condon, LL. B., Bursar, Administration Building.

Edward Noble Stone, A. M., Registrar and Recorder, Administration Building.

Edwin Bicknell Stevens, A. M., Secretary to the President, Administration Building.

Isabella Austin, A. B., Dean of Women, Denny Hall.

THE COLLEGES AND SCHOOLS

Arthur Sewall Haggett, Ph. D., Dean of the College of Liberal Arts, Administration Building and Denny Hall.

Almon Homer Fuller, M. S., C. E., Dean of the College of Engineering, Engineering Building.

Milnor Roberts, A. B., Dean of the College of Mines, Mines Building.

Charles Willis Johnson, Ph. C., Ph. D., Dean of the College of Pharmacy, Bagley Hall.

John Thomas Condon, LL. M., Dean of the School of Law, Law Building.

Hugo Winkenwerder, M. F., Dean of the College of Forestry, Good Roads Building.

J. Allen Smith, Ph. D., Dean of the Graduate School, Denny Hall.

Henry Landes, A. M., Dean of the College of Science, Science Hall.

Frederick Elmer Bolton, Ph. D., Dean of the School of Education, Education Building.

Irving Mackey Glen, M. A., Director of Fine Arts, The Auditorum.

THE EXTENSION DIVISION

Edwin Augustus Start, A. M., Director, Administration Building.

THE LIBRARY

William Elmer Henry, A. M., Librarian, Library Building.

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*Leave of absence, January 1 to August 1. Retires August 1, 1914.

FACULTY AND OTHER OFFICERS*

† THOMAS FRANKLIN KANE, PH. D., LL. D., President.

A. B., De Pauw University, 1888; A. M., 1891; Ph. D., Johns Hopkins University, 1895; LL. D., De Pauw University, 1911; Principal, Public Schools, three years; Tutor in Latin, De Pauw University, 1886-88; Professor of Latin and Greek and Vice-President, Lewis College, 1888-90; Acting President, 1890-91; Scholar in Latin, Johns Hopkins University, 1893-94; Fellow in Latin, 1894-95; Professor of Latin, Olivet College, 1895-1900; Principal Preparatory Department, 1897-1900; Professor of Latin, University of Washington, 1900-02; Acting President, 1902-03; President, 1903-.

HENRY LANDES, A. M., Acting President, Dean of the College of Science and Professor of Geology and Mineralogy.

A. B., Indiana University, 1892; A. B., Harvard University, 1892; A. M., 1893; Assistant U. S. Geological Survey, 1891 and 1893; Assistant to State Geologist, New Jersey, 1892-94; Principal of Rockland (Me.) High School, 1894-95; Professor of Geology and Mineralogy, University of Washington, 1895-; State Geologist, 1901-; Dean of the College of Science, 1913-.

ORSON BENNETT JOHNSON, LL. B., Professor Emeritus of Zoology.

LL. B., Union College Law School, 1869; Professor of Natural Science, University of Washington, 1882-92; Professor of Biology, *ibid.*, 1892-96; Curator of Museum, 1896; Professor Emeritus of Zoology, *ibid.*, 1910-.

EDMOND STEPHEN MEANY, M. L., Professor of History.

B. S., University of Washington, 1885; M. S., 1899; M. L., University of Wisconsin, 1901; Member of Washington Legislature, 1891 and 1893; Secretary of the Board of Regents, University of Washington, 1894-97; Registrar and Lecturer on Northwest History and Forestry, 1895-97; Professor of History, 1897-.

J. ALLEN SMITH, PH. D., Professor of Political and Social Science, and Dean of the Graduate School.

A. B., University of Missouri, 1886; LL. B., 1887; Ph. D., University of Michigan, 1894; Attorney-at-Law, Kansas City, 1887-92; Professor of Economics and Sociology, Marietta College, 1895-97; Professor of Political and Social Science, University of Washington, 1897; Dean of the Graduate School, 1909-.

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* The faculty list is arranged in six groups—professors, associate professors, assistant professors, instructors, lecturers, graduate assistants. In each group the names occur in the order of academic seniority.

†Leave of absence, January 1 to August 1. Retires August 1, 1914.

CAROLINE HAVEN OBER, Professor of Spanish.

Student, Wheaton Seminary, Norton, Mass., 1882-86; Massachusetts Normal School, Salem, 1888-89; Teacher, Public School, Palisade, Nevada, 1886-87; Instructor in Modern Languages, Bozeman Academy, Montana, 1887-89; Regent and Vice-Directress, Government Normal Schools, Argentine Republic, 1889-93; Instructor in Spanish, San Diego High School, California, 1896-97; Professor of Romanic Languages, University of Washington, 1897-1903; Absent on Leave in China, 1912-1913; Professor of Spanish, 1903-.

ALMON HOMER FULLER, M. S., C. E., Professor of Civil Engineering and Dean of the College of Engineering.

C. E., Lafayette College, 1897; M. C. E., Cornell University, 1898; M. S., Lafayette College, 1900; Mem. Am. Soc. C. E.; Fellow in Civil Engineering, Cornell University, 1897-98; Professor of Civil Engineering, University of Washington, since 1898; In Practical Work, 1900-01 and 1912-13; Dean of College of Engineering, 1899-.

JOHN THOMAS CONDON, LL. M., Professor of Law, and Dean of the School of Law.

Student, University of Washington, 1875-79; LL. B., University of Michigan, 1891; LL. M., Northwestern University, 1892; Assistant, in charge of Evidence, Northwestern University, 1891-92; Member of Seattle Bar since 1892; Professor of Law and Dean of School of Law, University of Washington, 1899-.

HORACE G. BYERS, PH. D., Professor of Chemistry.

A. B., and B. S., Westminster College, 1895; A. M., 1898; Ph. D., Johns Hopkins University, 1899; University of Leipzig, 1907-08; Professor of Chemistry, Tarkio College, 1895-96; Instructor in Physics, Westminster College, 1896-97; Instructor in Chemistry, Maryland University, 1898-99; Instructor in Chemistry, University of Chicago, (Summer Session) 1902-1903-1904; Professor of Chemistry, University of Washington, 1899-.

TREVOR KINCAID, A. M., Professor of Zoology and Director of the Puget Sound Marine Station.

B. S., University of Washington, 1899; A. M., 1901; Instructor in Biology, University of Washington, 1895-99; Assistant, American Fur Seal Commission, 1897; Acting Professor of Entomology, Oregon Agricultural College, 1897-98; Entomologist, Harriman Alaska Expedition, 1899; Austin Scholar, Harvard University, 1905-6; Assistant Professor of Biology, University of Washington, 1899-1901; Professor of Zoology, 1901-.

FREDERICK MORGAN PADELFORD, PH. D., Professor of English.

A. B., Colby College, 1896; A. M., 1899; Ph. D., Yale University, 1899; Scholar in English, Yale University, 1896-98; Fellow, 1898-99; Professor of English, University of Idaho, 1899-1901; Research Work at British Museum, 1905-06; Professor of English Language and Literature, University of Washington, 1901-.

MILNOR ROBERTS, A. B., Professor of Mining Engineering and Metallurgy and Dean of the College of Mines.

A. B., Stanford University, 1899; Instructor in Mineralogy, Stanford University, 1899-1900; Professor of Mining Engineering and Metallurgy, and Dean of the School of Mines, University of Washington, 1901-.

ARTHUR SEWALL HAGGETT, PH. D., Professor of Greek and Dean of the College of Liberal Arts.

A. B., Bowdoin College, 1893; A. M., 1894; Ph. D., Johns Hopkins University, 1897; Student, University of Berlin and American School at Athens, 1897-98; Scholar in Greek, Johns Hopkins University, 1895-96; Fellow in Greek, 1896-97; Instructor in Greek, Bangor, (Maine) High School, 1898-99; Instructor in Greek and Latin, Worcester Academy, 1899-1901; Assistant Professor of Greek and Latin, University of Washington, 1901-02; Professor of Greek Language and Literature, 1902; Dean of the College of Arts and Science, 1911-1913; Dean of the College of Liberal Arts, 1913-.

FREDREICK ARTHUR OSBORN, PH. D., Professor of Physics and Director of Physics Laboratories.

Ph. B., University of Michigan, 1896; Ph. D., 1907; Graduate Student, University of Michigan, 1900-1902, and 1906-7; Assistant in Physics, Saginaw High School, 1890-91; Instructor in Physics, Ann Arbor High School, 1893-96; Professor of Physics, Olivet College, 1896-1902; Professor of Physics and Director of Physics Laboratories, University of Washington, 1902-.

WILLIAM SAVERY, PH. D., Professor of Philosophy.

A. B., Brown University, 1896; A. M., Harvard University, 1897; Ph. D., 1899; Assistant in Ethics, Harvard University, 1896-97; James Walker Fellow (traveling), Harvard University, 1897-98; Student in University of Berlin, 1897-98; Morgan Fellow, Harvard University, 1898-99; Assistant in History of Philosophy, Harvard University and Radcliffe College, 1899-1900; Professor of Psychology and Philosophy, Fairmount College, Kansas, 1900-1902; Professor of Philosophy, University of Washington, 1902-.

DAVID THOMSON, A. B., Professor of Latin.

A. B., University of Toronto, 1892; Classical Master in the High School, Orillia, Ontario, 1893-99; Fellow in Latin, University of Chicago, 1899-1901; Assistant in Latin, University of Chicago, 1901-02; Student, University of Munich, 1908-09; Professor of Latin, University of Washington, 1902-.

CHARLES WILLIS JOHNSON, PH. C., PH. D., Professor of Pharmaceutical Chemistry, and Dean of the College of Pharmacy.

Ph. C., University of Michigan, 1896; B. S., University of Michigan, 1900; Ph. D., University of Michigan, 1903; Practical Pharmacist, Detroit, Michigan, 1896-98; Assistant Instructor in Chemistry, University of Michigan, 1898-01; Instructor in Chemistry, University of Iowa, 1901-02; Assistant Professor in Chemistry, University of Washington, 1903-04; Chemist, State Dairy and Food Commission, 1909-13; State Chemist, 1913-; Professor of Pharmaceutical Chemistry, and Dean of the School of Pharmacy, University of Washington, 1904-.

PIERRE JOSEPH FREIN, PH. D., Professor of French.

A. B., Williams College, 1892; Ph. D., Johns Hopkins University, 1899; Instructor in Modern Languages, Holbrook Military School (New York), 1892-93; Instructor in French and Greek, Oahu College (Honolulu), 1893-95; Student in Europe and Johns Hopkins University, 1895-99; Fellow in Romanic Languages, Johns Hopkins University, 1898-99; Instructor (1899-1900) and Assistant Professor (1900-03) of Romanic Languages, Leland Stanford, Jr., University; Professor of French, University of Washington, 1903-.

*THEODORE CHRISTIAN FRYE, PH. D., Professor of Botany.

B. S., University of Illinois, 1894; Ph. D., University of Chicago, 1902; Principal of High School, Monticello, Ill., 1894-96; Superintendent of City Schools, Batavia, Ill., 1897-1900; Graduate Student, University of Chicago, 1896-97, 1900-02; Fellow in Botany, 1901-02; Professor of Biology, Morningside College, Iowa, 1902-03; Professor of Botany, University of Washington, 1903-.

ROBERT EDOUARD MORITZ, PH. D., PH. n. D., Professor of Mathematics and Astronomy.

B. S., Hastings College, 1892; Ph. M., University of Chicago, 1896; Ph. D., University of Nebraska, 1901; Ph. n. d., Universitaet Strassburg, 1902; Student in Goettingen and Paris, 1902; Instructor in Mathematics, Hastings College, 1893-4; Professor, 1894-8; Instructor in Mathematics, University of Nebraska, 1898-1901; Adjunct Professor, 1902-3; Assistant Professor, 1903-4; Professor of Mathematics and Astronomy, University of Washington, 1904-.

CARL EDWARD MAGNUSSON, PH. D., E. E., Professor of Electrical Engineering.

B. E. E., University of Minnesota, 1896; M. S., 1897; E. E., 1905; Scholar in Physics, University of Minnesota, 1895-1897; Graduate Student, University of Wisconsin, 1898-1900; Ph. D., 1900; Fellow in Physics, University of Wisconsin, 1899-1900; Professor of Physics, University of New Mexico, and School of Mines, 1901-04; absent on leave, with the General Electric Co., Schenectady, N. Y., 1911-1912; Professor of Electrical Engineering, University of Washington, 1904-.

*Absent on leave, first semester, 1913-14.

HARVEY LANTZ, A. M., LL. B., Professor of Law.

Ph. B., De Pauw University, 1888; A. M., 1891; LL. B., Kent Law School, 1893; Superintendent of Schools, Spencer, Ind., 1888-91; Law Clerk with Schuyler & Kremer, Chicago, 1892-5; Admitted to Bar Supreme Court of Illinois, 1893; Practiced law, member firms of Chase & Lantz, Chase, Proudfit & Lantz, and Proudfit & Lantz, 1896-1905; lecturer on Medical Law, Hering Medical College, Chicago, 1898-99; Admitted to Bar, United States Supreme Court, 1905; Professor of Law, University of Washington, 1905.

EVERETT OWEN EASTWOOD, C. E., A. M., Professor of Mechanical Engineering.

C. E., University of Virginia, 1896; A. B., 1897; A. M., 1899; B. S., Massachusetts Institute of Technology, 1902; Fellow, Astronomy, University of Virginia, 1897-1900; Practical work, Bureau of Construction and Repair, Navy Department, Washington, D. C., 1902-03; with the Fore River Ship Building Company, Quincy, Mass., 1903-04; Instructor in Mechanical Engineering, in charge of Marine Engineering and Naval Architecture, Lehigh University, 1904-05; Professor of Mechanical Engineering, University of Washington, 1905-.

FREDERICK WILLIAM MEISNEST, PH. D., Professor of German.

B. S., University of Wisconsin, 1893; Ph. D., 1904; Graduate of the State Normal School, Milwaukee, Wis., 1889; Principal of High Schools, Montello, Wis., 1889-91; Green Bay, Wis., 1893-94; Boscobel, Wis., 1894-96; Instructor in German, University of Wisconsin, 1897-1906; Student, University of Leipzig, Germany, 1901-02; Professor of German, University of Washington, 1906-.

DAVID CONNOLLY HALL, SC. M., M. D., Director of Physical Training.

Ph. B., Brown University, 1901; Sc. M., University of Chicago, 1903; M. D., Rush Medical College, University of Chicago, 1907; Acting Physical Director and Graduate Student, Wesleyan University, Connecticut, 1901-02; Physical Director and Instructor in Physiology and Pharmacology, University of Oklahoma, 1902-08; Medical School on leave of absence, 1906-07; Director of Physical Training, University of Washington, 1908-.

ELMER JAMES MCCAUSTLAND, C. E., M. C. E., Professor of Municipal and Highway Engineering.

C. E., Cornell College, 1895; M. C. E., Cornell University, 1897; Mem. Am. Soc. C. E.; Graduate Scholar in Civil Engineering Cornell University, 1896-97; Instructor in Civil Engineering, 1897-1900; Assistant Professor of Civil Engineering, 1902-07; Professor of Mining Engineering, University of Alabama, 1907-08; ten years' practice engineering work as designing, constructing and consulting engineer, two years as City Engineer of Salem, Oregon; two years as Assistant Chief Engineer of the Chicago Transfer and Clearing Co., of Chicago; member State Board of Health, 1911-; Acting Dean of the College of Engineering, 1912-13; Professor of Municipal and Highway Engineering, University of Washington, 1908-.

ISABELLA AUSTIN, A. B., Dean of Women.

A. B., University of Minnesota, 1895; Graduate, State Normal School, Winona, Minnesota, 1897; Minneapolis Public Schools, 1897-99; Critic Teacher, State Normal School, Winona, Minnesota, 1899-1902, 1905-06; Graduate Scholar, Teachers' College, Columbia University, 1902-03; Critic Teacher, Speyer School, Teachers' College, Columbia University, 1903-05; Critic Teacher, Michigan State Normal College, 1907-08; Supervisor, Primary Grades, Tacoma Public Schools, 1908-09; Dean of Women, University of Washington, 1909-.

REV. HERBERT HENRY GOWEN, D. D., F. R. G. S., M. R. S. A., Professorial Lecturer on Oriental History, Literature and Institutions.

Member Society of Arts, London; Oriental Scholar, St. Augustine's College, Canterbury, 1883-6; First Class Oxford and Cambridge Prelim., 1886; Rector Trinity Parish Church, Seattle, 1897; D. D., Whitman College, 1912; Professorial Lecturer on Oriental History, Literature and Institutions, University of Washington, 1909-.

OLIVER HUNTINGTON RICHARDSON, PH. D., Professor of European History.

A. B., Yale University, 1889; A. M., Ph. D., Heidelberg (Germany), 1897; Foote Scholar, Yale University, 1889; Instructor in History and Political Economy, Colorado College, 1889-90; European Travel and Study, 1890-92; Professor of History, Drury College, 1892-97; Research Work in Germany, 1895-97; Assistant Professor of History, Yale University, 1897-1909; Professor of European History, University of Washington, 1909-.

GEORGE SEAVERNS COLE, LL. B., Professor of Law.

LL. B., Kent Law School, Chicago, 1898; LL. B., Lake Forest University, College of Law, 1896; Student, Northwestern University, College of Law, 1891-2; Graduate Student, Lake Forest University, College of Law, 1895-6; Law Clerk with William Jay Manning, Esq., Chicago, 1892-7; Practiced Law as member of the firms of Manning & Cole, and Manning, Cole & Manning, Chamber of Commerce Building, Chicago, 1897-1906; Practiced individually, Borden Block, Chicago, 1906-9; Admitted to Bars, U. S. District and Circuit Courts, Chicago; Professor of Law, University of Washington, 1909-.

IVAN WILBUR GOODNER, LL. B., Professor of Law.

Admitted to Bar, Territory of Dakota, 1885; Clerk of Supreme Court of South Dakota, 1889-1896; LL. B., University of Nebraska, College of Law, 1897; City Attorney, Pierre, South Dakota, 1898-9; State's Attorney, Hughes County, S. D., 1899-1905; Admitted to Bar, United States Supreme Court, 1901; Attorney-at-Law, Seattle, Wash., 1908; Lecturer in Law, University of Washington, 1910-12; Professor of Law, 1912-.

WALTER GREENWOOD BEACH, A. M., Professor of Social Science.

A. B., Marietta College, 1888; A. B., Harvard, 1891; A. M., Harvard, 1892; Instructor, Marietta College, 1888-90; Instructor, Oberlin University, 1892-93; Professor, Marietta College, 1893-98; Graduate Student Stanford University, 1898-99; Assistant Professor, Economics, Washington State College, 1899-1905; Professor and Head of the Department of Economic Science and History, Washington State College, 1905-10; Professor of Social Science, University of Washington, 1910-.

IRVING MACKEY GLEN, M. A., Professor of Music and Director of Fine Arts.

Graduate, California State Normal School (San Jose), 1890; Graduate, California School of Education and Oratory, 1889; Graduate, Elwood School of Music, 1890; B. A., University of Oregon, 1894; M. A., 1897; Graduate Student, Johns Hopkins University, 1894-96; Professor of English and Latin, McMinnville College, 1897; Professor of Oratory, University of Oregon, 1897-99; Professor of English Language and Literature, 1899-1911; Dean of the School of Music, 1901-11; Professor of Music, University of Washington, 1911-.

EDWIN AUGUSTUS START, A. M., Director of University Extension Division.

A. B., Tufts College, 1884; A. M., Harvard University, 1893; Journalism, 1885-92; in charge Department of History, Tufts College, 1892-1900; Graduate Student, Harvard University, 1892-93, 1894-95; Editor Modern European History Section, New International Encyclopaedia, 1900-2; Secretary Massachusetts Forestry Association, 1900-09; Executive Secretary American Forestry Association and Editor American Forestry, 1909-11; Director of University Extension Division, University of Washington, 1912-.

CHARLES CHURCH MORE, M. S., C. E., Professor of Civil Engineering.

C. E., Lafayette College, 1898; M. C. E., Cornell University, 1899; M. S., Lafayette College, 1901; Graduate Scholar in Civil Engineering, Cornell University, 1898-99; Six and one-half years' practice in bridge and construction work with the following: Pencoyd Iron Works and American Bridge Co., Pencoyd, Penn.; D. H. Burnham & Co., Archts., Chicago; T. L. Condron, C. E., Chicago; Turner Construction Company, New York; U. S. Engineer Dept., Fort Worden, Wash.; C., M. & St. P. Ry. Co., of Washington, Seattle; Acting Professor of Civil Engineering, University of Washington, 1900-01; Assistant Professor, 1904-06; Associate Professor, 1907-12; Professor, 1912-.

HENRY KREITZER BENSON, PH. D., Professor of Industrial Chemistry.

A. B., Franklin and Marshall College, 1899; A. M., 1902; Ph. D., Columbia University, 1907; Superintendent of Schools, Kent, Washington, 1900-03; Graduate Student, Johns Hopkins University, 1903-04; Fellow in Chemistry, Columbia University, 1906-07; Assistant Professor of Chemistry, University of Washington, 1904-09; Acting Professor of Chemistry, 1907-08; Associate Professor, 1909-12; Professor of Industrial Chemistry, 1912-.

JOHN WEINZIRL, PH. D., Professor of Bacteriology.

B. S., University of Wisconsin, 1896; M. S., 1899; Ph. D., 1906; Assistant Professor of Biology, University of New Mexico, 1897-1900; Professor of Biology and Chemistry, *ibid.*, 1900-07; Fellow in Biology in University of Wisconsin, 1905-06; Assistant Professor of Bacteriology, University of Washington, 1907-9; Associate Professor, 1909-12; Professor, 1912-.

HUGO WINKENWERDER, M. F., Professor of Forestry and Dean of the College of Forestry.

B. S., University of Wisconsin, 1902; M. F., Yale University, 1907; Laboratory Assistant in Botany, University of Wisconsin, 1901-2; Instructor in Botany and Physiography, High School, Sheboygan, Wisconsin, 1902-5; Graduate Student, Yale University, 1905-7; U. S. Forest Service, 1907; Assistant Professor of Forestry, Colorado College, 1908-9; with U. S. Forest Service as Collaborator, 1908-; Associate Professor of Forestry, University of Washington, 1909-12; Professor and Dean of the College of Forestry, 1912-.

VERNON LOUIS PARRINGTON, M. A., Professor of English.

A. B., Harvard University, 1893; M. A., College of Emporia, 1895; studied in the British Museum, on leave of absence, 1903-1904; Instructor in English and French, College of Emporia, 1893-97; Instructor in English and Modern Languages, State University of Oklahoma, 1897-98; Professor of English Literature, State University of Oklahoma, 1898-1908; Assistant Professor of English, University of Washington, 1908-12; Professor, 1912-.

FREDERICK ELMER BOLTON, PH. D., Professor of Education and Dean of the School of Education.

Graduate of the State Normal School, Milwaukee, Wis., 1890; B. S., University of Wisconsin, 1893; M. S., 1896; Student, University of Leipzig, Germany, 1896-97; Fellow in Psychology, Clark University, 1897-98; Ph. D., 1898; High School Principal, 1890-91 and 1893-95; Professor of Psychology and Pedagogy, State Normal School, Milwaukee, Wis., 1898-1900; Lecturer in Education, University of Wisconsin, Summer Session, 1899; Assistant Professor of Pedagogy, State University of Iowa, 1900-01; Professor and Head of the Department of Education, 1901-12; Director of the Summer Session, 1902-10; Secretary, 1910-12; Director of the School of Education, 1906-12; Professor of Education, University of Washington, 1912-; Director of Summer Session, 1913-; Dean of the School of Education, University of Washington, 1913-.

EDWIN JOHN VICKNER, PH. D., Professor of the Scandinavian Languages.

A. B., University of Minnesota, 1901; A. M., 1902; Ph. D., 1905; Student, Paris and Berlin, 1902-1903; Professor of German and Spanish, Gustavus Adolphus College, 1903-1912; Student, Leipzig, Brussels, and Scandinavia, 1906-1907; Instructor in French, Summer Session, University of Minnesota, 1908; Student, Paris, Summer 1909; Graduate Student, University of Michigan, Summer Session, 1910; Student, Christiania, Summer, 1912; Professor of Scandinavian Languages, University of Washington, 1912-.

EDWARD EUGENE MCCAMMON, First Lieutenant, Third Infantry, U. S. A., Professor of Military Science and Tactics.

Student, University of Washington, 1899-1900; Student, University of Minnesota, 1900-1901; Appointed from the Army, 1903; Professor of Military Science and Tactics, University of Washington, 1913-.

HERBERT GALEN LULL, PH. D., Professor of Education.

Graduate Michigan State Normal College, 1898; A. B., University of Michigan, 1904; M. A., University of Washington, 1911; M. Pd. (Honorary), Michigan State Normal College, 1912; Ph. D., University of California, 1912; Principal Public School, Carson City, Michigan, 1898-1902; Superintendent of City Schools, Mt. Clemens, Michigan, 1904-05; Supervisor of Training School, Washington State Normal School, Bellingham, Washington, 1905-07; Assistant Professor of Education, University of Washington, 1907-08; Associate Professor of Education, *ibid*, 1908-1913; leave of absence (Acting Assistant Professor of Education, University of California), 1911-12; Professor, 1913-.

FRANK GEORGE KANE, A. B., Professor of Journalism.

A. B., University of Michigan, 1908; Reporter, Copy-reader, Sunday Editor, Duluth News Tribune, 1902-03; Reporter, Detroit News, 1904-05; Ann Arbor Correspondent, Detroit News and Chicago Tribune, 1905-08; Reporter, Copy-reader, Editorial Writer, Detroit News, 1908-09; Instructor in Journalism, University of Washington, 1909-10; Editorial Writer, the Detroit News, 1910-13; Professor of Journalism, University of Washington, 1913-.

JOHN HENRY HOBART LYON, A. M., Litt. D., Professor of English, Extension Division.

A. B., Columbia, 1897; A. M., Columbia, 1898; Doctor of Letters, Trinity College, Hartford, Conn., 1913; Summer School, Columbia, 1909; Head of English Department, St. John's, Manlius, N. Y., 1900-03; Head of English Department, Montclair Academy, N. J., 1903-05; Headmaster of Shattuck School, Faribault, Minnesota, 1905-13; Professor of English, Extension Division, University of Washington, 1913-.

ALLEN ROGERS BENHAM, PH. D., Associate Professor of English.

A. B., University of Minnesota, 1900; A. M., 1901; Ph. D., Yale University, 1905; Assistant in English, University of Minnesota, 1899-1901; Principal of High School, St. James, Minn., 1901-02; University Fellow, Yale University, 1902-05; Assistant Professor of English Literature, University of Washington, 1905-12; Associate Professor, 1912-.

FRANK MARION MORRISON, PH. D., Associate Professor of Mathematics.

A. B., University of Michigan, 1892; Ph. D., University of Chicago, 1913; Graduate Student, University of Chicago, 1897-99, 1911-12; Instructor in Mathematics in the High Schools, Elkhart, Indiana, Sioux City, Iowa, Circleville, Ohio, 1892-97; Instructor in Mathematics, Grand Prairie Seminary, Onarga, Illinois, 1899-1900; Professor of Mathematics, Illinois College, 1900-03; Professor of Mathematics, Buchtel College, Akron, Ohio, 1903-05; Assistant Professor of Mathematics, University of Washington, 1905-12; Associate Professor, 1912-.

LOREN DOUGLAS MILLIMAN, A. B., Associate Professor of English.

A. B., University of Michigan, 1890; Graduate Student, University of Chicago, 1892-94; Fellow in English, 1893-94; Professor of English, Searcy College, Arkansas, 1890-92; Instructor in English, Olivet College, Michigan, 1894-98; Professor of Rhetoric and English, Ohio University, Athens, Ohio, 1898-1900; Superintendent of City Schools, Cebu, P. I., 1901-03; Professor of English, Hanover College, Indiana, 1903-04; Assistant Professor of English, University of Washington, 1905-12; Associate Professor, 1912-.

SAMUEL LATIMER BOOTHROYD, B. S., M. S., Associate Professor of Astronomy and Mathematics.

B. S., Colorado Agricultural College, 1893; M. S., 1904; Graduate Assistant and Student of Mathematics and Physics, Colorado University first semester, 1893-4; Graduate Student in Mathematics and Astronomy, Chicago University, 1894-95; Professor of Mathematics and Astronomy, Mount Morris College, Mount Morris, Illinois, 1895-97; Assistant Astronomer at Lowell Observatory, 1897-99; Professor of Mathematics and Astronomy, Bellevue College, Bellevue, Nebraska, 1900-01; Associate Professor of Physics and Irrigation Engineering in charge of Department of Physics, Colorado Agricultural College, 1902-04; Instructor in Descriptive Geometry, Mechanics of Engineering, Geodesy and Astronomy, Cornell University, 1904-08; Graduate Student in Mathematics and Geodesy, Cornell University, 1904-08; Assistant Surveyor on the Alaskan Boundary Survey, Summers, 1905-1909, inclusive; Assistant Professor of Topographic and Geodetic Engineering, Cornell University, 1908-1912; Associate Professor of Astronomy and Mathematics, University of Washington, 1912-.

BURT PERSONS KIRKLAND, A. B., Associate Professor of Forestry.

A. B., Cornell University, 1905; Student, Yale University Forest School, 1905-1906; Forest Assistant United States Forest Service, 1906-1908; Forest Supervisor, United States Forest Service, 1908-1912; Associate Professor of Forestry, University of Washington, 1912-.

THOMAS KAY SIDEY, PH. D., Associate Professor of Latin and Greek.

A. B., Victoria College, Toronto University, 1891; Ph. D., University of Chicago, 1900; Classical Master, Iroquois High School, 1892; Teacher of English and Classics, Ottawa Collegiate Institute, 1892-94; Classical Master, Whitby Collegiate Institute, 1894-96; Graduate Student, University of Chicago, 1896; Fellow in Latin, 1897-99; Associate Professor of Latin, Cornell College, Iowa, 1899-02; Member American School of Classical Studies, Rome, Italy, 1912-13; Assistant Professor of Latin and Greek, University of Washington, 1903-13; Associate Professor, 1913-.

WILLIAM MAURICE DEHN, PH. D., Associate Professor of Physiological Chemistry.

A. B., Hope College, 1893; A. M., 1896; Ph. D., University of Illinois, 1903; Graduate School, University of Chicago, 1898-1900, and Summers of 1895-1900; Instructor, Reed City (Mich.) High School, 1893-94; Professor of Science, Wilton College, Iowa, 1894-97; Science and Athletics, Culver Military Academy, Indiana, 1897-98; Graduate Student and Assistant in Chemistry, University of Illinois, 1900-02; Instructor in Chemistry, University of Illinois, 1902-07; Assistant Professor of Physiological Chemistry, University of Washington, 1907-1913; Associate Professor, 1913-.

EDWARD MCMAHON, A. M., Associate Professor of American History.

Ph. B., University of Washington, 1898; A. M., University of Wisconsin, 1907; Principal, Van Asselt (Wash.) Schools, 1898-1901; Graduate Student, University of California, 1901-02; Principal Union Grammar School, Seattle, 1902-03; Head of Department of History, Seattle High School, 1903-06; Graduate Student in History, 1906-08; Fellow in History, 1907-08, University of Wisconsin; Instructor in American History, University of Washington, 1907-9; Assistant Professor, 1909-1913; Associate Professor, 1913-.

STEVENSON SMITH, PH. D., Associate Professor of Orthogenics.

A. B., University of Pennsylvania, 1904; Ph. D., 1909; Graduate Student, Heidelberg, 1905; Assistant in Psychology, Columbia University, 1905-06; Professor of Psychology, Hampden-Sidney College, 1906-11; Director Psychological Clinic, Columbia University, Summer Sessions, 1910 and 1911; Professor of Education, Summer Session, 1911; Assistant Professor of Orthogenics, University of Washington, 1911-1913; Associate Professor, 1913-.

JACOB NEIBERT BOWMAN, PH. D., Associate Professor of European History.

A. B., Heidelberg University (Tiffin, Ohio), 1896; Ph. D., Heidelberg, (Germany), 1900; Studied at Heidelberg, 1896-98; Liepzig, 1898; Berlin, 1898-99; Heidelberg, 1899-1900; Professor of History, State Normal School, Bellingham, Washington, 1901-06; Assistant Professor of Medieval History, University of California, 1906-12; Assistant Professor of European History, University of Washington, 1912-13; Associate Professor, 1913-.

EFFIE ISABEL RAITT, B. S., Associate Professor and Director of the Department of Home Economics.

B. S., Columbia University, 1912; Bachelor's Diploma in Domestic Science, Teachers' College, Columbia University, 1903; Bachelor's Diploma in Household Administration, Teachers' College, Columbia University, 1912; Bachelor's Diploma in Dietetics, Teachers' College, Columbia University, 1912; Dietitian and Steward, Massachusetts State Sanatorium for Tuberculosis, 1903-1904; Dietition, St. Luke's Hospital, New York City, 1904-1905; House Director of Willard Hall, Northwestern University, 1905-1911; Director of the Department of Home Economics, University of Washington, 1912; Associate Professor, 1913-.

WILLIAM PIERCE GORSUCH, A. B., Associate Professor in charge of the Department of Public Speaking and Debate.

A. B., Knox College, 1898; Assistant in English, *ibid.*, 1898; Tutor in Public Speaking, 1898-99; Instructor in Public Speaking, Duluth, Minn., High School, 1900; Assistant in Public Speaking, University of Chicago, 1900-02; Associate, *ibid.*, 1902-03; Instructor, *ibid.*, 1903-13; Lecturer in General Literature, Teachers' Assembly, Baguio, Philippine Islands, April-May, 1912; Associate Professor in charge of the Department of Public Speaking and Debate, University of Washington, 1913-.

ARTHUR WILSON LINTON, PH. G., B. S., Associate Professor of Pharmacy.

Ph. G., Highland Park College, 1902; B. S., University of Michigan, 1909; Practical Pharmacist, Bunker Hill, Ill., 1893-1901; Practical Pharmacist, Albion, Nebraska, 1902-06; Frederick Stearns Fellow, University of Michigan, 1908-09; Instructor in Pharmacy, University of Michigan, Summer Session, 1909; Professor of Pharmacy, Valparaiso University, 1909-13; Associate Professor of Pharmacy, University of Washington, 1913-.

VANDERVEER CUSTIS, PH. D., Assistant Professor of Economics.

A. B., Harvard University, 1901; A. M., 1902; Ph. D., 1905; Assistant in Economics, 1902-04; holder of Austin Teaching Fellowship in Economics, 1904-05; Assistant Professor of Economics, University of Washington, 1905-.

*OTTO PATZER, PH. D., Assistant Professor of French.

B. L., University of Wisconsin, 1898; M. L., 1899; Ph. D., 1907; Student, University of Paris, 1899-1900; Assistant in French, University of Wisconsin, 1900-01; Instructor, 1901-07; Assistant Professor of French, University of Washington, 1907-.

GEORGE SAMUEL WILSON, B. S., Assistant Professor of Mechanical Engineering.

B. S., University of Nebraska, 1906; Apprentice, Union Pacific Railway Company, 1898-1902; Machinist, same company, Summers of 1903 and 1904; with Westinghouse Machine Company, Summer of 1905; with Fairbanks, Morse & Company, June to September, 1906; Instructor in Mechanical Engineering, University of Washington, 1906-1909; Assistant Professor, 1909-.

EDWIN JAMES SAUNDERS, A. M., Assistant Professor of Geology.

A. B., University of Toronto, 1896; A. M., Harvard University, 1907; Graduate, Specialist in Science, Ontario Normal College, 1897; Principal Public School, Midland, Ont., 1897-1898; Professor of Geology and Geography, Washington State Normal School, Ellensburg, Wash., 1898-1905 and 1907-1909; Assistant in Physiography and Meteorology, Harvard University and Radcliffe, 1905-1907; Assistant Professor of Geology, University of Washington, 1909-.

JOSEPH KINMONT HART, PH. D., Assistant Professor of Education.

A. B., Franklin College, 1900; University of Chicago, 1900-02; Fellow, 1906-09; Ph. D., 1909; Instructor in Mathematics, Ottumwa, Iowa, High School, 1902-04; Instructor in History, Rock Island, Ill., High School, 1904-06; Professor of Philosophy, Baker University, 1909-10; Assistant Professor of Education, University of Washington, 1910-.

OTTILIE GERTRUDE BOETZKES, A. M., Assistant Professor of German.

A. B., University of Washington, 1901; A. M., 1902; Student in Paris, Summer of 1903; Assistant in Modern Languages, University of Washington, 1900-01; Instructor, 1901-03; Assistant Professor of German, 1903-1908; Graduate Student, University of Chicago, 1908-09; Assistant Professor of German, University of Washington, 1910-.

CHARLES WILLIAM HARRIS, C. E., Assistant Professor of Civil Engineering.

B. S., in Civil Engineering, University of Washington, 1903; C. E., Cornell University, 1905; Draftsman and Inspector, U. S. Engineering Department, Fort Casey, Washington, 1903-04; Student Cornell University, 1904-05; Practical Work in Railroad and Hydraulic Engineering, in Pennsylvania, Washington, and Alaska, 1905-06; Instructor in Civil Engineering, University of Washington, 1906-10; Assistant Professor, 1910-.

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*Absent on leave, 1913-1914.

*GEORGE IRVING GAVETT, B. S., (C. E.), Assistant Professor of Mathematics.

B. S., (C. E.), University of Michigan, 1898; Graduate Student in Mathematics, Leland Stanford, Jr., University, 1905; Graduate Student in Mathematics and Civil Engineering, Cornell University, 1905-07; Teacher of Mathematics and Science, Spring Arbor Seminary, Spring Arbor, Michigan, 1897-99; Professor of Mathematics, Fairmount College, Wichita, Kansas, 1899-1904; Instructor in Applied Mathematics, Leland Stanford, Jr., University, 1904-05; Instructor in Civil Engineering, Cornell University, 1905-07; Instructor in Mathematics, University of Washington, 1907-11; Assistant Professor, 1911-.

HANS JACOB HOFF, PH. D., Assistant Professor of German.

A. B., Bethany College, Lindeborg, Kansas, 1901; Ph. D., University of Illinois, 1908; Graduate Student, Royal University of Berlin, Germany, 1901-03; Graduate Student, University of Kansas, 1904-05; Graduate Student, University of Missouri, 1906-07; University of Illinois, 1907-08; Instructor in German and Norwegian, Y. M. C. A. Evening Schools, Berlin, Germany, 1901-02; Principal of City Schools, Herndon, Kansas, 1905-06; Instructor in German and Latin, Columbia Normal Academy, Columbia, Missouri, 1906-07; Fellow in Germanic Philology, University of Illinois, 1907-08; Instructor in German, University of Washington, 1908-11; Assistant Professor, 1911-.

ROBERT EVSTAFIEFF ROSE, PH. D., Assistant Professor of Chemistry.

Ph. D., University of Leipzig, 1903; Assistant in Chemistry, University of St. Andrews, Scotland, 1903-05; Lecturer and Demonstrator in Chemistry, University College, Nottingham, England, 1905-07; Acting Professor of Chemistry, University of Washington, 1907-08; Instructor in Chemistry, University of Washington, 1908-11; Assistant Professor, 1911-.

ROBERT MAX GARRETT, PH. D., Assistant Professor of English.

B. A., University of Idaho, 1902; M. A., University of Washington, 1903; Ph. D., University of Munich, 1909; Student Assistant in Latin, Preparatory School, University of Idaho, 1901-02; Assistant in English, University of Washington, 1902-04; Instructor in University of Washington Summer School, 1904; Teacher of English Literature, Seattle High School, 1904-06; Student, University of Leipzig and Munich, 1906-09; Student in British Museum, Summers, 1907, 1908, 1909, 1911; Instructor in English, University of Washington, 1909-11; Assistant Professor, 1911-.

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*Absent on leave, 1913-1914.

EDGAR ALLEN LOEW, B. S., E. E., Assistant Professor of Electrical Engineering.

Student, State Normal School, Oshkosh, Wisconsin, 1897-1901; B. S. E. E., University of Wisconsin, 1906; Instructor in Physics, High School, Two Rivers, Wisconsin, 1901-03; Student, University of Wisconsin, 1903-06; Instructor in Electrical Engineering, University of Wisconsin, 1906-09; eighteen months of practical work during school year and summers with the following: Wisconsin Telephone Co., Chicago Telephone Co., D. C. & Wm. B. Jackson, Consulting Engineers, Boston & Chicago; Electrical Engineer, U. S. Reclamation Service, Madison, Wisconsin; Instructor, University of Washington, 1909-11; Assistant Professor, 1911-.

ELIAS TREAT CLARK, M. F., Assistant Professor of Forestry.

Ph. B., Yale University, 1907; M. F., 1908; with U. S. Forest Service, 1908-11; Deputy Forest Supervisor, Snoqualmie National Forest, 1910-11; Superintendent Construction Department, Standard Railway and Timber Co., Spring and Summer, 1911; Assistant Professor of Forestry, University of Washington, 1911-.

EDWARD GODFREY COX, PH. D., Assistant Professor of English.

A. B., Wabash College, 1899; A. M., Cornell University, 1901; Ph. D., Cornell University, 1906; Student at the School of Irish Learning, Dublin, Summers of 1906, 1907, 1909; Student at the Celtic Training College, Tourmakeady, Summer of 1907; Instructor in English, Cornell University, 1906-11; Assistant Professor of English, University of Washington, 1911-.

JOSEPH DANIELS, M. S. S., Assistant Professor of Mining Engineering and Metallurgy.

S. B., Massachusetts Institute of Technology, 1905; M. S., Lehigh University, 1908; Engineer with Dominion Coal Co., Nova Scotia, 1905-06; Instructor in Mining Engineering, Lehigh University, 1907; Assistant Professor, 1908; Associate Professor, 1911; Assistant Professor of Mining Engineering and Metallurgy, University of Washington, 1911-.

ELI VICTOR SMITH, PH. D., Assistant Professor of Zoology.

Ph. B., Illinois Wesleyan University, 1907; A. M., University of Washington, 1909; Ph. D., Northwestern University, 1911; Teaching Fellow in Zoology, Northwestern University, 1909-11; Assistant Professor of Zoology, University of Washington, 1911-.

GEORGE WALLACE UMPHREY, PH. D., Assistant Professor of Spanish.

A. B., University of Toronto, 1899; A. M., Harvard, 1901; Ph. D., Harvard, 1905; Teacher, Ontario Normal College, 1899-1900; Graduate School, Harvard, 1900-01; Teacher of French and German, Whitby Collegiate Institute, 1901-03; Fellow of the French Ministry of Public Instruction, Paris, John Harvard Fellow, Study and Travel in Spain, 1903-04; Edward Austin Fellow, Harvard, 1904-05; Instructor and Assistant Professor of Romance Languages, University of Cincinnati, 1905-11; Teacher of French and Spanish in the Summer School of the University of Tennessee, 1907; Assistant Professor of Spanish, University of Washington, 1911.

HENRY LOUIS BRAKEL, PH. D., Assistant Professor of Physics.

B. S., Olivet College, 1902; A. M., University of Washington, 1905; Ph. D., Cornell University, 1912; Graduate Student, *ibid.*, 1910-12; Instructor in Physics and Chemistry, High School, St. Johns, Michigan, 1902-03; Assistant in Physics, University of Washington, 1903-05; Instructor in Physics, 1905-12; Assistant Professor, 1912-.

CHARLES MUNRO STRONG, A. M., Assistant Professor of Spanish.

A. B., University of Missouri, 1897; A. M., 1900; Fellow in German, University of Missouri, 1899-1900; Professor of German, French and Spanish, St. John's Military Academy, Delafield, Wisconsin, 1900-01; Newspaper work, United States and Cuba, 1902-06; Instructor in Spanish, University of Washington, 1906-February, 1909; Interpreter with Curtis North American Indian History Expedition of the Southwest, February, 1909-February, 1910; Instructor in Spanish, University of Washington, 1910-12; Assistant Professor, 1912-.

WILLIAM THEODORE DARBY, A. M., Assistant Professor of English.

A. B., Yale University, 1905; A. M., Columbia University, 1907; Instructor in Williston Seminary, Easthampton, Mass., 1905-06; Instructor in English, University of Washington, 1907-12; Assistant Professor, 1912-.

HARVEY BRUCE DENSMORE, A. B., Assistant Professor of Greek.

A. B., University of Oregon, 1903; Fellow in Latin, University of Oregon, 1903-04; Rhodes Scholar at Oxford University, 1904-07; A. B., Oxford University, 1907; Instructor in Greek, University of Washington, 1907-12; Assistant Professor, 1912-.

CHARLES EDWIN WEAVER, PH. D., Assistant Professor of Geology.

B. S., University of California, 1904; Ph. D., *ibid.*, 1907; Assistant in Petrology, University of California, 1905-06; Assistant U. S. Geological Survey in Alaska, 1906; Instructor in Geology, University of Washington, 1907-12; Assistant Professor, 1912-.

ORVILLE PORTER COCKERILL, A. B., LL. B., Assistant Professor of Law.

A. B., Ohio State University, 1902; LL. B., *ibid.*, 1905; Student, University of Michigan, College of Law, 1903; Instructor in American History and Chemistry, High School, Washington C. H., Ohio, 1902-05; Instructor in Chemistry, East High School, Columbus, Ohio, 1905-09; Admitted to Bar, Supreme Court of Ohio, 1905; Assistant in Moot Court, Ohio State University, College of Law, 1908-09; Attorney-at-Law, Columbus, Ohio, 1906-10; member of firms Cockerill and Ingalls, and Griffith, Bennett, Westfall and Cockerill; Instructor in Law, University of Washington, 1910-12; Assistant Professor, 1912-.

HERMAN GUSTAV ADOLPH BRAUER, PH. D., Secretary of the Municipal Reference and Legislative Bureau of the Extension Division.

A. B., Colorado College, 1896; A. M., University of Wisconsin, 1898; Ph. D., University of Wisconsin, 1904; A. M., (Hon.) University of Adelaide, South Australia, 1906; Librarian, Colorado College, 1895-08; Instructor in French, University of Wisconsin, 1898-1903; Instructor in Commercial Law, University of Wisconsin, 1903-05; Secretary, Bowron Bros. & Co., Ltd., Christchurch, New Zealand, 1907-11; Bureau of Municipal and Legislative Research, University of Washington, 1912-.

CLARENCE RAYMOND COREY, E. M., Assistant Professor of Mining and Metallurgy.

E. M., Montana State School of Mines, 1905; Instructor in Surveying, Montana State School of Mines, Summer School, 1905; Mining Engineering and Metallurgical Practice, Sumpter, Oregon, 1905-06; on Geological Survey in Montana, 1906; U. S. Deputy Mineral Surveyor for Montana; Instructor in Surveying and Metallurgy, Montana State School of Mines, 1906-07; Assayer, U. S. Assay Office, Seattle, Wash., Summers of 1908 and 1909; Instructor in Mining and Metallurgy, University of Washington, 1907-13; Assistant Professor, 1913-.

ALLEN FULLER CARPENTER, A. M., Assistant Professor of Mathematics.

A. B., Hastings College, 1901; A. M., University of Nebraska, 1909; Instructor in Mathematics, Hastings College, 1901-04; Professor 1904-09; Instructor in Mathematics, Intercollegiate Summer School, University of Nebraska, 1906-07; Instructor in Mathematics, University of Nebraska, 1908-09; Instructor in Mathematics, University of Washington, 1909-13; Assistant Professor, 1913-.

*GEORGE BURTON RIGG, A. M., Assistant Professor of Botany.

B. S., University of Iowa, 1896; B. Di., 1899; A. M., University of Washington, 1909; Graduate Student, University of Chicago, Summers of 1906, 1907, 1912; Teacher of Science, Woodbine Normal School, Woodbine, Iowa, 1898-1907; Teacher of Botany and Zoology, Lincoln High School, Seattle, 1907-09; Special Agent U. S. Dept. of Agriculture in Kelp Investigation on Puget Sound, 1911-12; Scientist in charge of party in kelp investigation in Western Alaska, 1913; Instructor in Botany, University of Washington, 1909-13; Assistant Professor, 1913-.

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*Absent on Leave, Second Semester, 1913-1914.

DAVID ALLEN ANDERSON, PH. D., Assistant Professor of Education.

A. B., University of Iowa, 1908; A. M., 1910; Ph. D., 1912; Graduate Student, University of Iowa, 1909-12; Graduate Assistant in Education, 1909-10, 1911-12; Senior Fellow, in Europe, studying particularly the school system of Norway, 1910-11; President and Professor of Education and Psychology, Graceland College, Iowa, 1908-09; Instructor in Education, University of Iowa, Summer Session, 1911; Professor and Acting Head of the Department of Education and Psychology, State Normal School, Moorehead, Minnesota, Summer Session, 1912; Professor of Education and Psychology, State Normal School, La Crosse, Wisconsin, 1912-13; Assistant Professor of Education, University of Washington, 1913-.

ERNEST GEORGE ATKIN, A. M., Assistant Professor of French.

A. B., Cornell University, 1904; A. M., Harvard University, 1911; Graduate Student, Cornell University, 1904-05; Instructor in French and German, Centenary Collegiate Institute, New Jersey, 1905-06; Student in France and Spain as Fellow in Romanic Languages of Cornell University, 1906-07; Instructor in Romanic Languages (1907-10) and Graduate Student (1908-10) Leland Stanford, Jr., University; Graduate Student (1910-12) and Instructor in French and Spanish (1911-12), Harvard University; Instructor in Romanic Languages, University of California, 1912-13; Assistant Professor of French, University of Washington, 1913-.

ABRAHAM BERGLUND, PH. D., Assistant Professor of Economics.

A. B., University of Chicago, 1904; Ph. D., Columbia University, 1907; Instructor in Economics, Washington State College, 1907-09; Bureau of Corporations, Washington, D. C., 1909-13; Assistant Professor of Economics, University of Washington, 1913-.

J HARLEN BRETZ, PH. D., Assistant Professor of Geology.

A. B., Albion College, 1905; Ph. D., University of Chicago, 1913; Instructor in Biology and Geology, High School, Flint, Mich., 1905-07; Instructor in Physiography, Franklin and Queen Anne High Schools, Seattle, 1907-11; Fellow in Geology, University of Chicago, 1911-13; Assistant Professor of Geology, University of Washington, 1913-.

GRACE GOLDENA DENNY, A. B., Assistant Professor of Domestic Art.

A. B., University of Nebraska, 1907; Graduate Student, Teachers' College, Columbia University, 1909-11; Assistant, Domestic Art, University of Nebraska, 1907-08; Instructor in Domestic Art, University of Nebraska, 1908-09; Instructor in Domestic Art, University of Wisconsin, 1911-12; Assistant in Domestic Art, Teachers College, Summer, 1912-13; Assistant Professor of Domestic Art, University of Washington, 1913-.

HORACE JAMES MACINTIRE, M. M. E., Assistant Professor of Mechanical Engineering.

S. B., Massachusetts Institute of Technology, 1905; M. M. E., Harvard University, 1911; Assistant Instructor, Massachusetts Institute of Technology, 1905-07; Mechanical Engineer, National Lead Co., 1907-09; Instructor in Machine Design, Pratt Institute Evening School, 1907-08; Instructor, Harvard University, 1909-10; Hilton Scholar, Harvard University, 1910-11; Instructor, Carnegie Institute of Technology, 1911-13; Three months summer work since 1905 in the following firms: Drafting Department, George Blake Pump Works; Time-keeper, Aberthaw Construction Co.; Designer and Erector, York Manufacturing Co.; Designer and Erector, Westinghouse Machine Co.; Assistant Professor of Mechanical Engineering, University of Washington, 1913-.

WILLIAM BAIRD ELKIN, PH. D., Acting Assistant Profesor of Philosophy.

A. B., Manitoba University, 1889; Ph. D., Cornell University, 1894; Acting Professor of Philosophy, Indiana University, 1891-92; Acting Professor of Philosophy, Colgate University, 1894-95; Lecturer and Assistant in Psychology and Education, Teachers College, Columbia University, 1897-99; Acting Professor of Psychology, Hamilton College, 1899-1901; Acting Assistant Professor, Theory and Practice of Teaching, University of Missouri, 1903-04; Acting Assistant Professor of Philosophy, University of Missouri, 1904-08; Acting Assistant Professor of Philosophy, University of Washington, 1913-.

GINO ARTURO RATTI, PH. D., Acting Assistant Professor of French.

A. B., Middlebury College, 1907; A. M., Middlebury College, 1909; Docteur de l'Universite de Grenoble, 1911; Principal of High School, Pittsford, Vt., 1907-09; Instructor in French, Northwestern University, 1911-13; In charge of French and Italian, Summer Session, Middlebury College, 1912; Instructor in French, Summer Session, Northwestern University, 1913; Acting Assistant Professor of French, University of Washington, 1913-.

FRANK EDWARD JOHNSON, E. E., Instructor in Electrical Engineering.

E. E., University of Minnesota, 1900; Teacher in Public Schools, Minnesota, 1893-96; Practical work, Fort Wayne Electrical Works Company, Appleton, Minnesota; River Falls, Wisconsin; Caldron, Nebraska, 1900-03; Superintendent for The Douglas Electric Light Co., Douglas, Wyo., 1903-05; Instructor in Electrical Engineering, University of Washington, 1905-.

SAMUEL THOMAS BEATTIE, Instructor in Woodwork.

Practical work as Pattern Maker with Warner and Swasey, Cleveland, Ohio; Chicago Ornamental Iron Works, Chicago, Ill., Card Electric Co., Mansfield, Ohio; Grant Machine Tool Works, Cleveland, Ohio; Humphrey Manufacturing Co., Mansfield, Ohio; C. H. Allmond & Co., Seattle, Washington; Instructor in Woodwork, University of Washington, 1906-.

JOEL MARCUS JOHANSON, A. B., Instructor in English

A. B., University of Washington, 1904; Rhodes Scholar, Oxford, England, 1904-1907; Instructor in German, University of Washington, 1907-09; Instructor in English, 1910-.

SANDY MORROW KANE, Instructor in Metalwork.

Seven years' apprenticeship in iron and brass molding, machine shop, and forging, Kane and Sons, Ireland; Foreman of shop four years, Kane and Sons, Ireland; Practical Machinist, Eagle Iron Works, Des Moines, Iowa, 1881-83; Foreman of machine shops, Des Moines Mfg. and Supply Co., Des Moines, Iowa, 1883-87; Master Mechanic, Golden Reward Gold Milling & Mining Co., Deadwood, S. D., 1897-1903; Moran Bros. Co., Seattle, Wash., 1903-06; Practical Machinist, U. S. Navy Yard, Bremerton, Wash., 1906-07; Instructor in Metalwork, University of Washington, 1907-.

EARL RICE, A. B., LL. B., Instructor in Law.

A. B., Syracuse University, 1905; LL. B., Syracuse University, Law School, 1907; Attorney-at-Law, Syracuse, N. Y., 1907-08; Attorney-at-Law, Seattle, Washington, 1908; Instructor in Law, University of Washington, 1908-.

WALTER BELL WHITTLESEY, A. M., Instructor in French.

A. B., University of Washington, 1907; A. M., 1909; Graduate Assistant in French and Spanish, University of Washington, 1907-09; Instructor in French, University of Washington, 1909-.

FRANK STEVENS HALL, Assistant Curator.

Student, University of Michigan, 1902-05; Assistant in Museum, University of Michigan, 1905-07; in charge of arrangement of Museum, University of Cincinnati, 1907; Assistant Curator, University Museum, University of Michigan, 1907-09; spring and summer 1908 spent in special study of Museum administration at the Smithsonian Institution and National Museum at Washington, Philadelphia Academy of Natural Sciences, American Museum of Natural History at New York, and at other eastern museums; Assistant Curator, University of Washington, State Museum, 1909-.

JESSIE BEE MERRICK, B. S., Director of Physical Training for Women.

Ph. B., University of Wisconsin, 1904; B. S., Columbia University, 1907; Graduate Student, University of Wisconsin, 1905-06; Summer Session, 1905; Scholarship, Teachers' College, Columbia University, 1906-07; Student Assistant in Physical Education, Teachers' College Columbia University, 1906-07; Athletic Director, Girl's Camp, Summer, 1907; Assistant, Physical Training for Women, University of Wisconsin, 1907-08; Instructor, Physical Training for Women, University of Wisconsin, 1908-09; Director, Physical Training for Women, University of Washington, 1909-.

JOHN WILLIAM MILLER, B. S. (C. E.), Instructor in Civil Engineering.

B. S., Civil Engineering, University of Nebraska, 1905; three years' engineering experience in Railroad Work in the Middle West with the Chicago, Burlington & Quincy Railroad, and the Chicago & Northwestern Railroad, 1903-07; Testing Engineer, Cushman Motor Co., Lincoln, Nebraska, 1908; Division Engineer, Chicago, Burlington & Quincy Railroad, Jan.-Sept., 1909; Instructor in Civil Engineering, University of Washington, 1909-.

*WALTER AUSTIN GLEASON, B. S., Instructor in Civil Engineering.

B. S., Massachusetts Institute of Technology, 1897; Track Apprentice, Illinois Central Railroad, 1897; on construction of Boston Elevated Railway, 1898-99; Draftsman and Designing Engineer, Boston Bridge Works, Milliken Brothers, Contractors, and the Robbins Conveying Belt Company, New York City, 1900-04; Assistant Engineer in charge of structural details of the B. T. Babbitt Plant, New York City, 1905-06; Superintendent of Construction, Somervell & Cote, Architects, Seattle, 1907-08; General Engineering Practice, Seattle, 1909-10; Instructor in Civil Engineering, University of Washington, 1910-.

†WILLIAM CHARLES MUEHLSTEIN, B. S. (C. E.), Instructor in Civil Engineering.

B. S., in Civil Engineering, University of Wisconsin, 1909; Assistant in Civil Engineering, University of Wisconsin, 1909-10; Instructor in Civil Engineering, Pennsylvania State College, First Semester, 1910-11; Instructor in Civil Engineering, University of Washington, February, 1911-.

THERESA SCHMID MCMAHON, PH. D., Instructor in Political and Social Science.

A. B., University of Washington, 1899; A. M., 1901; Ph. D., University of Wisconsin, 1909; Teacher in Public Schools of Washington, 1899-1901; Graduate Student in University of California, 1901-1902; Fellow in Sociology, 1907-1908, University of Wisconsin; Statistician, United Charities, Chicago, 1909-1910; Resident at Hull House, Chicago, summer 1909; Graduate Assistant in Political Science, University of Washington, 1911; Instructor in Political and Social Science, 1911-.

NEWELL WHEELER SAWYER, A. M., Instructor in English.

Ph. B., Dickinson College, 1908; M. A., University of Pennsylvania, 1909; Graduate Assistant in English, University of Washington, 1910-11; Instructor, 1911-.

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* Resigned, February 1, 1914.

† Resigned, January 1, 1914.

VICTOR LOVITT OAKES CHITTICK, A. M., Instructor in English.

A. B., Acadia University, 1905; A. M., 1906; A. M., Harvard University, 1908; Graduate Student on part time, Columbia University, 1908-10; English Fellow, Columbia University, 1910-11; English Master, King's Collegiate School, Windsor, N. S., 1905-07; Teacher, Ethical Culture School, New York City, 1908-10; Instructor in English, University of Washington, 1911-.

ERNEST OTTO ECKELMAN, PH. D., Instructor in German.

A. B., Northwestern University (Watertown, Wis.), 1897; B. L., University of Wisconsin, 1908; Ph. D., University of Heidelberg, 1906; Teacher of German and Greek, Carroll College, 1898-1900; Scholar in German Philology, University of Wisconsin, 1900-01; Fellow, 1901-02; Ottendorfer Memorial Fellow, New York University, 1902-03; Winter Semester, University of Munich; Summer Semester, University of Prague; Instructor in German, Smith College, 1903-05; Instructor in German, Dartmouth College, 1906-08; Instructor in German, University of Illionis, 1908-09; Student, University of Chicago, Summer Quarters, 1908 and 1909; Student, Cambridge, Mass., 1909-11; Instructor in German, University of Washington, 1911-.

CHARLES LOUIS HELMLINGE, B. PH,. Instructor in French.

B. Ph., German Wallace College (Berea), 1911; Teacher, Cincinnati School of Languages, 1898-1902; Teacher, Woodward High School, Cincinnati, 1902-03; Teacher, Cincinnati University School, 1903-09, 1910-11; Student, University of Madrid, 1909-10; Instructor in French, University of Washington, 1911-.

JOHN WILLIAM HOTSON, PH. D., Instructor in Botany.

A. B., McMaster University, 1901; A. M., 1902; Ph. D., Harvard University, 1913; Graduate Student, University of Chicago, 1902 (summer and fall), Cornell University, 1903 (winter), Teachers' College, Columbia University, 1903 (spring), Clark University, 1903 (summer); Lecturer in Botany, Ontario Agricultural College, Guelph, 1903-04; Principal, Macdonald Consolidated Schools, Guelph, 1904-06; Graduate Student, University of Chicago, 1906-07; Austen Teaching Fellow in Botany, Harvard University, 1907-08; Assistant Professor of Botany, Pomona College, 1908-10; Graduate Student, Harvard University, 1910-11; Instructor in Botany, University of Washington, 1911-.

RALPH HASWELL LUTZ, PH. D., Instructor in History.

A. B., Leland Stanford, Jr., University, 1906; LL. B., University of Washington, 1907; Ph. D., University of Heidelberg, 1910; Graduate Student, University of California, Summer Semester, 1906; Student, University of Bonn and University of Heidelberg, 1907-10; Instructor in History, University of Washington, 1911-.

LEWIS IRVING NEIKIRK, PH. D., Instructor in Mathematics.
B. S., University of Colorado, 1898; M. S., 1901; Ph. D., University of Pennsylvania, 1903; Fellow in Mathematics, University of Pennsylvania, 1901-03; Research Fellow in Mathematics, 1903-05; Instructor in Mathematics, University of Illionis, 1905-11; Instructor in Mathematics, University of Washington, 1911-.

CHARLES EDWARD NEWTON, E. M., Instructor in Civil Engineering.
B. S., Michigan College of Mines, 1906; E. M., 1907; Instructor in Mining Engineering, Michigan College of Mines, 1907-08; Practical Work in Mining Engineering in Colorado, Arizona and Mexico, 1908-11; Instructor in Civil Engineering, University of Washington, 1911-.

HJALMAR LAURITS OSTERUD, A. M., Instructor in Zoology.
A. B., University of Washington, 1909; A. M., 1910; Graduate Student, Columbia University, 1910-11; Instructor in Zoology, University of Washington, 1911-.

ATTILIO FILIPPO SBEDICO, PH. D., Instructor in French and Italian.
Licenza Liceale, 1903; A. M., University of Pennsylvania, 1907; Ph. D., 1909; Scholar, 1905-09; and Traveling Fellow in French, University of Pennsylvania, 1906-07; Instructor in the University of Pennsylvania, Summer School, 1908-10; Instructor in Romanic Languages, University of Illinois, 1909-11; Instructor in French and Italian, University of Washington, 1911-.

HARLAN LEO TRUMBULL, PH. D., Instructor in Chemistry.
A. B., University of Washington, 1907; A. M., *ibid.*, 1908; Ph. D., University of Chicago, 1911; Fellow in Chemistry, University of Chicago, 1908-11; Instructor in Chemistry, University of Washington, 1911-.

HENRY SLATER WILCOX, A. M., Instructor in Psychology
B. S., Trinity College (Hartford), 1908; A. M., Harvard University, 1911; H. E. Russell Traveling Fellow, Trinity College, 1908-10; Fellow by Courtesy and Student, Johns Hopkins University 1908-09; Student, University of Leipzig, 1909-10; Student, University of Berlin, Summer Semester, 1910; Toucey Scholar, Harvard University, 1910-11; Instructor in Psychology, University of Washington, 1911-.

SAMUEL HERBERT ANDERSON, PH. D., Instructor in Physics.
A. B., Park College, 1902; A. M., 1903; Ph. D., University of Illinois, 1912; Graduate Student, Park College, 1902-03; University of Chicago, Summer Quarters, 1908, '09, '10; Fellow in Physics, University of Illinois, 1910-12; Instructor, Park College, 1902-03; Salt Lake Collegiate Institute, 1903-05; Professor of Physics and Chemistry, Albany College, 1905-07; Head of Science Department and Instructor in Physics, Occidental Academy, 1907-09; Assistant Professor of Physics, Occidental College, 1909-10; Instructor in Physics, University of Washington, 1912-.

GERTRUDE CRUDEN, B. S., Instructor in Domestic Art.

A. B., Smith College, 1907; B. S. Columbia University, 1912; Diploma Household Arts Education, Teachers' College, Columbia University, 1912; Student, Teachers' College, Columbia University, 1908-1909, 1911-1912; Instructor in Domestic Art, University of Washington, 1912-.

LESLIE FORREST CURTIS, B. S., Instructor in Electrical Engineering.

B. S., Tufts College, 1910; Student Engineer, Testing Department, General Electric Co., 1910-1912; Designing Engineer, Railway Motor Department, General Electric Co., Schenectady, N. Y., 1912; Instructor in Electrical Engineering, University of Washington, 1912-.

CURT JOHN DUCASSE, PH. D., Instructor in Philosophy.

A. B., University of Washington, 1908; A. M., 1909; Ph. D., Harvard University, 1912; Undergraduate Assistant, University of Washington, 1907-1908; Graduate Assistant, 1908-1909; Instructor in Philosophy and Psychology, 1909-1910; University Scholar, Harvard University, 1910-1911; Assistant in Philosophy and Psychology, Harvard University, 1911-1912; Instructor in Philosophy, University of Washington, 1912-.

RUDOLPH HERBERT ERNST, A. M., Instructor in German.

A. B., Northwestern College (Watertown, Wis.), 1904; A. M., Harvard University, 1911; Student, Theological Seminary (Wauwatosa, Wis.), 1905-1907; Student, University of Rostock, 1908-1909; Student, University of Leipzig, 1909-10; Student, Harvard University, 1910-1912; Instructor in English and German, Northwestern College, 1904-1905, 1907-1908; Thayer Fellow (Harvard), 1911-1912; Instructor in German, University of Washington, 1912-.

LEO JONES, A. B., Chief of the Bureau of Debate and Discussion.

A. B., University of Washington, 1912; Student, Columbia University Law School, 1909-1910; Instructor in English, High School, Palouse, Washington, 1910-1911; Practiced Law, Seattle, 1911-1912; Instructor in Public Speaking and Debate, University of Washington, 1912-1913; Chief of the Bureau of Debate and Discussion, 1913-.

THOMAS WITHERS, C. E., Instructor in English.

Graduate of Virginia Military Institute, 1869; C. E., *ibid.*, 1870; Assistant Professor, Virginia Military Institute, 1871; Formerly Engineer in Charge of Salisbury Railroad, Coal and Iron Mines, Pennsylvania, also of Denver, South Park & Pacific Railroad; Late Chief Assistant Engineer, Kansas Pacific Railroad; Chief of U. S. Mineral Surveys for District of Colorado; Mining Engineer at Leadville, Kokomo and Cripple Creek, Colorado, and Goldfield, Nevada; Instructor in English, University of Washington, 1912-.

WALTER EDMUND SQUIRE, A. A. G. O., Assistant to the Musical Director.

Graduate in Music, Northwestern University, 1906; Associate American Guild of Organists, 1907; Student, Victor Heinze and Waldemar Lutschg (Berlin), Alex. Guilmant and Charles M. Widor, (Paris), 1908-1911; Assistant to the Musical Director, University of Washington, 1912-.

WALTER EDWARD ROLOFF, PH. D., Instructor in German.

A. B., Northwestern University, 1904; A. M., *ibid.*, 1905; Ph. D., University of Wisconsin, 1912; Teaching Fellow in German, Northwestern University, 1904-05; Student, University of Leipzig, 1905-06; Assistant in German, University of Wisconsin, 1906-08; Instructor in German, Northwestern University, 1908-12; Instructor in German, University of Washington, 1912-.

ERIC TEMPLE BELL, PH. D., Instructor in Mathematics.

A. B., Leland Stanford, Jr., University, 1904; A. M., University of Washington, 1908; Ph. D., Columbia University, 1912; Graduate Assistant, University of Washington, 1907-08; Teacher of Mathematics and Sciences, Siskiyou County High School, California, 1909-11; Graduate Student, Columbia University, 1911-12; Instructor in Mathematics, 1912-.

FLOYD THOMAS VORIS, A. M., Instructor in Physics.

B. S., Highland Park, 1892; M. S., 1895; A. M., Columbia, 1902; Professor of Physics and Chemistry, Buena Vista College, 1898-1904; Graduate Student, Columbia, 1901-02; Instructor, Macalester College and Graduate Student, University of Minnesota, 1904-05; Professor of Physics and Geology, Whitworth College, 1906-11; Research Student, University of Washington, 1911-12; Instructor in Physics, University of Washington, 1912.

CHARLES CULBERTSON MAY, B. S. (C. E.), Instructor in Civil Engineering.

B. S. (C. E.), University of Washington, 1910; Inspector of Paving, Pasadena, California, 1911; Construction Foreman, Barber Asphalt Paving Company, Owensmouth, California, 1912; Construction Foreman, Dome Lake Reservoir Co., Sheridan, Wyoming, Summers 1907-1908; Instructor in Civil Engineering, University of Washington, 1912-.

EDWIN LEONARD STRANDBERG, B. S. (C. E.), Instructor in Civil Engineering.

B. S. (C. E.), University of Washington, 1912; Draftsman, Bridge and Building Department, C. M. & P. S. Ry., 1910-11; Appraisal Work, Seattle Electric Company, Summer 1911; Draftsman, Engineering Department, C. M. & P. S. Ry.. Summer, 1912; Instructor in Civil Engineering, University of Washington, 1912-.

*JACK BECHDOLT, Instructor in Journalism.

Reporter Seattle Post-Intelligencer, 1906-1911; Assistant City Editor, *ibid.*, 1911-1912; Sunday Magazine Editor and Dramatic Critic, *ibid.*, 1912-; Contributor to Youth's Companion, Leslie's Weekly, Popular Mechanics, Technical World, Pacific Monthly, Overland Monthly, San Francisco News Letter, Sunset, etc., 1901-1913; Instructor in Journalism, University of Washington, February 1, 1913-.

HELEN MARIE FITCH, A. B., Instructor in Physical Training.

A. B., University of Wisconsin, 1910; Instructor in Physical Training, Sacred Hearts Academy, Madison, Wisconsin, 1909-10; Assistant in Physical Training, University of Washington, 1909-13; Instructor, 1913-.

NATHAN ALTSHILLER, SC. D., Instructor in Mathematics.

Candidat en Sciences Physiques et Mathematiques, University of Ghent, 1909; Docteur en Sciences Physiques et Mathematiques, University of Ghent, 1911; Graduate Student and Instructor in Mathematics, Extension Department, Columbia University, 1911-13; Instructor in Mathematics, University of Washington, 1913-.

JAMES EDGAR BELL, PH. D., Instructor in Chemistry.

B. S., University of Chicago, 1905; Ph. D., University of Illinois, 1913; Instructor in Chemistry and Physics, Ottawa, Illinois, High School, 1905-08; Graduate Student, 1908-10 and Fellow, 1909-10, University of Chicago; Instructor in Chemistry, University of Washington, 1910; Graduate Student, University of Illinois, 1911-13; Instructor in Chemistry, University of Washington, 1913-.

SERENO BURTON CLARK, PH. D., Instructor in Latin and Greek.

Graduate, Michigan State Normal School, Ypsilanti, 1895; B. Pd. 1901; A. B., University of Michigan, 1901; Ph. D., Harvard University, 1907; M. Pd. (Honorary), Michigan State Normal College, 1912, Instructor in Greek and Latin, Benton Harbor, Michigan, High School, 1896-98; Instructor in Greek and Latin, Michigan State Normal School, 1899-1901; Instructor in Greek and Latin, Marquette, Michigan, High School, 1901-04; Instructor in Latin and Greek, Western Reserve University, 1907-08; Instructor in Latin and Greek, Michigan State Normal College, 1908-09; Acting Assistant Professor of Latin, Cornell University, 1909-10; Instructor in Latin, University of California, 1910-13; Instructor in Latin and Greek, University of Washington, 1913-.

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* Resigned, December 1, 1914.

ROBERT ALEXANDER CUMMINS, M. A., Instructor in Psychology.

B. S., Illinois Wesleyan University, 1909; M. A., University of Illinois, 1910; Graduate of Valparaiso Business Institute, 1896; Seven years' experience in business as book-keeper, mill-wright, and assistant manager; Assistant in Biology, Illinois Wesleyan University, 1906-07; Assistant in Physics, 1907-08; Graduate Scholar in Education, University of Illinois, 1909-10; Professor of Philosophy and Education and Director of Educational Clinic, University of Puget Sound, 1910-13; Graduate Student in Education, University of Washington, 1912-13; Professor of Theory and Practice of Teaching, Tacoma Summer Normal School, 1912; Assistant Professor of Psychology, University of Washington, Summer Session, 1913; Instructor in Psychology, University of Washington, 1913-.

IRENE HUNT DAVIS, A. B., Instructor in Chemistry.

A. B., University of Washington, 1903; Instructor, Bellingham High School, 1903-08; Graduate Student, University of Washington, 1912-13; Instructor in Chemistry, University of Washington, 1913-.

CARL HENRY GETZ, A. B., Instructor in Journalism.

A. B., University of Washington, 1913; Assistant in Journalism, University of Washington, 1912-13; Instructor in Journalism, University of Washington, 1913-.

BROR LEONARD GRONDAL, M. S. F., Instructor in Forestry.

A. B., Bethany College, Kansas, 1910; M. S. F., University of Washington, 1913; Graduate Student, University of Washington, 1910-13; Graduate Assistant in Forestry, 1911-12; Chemist, Pacific Creosoting Company, 1912; Expert in Wood Preservation, Robert W. Hunt & Co., Engineers, 1912-13; Instructor in Forestry, University of Washington, 1913-.

JOSEPH BARLOW HARRISON, A. B., Instructor in English.

A. B., University of Washington, 1910; A. B., Oxford University, 1913; Rhodes Scholar at Oxford University, 1910-13; Instructor in English, University of Washington, 1913-.

GEORGE MILTON JANES, PH. D., Instructor in Political and Social Science.

B. Litt., Dartmouth College, 1901; S. T. B., Harvard University, 1902; A. B., Middlebury College, 1903; A. M., Harvard University, 1910; Ph. D., Johns Hopkins University, 1913; Graduate Student, Harvard University, 1906-10; Fellow in Political Economy, Johns Hopkins University, 1911-12; Assistant in Political Economy, Johns Hopkins University, 1912-13; Instructor in Political and Social Science, University of Washington, 1913-.

ETHEL DOROTHY JOHNSON, A. B., Instructor in Physical Training

A. B., University of Nebraska, 1913; Instructor in Physical Training, University of Washington, 1913-.

WILLIAM LA FOLLETTE, A. B., Instructor in Public Speaking and Debate.

A. B., De Pauw University, 1912; Instructor in Mathematics and Public Speaking, Lebanon High School, 1912-13; Instructor in Public Speaking and Debate, University of Washington, 1913-.

ALEXANDER PICKENS ROMINE, A. M., Instructor in Zoology.

A. B., West Virginia University, 1899; Graduate Student, Johns Hopkins University, 1899-1900; Austin Scholar, Harvard University, 1908-09; A. M., Harvard University, 1909; Principal High School, Clarksburg, West Virginia, 1894-96; Instructor in Science, High School, New Whatcom, Washington, 1900-01; Instructor in Biology, State Normal School, Bellingham, Washington, 1901-09; Instructor in Zoology, *ibid.*, 1909-11; Instructor in Zoology, University of Washington, 1913-.

ELIZABETH ROTHERMEL, A. M., Instructor in Home Economics.

A. B., University of California, 1899; A. M., Columbia University, 1913; Master's Diploma in Education, Teachers' College, 1913; Graduate Student, University of California, 1899-1900; Teacher of Latin and English, San Jacinto and Santa Paula High Schools, California, 1900-02; Student, University of California, Summer Session, 1911; Student, Columbia University, 1911-13; Scholarship, Teachers' College, 1912-13; Instructor in Home Economics, University of Washington, 1913-.

LLOYD LEROY SMAIL, PH. D., Instructor in Mathematics.

A. B., University of Washington, 1911; A. M. University of Washington, 1912; Ph. D., Columbia University, 1913; Denny Fellow, University of Washington, 1911-12; Fellow in Mathematics, Columbia University, 1912-13; Instructor in Mathematics, University of Washington, 1913-.

CONRAD TRESSMANN, PH. D., Instructor in German.

A. B., University of Minnesota, 1906; Ph. D., University of Pennsylvania, 1913; Principal of Waverly Public School, Waverly, Minnesota, 1906-08; Student in Germany, 1908-10; Berlin, Winter Semester, 1908-09; Heidelberg, Summer Semester, 1909; Munich, Winter and Summer Semesters, 1909-10; Student and Graduate Assistant in German, University of Pennsylvania, 1910-13; Instructor in German, University of Pennsylvania, Summer Sessions, 1911, 1912, 1913; Instructor in German, University of Washington, 1913-.

FRANK MELVILLE WARNER, B. S. (M. E.), Instructor in Engineering Drawing.

B. S. in M. E., University of Wisconsin, 1907; Instructor in Engineering Drawing, University of Wisconsin, 1907-08; Assistant Professor of Engineering, Washington State College, 1908-10; Engaged in private drafting business in Spokane, 1910-13; Instructor in Engineering Drawing, University of Washington, 1913-.

LUTHER EWING WEAR, PH. D., Instructor in Mathematics.

A. B., Cumberland University, 1902; Ph. D., Johns Hopkins University, 1913; Instructor, Lebanon College for Young Ladies, 1902-03; Instructor, High School, Texas, 1903-04; Professor of Mathematics, Trinity University (Texas) 1904-08; Dean of the Faculty, *ibid.*, 1907-08; Harvard Engineering Camp, Summer of 1905; Graduate Student and Fellow by Courtesy, Johns Hopkins University, 1908-09; Head of the Department of Mathematics, Houston (Texas) High School, 1909-10; Graduate Student, Johns Hopkins University, 1910-13; University Scholar, 1910-11; Fellow in Mathematics, 1912-13; Instructor in Mathematics, University of Washington, 1913-.

SANFORD MYRON ZELLER, A. M., Instructor in Botany.

B. S., Greenville College, 1909; A. B., University of Washington, 1912; A. M., *ibid.*, 1913; Teacher of Science, Seattle Seminary, 1909-12; Assistant in the Department of Botany, University of Washington, 1912-13; Field Assistant, United States Department of Agriculture in Alaskan Kelp Investigation, 1913; Instructor in Botany, University of Washington, 1913-.

CLARA JEANNETTE TERRY, A. B., Extension Instructor in Home Economics.

A. B., University of Wisconsin, 1910; Diploma, Teachers' College, 1911; Teacher of Home Economics, Eau Claire, Wisconsin, High School, 1911-13; Extension Instructor in Home Economics, University of Washington, 1913-.

CHARLES GLENN BURRITT, B. S. (C. E.), Instructor in Civil Engineering.

B. S. (C. E.), University of Wisconsin, 1909; Surveyman, Oliver Iron Mining Company, Hibbing, Minnesota, summer of 1908; Instructor in Railway Engineering, University of Wisconsin and Engineer Inspector, Wisconsin R. R., and Tax Commission, 1909-1913; Engineer Inspector, Wisconsin R. R. and Tax Commission, June to December, 1913; Instructor in Civil Engineering, University of Washington, January, 1914-.

SIDNEY HOWARD GEORGE, Instructor in Civil Engineering.

Student, Massachusetts Institute of Technology, 1902-03; Student, Dartmouth College, 1903-04; with the C. M. & P. S. Railway in capacities of Rodman, Instrument Man, Assistant Engineer and Draftsman, in the Engineering and Bridge and Building Departments, 1906-14; Instructor in Civil Engineering, University of Washington, February, 1914.

FRANCES EDITH HINDMAN, PH. C., B. S., Instructor in Pharmacy and Assistant State Chemist and Bacteriologist.

Ph. C., University of Washington, 1910; B. S., University of Washington, 1912; Assistant in Pharmacy, University of Washington, 1911-12; Graduate Assistant in Pharmacy, University of Washington, 1912-13; Instructor in Pharmacy and Assistant State Chemist and Bacteriologist, University of Washington, 1913-.

FRED WASHINGTON KENNEDY, Director of the Journalism Laboratories.

HIRAM B. CONIBEAR, Supervisor of Aquatics.

Graduate, Chatauqua School of Physical Training and Athletics, 1901; Trainer of Athletics, University of Chicago, 1897-1901; Assistant Director of Athletics and Physical Training and Coach of Track, University of Illinois, 1901-02; Director of Physical Training and Athletics, University of Montana, 1903-04; Trainer of Athletics, University of Chicago, 1905; Assistant Director of Physical Training and Coach of Track and Crew, University of Washington, 1907-08; Coach of Rowing, *ibid.*, 1909-11; Supervisor of Aquatics, University of Washington, 1912-.

PART TIME INSTRUCTORS

MORITZ ROSEN, Teacher of Violin.

Graduate, Warsaw Conservatory, Russia.

ADA DEIGHTON HILLING, Teacher of Harmony.

Graduate, Trinity College of Music, London, 1883.

GRACE BLANCHE ZIMMERMAN, A. B., Teacher of Piano.

Graduate, Elgin College of Music, 1902; A. B., University of Washington, 1909.

LUCY K. COLE, Teacher of Public School Music.

Supervisor of Music, City Schools, Seattle.

ANNE VOLKER, Assistant in Piano.

Oberlin, Michigan, Pupil of Walter Squire.

AGNES BIRKMAN, Teacher of Public School Drawing

Teacher, City Schools, Seattle.

ALBERT FRANZ VENINO, Teacher of Piano.

Student at the New York College; Pupil of the Stuttgart Conservatory of Music; Pupil of Leschetizky.

GRACE TERRY, Instructor in Music.

Graduate, Knox Conservatory of Music, 1895; Student, Karlton, Hackett, Madame Magnus, 1895-97; Instructor in Music, Knox Conservatory, 1897-1901; First Assistant to Mary Woods Chase, Chicago, 1903-05; Director of Music, Bethany College (Kansas), and Soprano at Cathedral (Bishop Millspaugh's Church), 1905-07; Director of Music, State Normal School, Lewiston, Idaho, 1910-13.

ALLETTA GILLETTE, A. M., Extension Instructor in English.

A. B., Smith College, 1907; A. M., University of Washington, 1911; Instructor in English, Morningside College, 1908-1910, 1911-1912; Extension Instructor in English, University of Washington, 1912-.

CHARLES ALEXANDER GUERARD, B. L., Extension Instructor in French.

B. L., University of France, 1876; Student in Languages and Literature at the Sarbonne, 1879; Professor of Classics, University of Paris, 1880-1905; Twenty-five years in public and private instruction; Officer d'Academie, 1900; Officer d'Instruction Publique, 1905, in America since 1908; Graduate Assistant, University of Washington, 1909-10; Instructor, Stanford University, 1910-11; Extension Instructor, University of Washington, 1912-.

HUGH ELMER AGNEW, A. B., Instructor in Journalism.

Graduated from Michigan State Normal College, 1898; A. B., University of Michigan, 1902; Superintendent of Portland, Michigan, schools, 1898-1901; Superintendent of Howell, Michigan, schools, 1902-03; Owner and editor Dowagiac, (Michigan) Republican and Manager of the Fuller Book Bindery, 1903-08; Manager of the Chamberlin Printing Company and printer of trade journals "Home" and "Service," 1908-11; Manager, Canton (Illinois) Daily Ledger, 1911-13; Instructor in Journalism, University of Washington, 1913-.

LECTURERS

1913-1914

CHARLES EVAN FOWLER, M. Am. Soc. C. E., Lecturer on Engineering Contracts and Specifications.

President and Chief Engineer, International Contract Co., President Seattle Park Commission, 1904.

HARVEY L. GLENN, B. S., Lecturer on Bullion Assaying.

Assayer, U. S. Assay Office, Seattle.

GEORGE NELSON SALISBURY, B. S., Lecturer in Meteorology.

United States Weather Bureau Official, since 1883; Washington Section, United States Weather Bureau, since 1894.

* OLIVER P. M. GOSS, C. E., Lecturer in Timber Physics.

In charge of U. S. Forest Service Timber Testing Laboratory at University of Washington, 1907-.

ISABELLA AUSTIN, A. B., Lecturer on Education.

Dean of Women, University of Washington.

GEORGE BATES HARRINGTON, B. S., Lecturer on the Economics of Mining.

Superintendent of Coal Mining Department, Seattle Electric Co., 1909-.

JAMES BAGLEY, Lecturer on Mine Regulations.

State Coal Mine Inspector of Washington, 1913-.

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* Resigned, February 15, 1914.

ROBT. F. MCELVENNY, E. M., Lecturer on Copper Smelting and Refining.

Superintendent of Tacoma Smelting Company.

MAGNUS T. CRAWFORD, E. E., Lecturer on Electric Transmission.

Superintendent of Transmission, Puget Sound Electric Traction, Light & Power Co.

L. A. NELSON, Lecturer on Scaling.

CORNELIUS OSSEWARD, Lecturer on Commercial Pharmacy.

Ph. G., Columbia University, 1892; Ph. C., Northwestern University, 1895; Member of Washington State Board of Pharmacy; Practical Pharmacist, Cobb Building, Seattle; Lecturer on Commercial Pharmacy, University of Washington, 1914-.

CARL GOULD, Lecturer in Architecture.

A. B., Harvard University, Beaux Arts, Paris.

TEACHING FELLOWS

DONALD ADAMS, A. B., (Harvard University), English.

*FRED W. ASHTON, A. B., (University of Washington), Chemistry.

ETHEL BARDELL, A. B., (University of Washington), Botany.

GLENOLA BEHLING, B. S., (University of Chicago), Chemistry.

MALCOLM DOUGLAS, PH. B., (Ohio University), History.

GROVER R. GREENSLADE, A. B., (Whitman College), Physics.

KATE M. GREGG, A. B., (University of Washington), English.

FERRY C. HOUGHTEN, A. B., (Olivet College), Physics.

DAVID OHLSON, A. B., (University of Washington), Physics.

ELIZABETH MACLEAY, A. B., (University of Washington), English.

EARL MILLIRON PLATT, PH. C., (University of Washington), Pharmacy.

WESLEY FREDERIC RENNIE, A. B., (University of Michigan), English.

VERA MIRIAM RICHARDS, A. B., (University of Washington), Spanish.

CARL HENRY WALTER, B. S., (Carthage College), Chemistry.

OLIVER WEESNER, B. S., (Earlham College), Mathematics.

THOMAS ALEXANDER WILLIAMS, A. B., (Maryville College), Mathematics.

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* Withdrew, January 1, 1914.

GRADUATE ASSISTANTS

MARC DARRIN, M. S., (University of Washington), Chemistry.

PAUL J. KRUSE, A. M., (University of Washington), Education.

FRANCIS E. MILLAY, A. B., (University of Iowa), Education.

MARTHA REEKIE, A. B., (University of Washington), Museum.

MILTON VELDEE, B. S., (University of Washington), Bacteriology.

EDWARD GOLDSMITH, B. S., (University of Washington), Stock Room Keeper in Chemistry.

CLARENCE JOHN ALBRECHT, A. B., (University of Iowa), Taxidermist, Museum.

OFFICE ASSISTANTS

LILLIAN BROWN GETTY, President's Office.

MAX HIPKOE, Bursar's Office.

AIMEE WILSON, Bursar's Office.

CAROLINE TALBOT, Recorder's Office.

VICTOR BOUILLON, Recorder's Office.

AGNES MOBECK, Extension Division.

ETHEL WEISENSEE, Extension Division.

VIOLET W. DUNGAN, Extension Division.

LYDIA MCCUTCHEON, Assistant and Reference Librarian, Extension Division.

HATTIE JOHNSTON, In charge of Alumni Register.

MADGE WILKINSON, Gatzert Foundation for Child Welfare.

BERTHA SPARKS, Department of Education.

CORABEL HOLCOMB, Department Stenographer.

OLIVE BARTER, Military Clerk.

JENNIE CLY GARDNER, Engineering Building.

BUILDINGS AND GROUNDS

EVERETT OWEN EASTWOOD, C. E., Consulting Engineer.

SANDY MORROW KANE, Engineer.

FRANK E. JOHNSON, Electrical Engineer.

FRED BLOOM, Assistant Engineer.

GEORGE LEWIS MOTTER, Head Gardener.

DAVID MCDANIEL, Head Janitor.

OFFICERS OF THE UNIVERSITY OF WASHINGTON STATION OF THE UNITED STATES FOREST SERVICE

OLIVER PERRY MORTON GOSS, C. E., Engineer in Forest Products, in charge.

CONRAD W. ZIMMERMAN, Engineer in Timber Tests.

CORNELIUS BARRY, Laboratory Assistant.

STATE FOOD AND DRUG WORK

CHARLES WILLIS JOHNSON, PH. C., PH. D., State Chemist.

FRANCES EDITH HINDMAN, Assistant State Chemist.

HARRY JACOB SIEGEL, Assistant, State Food and Drug Analysis.

COMMITTEES OF THE FACULTY

The President is *ex officio* a member of each standing committee.

ADMISSIONS AND REGISTRATION: The Deans of the Colleges and Schools.

APPOINTMENTS: Dean Bolton, Professor Lull and major professors.

ASSEMBLY: Professors Richardson, Glen, and Benson.

ATHLETICS: Dean Roberts, Professors Hall, Mortiz, Densmore and Dehn.

FRESHMAN COUNSELLORS: Professor Beach, Dean Austin, Professors Parrington, McMahon, Saunders, Rose, Denny, and Mr. Jones.

GRADUATION: Professors Byers, Magnusson, Lantz, Hart, Kirkland and Custis.

HONORS: Professors Padelford, Byers, Savery, Meisnest, and Dr. McMahon.

HYGIENE AND SANITATION: Professors Hall, Weinzirl, McCaustland, Stevenson Smith and Raitt.

PETITIONS: Professors Moritz, Benham, More, Brakel and Dr. Trumbull.

PRE-LAW CURRICULUM: Professors Savery, Beach, Cockerill, Gorsuch, and E. Victor Smith.

PRE-MEDICAL COURSE: Professors Byers, Kincaid, Hall, Weinzirl, and Dean Johnson.

PUBLICATIONS: Professors McCaustland, Milliman, Mr. Stevens, Professor Kane, Mr. C. W. Smith, and Professors Umphrey, and Saunders.

RELATIONS WITH SECONDARY SCHOOLS: Dean Bolton, Dean Haggett, Professors Meisnest, Lull, and Benham.

RULES COMMITTEE: Professors Benham, Goodner, Strong, Dr. E. T. Bell, Mr. Stone.

SCHEDULE: Professors Morrison, Rose, Wilson, Bretz, and Mr. Johanson.

SPECIAL STUDENTS: Professor Morrison (To act with Deans).

STUDENT AFFAIRS: Professor Thomson, Dean Austin, Professors McMahon, Cockerill and Loew.

SUMMER SESSION: Dean Bolton, Professor Frein, Professor Moritz, and Mr. Condon.

LIBRARY STAFF

WILLIAM ELMER HENRY, A. M., Librarian.

A. B., Indiana University, 1891; A. M., 1892; Instructor in English; Indiana University, 1891-93; Graduate Student, Chicago University, 1893-95; Fellow in English, 1894-95; Professor of English, Franklin College, 1895-97; State Librarian of Indiana, 1897-1906; Librarian, University of Washington, 1906-.

CHARLES WESLEY SMITH, A. B., B. L. S., Associate Librarian, in charge of Reference.

A. B., University of Illinois, 1903; B. L. S., University of Illinois, 1905; University of Washington Library, 1905-.

EMMA PEARL MCDONNELL, A. B., in charge of Periodicals and Northwest History.

A. B., University of Washington, 1902; Wisconsin Summer School for Library Training, 1901 and 1902; University of Washington Library, 1901-.

FLORENCE BAXTER CURRIE, B. L., B. L. S., in charge of the catalogue.

B. L., Milwaukee-Downer College, 1904; B. L. S., University of Illinois, 1906; Assistant Cataloguer, Carnegie Library of Pittsburg, 1906-08; University of Washington Library, 1908.

MAUD OSBORNE, A. B., B. L. S., in charge of circulation.

A. B., Northwestern University, 1909; B. L. S., University of Illinois, 1911; Assistant Reference Librarian, Seattle Public Library, 1911-12; University of Washington Library, 1912-.

EVELYN MAY BLODGETT, A. B., B. L. S., Library Assistant.

A. B., Vassar College, 1909; Graduate, Pratt Institute Library School, 1911; Assistant in Library, Johns Hopkins, 1911; Cataloguer, Vermont State Library, 1912-13; University of Washington Library, 1913-.

MARY HUBBARD, A. B., B. L. S., Assistant in Reference Department.

A. B., Western College for Women, 1896; B. L. S., University of Illinois Library School, 1913; University of Washington Library, 1913-.

JESSIE ALMA BALLARD, A. B., Loan Desk Assistant.

A. B., Nebraska Wesleyan University, 1910; University of Washington Library, 1913-.

GENERAL INFORMATION

HISTORICAL

The foundation for the establishment of the University of Washington was laid in 1854 when Governor Isaac Ingalls Stevens, in his message to the first legislature, recommended that Congress be memoralized to appropriate land for a university. Two townships were subsequently granted, and in January, 1861, the legislature finally located the Territorial University at Seattle.

On February 22nd (Washington's Birthday) the Reverend Daniel Bagley, John Webster, and Edmund Carr, composing the board of University Commissioners, met and organized for work. Ten acres of land were donated by Hon. Arthur A. Denny, Charles C. Terry and Edward Lander from their adjoining farms, and on May 21, 1861, the cornerstone of the main building was laid and the building completed in specified time.

On November 4th following, the University was opened for students.

GOVERNMENT

Under the constitution and laws of the State of Washington, the government of the University is vested in a Board of Regents, consisting of seven members appointed by the governor by and with the advice and consent of the senate. Each regent is appointed for a term of six years.

ENDOWMENT AND SUPPORT

The University derives its support entirely from the state. As yet the property belonging to the institution as an endowment yields little revenue. The income from this property will some day greatly help to support the University. The property of the University includes:

(1) The two townships of land granted by Congress in 1854. There remains of this old grant some three thousand acres.

(2) The old University site, consisting of the tract of 8.32 acres, donated in 1861 by Arthur Denny and wife; and 1.67 acres donated by C. C. Terry and wife and Edward Lander. This "ten-

acre tract" is situated in the very heart of Seattle, and is rapidly enhancing in value.

(3) In addition to the above the University was further endowed by the state on March 14, 1893, by the segregation of 100,000 acres of lands.

BEQUESTS

In the legislative session of 1897 in the Code of Public Instruction is the following provision for University bequests:

"The Board of Regents is authorized to receive such bequests or gratuities as may be granted to said University, and to invest or expend the same according to the terms of said bequests or gratuities. The said board shall adopt proper rules to govern and protect the receipts and expenditures of the proceeds of all fees, bequests, or gratuities, and shall make full report of the same in the customary biennial report to the governor, or more frequently if required by law."

EQUIPMENT

GROUNDS

The grounds are ample to meet every need of the University. There are three hundred and fifty-five acres, all within the city limits of Seattle, lying between Lakes Union and Washington, with a shore line of over one mile on Lake Washington and about a quarter of a mile on Lake Union.

BUILDINGS

The following is a list of the buildings now in use on the University campus: Administration Building, Auditorium, Astronomical Observatory, Bagley Hall, Denny Hall, two Dormitories (Lewis Hall for men and Clarke Hall for women), Education Building, Engineering Building, Forestry Building, Forge and Foundry Building, Good Roads Building, Gymnasium, Hydraulic Laboratory, Law Building, Library Building, Mining Building, Museum, Music Building, Power Plant, Science Hall, Mines Rescue Training Station, Armory for the Cadet Battalion, Executive residence, Faculty Club House, Student Men's Club, Women's League Building, Engineer's residence, and Electrician's residence.

LIBRARY FACILITIES

The general library contains 62,109 volumes, and receives 494 current magazines. About 6,000 volumes a year are being added.

The Law School library contains more than 10,000 volumes. All books of both libraries are upon open shelves and are easily accessible to all who care to use them.

In addition to the library facilities upon the campus the Seattle Public Library, containing approximately 200,000 volumes, is open free to the University.

THE MUSEUM

By an enactment of the Legislature of the State of Washington in 1899 the museum at the University of Washington was "constituted the State Museum and the depository for the preservation and exhibition of documents and objects possessing an historical value, of material illustrating the fauna, flora, anthro-

pology, mineral wealth, and natural resources of the state, and for all documents and objects whose preservation will be of value to the student of history and the natural sciences."

The nucleus of this museum was formed in the late 70's, when a small ethnological collection was got together by Dr. A. J. Anderson, president of the University, later supplemented by a collection of rare fishes presented by Dr. David Starr Jordan. The real start toward a permanent museum, however, was in the acquisition by the University of the ethnological, zoological and botanical collections, got together by the Young Naturalist's Society of Seattle, which society was formed in 1883. These collections were augumented from time to time by accessions from the World's Fair at Chicago, the Lewis and Clark Exposition at Portland, and the late Alaska-Yukon-Pacific Exposition at Seattle, besides numerous gifts and loans made by private individuals. The Museum is now located in the Forestry Building, which is constructed of 126 main columns of Douglas Fir, from five to six and one-half feet in diameter, and from forty-two to fifty-four feet high, a remarkable exhibit of the timber resources of the Northwest.

The ethnology of the Northwest Coast from the Columbia river north through Arctic Alaska is represented, (1) by the collections made by Lieutenant George T. Emmons, which are very complete in representing the life and history of the Tlingit and Tahltan Indians of Southeastern Alaska, and of the early Indian tribes at the junction of the Thompson and Fraser rivers; (2) by collections made by Messrs. Hachman and Konig, James T. White, H. D. Harding and E. M. Blackwell, illustrating the life of the Arctic Eskimo; (3) by several collections illustrative of Indian life in the Puget Sound region and on the west coast of Washington, and a large collection of stone implements made by Dr. R. E. Stewart along the Columbia river and in the vicinity of Goldendale, Washington.

The Partello Philippine collection consists of fine old Moro brasses, hats, carvings and implements of warfare. In the Bash Chinese collections are to be found embroideries, carvings, porcelains, etc., which were in use in the old days of the Chinese emperors.

Through the generosity of Mrs. A. M. H. Ellis, the museum recently came into possession of some old Italian laces, mosaics, a

piece of Grecian jewelry of prehistoric design, and a number of textiles.

The zoological collections are numerous and constantly increasing in size. The exhibition series of birds and mammals are arranged in various alcoves together with several groups representing the natural habitat. Marine fauna is represented by a series of mounted fishes of Alaska and the western coast; a collection of Japanese and Puget Sound crustacea mounted by Prof. O. B. Johnson; the P. B. Randolph collections of mollusca from all over the world, together with a miscellaneous collection of corals, sponges, starfishes, etc., of the Puget Sound region. The reserve and study collection contains the O. B. Johnson, L. M. Turner, H. H. Hindshaw, Dr. Clinton T. Cook, George B. Cantwell and Jennie V. Getty collections of bird skins, eggs, and nests.

The geological and mineral collections consist of the John R. Baker collection of minerals, together with a representative collection of Washington and Alaskan ores arranged by districts, and a collection showing the clay products and marbles of the state.

The botanical and forestry collections consist of mounted series of eastern and western Washington flora, and of Alaska; cases of grains and grasses on the straw, of the state and Alaska; an exhibit of fruits of the horticultural section of the state; a comprehensive display of timbers, together with various products. The herbarium of dried flowering plants represents over 8,000 species.

LABORATORIES

The University of Washington has the following laboratories equipped for work in the various departments:

BOTANY LABORATORIES

The botanical and bacteriological laboratories are on the third floor of Science Hall. They occupy about 5,000 feet of floor space divided as follows: Three large laboratories of about 1,200 square feet each; three small laboratories, one for small classes and advanced work, one for taxonomic and field work, one for a media-room for bacteriology; one dark room; one private laboratory. The laboratories are fitted with the apparatus and conveniences usual for the work.

CHEMISTRY LABORATORIES

The chemistry laboratories are housed in a thoroughly modern fireproof building designed after the most approved models, combining the good features of the best chemistry buildings in the country. There are fully equipped separate laboratories devoted to general chemistry, analytical chmistry, food inspection and analysis, organic chemistry, physiological chemistry, industrial chemistry, and pharmaceutical chemistry. All laboratories are equipped with hoods with forced drafts, water, gas, distilled water and air under pressure. The industrial or chemical engineering laboratories are equipped with the fundamental types of apparatus used in manufacturing processes, such as filter press, hydraulic press, stills, grinding apparatus, heating furnaces, and vacuo drying oven.

CIVIL ENGINEERING LABORATORIES

HYDRAULIC. The high pressure equipment consists of small impulse wheels, nozzles and orifices connected to a header under a pressure of two hundred and sixty-five feet. For low head experiments and pump tests there is a set of tanks and measuring weirs. Larger weirs are placed in streams near the campus, making it possible for regular work to be conducted under ordinary field conditions. Current meters and other auxiliary apparatus are available for both field and laboratory work.

STRUCTURAL MATERIALS. The structural materials testing laboratory contains five universal testing machines with capacities from thirty thousand to two hundred thousand pounds, two impact machines with various hammers ranging in weight from fifty to fifteen hundred pounds, with the necessary auxiliary apparatus for general work.

CEMENT. The equipment for testing hydraulic cement is complete for all the ordinary tests as specified by the American Society of Civil Engineers.

ROAD. The road laboratory is equipped for testing materials used in the construction of roads. The machines for the abrasion and toughness tests are of the standard designs adopted by the American Society for Testing Materials; other machines are similar to those used by the U. S. Office of Public Roads.

SURVEYING. The equipment consists of an ample supply of all the necessary instruments for plane and topographic surveying.

ELECTRICAL ENGINEERING LABORATORIES

The dynamo laboratory contains sixteen alternating and thirty-two direct current generators and motors. The machines are of modern design and have a combined capacity of three hundred kilowatts in direct current machines and two hundred and fifteen kilowatts in alternating current machines. Most of the machines are of five or ten-kilowatt capacity. Power from a storage battery of one hundred and thirty cells is available at a separate switchboard in the dynamo laboratory. The University power house, containing two steam driven units of two hundred and one hundred kilowatts, serves as a commercial laboratory for operating and testing purposes.

Nine smaller rooms are devoted to the following: (a) Instrument making and repairing, (b) grinding room and shop, (c) instrument and stock room, (d) telephone laboratory, (e) electrolysis and special thesis problems, (f) storage battery room, (g) three dark rooms for photometry work. The instrument room contains a large collection of standard indicating and recording ammeters, voltmeters and wattmeters, and a three-element G. E. oscillograph. The photometry rooms are equipped with Matthews integrating and bench photometers.

FORESTRY LABORATORIES

DENDROLOGY. Individual lockers, compound microscopes, gas and water. An herbarium of fruits, twigs and trunk sections of trees is well under way.

LUMBERING. Field work at logging camps and sawmills. A complete equipment for exercises in logging engineering; for demonstration, collections of lumber, showing grades and defects, planing mill products, saws, axes, cables and other apparatus used in logging and milling. There are mills and camps about Seattle.

MENSURATION. Equipment selected to show all principal types of instruments in use. Those particularly adapted to the Northwest provided in quantities sufficient for all practice work by students in cruising, volume, growth and yield studies.

SILVICULTURE. Greenhouse space and a forest tree nursery are provided on the campus. The forests about Seattle offer wide opportunities for other practical studies and demonstrations.

TIMBER PHYSICS. The magnificently equipped Government Timber Testing Laboratory, operated in co-operation with the University, is used.

WOOD TECHNOLOGY. Same room as Dendrology laboratory. Individual lockers, gas, water, Lietz compound microscope, and all apparatus necessary for sectioning and preparing microscopic sections for the study of woody tissue. Extensive collection of domestic and foreign commercial timbers, including collection of South American and Philippine hardwoods, and microscopic preparation. Research laboratory, equipped with microtome, water baths, drying ovens, balances, camera and apparatus required for photo-micrography, and all apparatus required for the detailed study of woody tissue.

WOOD PRESERVATION AND UTILIZATION. A modern open tank preservation plant and accessories. All equipment required for commercial testing of wood preservatives. Four large creosoting plants, several smaller treating plants, and plants for the manufacture of paper, veneers, wood pipe, cooperage stock, excelsior, boxes, and numerous other secondary wood products are located in or near Seattle and are available for study.

ASSEMBLY ROOM. Supplied with Lietz lantern for episcopic, diascopic and microscopic projection.

GEOLOGY LABORATORIES

The geology laboratories, four in number, are in Science Hall. Two are on the first floor, and consist of large rooms, arranged for general geology, physiography, meteorology, mineralogy, petrography and paleontology. Two laboratories are in the basement, in well-lighted rooms at the southwest end of the building. One of these laboratories is fitted with lathes, diamond saw, and grinding plates run by electric motor for the preparation of rock slides for petrographic study. The other basement laboratory is equipped with large tanks for experimental work in erosion, and with ample facilities for map modeling and the construction of relief maps.

For work in mineralogy and petrography extensive collections of minerals and rocks are supplied; and for paleontological study

collections of fossils and casts represent the principal geological formations. In the study of meteorology practical work is done by the use of a complete set of weather bureau instruments. For the study of earthquake phenomena a Bosch-Omori seismograph has been installed for some years. For general laboratory and lecture work the latest model Bausch & Lomb Balopticon with reflectoscope and polariscope attachments is provided.

MECHANICAL ENGINEERING LABORATORIES

The steam and experimental laboratory is fully equipped with steam apparatus, including engines aggregating 900 H. P., of simple and compound, high speed and Corliss types; steam turbine; jet and surface condensers; injector; centrifugal pump; steam calorimeters; indicators; calibrating appliances; gas engine; gas producer plant; compressed air machinery for two stage compression and Westinghouse full train equipment; fuel testing facilities, including Mahler Bomb, Junkers and other calorimeters, with accessories for determining heating value and analysis of solid, liquid and gaseous fuels.

There is a thoroughly modern woodworking shop, machine shop, foundry and forge shop. The wood shop is equipped with benches, lathes, band saws, circular saws, planer, and trimmer. The forge and foundry are equipped with down-draft forges, power hammer, punch and shears, cupola, moulding machines, shakers, rattler, riddles, brass furnace, core oven, and traveling crane. Machine shop is equipped with small and large lathes, drill press, milling machine, planer, shaper, metal saw, grinding machine and complete equipment for bench and vise work.

MINING AND METALLURGY LABORATORIES

The Mines building contains the stamp milling, concentrating and coal washing plant, the mining laboratory, and the assaying and general metallurgy laboratories. The United States Mine Rescue Training Station occupies a separate building nearby. The "smokeroom," fitted with track and car, overcast airway and smudge floors, is the largest of its kind in the country. Several sets of oxygen apparatus and pulmoter are kept on hand for practice as well as for use in mine rescue work, or emergencies such as asphyxiation, drowning, electric shock, and the like.

PHARMACY AND MATERIA MEDICA LABORATORIES

The rooms devoted to pharmacy and materia medica are located in Bagley Hall. A room accommodating thirty-two students working at one time is used for manufacturing pharmacy. Work in prescription practice receives special attention in a room constructed as a model prescription pharmacy. The materia medica room contains a drug museum of several hundred samples of official and unofficial crude drugs. This room is fitted with desks suitable for microscopic work. Work in drug assaying and the several courses in chemistry are located in suitable rooms in other parts of the building.

PHYSICS

The laboratories set apart for the use of the department consist of: (1) A general laboratory for students in arts and sciences, (2) a general laboratory for students in applied science, (3) an electrical laboratory, (4) a heat laboratory, (5) a sound and light laboratory, (6) a photometry room, (7) a battery room.

The laboratories are supplied with apparatus from the best American and European makers.

The bureau of testing. The bureau is equipping itself as rapidly as possible to meet the demand for a bureau where scientific instruments may be accurately calibrated and tested. The standards of the bureau will be calibrated by our National Bureau of Standards at Washington, D. C.

The bureau is prepared to calibrate direct and alternating current instruments, to determine candle power of lamps, to measure temperature, both high and low, and to a limited extent standardize weights. Those desiring to have work done should address the director, Frederick A. Osborn.

PSYCHOLOGY LABORATORY

The psychology laboratory occupies seven rooms on the fourth floor of Science Hall. These include an acoustics room, an optics room, a shop, a dark room, a room for time measurements, a clinic room for the examination of children, and a general laboratory for elementary psychology courses. Apparatus is annually added for undergraduate, graduate, and research work.

ZOOLOGY LABORATORIES

The laboratory work of the department of zoology is conducted in six rooms located on the second floor of Science Hall. Here are adequate facilities for pursuing the following lines of investigation: General zoology, histology, anatomy, physiology, entomology and research.

OBSERVATORY

The Observatory is housed in a substantial sandstone structure containing dome for equatorial, room for transit and clocks, small shop, office, room for lectures and laboratory work, dark room, shop, etc. Part of the roof is flat, making an admirable place for evening study of the heavens. The instruments include a six-inch refracting telescope and accessories; a Bamberg transit, Riefler clock, Bond chronometer, Gaetner chronograph, Astro-Petzval objective, with accessories, a barometer, sextants, etc. The clock is enclosed in a constant temperature chamber. The minor equipment consists of a good assortment of transparencies and lantern slides, globes, planetarium, and other equipment for experiments in laboratory and lecture work in astronomy.

ASSEMBLY ADDRESSES, 1913-1914

Sept. 19—President's Address.

Oct. 3—Dean Isabella Austin (Assembly for Women).

Oct. 20—Dr. Winfield Scott Hall—Social Hygiene.

Oct. 28—Dr. Lincoln Steffens—The New Social Ideal.

Nov. 3—Dr. George Edgar Vincent, President of the University of Minnesota—The Game of Life.

Nov. 11—Hon. William B. Wilson, Secretary of Labor—The Place of Labor.

Nov. 20—Mr. Bernard Noel Langdon-Davies—The Great Illusion.

Jan. 16—Miss Ellen Fitz Pendleton, President of Wellesley College (Assembly for Women).

ENTRANCE INFORMATION

LOCATION OF THE UNIVERSITY

The University campus, comprising 355 acres, lies between Fifteenth Avenue Northeast on the western boundary and Lake Washington on the eastern and Forty-fifth Street on the northern and Lake Union on the southern. The campus is best reached from the railway stations and docks by Revenna or Cowen Park cars. The administration building is reached by leaving the street car at Fortieth Street and Fourteenth Avenue Northeast and walking one block east.

The state legislature in 1895 enacted a law prohibiting the sale of intoxicating liquors within a radius of two miles of the University grounds. This insures a college neighborhood free from the evils of the saloon.

INSTRUCTION OFFERED BY THE UNIVERSITY

The instruction offered by the University may be in a broad way indicated by the names of the colleges and schools as follows: Liberal Arts, Science, Education, Engineering (chemical, civil, electrical, and mechanical), Mines (coal and metal mining), Fine Arts (Music), Forestry, Pharmacy, Law, and Graduate. While not organized as colleges, definite four-year courses are offered in home economics, journalism, library economy, and commerce. This work is carried on through the regular academic year, September to June. In the summer a six-weeks session is is held in which the work most in demand by teachers of the public schools is given. The Puget Sound Marine Station at Friday Harbor, under a cooperative management, offers facilities for research in marine biology. In addition a large number of courses of instruction are offered through the University Extension Division, the services of which are available at any time.

REGISTRATION

Both old and new students will be registered on the first and second days of each semester, Monday and Tuesday, September 14 and 15, 1914, and February 1 and 2, 1915.

LATE REGISTRATION: In order to enforce promptness in the matter of taking up University work at the opening of the semester a penalty of $1.00 is imposed for registration after the regular registration days. The same penalty is imposed for changes in election after the beginning of regular class work, except where such changes are made upon the initiative of the student's instructor or class officer. An excuse from the payment of the penalty must in each case be endorsed by the dean of the college in which the student is enrolled.

ADMISSION TO THE UNIVERSITY

GENERAL STATEMENT

All correspondence regarding the admission of students to the residence courses of the University as well as the requirements for graduation should be addressed to the Recorder. Every applicant for admission in September, 1914, is requested to forward his credentials as early in the summer as possible, at the same time indicating the college or school of the University that he intends to enter. Persons interested in the extension courses offered by the University should write to the Director of the Extension Division.

Admission to the residence work of the University is by examination or by certificate, a graduate of an accredited* four year high school only being admitted without examination upon the recommendation of the principal and the presentation of a satisfactory, official certificate. Since the high school diplomas do not give the necessary information, they cannot be accepted for this purpose. The principals of all accredited high schools in the state are furnished with the official blanks, which may also be obtained from the Recorder's office.

Applicants for advanced standing are required to furnish a complete certified statement of both preparatory and college credits, together with a letter of honorable dismissal from the institution last attended.

Credentials for students expecting to enter in September should be received in the Recorder's office before August 15th.

REQUIREMENTS FOR ADMISSION TO THE SEVERAL COLLEGES AND SCHOOLS

The requirements for admission are stated in terms of units. The term *unit* means the equivalent of five recitations per week,

*For list of accredited high schools see page 62.

in periods of not less than forty-five minutes, in one branch of study, for a school year of not less than thirty-six weeks.

COLLEGE OF LIBERAL ARTS

One foreign language	2	units
English	3	units
Algebra	1½	units
Plane Geometry	1	unit
Physics, Chemistry, Botany, or Zoology	1	unit
A history	1	unit
(Or U. S. History (½) and Civics (½).)		
Foreign language	2 additional	units
or		
Solid Geometry ½ unit and 1 unit in one of the sciences listed above.		
Optional subjects (See page 6)	3½ or 4	units

COLLEGE OF SCIENCE

One foreign language	2	units
English	3	units
Algebra	1½	units
Plane and Solid Geometry	1½	units
Physics	1	unit
Chemistry, Botany, or Zoology	1	unit
A history	1	unit
(Or U. S. History (½) and Civics (½).)		
Optional subjects (See page 58)	4	units

NOTE: The requirements for admission to the four-year set course in Home Economics may be met by (1) completion of the Girls' Manual Arts Course prescribed by the State Board of Education, or (2) completion of the requirements for admission to some one group in Liberal Arts or Science.

COLLEGES OF ENGINEERING AND MINES

One foreign language	2	units
English	3	units
Algebra	1½	units
Plane and Solid Geometry	1½	units
Physics	1	unit
Chemistry	1	unit
(For the five-year course 1 optional unit may be substituted).		
A history	1	unit
(Or U. S. History (½) and Civics (½).)		
Optional subjects (See page 58)	4	units

DIVISION OF FINE ARTS (MUSIC)

The requirements for the Division of Fine Arts are the same as for Liberal Arts, with the addition of four years of music, as outlined in the Fine Arts Bulletin.

COLLEGE OF FORESTRY

One foreign language	2	units
English	3	units
Algebra	1½	units
Plane and Solid Geometry	1½	units
Physics	1	unit
Botany	1	unit
A history (or U. S. History and Civics)	1	unit
Optional subjects (See below)	4	units

COLLEGE OF PHARMACY

One foreign language	2	units
English	3	units
Algebra	1½	units
Plane Geometry	1	unit
Physics	1	unit
A history	1	unit
(Or U. S. History (½) and Civics (½).)		
Optional subjects (See below)	4	units

SCHOOL OF LAW AND SCHOOL OF EDUCATION

Clear entrance to the College of Liberal Arts or the College of Science, and 68 hours (2 years) of advanced credit in prescribed Freshman and Sophomore courses, are required for admission to the School of Law or the School of Education.

GRADUATE SCHOOL

A bachelor's degree from a university or college of good standing is required for admission to the Graduate School.

LIST OF OPTIONAL SUBJECTS

(With minimum and maximum amounts accepted)

Agriculture or Horticulture	½ or 1	unit
(One unit accepted only when preceded by Botany.)		
Astronomy	½	unit
Botany	½ or 1	unit
Chemistry	1	unit
*Commercial Branches	½ to 3	units
Civics	½	unit
*Domestic Science or Domestic Art (more than one unit accepted only when preceded by Chemistry)	1 to 3	units
*Drawing, Freehand and Mechanical	½ to 2	units
Economics	½	unit
English, in excess of the 3 units required	½ or 1	unit

French	1 to 4 units
Geology	½ or 1 unit
German	1 to 4 units
Greek	1 to 4 units
Higher Arithmetic	½ unit
History	1 to 3 units
Latin	2 to 4 units
*Music	1 unit
Physical Geography	½ or 1 unit
Physiology	½ or 1 unit
*Shop Work	½ to 2 units
Solid Geometry	½ unit
Spanish	1 to 4 units
Trigonometry	½ unit
Zoology	½ or 1 unit

A candidate may also present for entrance any modern foreign language in which he has had a course fairly equivalent to a high school course in English, *i. e.*, which he has used as a spoken or written language and of which he has studied the grammar and literature.

Credit for such work is given only on presentation of satisfactory credentials, or on examination.

ADMISSION TO UNIVERSITY STANDING

STUDENT CLASSIFICATION

Students are admitted to the following classifications: (I) to freshman standing, (II) as unclassified students, (III) as special students, (IV) to advanced undergraduate standing, (V) to graduate standing.

I. FRESHMAN STANDING

ADMISSION ON EXAMINATION

Applicants for admission by examination are required to pass an examination based on a four-year course amounting in the aggregate to fifteen units and covering the requirements of the college that the student wishes to enter.

Entrance examinations are held at the University on Friday and Saturday preceding the opening of each semester.

The schedule of hours for examinations may be obtained from the Recorder.

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* The aggregate amount presented in subjects marked with an asterisk may not exceed three units.

ADMISSION ON CERTIFICATE FROM AN ACCREDITED SCHOOL

Students from accredited high schools, who have been graduated from either the Classical, Scientific, or English Courses prescribed by the State Board of Education (or corresponding approved courses in schools of the first class) will be admitted to full freshman standing in the University; but any discrepancies between the above mentioned courses and the published University entrance requirements (see page 56) must be made up as a part of the student's college prescription for his degree.

II. UNCLASSIFIED STUDENTS

A graduate of an accredited high school who presents any fifteen units in the prescribed list of the State Board of Education will be admitted to the University as an unclassified student. Such a student will be allowed to enroll for those courses only for which he has had adequate preparation. By virtue of his classification he is not a candidate for a degree. He may ultimately become a candidate for a degree by fulfilling as part of his college prescriptions all the requirements for entrance and graduation.

III. SPECIAL STUDENTS

ADMISSION AS A SPECIAL STUDENT

Under certain regulations a student who cannot be admitted to freshman standing or as an unclassified student, may be admitted, classified as a special student, and allowed to take such courses as he may seem capable of undertaking. These regulations are as follows:

1. For admission to any college or school of the University, except the College of Pharmacy, a special student must be at least twenty-one years of age. A special student in the College of Pharmacy must be at least twenty years of age.

2. A student from an accredited high school will not be admitted to this classification if he has been in attendance in the high school the previous year.

3. All available certified credits for previous school work should be submitted to the Recorder and an application blank for admission as a special student filled out, giving, in addi-

tion to other information, the kind of work desired, the reasons for desiring such work, and, when no credits can be presented, a detailed statement of any previous educational work and practical experience.

4. A copy of the credits and the application blank (see 3 above), must be presented to the proper dean or special student advisor for consideration as to admission. When it seems necessary to assure the applicant's preparation for the particular courses desired, an examination may be required.

Persons desiring to be admitted as special students should apply to the Recorder for the necessary application and credential blanks.

Mature students admitted to regular or unclassified standing, and not desiring to become candidates for degrees, will be given the same consideration in the selection of their studies as are those who are admitted as special students.

IV. ADMISSION TO ADVANCED UNDERGRADUATE STANDING

Students from classes above the first year in other colleges of recognized rank, who present letters of honorable dismissal, may be admitted to the advanced standing for which their training seems to fit them. No advanced credit will be given for work done in institutions whose standing is unknown, except upon examination. Definite advanced standing will not be given until the student has been in residence for at least a semester.

ADMISSION OF NORMAL SCHOOL GRADUATES TO ADVANCED STANDING IN THE COLLEGE OF LIBERAL ARTS AND THE COLLEGE OF SCIENCE

Graduates of the advanced courses of approved normal schools receive 48 scholastic credits plus 8 in physical training. For graduation they must present the following specific requirements: Ancient foreign language or literature, 8 hours; modern foreign language, 8 hours; physical science, 8 hours; biological science, 8 hours; economics, 8 hours; philosophy, 8 hours; major subject, 24 hours. On all these points, however (except major), they may have the benefit of the stated exemptions for entrance subjects, and they may also be excused from any prescribed subject for which they have completed a fair equivalent in the normal school, such excuse to be granted only upon the recommendation of the head of the department concerned.

Normal school graduates are requested to forward their high school credentials with those of the normal school.

V. ADMISSION TO GRADUATE STANDING

A bachelor's degree from a college or university of good standing is required for admission to the Graduate School.

LIST OF ACCREDITED SCHOOLS

1. PUBLIC HIGH SCHOOLS

Aberdeen
Anacortes
Arlington
Asotin
Auburn
Bellingham (North)
Bellingham (South)
Blaine
Bothell
Bremerton-Charleston
Buckley
Burlington Union
Burton Union
Camas
Cashmere
Castle Rock
Centralia
Chehalis
Chelan
Cheney
Chewelah
Clarkston
Cle Elum
Colfax
Colville
Coupeville
Creston
Davenport
Dayton
Deer Park
Edmonds
Ellensburg
Elma
Endicott
Enumclaw
Everett
Fairfield
Ferndale
Friday Harbor
Garfield
Goldendale
Grandview
Granite Falls
Harrington
Hillyard
Hoquiam
Juneau, Alaska
Kalama
Kelso
Kennewick
Kent
Kirkland
Kittitas
La Conner
Latah
Lebam
Lind
Lynden
Mabton
Marysville
Monroe
Montesano
Mt. Vernon
Newport
North Yakima
Oakesdale
Odessa
Olympia
Outlook
Palouse
Pasco
Pomeroy
Port Angeles
Port Townsend
Prosser
Pullman
Puyallup
Raymond
Reardan
Renton
Richland
Ridgefield
Ritzville
Rosalia
Roslyn
Seattle
  Ballard
  Broadway
  Franklin
  Lincoln
  Queen Anne
  West Seattle
Sedro Woolley
Selah
Shelton
Snohomish
South Bend
Spokane
  Lewis and Clark
  North Central
Sprague

Stanwood	Tenino	Waterville
Stevenson	Toppenish	Wenatchee
Sultan Union	Vancouver	White Salmon
Sumas	Vashon	Wilbur
Sumner	Waitsburg	Winlock
Sunnyside	Walla Walla	Winslow
Tacoma	Wapato	Woodland
Tekoa		

II. OTHER SECONDARY SCHOOLS

Adelphia College, Seattle (Academic Department)
Annie Wright Seminary, Tacoma
Brunot Hall, Spokane
Holy Names Academy, Seattle
Holy Names Academy, Spokane
Seattle Seminary, Seattle.
St. Helen's Hall, Portland, Ore.
St. Nicholas School, Seattle
St. Paul's Academy, Walla Walla
University of Puget Sound, Tacoma (Preparatory Department)
Walla Walla College Academy, Walla Walla
Whitworth College Academy, Tacoma.

The accredited school list of other state universities will be accepted by the University of Washington. As in the case of local students, graduates of accredited schools in other states must present a certified record of work.

EXEMPTIONS ALLOWED FOR CERTAIN ENTRANCE UNITS

In the colleges of Liberal Arts and Science a student may be exempted from taking certain of the studies required for his degree on the following conditions:

a. If he presents for entrance 4 units of ancient language, he will not be held for the 8 credits* required in ancient language and literature.

b. If he presents for entrance 4 units of modern language, he will not be held for the 8 credits required in modern foreign language.

c. If he presents for entrance 3½ units of mathematics, namely, 1½ units of algebra, 1 unit of plane geometry, ½ unit of

* A credit is the unit by which work in the University is measured, and represents one recitation per week for one semester.

solid geometry and ½ unit of trigonometry, he will not be held for the four credits required in mathematics.

d. If he presents for entrance 3 units of science, namely, one unit physics, one unit chemistry and one unit of any other science, he will not be held for the 8 credits required in physical science.

e. If he presents for entrance 3 units of science, namely, one unit of biological science, one unit of physics and one unit of any other science, he will not be held for the 8 credits required in biological science.

f. If he presents for entrance 3 units of history, he will not be held for the 8 credits required in history.

A student cannot obtain exemption from both *d* and *e*.

DEGREES

The curricula leading to baccalaureate degrees in the College of Liberal Arts, the College of Science, the College of Engineering, the College of Mines, and the College of Forestry, are arranged to cover a period of four years. The curriculum in the College of Pharmacy covers two years, and an advanced curriculum takes two years longer. To complete the curriculum in the School of Law and the School of Education three and two years respectively are required, based on two years of regular college work. The courses leading to the masters' degree require not less than one year, based on four years of undergraduate work.

In the College of Liberal Arts is given the degree of bachelor of arts (A. B.); in the College of Science, bachelor of science (B. S.); in the College of Engineering, bachelor of science (B. S.); in the College of Mines, bachelor of science (B. S.); in the College of Forestry, bachelor of science in forestry (B. S. F.); in the College of Pharmacy, pharmaceutical chemist (Ph. C.), and bachelor of science (B. S.); and in the School of Law, bachelor of laws (LL. B.); in the School of Education, bachelor of arts, or bachelor of science in education (A. B. E. or B. S. E.). Specific requirements for the different degrees may be found in the statements of the respective colleges.

GRADUATE DEGREES

Courses adapted to the needs of students who wish to earn the M. A. degree are offered in nearly all departments of the colleges of Liberal Arts and Science. In one department, Chemistry, courses are offered leading to the Ph. D. degree. Courses leading

to the degree of M. S. are offered in the College of Engineering, the College of Mines, the College of Forestry and the College of Pharmacy. Graduates from the three year curriculum in the School of Education receive the degree of master of arts in education (M. A. E.). For further information concerning the requirements for graduate degrees, see the special bulletin of the college or school in which the work is offered.

It is not the policy of the University at the present time to grant honorary degrees.

DEGREE WITH HONORS

A degree with honors may be conferred upon a student who, upon recommendation of the honors committee and upon vote of the faculty, may be declared worthy of unusual distinction.

Early in May each head of a department shall bring to the attention of the committee on honors such seniors making majors in his department as he thinks may be eligible for honors.

A student is not allowed to take honors in more than one subject.

THE UNIVERSITY NORMAL DIPLOMAS

The University is authorized by law to issue teachers' diplomas, valid in all public schools of the state. Candidates for these diplomas should register in the Department of Education as early as possible after the beginning of the sophomore year, and should consult with the department from time to time as to their work for the diploma and their preparation for teaching. For more definite information see Bulletin of the School of Education.

GENERAL SCHOLASTIC REGULATIONS

STUDIES

At the beginning of each semester, the student arranges his schedule of studies with the advice and assistance of his class officer. A regular course consists of sixteen hours of recitations per week.

All women students are required to take three hours of gymnasium work per week throughout the first and second years, eight credits in physical culture being required of women for a degree.

A course of two years in military training is required. All able-bodied male students (except those from foreign countries, not intending to become naturalized) must take the course

which by regulation of the University is required during the first and second year.

Neither the requirement of physical culture for women, nor that of military science for men applies to any student entering as a junior or senior. The deans, together with the physical director, or commandant, as the case may be, have authority to allow a student to substitute the proper corresponding amount of scholastic work for gymnasium or military science when it seems advisable. Substitutions to be valid must be signed by the dean concerned and the physical director or commandant, and must be filed in the office of the Recorder.

REGULATIONS FOR WITHDRAWAL

1. Before October 15 or March 1 of the respective semester, a student may withdraw from a given class with the written consent of his class adviser.

2. Before November 15 or April 1 of the respective semester, a student may withdraw from a given class with the written consent of his class adviser and instructor.

3. After November 15 or April 1 of the respective semester, a student may withdraw from a given class with the written consent of his class adviser and instructor; provided, however, that if his work has not been satisfactory to the instructor, the instructor must give the student an "E" on the semester grade. It is further provided, that if any withdrawal will reduce the student's hours below twelve, such withdrawal cannot be made till the Dean gives his written approval.

4. Any student who registers for a given course must ultimately complete that course, or if that be impossible, must complete the same number of hours in some other subject approved by the dean of the college concerned, in addition to the total number of hours otherwise required for graduation. (Students who may be properly withdrawn with the consent of the class adviser alone shall not be affected by this rule, but it shall not exempt any student from the necessity of completing his required courses.)

SCHOLARSHIP STANDING

(a) Any student who, in any semester, is reported as doing unsatisfactory work in more than one-half of his registered hours will be dropped from the University for the remainder of that semester and for the following semester.

(b) Any student who, in any semester, is reported as doing unsatisfactory work in more than one-quarter of his registered hours will be placed on probation for the remainder of that semester and for the following semester. During the full probationary period the student must pass in twelve hours; or in all his hours, if he is registered for less than twelve.

Monthly reports are made to the Recorder, by all instructors, of students whose work for the preceding four weeks has been unsatisfactory.

EXAMINATIONS

The regular semester examinations are held twice each year. Examinations for the first semester are held the last week of the first semester, while those for the second semester are held during the week prior to Commencement week.

In the College of Liberal Arts, the College of Science, the School of Education, and the Division of Fine Arts, the examinations held at the end of the first semester are of year courses merely qualifying (except for students of other colleges or schools of the University, who are taking courses in the College of Liberal Arts and the College of Science); *i. e.*, students failing to pass them are not allowed to take the year examinations, which are given in June and cover the work of both semesters.

In addition to the regular year examinations in other subjects, senior students in the College of Liberal Arts, the College of Science, the School of Education, and the Division of Fine Arts, are required to take examinations in all the work of their major subject and in all the subjects in their group which they have taken in their junior and senior years.

SYSTEM OF GRADES

1. The following is the system of grades*;

A	Honor
B	Intermediate
C	Intermediate
D	Intermediate
E	Failed
I	Incomplete

(An incomplete is given only for excusable delinquencies.)

* These grades correspond approximately to the old marking scheme as follows: A, 100-96; B. 95-86; C, 85-76; D, 75-70; E, 70-0.

2. Candidates for the bachelor's degrees in the colleges of Liberal Arts and Science must receive grades of A, B, or C in three-fourths of the credits required for their respective degrees. This rule became operative in June, 1913, and does not apply to grades given before the year 1910-11.

FRATERNITY PLEDGING

No fraternity or sorority shall pledge any person for membership who is not regularly registered in this University.

No student shall be initiated into a fraternity or sorority until he or she has earned 12 credits or provisional credits at this University.

EXPENSES

TUITION

The tuition is free to all students of the State of Washington in all colleges and schools of the University, except in the School of Law and in the Summer Session. In the School of Law the tuition is $20.00 a semester, or $40.00 for the year. In the Summer Session the tuition is $10.00, as the Summer Session is conducted, to a large extent, independently of state support.

ASSOCIATED STUDENTS FEE

The Associated Students Fee of five dollars is paid by every student on entering the University. See page 73.

LABORATORY DEPOSITS

The actual amount of material that a student may use during a laboratory course cannot always be stated in advance. The student's deposit therefore, as announced in the catalogue, and made at the Bursar's office, is an amount which is expected to cover the value of the material that will be consumed; this includes the expense involved in the actual repair—not replacement—of the scientific apparatus used by the student. In case these charges overrun this amount it becomes necessary for the student to make a further deposit. At the end of the semester the student receives a rebate order from the department concerned, which informs the Bursar as to the amount consumed and a refund is paid accordingly.

The following are the laboratory deposits for each semester in force in the various laboratory courses, arranged by departments:

ASTRONOMY, 1—2—$1.00

BACTERIOLOGY, 110—$2.00; 103 104, 105, 106, 108, 111, 112, 115, 116, 119, 120,—$4.00.

BOTANY, 1, 2, 5, 6, 9, 10, 11, 12, 13, 14, 16, 17, 20, 23, 24, 25, 26, 33, 41, 42, 43, 44,—$2.00; Botany 1s,—$1.00.

CHEMISTRY, 1—2, 1a—2a, 1b—2b, 1c—2c, 1d, 3—4, 3c, 5—6, 7—8, 8b, 9, 10—11, 12, 13, 14, 15, 16, 18, 19, 20—21, 20a, 22, 23, 24, 25, 26, 29—30,—$10.00; 1s,—$5.00 (with Geology 1s,—$1.00); (Course 1f, see Pharmacy).

ENGINEERING, (C. E.), 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 31, 32,—$3.00. (E. E.), 1, 6, 27, 32, 41,—$1.00; 5, 7, 15, 24, —$2.00; 3, 22,—$4.00. (M. E.), 1, 2, 3, 4, 5, 6, 7, 8, 9, 40, 41, 42, 43, 45,—$2.00.

FORESTRY, 1, 4, 19,—$1.00; 5, 6, 7, 7a, 7b, 18,—$2.00.

GEOLOGY, 1, 2, 1a, 1b, 1c, 1d, 1s, 3, 4, 5, 8,—$1.00; 9, 13, 16, 17, B,—$2.00.

GYMNASIUM, $1.00 for the year, locker and apparatus.

HOME ECONOMICS, 5, 9—10, 11—12, 18, 26, 29,—$1.00; 8,—$1.50; 19, 20,—$2.00; A, B, 14, 15,—$3.00; 2, 3, 4,—$4.00.

JOURNALISM, 1—2, 27—28, 29—30,—$2.00.

MINES, Short Session C,—$15.00; D,—$5.00; Mining Engineering, 1, 3,—$3.00; 2, 20,—$5.00; Metallurgy, 1,—$15.00; 2, 7, 8,—$10.00; 3, 5, 6, 12,—$5.00; 9, 10,—$3.00.

PHARMACY, 5—6,—$5.00; 15, 16, 17, 19,—$5.00 or $10.00 (according to hours); 1, 1a, 2a, 2, 9—10, 11—12, 13—14,—$10.00; Chemistry 1f, 2f,—$15.00.

PSYCHOLOGY, 34, 46,—$1.00; 31, 33,—$2.00.

PHYSICS, 1, 2, 3, 4, 5, 6, 7, 8, 9, 18, 20, 21,—$2.50; 1b, 2b, 3a, 4a, 5a, 6a,—$6.00 for the year.

ZOOLOGY, 1—2, 1a, 3—4, 5, 6, 7, 8, 10, 11, 12, 13,—$2.00; 1s,—$1.00 (with Botany 1s,—$1.00); 17—18, 19—20, 21—22, to be arranged.

BOARD AND ROOM

(a) In the university dormitories the room rent ($12.00 a semester) is payable in advance and no rooms will be reserved unless paid for by August 15th. The price of board is seventeen dollars and a half ($17.50), payable monthly as the bills are rendered. The rooms are furnished with necessary articles of

plain furniture, but the student is expected to supply his own bed linen, bedding, mattress, towels, and rugs. A new mattress to fit beds can be obtained at the dormitories for $2.00.

A deposit of $17.50 (one month's board bill) is required of all who board at the dining hall. This amount is exclusive of the board bill for the first month, and is applied on the bill for the last month of the college year.

(b) Outside the dormitory, in the past, the expense of board and lodging with private families has ranged from twenty-three to thirty dollars per month.

In the judgment of the University, it is deemed advisable that men and women room in different houses and that women room only in houses which furnish a first floor reception room for the entertainment of men callers. All first-year women are required to communicate with the Dean of Women before securing rooms.

CADET UNIFORM

The uniform with which the members of the cadet corps are required to provide themselves costs about fourteen dollars. The amount necessary to cover this cost is deposited with the bursar of the University. The uniform is designed to be worn in place of civilian dress.

DIPLOMA FEE

The fee charged to graduates is five dollars for each one receiving a baccalaureate or higher degree, or a diploma in pharmacy, and three dollars for each one receiving a teacher's diploma.

STUDENT HELP

Many students who have found it necessary to support themselves while at the University have been enabled to do so by securing occupation of various sorts. There is an employment bureau conducted by the Y. M. C. A. to secure work for men who have to make their own expenses. There is also a faculty committee which lends its assistance in securing aid for such students. The Dean of Women renders a similar service for women. The official records of the recorder's office show that twenty-six (26%) per cent. of the students enrolled in 1912-13 are entirely self-supporting, while thirty-five (35%) per cent. more are partially dependent upon their own resources. *Students obliged to earn a portion of their support are advised not to register for a full schedule of studies.*

DEAN OF WOMEN

The Dean of Women is always ready to help or advise any woman student who may need assistance. She will supply lists of approved boarding and lodging places, correspond with parents or guardians who desire to make inquiry concerning their daughters or wards, and take an interest in all the women's organizations.

FELLOWSHIPS AND SCHOLARSHIPS

GRADUATE FELLOWSHIPS

By the will of Sarah Loretta Denny the sum of $25,000 was bequeathed to this University for the establishment of University fellowships. The income from this fund is at present $1,250.00, and affords three graduate fellowships of equal amount, which will be awarded by May 1st of each year by the graduate faculty.

UNIVERSITY TEACHING FELLOWSHIPS

The University each year provides for about twelve teaching fellowships in nearly as many departments. For a number of years the position has been known as a graduate assistantship, the graduate student dividing his time equally between his studies and assisting in the teaching work of the department in which he is enrolled.

CHEMISTRY SCHOLARSHIP

A friend of the University has provided a scholarship of one hundred and fifty dollars to be awarded annually to a student of the department of chemistry on the basis of scholarship in the courses taken in the department, of scholarship in other departments, and of personality.

THE JOHN WALTER ACKERSON SCHOLARSHIP

In memory of the late John Walter Ackerson, a pioneer of Washington, Mrs. S. Louise Ackerson offers a scholarship of one hundred dollars annually to the young woman member of the junior class who may be adjudged most worthy on the basis of scholarship, personal influence and self reliance.

WOMAN'S LEAGUE SCHOLARSHIP

The Woman's League of the University of Washington offers a scholarship of one hundred dollars annually to a woman member

of the junior class adjudged worthy on the basis of scholarship, financial need, and personal influence.

SENIOR SCHOLARS

In June preceding their senior year, juniors who have eighty-eight or more credits with high grade may be elected senior scholars. A senior scholar may be relieved from attendance at regular lectures or recitations, and may be granted other special privileges in order that he may devote himself to more intensive and more correlated study than the class-room system permits. His work must be in not less than two or more than four allied subjects; and it must be correlated so that it will bear upon some common field.

PRIZES

FOR EXCELLENCE IN PUBLIC SPEAKING AND DEBATE

Judge Alfred Battle offers an annual cash prize of seventy-five dollars to the Washington debating team chosen to meet representative debaters from the University of Oregon.

In 1907 Mr. E. F. Blaine, of Seattle, assumed the annual cash prize of $100.00 formerly offered by the King County Bar Association as an incentive for oratory. This prize is competed for annually by the students of the Universities of Washington, Oregon, and Montana, and is known as the E. F. Blaine prize for oratory.

Mr. L. J. Corkery, of Toledo, Ohio, supplements the Blaine prize for oratory by offering a fifteen-dollar prize for second honors in the contest between the Universities of Washington, Oregon, and Montana.

Each alternate year, beginning with the spring of 1908, the Seattle Bar Association will give the sum of fifty dollars to defray the expenses of a debate between the representatives of the Law Schools of Oregon and Washington.

FOR ESSAYS

The Philo Sherman Bennett prize of twenty-four dollars annually is "for the best essay discussing the principles of free government."

Mr. Vivian W. Carkeek, of the Law class of 1901, offers an annual cash prize of $25.00 for the best thesis on Washington law.

The Washington Bankers' Association awards two prizes of fifteen and ten dollars for the best essays on an economic topic to be selected by the executive committee of the association.

Alpha Chapter of the Chi Omega Fraternity offers a social betterment prize of fifteen dollars, to be given annually, for the best paper on any phase of social service presented by a student of the University of Washington.

FOR ELECTRICAL ENGINEERING

Mr. Jacob Furth offers an annual scholarship of one hundred dollars, to be awarded at commencement, to the senior student in electrical engineering who shall have done the best work in physics, mathematics, and electrical engineering during his course.

FOR SCHOLARSHIP IN ITALIAN

Mr. N. Paolella, of Seattle, offers a gold medal each year, beginning with 1913, for a period of ten years, to the student doing the best work in Italian.

STUDENT LOAN FUNDS

Mr. Samuel H. Hedges, of Seattle, has endowed a student loan fund, known as The David Jackson Hedges Memorial Fund in memory of the donor's son, which affords assistance by way of emergency loans to young men of the University upon applications duly approved by the trustees of the fund.

The Tolo Club, a senior women's honor society, maintains a loan fund for women students.

The Faculty Women's Club, made up of faculty women and wives of the faculty, maintains a loan fund for women students.

ASSOCIATIONS AND CLUBS

ALUMNI ASSOCIATION

The officers of the Alumni Association for 1913-14 are as follows: President, Mr. J. Wylie Hemphill; vice-president, Mr. William Coyle; secretary, Miss E. Pearl McDonnell; treasurer, Dr. Ralph Lutz.

THE ASSOCIATED STUDENTS

The Associated Students of the University of Washington (incorporated) is an organization of the entire student body. The powers of government are vested by its constitution in an annually elected board of control, upon which three members of the faculty and three alumni also have seats. The board appoints a general manager, who has the financial control of all branches of athletics, musical organizations, and of contests in debate and

oratory. The associated student fee of $5.00 a year entitles the student to a subscription to the University of Washington Daily—the official student paper—free admission to all atheltic, debating and oratorical contests given under the auspices of the A. S. U. W., the annual musical concert, the discounts in the cooperative book store, and to all the voting and other privileges of the association.

CHRISTIAN ASSOCIATIONS

The Young Men's and the Young Women's Christian Associations each have a branch organization among the students. They are active in making the new students feel at home and in assisting them in many ways. Prospective students are invited to address the secretary of the University of Washington Y. M. C. A., Seattle, Washington, regarding rooming needs or employment. The student handbook will be ready for distribution at registration time.

DEPARTMENT CLUBS

The following clubs are connected with the work of different University departments: Chemical Club, Classical Club, Deutscher Verein, English Club, Forest Club, French Club, Home Economics Club, Mathematics Club, Political Science Club.

DEBATING

Debating in the University is fostered and directed by the University of Washington Debating Association, which has supervision of all the debating activities of the students. This association is composed of all students who are interested in debating and directs the various activities through three standing committees, viz., the Executive Committee, the Men's Debate Council and the Women's Debate Council.

The Executive Committee has supervision over all inter-club and inter-class debates. The Men's Council has supervision over all matters relating to the inter-collegiate debates in which the men of the University participate. The Women's Council has supervision of the inter-collegiate debating relations in which the women of the University participate.

There are four debating and literary societies in the University, viz.: Stevens, Badger, Athena, and Sacajawea. The first two are for men, the last two for women. Membership in the clubs is limited in order that frequent practice may be afforded.

Several annual debates are held with universities and colleges of the Pacific Coast, representatives of the University being chosen by tryouts held early in the year.

The Pacific Coast Triangular Debating League, consisting of the Universities of Washington, Oregon, and Stanford, holds an annual triangular debate on the second Friday evening in March. Each institution is represented by two teams representing the affirmative and negative of the question under discussion. The team remaining at home debates the affirmative side of the question.

The Northwest Triangular Debating League, consists of the University of Washington, Washington State College, and Whitman College. The arrangements are similar to those of the Pacific Coast Triangular League. The debates are held in February.

The Pacific Northwest Women's Debating League, consists of the University of Washington, Washington State College, and Whitman College. The arrangements are very similar to those of the men's leagues and give the women of the University equal opportunities for development in this field of practical achievement. The debates are held early in the second semester.

LAW SCHOOL DEBATES. An annual debate is held between representatives of the law schools of the University of Washington and the University of Oregon early in May. Debates are also held between the University of Washington Law School and the Law School of Vancouver, B. C.

MUSICAL ORGANIZATIONS

The musical organizations consist of the University Choral Society, Men's Glee Club, Women's Glee Club, Orchestra and Band.

PHILOLOGICAL ASSOCIATION

The Philological Association was organized to encourage scientific investigation in language and literature. Membership is open to all members of the University who are interested in philology.

HONOR SOCIETIES

The following honor societies have been established at the University: Phi Beta Kappa, Sigma Xi, Phi Delta Phi, Phi Delta Chi, Phi Delta Kappa, Phi Lambda Upsilon, Tau Kappa Alpha, Theta Sigma Phi, Sigma Delta Chi, Mim Kaph Mim, Tau Beta Pi.

WASHINGTON UNIVERSITY STATE HISTORICAL SOCIETY

The Washington University State Historical Society has for its purpose the preserving of the historical documents and records of the Northwest and of the State of Washington, and to preserve or publish the results of all investigations.

COLLEGE OF LIBERAL ARTS

THE FACULTY

*Thomas Franklin Kane, Ph. D., (Johns Hopkins), President.

Henry Landes, A. M., (Harvard), Acting President.

Arthur Sewall Haggett, Ph. D., (Johns Hopkins), Professor of Greek; Dean.

Edmond Stephen Meany, M. L., (Wisconsin), Professor of History.

J. Allen Smith, Ph. D., (University of Michigan), Professor of Political and Social Science.

Caroline Haven Ober, Professor of Spanish.

Frederick Morgan Padelford, Ph. D., (Yale), Professor of English.

William Savery, Ph. D., (Harvard), Professor of Philosophy.

David Thomson, A. B., (Toronto), Professor of Latin.

Pierre Joseph Frein, Ph. D., (Johns Hopkins), Professor of French.

Frederick William Meisnest, Ph. D., (Wisconsin), Professor of German.

Herbert Henry Gowen, D. D., F. R. G. S., M. R. S. A., Professorial Lecturer on Oriental History, Literature and Institutions.

Oliver Huntington Richardson, Ph. D., (Heidelberg), Professor of European History.

Walter Greenwood Beach, A. M., (Harvard), Professor of Social Science.

Vernon Louis Parrington, A. B., (Harvard), Professor of English.

Edwin John Vickner, Ph. D., (University of Minnesota), Professor of the Scandinavian Languages.

Edward Eugene McCammon, Lieutenant U. S. A., Professor of Military Science and Tactics.

Frank George Kane, A. B., (Michigan), Professor of Journalism.

Allen Rogers Benham, Ph. D., (Yale), Associate Professor of English.

Loren Douglas Milliman, A. B., (Michigan), Associate Professor of English.

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* Leave of absence, January 1 to August 1. Retires August 1, 1914.

KATE M. GREGG, A. B., (Washington), Graduate Assistant in English.

DONALD ADAMS, A. B., (Harvard), Graduate Assistant in English.

TREVOR KINCAID, A. M., (Washington), Professor of Zoology.

DAVID CONNOLLY HALL, M. S., M. D., (Chicago), Director of Physical Training.

IRVING MACKEY GLEN, A. M., (University of Oregon), Professor of Music and Director of Fine Arts.

HERBERT GALEN LULL, PH. D., (California), Professor of Education.

FRANK MARION MORRISON, A. B., (Michigan), Associate Professor of Mathematics.

WILLIAM MAURICE DEHN, PH. D., (Illinois), Associate Professor of Chemistry.

EFFIE ISABEL RAITT, B. S., (Columbia), Associate Professor and Director of the Department of Home Economics.

EDWIN JAMES SAUNDERS, A. M., (Harvard), Assistant Professor of Geology.

HENRY LOUIS BRAKEL, PH. D., (Cornell), Assistant Professor of Physics.

*GEORGE BURTON RIGG, A. M., (Washington), Assistant Professor of Botany.

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* Absent on leave, second semester, 1913-1914.

ADMISSION TO THE FRESHMAN CLASS

To be admitted to freshman standing in the College of Liberal Arts a student must either (a) pass an examination based on a four year course amounting in the aggregate to fifteen units, or (b) complete a course of the same length in an accredited school. The required and elective units are as follows:

Algebra	1½
Plane geometry	1
A science (chemistry, physics, botany, zoology)	1
A history (American preferred) or U. S. history and civics	1
English	3
A foreign language	2
Total	9½

Additional subjects prescribed for the several groups of the College of Liberal Arts:

Group 1	Sub-group 1.	(Classical) 2 additional units of foreign language (making in all, 4 units of foreign language, of which at least 2 must be Latin).
	Sub-group 2.	(Modern Language) 2 additional units of foreign language.
Group 2	Sub-group 1.	(History and Political Science) 2 additional units of foreign langauge, or an additional unit of laboratory science and ½ unit of solid geometry.
	Sub-group 2.	(Philosophy and Education) Same as for History and Political Science.

More detailed information concerning admission will be furnished those interested in a separate section of the University Bulletin, known as Entrance Information.

CURRICULUM OF THE COLLEGE OF LIBERAL ARTS.

GROUPS

The departments of the College of Liberal Arts are grouped as follows:

Group I. LANGUAGE AND LITERATURE.

Sub-group 1. (Classical) Greek, Latin.

Sub-group 2. (Modern Language) English, French, German, Italian, Public Speaking and Debate, Spanish, Scandinavian.

Group II. PHILOSOPHICAL.

Sub-group 1. (History and Political Science) History, Political Science.

Sub-group 2. (Philosophy and Education) Philosophy, Education.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

To secure the degree of Bachelor of Arts the candidate must meet the following requirements:

1. He must be regularly admitted, cf. page 80.

2. He must complete the number of credits* specified in each of the following subjects:

a. Ancient Language and Literature.....‡6 or 8 credits
b. Modern foreign Language.....‡8 credits
c. Rhetoric .....†4 or 8 credits
d. Mathematics .....4 credits
e. Physical science .....8 credits
f. Biological science .....8 credits
g. History ..... 8 credits
h. Philosophy .....8 credits
i. Political science .....6 credits
j. Physical Training or Military Science.....8 credits
k. College Problems .....1 credit

NOTE—Freshmen are required to take one hour a week each semester in hygiene, in connection with their physical or military training.

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* By the term *credit* is meant one recitation a week for a period of one semester.

‡ A student entering with less than 4 years of foreign language must make a total of 5 years in high school and college combined.

† A student who completes the first semester of rhetoric with a grade of "A" will not be required to take that subject during the second semester.

COLLEGE PROBLEMS: Freshmen in the Colleges of Liberal Arts and Science, except those who are registered in "set" courses, are required to take one hour a week the first semester in instruction in "Problems of Study," "How to Use the Library" and "Organization of Departments and Courses in the University;" and in the second semester, one hour a week in the study of "Vocations Open to College Men and Women of the Northwest." This course will include practical discussions of the organization of the student's plans for his university career, the consideration of a vocation, the planning of a course that will help him to work out his vocational interests, and the relating of his university work and his vocational plans to the demands of the world. One credit is allowed for the year's work. The section for women comes on Friday at 11, and the one for men on Wednesday at 1 o'clock.

This course is not required of students who enter the university with the standing of sophomore or above. Students who fail to take the course at the proper time, or who fail in the course will take, in lieu thereof, some course in Social Science of double the number of hours credit.

EXEMPTIONS: A student may be exempted from certain of the above requirements on the following conditions:

From *a* if he presents for entrance 4 units of ancient language.

From *b* if he presents for entrance 4 units of modern foreign language.

From *d* if he presents for entrance 3½ units of mathematics; viz.: 1½ units of algebra, 1 unit of plane geometry, ½ unit solid geometry, and ½ unit trigonometry.

From *e* if he presents for entrance 3 units of science; viz.: 1 unit physics, 1 unit chemistry, and 1 unit of any other science.

From *f* if he presents for entrance 3 units of science; viz.: 1 unit of biological science, 1 unit of physics, and 1 unit of any other science.

From *g* if he presents for entrance 3 units of history.

NOTE: A student cannot obtain exemption from both *e* and *f*.

PENALTIES: Of the above requirements *c* must be completed within the first year, otherwise only ½ credit will be allowed; *a* or *b*, *d*, *e* or *f*, *g* must be completed within the first two years, otherwise only ½ credit will be allowed.

3. He must complete the requirements for a major.*

* A major consists of not less than 24 credits in some one department

The department in which the student selects his major will be known as his major department and its head as his major advisor. Not more than forty credits in the major department may be counted toward graduation.

4. He must complete not less than 48 credits in the group in which his major department falls.

5. He must complete a total of 128 credits, but of these not more than 24 may be counted in any department, other than the major department (except that in English 24 may be counted in addition to Freshman Composition).

GENERAL NOTE: Each student is to be held either for the admission and graduation requirements of the catalogue under which he enters, or for those of the catalogue under which he graduates.

DISTRIBUTION OF WORK BY YEARS

Of the work in the prescribed subjects (see 2 above), that in English Composition (Rhetoric) must be completed in the Freshman year; that in Mathematics and in Medieval and Modern History (when taken in fulfillment of the History requirement) and also one year of Science and one year of Foreign Language must be completed by the end of the Sophomore year.† The work of the Junior and Senior years consists of those prescribed subjects which the student has not been able to take during the first two years, and of those additional courses which will fulfill the major and elective requirements as specified under 3, 4 and 5 above.

Candidates for the bachelor's degrees in the College of Liberal Arts must receive grades of A, B, or C in at least three-fourths of the credits required for the degree. This rule does not apply to grades given before the year 1910-11.

SCHEME OF ELECTIVES

For purposes of election, outside the major department, the College of Liberal Arts, the College of Science and the School of Education shall be treated as one.

The following courses given outside the College of Liberal Arts may be counted toward a bachelor of arts degree. How-

† If taken later than the time indicated here these subjects will count but half credit.

ever, not more than twelve such credits altogether shall be counted toward this degree.

COLLEGE OF PHARMACY

Materia medica
Therapeutics
Toxicology
} Total amount allowed, eight credits.

COLLEGE OF ENGINEERING

Mechanical drawing, 4 credits
Descriptive geometry, 4 credits
Surveying, 4 credits
Dynamo machinery, 4 credits
Alternating currents, 4 credits
} Total amount allowed, twelve credits.

COLLEGE OF MINES

General metallurgy—four credits.

MUSIC

A total of twelve credits in music may be counted toward the bachelor of arts degree.

COLLEGE OF FORESTRY

The following courses may be counted toward the bachelor of arts degree: General Forestry, 2 hours; Dendrology, 4 hours; Forest Economics, 2 hours; Silviculture, 6 hours. The maximum number of hours elected from these subjects is twelve.

SCHOOL OF LAW

Agency, 2 credits
Constitutional law, 4 credits
Contracts, 6 credits
General business law, 2 credits
Equity, 2 credits
Persons, 2 credits
Property, 4 credits

From the above subjects a total of twelve credits may be counted toward the bachelor of arts degree by a student majoring in the Philosophical Group; a total of six credits may be so counted by a student majoring in any other group.

SUGGESTIVE SCHEDULE BY YEARS OF THE COURSES LEADING TO THE A. B. DEGREE.

GROUP I. LANGUAGE AND LITERATURE		GROUP II. PHILOSOPHICAL.
Sub-group I.	Sub-group II.	Sub-groups I and II.
ANCIENT LANGUAGE AND LITERATURE.	MODERN LANGUAGE AND LITERATURE.	HISTORY AND POLITICAL SCIENCE, OR PHILOSOPHY
Freshman	*Freshman*	*Freshman*
English 8	English 8	English 8
Greek 8	Mod. For. Lang..... 8	Foreign Lang 8
Latin 8	History 8	History 8
Mathematics 4	Mathematics 4	Mathematics 4
College Problems.... 1	College Problems.... 1	College Problems.... 1
Phys. Training 4	Phys. Training..... 4	Phys. Training..... 4
Sophomore	*Sophomore*	*Sophomore*
Latin 8	Anc. Language 8	For. Language..... 8
Greek 8	Philosophy 8	Philosophy 8
History 8	Science 8	Pol. Science 8
Phys. Science 8	Elective* 8	Science 8
Phys. Training 4	Phys. Training..... 4	Phys. Training..... 4
Junior	*Junior*	*Junior*
Major 8	Major 8	Major 8
Mod. For. Lang..... 8	Pol. Economy..... 8	Science 8
Philosophy 8	Science 8	Electives 16
Biol. Science 8	Elective 8	
Senior	*Senior*	*Senior*
Major 8	Major 8	Major .....
Pol. Science..... 8	Electives 16	Electives .....
Electives 16		

* This elective should be applied on the student's proposed major.

CURRICULUM IN HOME ECONOMICS

Leading to the A. B. Degree.

FRESHMAN		SOPHOMORE	
English	4	English	4
Modern language	8	Ancient Language	8
Chemistry	8	History	8
Zoology 10	4	Mathematics	4
Home Economics	4	Fine Arts (Arch'tecture)	3
Fine Arts	2	Home Economics	6
Physical Training	4	Physical Training	4
College Problems	1		

JUNIOR		SENIOR	
Philosophy	8	Home Economics	6
Political Science 1a and 26	6	Political Science 3-4 or 44 or Fine Arts	6
Biology	6	Philosophy	4
Elective	6	Elective	10
Home Economics	8		

CURRICULUM IN JOURNALISM

Leading to the A. B. Degree.

A. EDITORIAL GROUP.

FRESHMAN YEAR

First Semester	Hours.	*Second Semester*	Hours.
Journalism 1 (Reporting)	3	Journalism 2 (continued)	3
Journalism 27 (Mechanics of Printing)	1	Journalism 28 (continued)	1
Modern Language	4	Modern Language	4
English 1	4	Ancient Language and Lit.	3
Zoology	4	Zoology	4
Mil. Sci. or Physical Tr.	2	Mil. Sci. or Physical Tr.	2
	16+2		15+2

SOPHOMORE YEAR

Journalism 3 (Editing)	3	Journalism 4 (continued)	3
Ancient Language and Lit.	3	Journalism 10 (Jurisprudence)	2
Physical Science	4	Physical Science	4
History 7	4	History 8	4
Political Science 1	3	Political Science 2	3
Mil. Sci. or Physical Tr.	2	Mil. Sci. or Physical Tr.	2
	17+2		16+2

JUNIOR YEAR

Journalism 5 (Features and Ex.) or Journalism elective equivalent	2	Journalism 6, or Journalism elective equivalent	2
Journalism 11 (editorial)	3	Journalism 12 (continued)	3
Philosophy 1 or 5	4	Philosophy 31 or 6	4
Political Science 3	3	Political Science 4	3
English 19 or 5 or 15 or 23a	2 or 3	English 20 or 6 or 16 or 24a	2 or 3
Elective	3 or 2	Elective	3 or 2
	17		17

SENIOR YEAR

Journalism 13 (policy)	3	Journalism 14 (continued)	3
Journalism 15 (the newspaper)	2	Journalism 16 (continued)	2
Political Science 19	3	Political Science 20	3
Elective	7	Elective	7
	15		15

NOTE: Students who wish to take two years of modern foreign language in succession may postpone Physical Science to the junior year, and English 19, 5, 15 or 23a and second semester continuation, to the senior year.

B. ADVERTISING AND BUSINESS ADMINISTRATION GROUP.

The curriculum in the "Advertising and Business Administration" group is the same as that for the editorial group in the freshman year. In the sophomore year, students electing this

group will take Journalism 21-22, instead of Journalism 3-4; in the junior year, Journalism 23-24 instead of Journalism 5-6 or its elective equivalent in the editorial group, and Journalism 29-30 instead of Journalism 11-12; in the senior year, Journalism 25 and Journalism 26 instead of Journalism 15-16. This arrangement will give students in the advertising and business administration group one more hour elective in the junior year than those in the editorial group have.

CURRICULUM IN LIBRARY ECONOMY

Leading to the A. B. Degree.

FRESHMAN YEAR

First Semester	Credits.	*Second Semester*	Credits.
English 1	4	English 2	4
Elementary Botany, Chemistry, or Physics	4	Elementary Botany, Chemistry, or Physics	4
History 1	4	History 2	4
German or French	4	German or French	4
Mil. Sci. or Physical Tr.	2	Mil Sci. or Physical Tr.	2
	16+2		16+2

SOPHOMORE YEAR

Elective Eng. or Language	4	Zoology 1	4
History 7	4	History 8	4
German or French	4	German or French	4
Mathematics 1	4	Geology	4
Physical Training	2	Physical Training	2
	16+2		16+2

JUNIOR YEAR

History of Education	3	Elements of Economics 2	3
Philosophy 1	4	History 22	3
Elements of Economics 1	3	Zoology 16	2
Library Economy 1	5	Library Economy 2	7
	15		15

SENIOR YEAR

Elements of Sociology 3	3	Elements of Sociology 4	3
Philosophy 15	2	Philosophy 16	2
English 19a, Greek 13, or Latin 11	3	English 20a, or History 30	3
Library Economy 3	7	Library Economy 4	7
	15		15

CURRICULUM IN COMMERCE

Leading to the A. B. Degree.

FRESHMAN YEAR

First Semester	Credits.	*Second Semester*	Credits.
English 1	4	English 2	4
History (Med. and Mod.) or Science	4	History (Med. and Mod.) or Science	4
Modern Language	4	Modern Language	4
Mathematics	4	Mathematics	4
College Problems	½	College Problems	½
Physical or Military Tr...	2	Physical or Military Tr....	2
	16½+2		16½+2

SOPHOMORE YEAR

Modern Language	3 or 4	Modern Language	3 or 4
Science or History (Amer., Eng., or Med. and Mod.)	4	Science or History (Amer., Eng., or Med. and Mod.)	4
Philosophy 31 (Psychology)	4	Philosophy 2 (Ethics)	4
Pol. and Soc. Sci. 1a (El. Econ.)	3	Pol. and Soc. Sci. 8 (Ind. Org.)	3
Pol. and. Soc. Sci. 39 (Com. Geog.)	3	Pol. and Soc. Sci. 32 (Eco. Hist. U. S.)	3
Physical or Military Training...	2	Physical or Military Training..	2
	17 or 18+2		17 or 18+2

NOTE: (1) An elementary knowledge of bookkeeping (½ unit) required for admission.

COMMERCIAL OR MANUFACTURING GROUP

JUNIOR YEAR

First Semester	Credits.	*Second Semester*	Credits.
Pol. and Soc. Sci. 19 (Am. Govt.)	3	Pol. and Soc. Sci. 20 (Am. Govt.)	3
Pol. and Soc. Sci. 11 (Transportation)	3	Pol. and Soc. Sci. 12 (Hist. of Com.)	3
Pol. and Soc. Sci. 47 (Accounting)	3	Pol. and Soc. Sci. 28 (Trade of Pacific)	3
Law	3	Law	3
Science	4	Science	4
	16		16

SENIOR YEAR

Pol. and Soc. Sci. 49 (Statistics)	3	Pol. and Soc. Sci. 14 (Mod. Tariffs)	2
Pol. and Soc. Sci. 27 (Dom. and Foreign Markets)	3	Electives:*	
Electives:*		Journalism 20 (Practice of Adv.)	2
Phil. 41 (Psy. of Adv.)	2	Pol. and Soc. Sci. 38 (Labor Legislation)	3
Journalism 19 (Practice of Adv.)	2	Pol. and Soc. Sci. 48 (Insurance)	3
Pol. and Soc. Sci. 37 (Labor)	3	Forestry 8 (Forest Ecs.)	2
Pol. and Soc. Sci. 15 (Money and Banking)	3	Geology 15 (Eco. Geog. of Wash.)	2
Pol. and Soc. Sci. 31 (Ev. of Ind. Soc.)	3	Pol. and Soc. Sci. 30 (Soc. Psy.)	3

BANKING GROUP

JUNIOR YEAR

First Semester	Credits.	*Second Semester*	Credits.
Pol. and. Soc. Sci. 15 (Money and Banking)	3	Pol. and Soc. Sci. 48 (Insurance)	3
Pol. and Soc. Sci. 19 (Am. Govt.)	3	Pol. and Soc. Sci. 20 (Am. Govt.)	3
Pol. and Soc. Sci. 47 (Accounting)	3	Pol. and Soc. Sci. 40 (Corp. Finance)	3
Law	3	Law	3
Electives*	3	Electives*	3

SENIOR YEAR

Pol. and Soc. Sci. 49 (Statistics)	3	Pol. and Soc. Sci. 50 (International Exch.)	3
Electives*		Electives*	

TRANSPORTATION GROUP

JUNIOR YEAR

First Semester	Credits.	*Second Semester*	Credits.
Pol. and Soc. Sci. 47 (Accounting)	3	Pol. and Soc. Sci. 10 (Public Finance)	3
Pol. and Soc. Sci. 11 (Transp.)	3	Pol. and Soc. Sci. 20 (Am. Govt.)	3
Pol. and Soc. Sci. 19 (Am. Govt.)	3	Law	3
Law	3	Electives*	3
Electives*	3		

SENIOR YEAR

Pol. and Soc. Sci. 49 (Statistics)	3	Pol. and Soc. Sci. 38 (Labor Legislation)	3
Pol. and Soc. Sci. 27 (Dom. and For. Mkts.)	3	Pol. and Soc. Sci. 12 (Hist. of Com.)	3
Pol. and Soc. Sci. 37 (Labor)	3	Pol. and Soc. Sci. 40 (Corp. Finance)	3
Electives:*		Electives:*	

PUBLIC SERVICE GROUP

JUNIOR YEAR

First Semester	Credits.	*Second Semester*	Credits.
Pol. and Soc. Sci. 47 (Accounting)	3	Pol. and Soc. Sci. 10 (Pub. Finance)	3
Pol. and Soc. Sci. 19 (Am. Govt.)	3	Pol. and Soc. Sci. 20 (Am. Govt.)	3
Electives:*		Electives*	
Pol. and Soc. Sci. 3		Pol. and Soc. Sci. 12	
Pol. and Soc. Sci. 15		Pol. and Soc. Sci. 4	
Pol. and Soc. Sci. 11		Modern Language	
History		History	
Law		Law	
Modern Language		Science	
Science		Engineering	
Engineering			

SENIOR YEAR

Pol. and Soc. Sci. 49 (Statistics)	3	Pol. and Soc. Sci. 24 (International Law)	2
Electives*		Electives:*	
Pol. and Soc. Sci.		Pol. and Soc. Sci.	
History		History	
Law		Law	
Science		Science	
Engineering		Engineering	

TWO-YEAR CURRICULUM IN COMMERCE

FIRST YEAR

First Semester	Hours.	*Second Semester*	Hours.
Elem. of Ecs. (Pol. and Soc. Sci. 1a)	3	Econ. Hist of U. S. (Pol. and Soc. Sci. 32)	3
Business Law	3	Business Law	3
Accounting	3	History of Commerce (Pol. and Soc. Sci. 12)	3
Commercial Geog. (Pol. and Soc. Sci. 39)	3	Trade of the Pacific (Pol. and Soc. Sci. 28)	3
English (Composition)	4	English (Composition)	4
Military Training	2	Military Training	2
	18		18

SECOND YEAR

Money and Banking (Pol. and Soc. Sci. 15)	3	Economic Geog. of Wash.	2
American Govt. (Pol. and Soc. Sci. 19)	3	American Govt. (Pol. and Soc. Sci. 20)	3
Advertising and Salesmanship (Philosophy 41)	3	Insurance (Pol. and Soc. Sci. 48)	3
Practice of Adv. (Journalism 19)	2	Practice of Adv. (Journalism 20)	2
Dom. and For. Mkts. (Pol. and Soc. Sci. 27)	3	Industrial Org. (Pol. and Soc. Sci. 8)	3
Transportation (Pol. and Soc. Sci. 11) or Statistics (Pol. and Soc. Sci. 49)	3	Public Finance (Pol. and Soc. Sci. 10)	3
Military Training	2	Military Training	2
	16		18

CURRICULUM PREPARATORY TO LAW

A course designed for students who will begin law after having taken only the two years college work as required for their admission to the Law School.

The student must take either the prescribed courses in the College of Liberal Arts or the course outlined below:

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* A total of 128 credits is required for the degree.

FIRST YEAR

English (1, 2), Freshman composition.....8 credits
History, (English or American).....8 credits
Chemistry, Zoology or Botany.....8 credits
(preferably in the order named)
College Mathematics (1b, 2b) or foreign language .....8 credits
(If the student has taken two years of Latin, it is recommended that he take Roman law).
Military Drill (men); Physical Training (women) .....4 credits
College Problems .....1 credit

SECOND YEAR

Political and Social Science.....8 credits
(Either Principles of Sociology and Elementary Economics or American Government)
Philosophy .....8 credits
(Two of the following four subjects: Introduction to Philosophy; Ethics; Logic or Psychology; or History of Philosophy).
Sixteen hours from among the following subjects: Physics; the continuation of a foreign language; English Constitutional History; Political and Social Science; Philosophy; English Literature, a year of Science.

For the third and fourth year in the College of Liberal Arts and the College of Science, students must classify themselves under some one of the groups as offered, either a regular course or the combined Arts-Law course.

SIX-YEAR ARTS AND LAW CURRICULUM

This combined course allows the student with a good record to obtain an A. B. and an LL. B. in six years. It is open only to those students who have maintained a uniformly good record for scholarship during the first three years of collegiate work. At the end of three years after the student has earned 98 credits, including 8 credits in military drill or physical training and including all of the required work, together with a major, he may for the fourth year register in the School of Law for the first year's work in law. He must, however, earn in the College of

Liberal Arts additional credits sufficient to make the total credits amount to 104. Twenty-four credits in the first year law work may apply toward the A. B. degree, thus making 128 credits required for this degree.

The last two years of this combined course are devoted to completing the rest of the required work in the School of Law.

Students are strongly advised to complete their full ninety-six credits in the College of Liberal Arts by the end of the third year so that they can enter the law work clear in the fourth year.

Students from other institutions entering this university with advanced standing may take advantage of this combined course, provided they are registered in the College of Liberal Arts for at least one full year of work, and earn at least thirty credits in this university before entering the School of Law.

This privilege will not be extended to normal graduates attempting to graduate in two years, nor to under-graduates of other colleges who enter this university with the rank of senior.

COLLEGE OF SCIENCE

THE FACULTY

*Thomas Franklin Kane, Ph. D., (Johns Hopkins University), President.

Henry Landes, A. M., (Harvard University), Acting President and Dean, Professor of Geology and Mineralogy.

Obson Bennett Johnson, LL. B., (Union College of Law), Professor Emeritus of Zoology.

Horace G. Byers, Ph. D., (Johns Hopkins University), Professor of Chemistry.

Trevor Kincaid, A. M., (University of Washington), Professor of Zoology.

Frederick Arthur Osborn, Ph. D., (University of Michigan), Professor of Physics and Director of Physics Laboratories.

Theodore Christian Frye, Ph. D., (University of Chicago), Professor of Botany.

Robert Edouard Moritz, Ph. D., (University of Nebraska), Professor of Mathematics and Astronomy.

David Connolly Hall, Sc. M., M. D., (University of Chicago), Director of Physical Training.

Henry Kreitzer Benson, Ph. D., (Columbia University), Professor of Industrial Chemistry.

John Weinzirl, Ph. D., (University of Wisconsin), Professor of Bacteriology.

Frank Marion Morrison, Ph. D., (University of Chicago), Associate Professor of Mathematics.

Samuel Latimer Boothroyd, A. M., (Colorado Agricultural College), Associate Professor of Astronomy and Mathematics.

William Maurice Dehn, Ph. D., (University of Illinois), Associate Professor of Physiological Chemistry and Toxicology.

Stevenson Smith, Ph. D., (University of Pennsylvania), Associate Professor of Orthogenics.

Effie Isabel Raitt, B. S., (Columbia University), Associate Professor and Director of the Department of Home Economics.

Edwin James Saunders, A. M., (Harvard University), Assistant Professor of Geology.

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* Leave of absence, January 1 to August 1. Retires August 1, 1914.

*GEORGE IRVING GAVETT, B. S., (C. E.) (University of Michigan), Assistant Professor of Mathematics.

ROBERT EVASTAFIEFF ROSE, PH. D., (University of Leipzig), Assistant Professor of Chemistry.

ELI VICTOR SMITH, PH. D., (Northwestern University), Assistant Professor of Zoology.

HENRY LOUIS BRAKEL, PH. D., (Cornell University), Assistant Professor of Physics.

CHARLES EDWIN WEAVER, PH. D., (University of California), Assistant Professor of Geology.

ALLEN FULLER CARPENTER, A. M., (University of Nebraska), Assistant Professor of Mathematics.

GEORGE BURTON RIGG, A. M., (University of Washington), Assistant Professor of Botany.

J. HARLEN BRETZ, PH. D., (University of Chicago), Assistant Professor of Geology.

GRACE GOLDENA DENNY, A. B., (University of Nebraska), Assistant Professor of Domestic Art.

JESSIE B. MERRICK, B. S., (Columbia University), Director of Physical Training for Women.

JOHN WILLIAM HOTSON, PH. D., (Harvard University), Instructor in Botany.

LEWIS IRVING NEIKIRK, PH. D., (University of Pennsylvania), Instructor in Mathematics.

HJALMAR LAUBITS OSTERUD, A. M., (University of Washington), Instructor in Zoology.

HARLAN LEO TRUMBULL, PH. D., (University of Chicago), Instructor in Chemistry.

HENRY SLATER WILCOX, A. M., (Harvard University), Instructor in Psychology.

CURT JOHN DUCASSE, PH. D., (Harvard University), Instructor in Philosophy and Psychology.

FLOYD THOMAS VORIS, A. M., (Columbia University), Instructor in Physics.

SAMUEL HERBERT ANDERSON, PH. D., (University of Illinois), Instructor in Physics.

ERIC TEMPLE BELL, PH. D., (Columbia University), Instructor in Mathematics.

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* On leave of absence, 1913-1914.

GERTRUDE CRUDEN, A. B., (Smith College), B. S., (Columbia University), Instructor in Domestic Art.

GEORGE NELSON SALISBURY, B. S., (University of Minnesota), Lecturer in Meteorology. United States Weather Bureau Official.

HELEN FITCH, A. B., (University of Wisconsin), Instructor in Physical Training.

NATHAN ALTSHILLER, Sc. D., (University of Ghent), Instructor in Mathematics.

JAMES EDGAR BELL, PH. D., (University of Illinois), Instructor in Chemistry.

IRENE HUNT DAVIS, A. B., (University of Washington), Instructor in Chemistry.

ETHEL DOROTHY JOHNSON, A. B., (University of Nebraska), Instructor in Physical Training.

ALEXANDER PICKENS ROMINE, A. M., (Harvard University), Instructor in Zoology.

ELIZABETH ROTHERMEL, A. M., (Columbia University), Instructor in Home Economics.

LLOYD LEROY SMAIL, PH. D., (Columbia University), Instructor in Mathematics.

LUTHER EWING WEAR, PH. D., (Johns Hopkins University), Instructor in Mathematics.

SANFORD MYRON ZELLER, A. M., (University of Washington), Instructor in Botany.

OLIVER WEESNER, B. S., (Earlham College), Teaching Fellow in Mathematics.

THOMAS A. F. WILLIAMS, A. B., (Maryville College), Teaching Fellow in Mathematics.

MILTON VELDEE, B. S., (University of Washington), Teaching Fellow in Bacteriology.

ETHEL BARDELL, A. B., (University of Washington), Teaching Fellow in Botany.

GLENOLA BEHLING, B. S., (University of Chicago), Teaching Fellow in Chemistry.

GROVER R. GREENSLADE, A. B., (Whitman College), Teaching *Fellow* in Physics.

FERRY C. HOUGHTON, A. B., (Olivet College), Teaching Fellow in Physics.

DAVID OHLSON, A. B., (University of Washington), Teaching Fellow in Physics.

WILLIAM SAVERY, PH. D., (Harvard University), Professor of Philosophy.

PIERRE JOSEPH FREIN, PH. D., (Johns Hopkins University), Professor of French.

EDWIN JOHN VICKNER, PH. D., (University of Minnesota), Professor of Scandinavian Languages.

ALLEN ROGERS BENHAM, PH. D., (Yale University), Associate Professor of English.

THOMAS KAY SIDEY, PH. D., (University of Chicago), Associate Professor of Latin and Greek.

JACOB NEIBERT BOWMAN, PH. D., (University of Heidelberg), Associate Professor of European History.

JOSEPH KINMONT HART, PH. D., (University of Chicago), Assistant Professor of Education.

GEORGE WALLACE UMPHREY, PH. D., (Harvard University), Assistant Professor of Spanish.

HARVEY BRUCE DENSMORE, A. B., (University of Oregon), Assistant Professor of Greek.

THERESA SCHMID MCMAHON, PH. D., (University of Wisconsin), Instructor in Political and Social Science.

WALTER EDWARD ROLOFF, PH. D., (University of Wisconsin), Instructor in German.

ADMISSION TO THE FRESHMAN CLASS

To be admitted to freshman standing in the College of Science, a student must either (a) pass an examination based on a four-year course amounting in the aggregate to fifteen units, or (b) complete a course of the same length in an accredited school. The required and elective units are as follows:

Algebra	1½
Plane Geometry	1
Solid Geometry	½
Physics	1
Chemistry or Biology	1
English	3
A foreign language	2
A history (American history preferred) or U. S. History and Civics	1
Elective	4
Total	15

More detailed information concerning admission will be furnished those interested in a separate section of the University Bulletin, known as Entrance Information.

CURRICULA OF THE COLLEGE OF SCIENCE

I. Curricula with elective courses.

In this division, in order to receive the degree of bachelor of science, a candidate who has been regularly admitted to the College of Science must fulfill the following requirements.

1. The requirements for a major must be completed, which consist of 24 credits or more in some one department.

The department in which the student selects his major will be known as his major department and its head as his major advisor. Not more than 40 credits in the major department may be counted toward graduation.

2. A total of 128 credits must be secured, but of these not more than 24 may be counted in any department other than the major department. A minimum of 48 credits must be completed in the College of Science. Elections may be made of courses in the College of Arts and the School of Education in the same manner as in the College of Science.

3. The number of credits specified in each of the following subjects must be earned as a part of the total of 128 credits, subject to the possible exemptions stated below:

a. Astronomy, Chemistry, or Physics.....8 credits
b. Botany, Geology, or Zoology.....8 credits
c. Physical Training or Military Science...8 credits
d. Mathematics .....4 credits
e. Ancient language and literature.....6 or 8 credits
f. Modern foreign language.....8 credits

(A student entering with less than four years of foreign language must make a total of five years in high school and college combined).

g. Rhetoric .....4 or 8 credits

(A student who completes the first semester of rhetoric with a grade of A will not be required to take that subject during the second semester).

h. History .....8 credits
i. Philosophy .....6 or 8 credits
j. Political Science.....6 credits
k. College Problems .....1 credit

COLLEGE PROBLEMS. Freshmen in the Colleges of Liberal Arts and Science, except those who are registered in "set" courses, are required to take one hour a week the first semester in instruction in "Problems of Study," "How to use the Library," and "Organization of Departments and Courses in the University;" and in the second semester, one hour a week in the study of "Vocations Open to College Men and Women of the Northwest." This course will include practical discussions of the organization of the student's plans for his University career, the consideration of a vocation, the planning of a course that will help him to work out his vocational interests, and the relating of his university work and his vocational plans to the demands of the world. One credit is allowed for the year's work. The section for women comes on Friday at 11, and the one for men on Wednesday at 1 o'clock.

This course is not required of students who enter the university with the standing of sophomore or above. Students who fail to take the course at the proper time, or who fail in the course will take, in lieu thereof, some course in Social Science of double the number of hours credit.

HYGIENE. Freshmen are required to take one hour a week each semester in hygiene, in connection with their physical or military training.

Possible exemptions from the courses specified above:

A student may be exempted from certain of the above requirements on the following conditions:

From (*a*) if he presents for entrance 3 units of science, viz.: 1 unit of physics, 1 unit of chemistry, and 1 unit of any other science.

From (*b*) if he presents for entrance 3 units of science, viz.: 1 unit of biological science, 1 unit of physics, and 1 unit of any other science.

From (*d*) if he presents for entrance 3½ units of mathematics, viz.: 1½ units of algebra, 1 unit of plane geometry, ½ unit of solid geometry, and ½ unit of trigonometry.

From (*e*) if he presents for entrance 4 units of ancient language.

From (*f*) if he presents for entrance 4 units of modern foreign language.

From (*h*) if he presents for entrance 3 units of history.

NOTE 1. A student cannot obtain exemption from both (*a*) and (*b*).

NOTE 2. Of the above requirements *g* must be completed within the first year, and (*e*) or (*f*), (*d*), (*a*) or (*b*), and (*h*) must be completed within the first two years, otherwise only one-half credit will be allowed.

GENERAL NOTE. The student is to be held either for the admission and graduation requirements of the catalogue under which he enters, or for those of the catalogue under which he graduates.

THREE-FOURTHS GRADES ABOVE D

Candidates for the bachelor's degree in the College of Science must receive grades of A, B, or C in at least three-fourths of the credits required for the degree. This rule does not apply to grades given before the year 1910-11.

ELECTIVES IN OTHER COLLEGES

In Engineering, Forestry, Law, Mines, Music, and Pharmacy elections will be allowed to the extent of 12 credits from any one college, and not to exceed 16 from all.

SUGGESTIVE SCHEDULE BY YEARS FOR THE GENERAL OR ELECTIVE COURSES.

Astronomy Chemistry Mathematics Physics

Freshman.

Astron. Chem. or Physics	8
Mathematics	4
English	8
Foreign language	8
College problems	1
Physical or Military training	4

Sophomore.

Science	8
Foreign language	8
History	8
Political science	6
Physical training	4

Junior.

Major	8
Philosophy	8
Electives	14

Senior.

Major	8
Electives	22

Botany Geology Zoology

Freshman.

Botany, Geol. and Zoology	8
Mathematics	4
English	8
Foreign language	8
College problems	1
Physical or Military training	4

Sophomore.

Science	8
Foreign language	8
History	8
Political science	6
Physical training	4

Junior.

Major	8
Philosophy	8
Electives	14

Senior.

Major	8
Electives	22

Home Economics

Freshman.

Home economics	4
Chemistry	8
English	4
Foreign language	8
Mathematics	4
Design	2
College problems	1
Physical or Military training	4

Sophomore.

Home economics	4
Chemistry	8
English	4
Zoology	8
Foreign language	8
Physical training	4

Junior.

Home economics	6
Philosophy	8
History	8
Political science	6
Electives	2

Senior.

Home economics	10
Electives	20

Physical Training

Freshman.

Mathematics	4
Zoology	8
English	8
Foreign language	8
College problems	1
Physical or Military training	4

Sophomore.

Chemistry	8
Zoology	8
History	8
Foreign language	8
Physical training	4

Junior.

Major	12
Education	4
Philosophy	8
Political science	6

Senior.

Major	12
Education	8
Elective	10

Psychology

Freshman.

Mathematics	4
Zoology	8
English	8
Foreign language	8
College problems	1
Physical or Military training	4

Sophomore.

Major	4
Mathematics	4
Physics	8
History	8
Foreign language	8
Physical training	4

Junior.

Major	8
Histology and Neurology	8
History of Philosophy	8
Political science	6

Senior.

Major	8
Electives	22

CURRICULUM IN HOME ECONOMICS

A prescribed curriculum in Home Economics, leading to the degree of Bachelor of Science in Home Economics, is offered as follows:

FRESHMAN YEAR

First Semester	Credit	*Second Semester*	Credit
Fine Arts (design)	2	Home Econ. 2 (food preparation)	2
Chemistry 1c (general)	4	Chemistry 2c (household chemistry)	4
English 1b (composition)	2	English 2b (composition)	2
German or French	4	German or French	4
Botany or Zoology	4	Zoology 10 (physiology)	4
Physical training 1	2	Physical training	2
	16+2		16+2

SOPHOMORE YEAR

	Credit		Credit
Home Econ. 3 (foods, selection and preparation)	4	Home Econ. 4 (foods, comparative studies)	2
Home Econ. 5 (clothing)	2	Home Econ. 8 (clothing)	4
Chemistry 3c (organic)	4	Chemistry 11c (foods)	4
English 1bA (composition)	2	English 2bA (composition)	2
German, French, Eng. Literature, Greek and Roman Literature, or History	4	German, French, Eng. Literature, Greek and Roman Literature, or History	4
Physical training	2	Physical training	2
	16+2		16+2

JUNIOR YEAR

	Credit		Credit
Home Econ. 15 (dietetics)	4	Home Econ. 22 (home decoration)	3
Architecture	3	Bacteriology 106	5
Home Economics 25 (Tx.)	3	Physics 6a (Physics of the home)	4
Political Science 1 (Principles of Econ.)	3	Political Science 26 (Standards of Living)	2
Psychology (or elective)	4	Education (or elective)	4
	17		18

SENIOR YEAR

	Credit		Credit
Home Econ. 27 (Teachers' Course)	2	Home Econ. 24 (household management)	3
Home Econ. 19 (Home nursing)	2	Home Econ. 28 (Teachers' Course)	2
Pol. Science 3 (Sociology)	3	Pol. Science 4 (Social Problems)	3
Ethics	4	Education (or elective)	4
Education (or elective)	4	Elective	2
	15		14

CURRICULUM PREPARATORY TO MEDICINE

Four years of prescribed work, leading to the B. S. degree, are provided for those students who desire to enter a medical school after graduation from this institution. By special permission, a student planning to enter a medical school before completion of the four-year course may be permitted to take out of regular order such courses as may be accorded advanced credits in the particular school selected.

Freshman (a)

	Hours
Botany (b)	4
Chemistry (c)	8
Zoology (d)	4
Mathematics (e)	4
English	4
German or French (f)	8
Military or physical training	4

Sophomore.

	Hours
Anatomy, comparative	8
Chemistry, organic	8
Physics (g)	8
French or German	8
Military or physical training	4

Junior.

	Hours
Chemistry, physiological	4
Embryology	4
Histology	4
Neurology	4
Physiology	8
Elective	8

Senior.

	Hours
Bacteriology 3 and 8	8
Elective	12
Pharmacology and Toxicology	4
Psychology	8

NOTE: (a) Two years of Latin must be offered for admission.

(b) Botany 2, second semester. If Botany was studied in the high school, then Botany 10 should be elected.

(c) General Chemistry the first semester, qualitative analysis the second semester.

(d) Invertebrate zoology for the first semester.

(e) Trigonometry is required, but solid geometry may be elected if not previously studied in the high school.

(f) A reading knowledge of French or German is required. (Equivalent to two years' work.)

(g) Physics 3a and 4a.

DEPARTMENTS OF INSTRUCTION

COLLEGE OF LIBERAL ARTS AND THE COLLEGE OF SCIENCE.

The departments of these two colleges are arranged in alphabetical order. Distinct subjects which are not organized as separate departments but are given in connection with the related work of an established department have directory headings in the alphabetical list.

Courses listed as year courses ordinarily carry credit only when pursued for the full time; the instructor's permission must be obtained for credit for only a single semester of such a course.

The credit indicated in connection with each course is the "semester credit," being based on the class periods per week.

ASTRONOMY

(See Mathematics and Astronomy)

BACTERIOLOGY

(See Botany)

BOTANY

(Office, Science Hall)

PROFESSOR FRYE; PROFESSOR WEINZIRL; ASSISTANT PROFESSOR RIGG; DR. HOTSON; MR. ZELLER, MISS BARDELL, MR. VELDEE, MISS HAVENS, MISS MACAULEY.

I. Botany

SUGGESTED SELECTIONS

1. For the required science in the colleges of Liberal Arts and Science only courses 1, 2, 9, 10, 5, 6, 43, 44, will be accepted.

2. For a major: courses 9, 10, 5, 6, 43, 44, of which 5 and 6 are required. The total number of credits in the department must be at least 24.

3. For those preparing to teach botany: courses 9, 10, 5, 6, 42, 43, 44.

4. For pharmacy students: courses 13, 14.

5. For forestry students: courses 1, 10, 11, 12, 43, 44, 16.

6. For home economics students: courses 1, 2, 23, 24.

7. For students preparing to teach agriculture: courses 9, 10, 5, 6, 42, 43, 44, 25, 26, 41.

8. For those desiring to enter seed laboratories: courses 9, 10, 5, 6, 43, 44, 17.

The laboratory fee for all courses except 1s-2s, 39 and 37 is two dollars.

Course No.		Title	Credits	Prerequisites	Time Schedule
		FOR UNDERGRADUATES			
1	2	Elem.	4	None	M. F. at 1 or T. Th. at 1.
		Laboratory			M. F. 2 to 4; or T. Th. 2 to 4; or T. Th. 8 to 10, or 10 to 12.
	2s	Biol. Soils	4	1 yr. col. chem.	M. W. F. at 4.
		Laboratory			W. 1 to 4.
9		Ecology	4	1, or equiv.	M. F. at 4.
		Laboratory			M. F. 1 to 4.
	10	Taxonomy	4	1, or equiv.	M. F. at 4.
		Laboratory			M. F. 1 to 4.
11		General	4	1; 10 or 2.	T. Th. at 1.
		Laboratory			T. Th. 2 to 4.
	12	Mor. Sperm.	4	11	T. Th. at 1.
		Laboratory			T. Th. 2 to 4.
13	14	Pharmacy	4	None	T. Th. at 10.
		Laboratory			T. Th. 8 to 10.
23	24	Foods & Fibres	4	1 or H. S.	T. Th. at 8.
		Laboratory			T. Th. 10 to 12.
		FOR UPPERCLASSMEN AND GRADUATES			
5		Mor. Thall.	4	2 or 10, or	T. Th. at 1.
		Laboratory		Zool. 1-2	T. Th. 2 to 4.
	6	Bryo. & Pter.	4	2 or 10, or Zool. 1-2	T. Th. at 1. T. Th. 2 to 4.
	16	For. Pathology	4	5 or 11	M. W. at 10.
		Laboratory			T. Th. 9 to 12.
17		Seeds	4	1 yr. Bot.	To be arranged.
	20	Plant Histol.	3	6 or 11	To be arranged.
25	26	Agriculture	4	1; 2 or 10	M. W. at 4.
		Laboratory			W. F. 1 to 4.
33	33	Research		See statement	To be arranged.
35		Teachers'	3	1 yr. Bot.	To be arranged.
37	37	Journal Club		2 yrs. Bot.	To be arranged.
41		Fungi	4	11 or 5	T. Th. at 11.
		Laboratory			T. Th. 8 to 11.
	42	Plant Path.	4	41	T. Th. at 11.
		Laboratory			T. Th. 8 to 11.
43		Plant Physiol.	4	5-6 or 9-10 or 11-12; Chem. 1-2	M. W. at 11.
		Laboratory			M. W. 2 to 5.
	44	Plant Physiol.	4	43	M. W. at 11.
					M. W. 2 to 5.

FOR UNDERGRADUATES

1. ELEMENTARY BOTANY. Four credits. First semester. Professor FRYE and Assistant Professor RIGG.

The structure and functions of roots, stems, leaves and seeds. Only for those who have had no botany in the high school.

2. ELEMENTARY BOTANY. Four credits. Second semester. Professor FRYE and Assistant Professor RIGG.

Open to students entering the second semester without any previous botany work.

Types of the great groups of plants from the lowest to the highest. Plant analysis.

1s-2s. SOILS. Four credits. The year. Not accepted for science requirement. Prerequisite, one year college chemistry; laboratory fee for course, $8, $6 payable first semester and $2 the second. Credit given only upon completion of entire course. See Chemistry 1s-2s. Professors BENSON, LANDES, KINCAID, and HOTSON.

General characteristics of plants in relation to the soil; micro-organisms of the soil and their relation to fertility and to higher plants; some common fungous diseases of Washington plants and their remedies; simple experiments with plants in relation to soils.

9. ECOLOGY. Four credits. First semester. For students who have received entrance credit for a high school course in botany. Prerequisites: botany 1, except for teachers, seniors and those having had an acceptable high school course. Professor FRYE.

The factors causing environmental adaptations in plants. Recitation, field and laboratory work.

10. TAXONOMY. Four credits. Second semester. For students who have received entrance credit for a high school course in botany. To be taken in place of botany 2 by those who expect to continue with botany 5 or 11. Prerequisite, botany 1, or an equivalent, except for teachers and seniors. Professor FRYE.

The science of classification of plants. Analysis of plants. Field trips, laboratory work and lectures.

11. GENERAL BOTANY. Four credits. First semester. For forestry students. Prerequisites, botany 1, and 10 or 2. Dr. HOTSON.

A study of the types of the lower plants to illustrate the advance in complexity, thus preparing the way for the understanding of spermatophyte structures.

12. MORPHOLOGY OF SPERMATOPHYTES. Four credits. Second semester. Prerequisite, botany 11. Dr. HOTSON.

Structure, especially of the stem. Lectures on adaptation to environment.

13-14. PHARMACY BOTANY. Four credits. The year. Assistant Professor RIGG.

Gross structure of vegetative and reproductive parts of seed plants. Brief study of spore plants. Microscopy of powdered drugs.

23. FOODS. Four credits. First semester. Prerequisite, botany 1 or high school botany. Assistant Professor RIGG.

The origin and structure of food-producing tissues in plants.

24. FIBRES. Four credits. Second semester. Prerequisite, botany 1 or high school botany. Assistant Professor RIGG.

The origin and structure of fibre-producing tissue in plants.

FOR UPPERCLASSMEN AND GRADUATES

5. MORPHOLOGY OF THALLOPHITES. Four credits. First semester. Prerequisites, botany 2 or 10, or zoology 1 and 2. Professor FRYE.

Study of types of algae and fungi with a view to their evolution, ecology, and physiology as shown by structure.

6. MORPHOLOGY OF BRYOPHYTES AND PTERIDOPHYTES. Four credits. Second semester. Prerequisites, botany 2 or 10, or zoology 1 and 2. Professor FRYE.

Studies of types of families with a view to relationships. Some classification.

16. FOREST PATHOLOGY. Four credits. Second semester. Prerequisite, botany 5 or 11. For forestry students. Dr. HOTSON.

The fungous and bacterial diseases of trees.

17. SEEDS. Four credits. First semester. Prerequisites, one year of botany; junior standing.

Seed structure and physiology. The recognition of plants by their seeds.

20. PLANT HISTOLOGY. Three credits. Second semester. Prerequisite, botany 6. Professor FRYE.

Preparation of slides for the compound microscope. Study of plant tissues.

25-26. ELEMENTARY AGRICULTURE. Four credits. The year. Prerequisites, botany 1, and 2 or 10; junior standing. Dr. HOTSON.

Designed as a preparation for those who expect to teach the subject in high schools.

33. RESEARCH. First or second semesters, or both. Credit and time to be arranged. Open to qualified students, after consultation, either for thesis work or credit only.

35. TEACHERS' COURSE. Three credits. First semester. Prerequisites, 1 year of botany and junior standing. Professor FRYE.

The subject matter, aim and manner of presentation of high school botany. Practice teaching.

37. JOURNAL CLUB. No credit. The year. One meeting per week at time to be arranged. Prerequisite, junior standing; two years of botany. Professor FRYE.

Review of articles in current journals. Suggested for all seniors, graduates and instructors in the department.

41. GENERAL FUNGI. Four credits. First semester. Time to be arranged. Prerequisites, botany 11 or 5 and junior standing. Dr. HOTSON.

Morphology and classification of fungi; designed as a basis for plant pathology.

42. PLANT PATHOLOGY. Four credits. Second semester. Time to be arranged. Prerequisite, botany 41. Dr. HOTSON.

The courses, symptoms and treatment of some of the common fungal and bacterial diseases of orchard and garden plants and their fruits.

43. PLANT PHYSIOLOGY. Four credits. First semester. Prerequisites, chemistry 1 and 2; botany 1 and 2, or 9 and 10, or 1 and 10. Assistant Professor RIGG.

The fundamental physical and chemical processes in plants.

44. PLANT PHYSIOLOGY. Four credits. Second semester. Prerequisite, botany 43. Assistant Professor RIGG.

The laws underlying growth and movement in plants.

II. BACTERIOLOGY

The courses in bacteriology are essentially all applied and bear primarily upon: (a) medicine, (b) sanitation, and (c) industry.

The laboratory deposit for courses 103, 104, 105, 106, 108, 111, and 112 is $4 per semester; for course 110 is $2.00; no deposit for other courses.

SUGGESTED SELECTIONS

For pre-medical students: 103, 108, are required; 111, 112, 113, 114, may be elected.

For home economics students: 106 is required; 113 is recommended.

For chemical engineering students: 103, 104, 111, 113.

For other engineering students: 110 only is open.

For pharmacists: 105 is required; in junior and senior years, 108, 111, 112, 113, 114, may be elected.

For hygienic training: 103, 104, 111, 113, 117, 118, 119, 120.

For a major, see BOTANY, botany 1, 2; bacteriology 103, 104 or 108, 111, 112, 113, 114,

Course No.	Title	Credits per Semester	Prerequisites	Time Schedule
	FOR UNDERGRADUATES			
101 102	Public Health	2	None	See Phys. Training.
105	Pharmacy	4	1 yr. Bot.	T. Th. at 8.
	Laboratory		1 yr. Chem.	T. Th. 9 to 11.
106	General	5	None	M. W. F. at 1.
	Laboratory			M. W. 2 to 4.
110	Engineers	2		F. at 2.
	Laboratory			F. 3 to 5.
	FOR UNDERGRADUATES AND GRADUATES			
103	General	4	1 yr. Bot.	T. Th. at 1.
	Laboratory		or Zool.	T. Th. 2 to 4, or M. W. 2 to 4.
104	San. and Indust.	4	103	T. Th. at 1.
	Laboratory			T. Th. 2 to 4, or 4 to 6.
108	Medical	4	103	T. Th. at 4.
	Laboratory			T. Th. 2 to 4.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
109		School Hygiene	2		T. Th. at 8.
111		Analysis	2	103	To be arranged.
	112	Diagnosis	2	104 or 108	To be arranged.
113	113	Sanitary Problems	2	103	To be arranged.
	114	Diagnosis Methods	2	112, Concur't.	To be arranged.
		FOR GRADUATES			
117	118	Seminar	2	Graduate	To be arranged.
119	120	Research	2-4	Graduate	To be arranged.

FOR UNDERGRADUATES

101-102. PUBLIC HEALTH. See Physical Training.

105. BACTERIOLOGY FOR PHARMACISTS. Four credits. First semester. Prerequisites, sophomore standing, one year of botany, and one year of chemistry. Professor WEINZIRL.

A general survey including technique, biology, diseases, immune sera, vaccines, disinfectants, etc.

106. GENERAL AND HOUSEHOLD BACTERIOLOGY. Five credits. Second semester. For home economics students. Professor WEINZIRL.

Bacteriology as related to the home and its activities. Lectures only.

110. BACTERIOLOGY FOR ENGINEERS. Two credits. Second semester. Laboratory deposit $2.00. Professor WEINZIRL.

General course. Application to sewage disposal and water supplies.

FOR UNDERGRADUATES AND GRADUATES

103. GENERAL BACTERIOLOGY. Four credits. First semester. Prerequisite, junior standing; botany or zoology, 1 year; chemistry 1 year. Professor WEINZIRL and Mr. VELDEE.

Methods of growing bacteria and studying their structure, functions and distribution.

104. SANITARY AND INDUSTRIAL BACTERIOLOGY. Four credits. Second semester. Prerequisite, bacteriology 103. Professor WEINZIRL and Mr. VELDEE.

A brief survey of disease bacteria. Most of the time is given to sanitation and industry. Inspection trips.

108. MEDICAL BACTERIOLOGY. Four credits. Second semester. Prerequisite, bacteriology 103. Required of pre-medical students. Professor WEINZIRL and Mr. VELDEE.

The study of pathogenic bacteria.

109. SCHOOL HYGIENE. See EDUCATION 29. T. Th. at 3. Professor WEINZIRL.

111. BACTERIOLOGICAL ANALYSIS. Two credits. First semester. Prerequisite, bacteriology 103. Professor WEINZIRL.

Analysis of water, sewage, milk, meat, etc. Laboratory work only.

112. LABORATORY DIAGNOSIS. Two credits. Second semester. Prerequisite, bacteriology 104 or 108. Professor WEINZIRL.

The diagnosis of disease by laboratory methods, mainly bacteriological.

113. SANITARY PROBLEMS. Two credits. First semester. Prerequisite, bacteriology 103. Professor WEINZIRL.

The sanitary problems relating to water, sewage, and food. Lectures only.

114. DIAGNOSTIC METHODS. Two credits. Second semester. Prerequisite, to be taken with bacteriology 112. Professor WEINZIRL.

The consideration of diagnostic methods and their application. Lectures only.

FOR GRADUATES ONLY

117-118. SEMINAR IN BACTERIOLOGY. Two credits. The year. For graduate students only. With research constitutes a full year's work, and is planned as the regular third year's work in bacteriology. Time to be arranged. Professor WEINZIRL.

119-120. RESEARCH IN BACTERIOLOGY. Two or four credits. The year. Open to qualified students after consultation. Professor WEINZIRL.

CHEMISTRY.

(Bagley Hall)

PROFESSOR BYERS, PROFESSOR BENSON, ASSOCIATE PROFESSOR DEHN, ASSISTANT PROFESSOR ROSE, DR. TRUMBULL, DR. BELL, MRS. DAVIS, MR. ASHTON, MISS BEHLING, MR. WALTERS, AND DEAN JOHNSON, COLLEGE OF PHARMACY.

The instruction in this department is designed to satisfy, as far as possible, the requirements of those students who desire to study chemistry as a means of culture and as a necessary complement of a liberal education. It is also realized that the subject is eminently practical, hence it is the desire of those in charge so to guide the student that he may fit himself for work in those lines in which chemistry has become an applied science.

REQUIREMENTS OF THE DEPARTMENT

For a major, twenty-four credits selected from the courses outlined and including 1a, 2a, 3, 4, and 9.

The fee for each laboratory course is ten dollars per semester. This deposit covers the materials actually consumed in the laboratory and with care provides a student for a full semester's work; the portion of the deposit not used will be refunded.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR UNDERGRADUATES			
1	2	General	4	None	T. Th. at 11.
1a	2a	General	4	H. S. Chem.	M. W. at 11.
		Laboratory (1-2 & 1a-2a)			T. Th. 8 to 11, or M. W. 8 to 11, or F. S. 8 to 11 (3 sections, one for Engineers only), or T. Th. 1 to 4, or M. F. 1 to 4.
2b	1b	General	4	H. S. Chem.	T. Th. at 8.
		Laboratory			1st Sem. T. Th. 9 to 12; 2nd Sem. T. Th. 9 to 12, or M. F. 1 to 4.
1c	2c	General	4	None	T. Th. at 9.
		Laboratory			M. F. or T. Th. 1 to 4.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
	1d	Prospector's	4	None	T. Th. F. at 9.
		Laboratory			F. 1 to 4.
1e		General	4	1f, C	M. W. F. S. at 8.
1f		General	4	1e, C	M. W. Th. 1 to 4; S. 9 to 12.
	2e	Organic	4	2f, C	M. W. F. S. at 8.
	2f	Organic	4	2e, C	M. W. Th. 1 to 4; S. 9 to 12.
1s		Elementary Soils	4		M. W. F. at 9.
		Laboratory			W. 1 to 4.
3	4	Organic	4	1-2, or equiv.	M. W. F. at 8.
		Laboratory			M. or W. or F. 1 to 5.
3c		Organic	4	1c-2c	T. Th. at 8.
		Laboratory			M. F. or T. Th. 1 to 4.
		C—Concurrent.			
		FOR UPPERCLASSMEN AND GRADUATES			
5	6	Advanced Organic	4	3-4	M. W. at 8.
		Laboratory			W. 1 to 4; S. 9 to 12.
7	7	Organic Analysis	2-4	3-4	To be arranged.
8		Advanced Qual.	4	1-2	T. Th. at 10.
		Laboratory			M. W. 1 to 4.
8b	8b	Elementary Qual.	4		M. W. at 11.
		Laboratory			T. Th. 2 to 5.
9	9	Quant. Analysis	4	8 or 8b	Th. at 8.
		Laboratory			T. F. 1 to 4; T. 8 to 11.
9a	9a	Quant. Analysis	4	9	To be arranged.
10	11	Food Analysis	4	9	To be arranged.
	11c	Chemistry of Foods	4	1c-2c, 3c	T. Th. at 11.
		Laboratory			M. W. 1 to 4.
12	12	Engineers	3	2a, 2b or 8b	M. W. at 11.
		Laboratory			T. 1 to 4.
13	14	Industrial	4	9	T. Th. at 11.
		Laboratory			M. Th. 1 to 4.
15		Water Examination	3	9	T. Th. at 8.
					T. Th. 9 to 12.
	18	Road Materials	2	1a-2a	T. at 8.
		Laboratory			W. 1 to 4.
	19	Urinary Analysis	2	3-4	To be arranged.
20	21	Physiological	4	3-4	To be arranged.
20a		Physiological	4	3-4 or 1c-2c, 3c	T. Th. at 8. T. Th. or M. F. 1 to 4.
22		Physical	4	9, Physics 1-2.	M. W. at 11.
		Laboratory			M. W. 1 to 4.
	23	Electro	4	9, Physics 1-2.	M. W. at 10.
		Laboratory			M. F. 1 to 4.
		FOR GRADUATES			
	24	Inorganic Preparations		9,3-4, 22	To be arranged.
	25	Advanced Physical		22	To be arranged.
26	26	Investigation	2	3, 4, 8, 9	To be arranged.
27	28	Chemical Theory	2	3, 4, 8, 9	T. 7 to 9 p. m.
29	29	Advanced Organic Prep.		3, 4, 8, 9	To be arranged.
	30	Textiles	2	1c, 2c, 3c	To be arranged.

FOR UNDERGRADUATES

1-2. GENERAL CHEMISTRY. Four credits. The year. Two lectures and six hours laboratory work per week. Professor BYERS, Instructors and Assistants.

Many students come from accredited schools in which chemistry is not required. To meet the needs of such students, this course is offered. Text-books, Smith's College Chemistry and Laboratory Manual.

1a-2a. GENERAL CHEMISTRY. Four credits. The year. Two lectures and six laboratory hours per week. Professor BYERS, Dr. TRUMBULL and Assistants.

Primarily for engineers, but is open to all students who have had a year's work in chemistry in an accredited high school. Text-books, Smith's General Chemistry, Smith's Laboratory Manual, and Byers and Knight's Qualitative Analysis.

1b. GENERAL CHEMISTRY. Four credits. Second semester. Assistant Professor ROSE.

For students entering at the beginning of the second semester.

2b. GENERAL CHEMISTRY. Four credits. First semester. Continuation of 1b. Assistant Professor ROSE.

1c-2c. GENERAL CHEMISTRY. Four credits. The year. Two lectures and six laboratory hours per week. Assistant Professor ROSE.

For students of domestic science and women of the Colleges of Liberal Arts and Science.

1d. PROSPECTOR'S COURSE. Four credits. For miners who enter January 1 and continue to April 1. Professor BENSON.

Does not require previous knowledge of chemistry, and will be merged into a course of qualitative analysis. Brownlee text-book required.

1e. GENERAL CHEMISTRY. Four credits. First semester.

A lecture and recitation course designed for students of pharmacy. It must be taken in conjunction with 1f.

1f. GENERAL CHEMISTRY. Four credits. First semester.

A laboratory course designed to accompany 1e. A portion of this course and of 2f form a continuous course in qualitative analysis.

1s-2s. SOILS. Four credits. The year. Not accepted for science requirement. Prerequisite, one year college chemistry; laboratory deposit for course $8.00, $6 payable first semester, $2 second. Credit given only upon completion of entire course. Professors BENSON, LANDES, KINCAID, and HOTSON.

First quarter in department of chemistry dealing with classification, composition and fertility of soils. Second quarter in department of geology treating of the relation of minerals, rocks, topography, and climate to soil formation, distribution and classification. Third quarter in department of zoology dealing with the relation of animal life to soils, insect control and insecticides. Fourth quarter treating of plants in relation to the soil, microorganisms of the soil, fungous diseases of Washington plants and their remedies.

2e. ORGANIC CHEMISTRY. Four credits. Second semester.

For students in pharmacy. It must be accompanied by chemistry 2f.

2f. ORGANIC CHEMISTRY. Four credits. Second semester.

A laboratory course in organic preparations. See also 1f.

3-4. ORGANIC CHEMISTRY. Four credits. The year. Assistant Professor DEHN.

Lecture course. Laboratory work on the preparation and testing of representative compounds. Bernthsen-Sudburough's text used in connection with Sudburough-James laboratory manual as laboratory guide.

3c. ORGANIC CHEMISTRY. Four credits. First semester. Associate Professor DEHN.

A lecture and laboratory course for the women of the department of home economics and adapted to the students of the Colleges of Arts and Science who wish to make a more rapid survey of the subject than is furnished by courses 3-4.

FOR UPPERCLASSMEN AND GRADUATES

5-6. ADVANCED ORGANIC CHEMISTRY. Four credits. The year. Assistant Professor ROSE.

Chemistry of volatile oils, dyestuffs, alkaloids and sugars. Special laboratory work can be arranged.

7. ORGANIC ANALYSIS AND GLASS BLOWING. Two to four credits. The year. Associate Professor DEHN.

A laboratory course of either two or four hours. Individual instruction.

8. ADVANCED QUALITATIVE ANALYSIS. Four credits. First semester. Two lectures and six laboratory hours per week. Professor BYERS.

Lectures on theory of solution as applied to analytical work. Laboratory work on the analysis of alloys and minerals.

8b. ELEMENTARY QUALITATIVE ANALYSIS. Four credits. The year.

Chemistry 1-2 is followed by a course in qualitative analysis. Two lectures and six laboratory hours per week. Text-book: Byers and Knight.

9. QUANTITATIVE ANALYSIS. Four credits. The year. Twelve laboratory hours and one recitation per week. Professor BENSON.

Gravimetric and volumetric analysis. Olsen's Quantitative Analysis.

9a. QUANTITATIVE ANALYSIS. Four credits. Either semester. Four laboratory periods per week. Dr. BELL.

A continuation of the work of Chemistry 9, and including special methods and mineral analysis.

10-11. FOOD ANALYSIS. Four credits. The year. Laboratory, three afternoons per week. Professor JOHNSON.

First semester includes the study of the source, preparation, chemical nature and analysis of fats and oils of food, and pharmaceutical use. The second semester includes the analysis of the various food products on the market. Methods of the Association of Official Agricultural Chemists are used.

11c. CHEMISTRY OF FOODS. Four credits. Second semester. Three laboratory periods per week. Prerequisite, chemistry 1c-2c, and 3c, or their equivalent.

A course designed particularly for students of home economics.

12. ENGINEERING CHEMISTRY. Three credits. Both semesters. Sophomore engineers. Prerequisite, 2a, 2b or 8b. Professor BENSON.

Chemistry of the materials of engineering. Two lectures and one laboratory period. Text-book, Benson's Industrial Chemistry for Engineering Students.

13-14. INDUSTRIAL CHEMISTRY. Four credits. The year. Junior chemical engineers. Prerequisite, chemistry 9. Two lectures and two laboratory periods. Professor BENSON.

A course dealing with a detailed study of chemical industries.

15. WATER EXAMINATION. Three credits. First semester. Two lectures and one laboratory period. Professor BENSON.

Option for students in chemical and civil engineering. The course deals with the sanitary aspects of water supplies and the chemistry of water purification.

*17. FOREST PRODUCTS. Three credits. First semester. Option for students in forestry. Two lectures and one laboratory period. Professor BENSON.

A detailed study of the chemical process involved in the utilization of wood.

18. ROAD MATERIALS. Two credits. Second semester. Professor BENSON. Option for students in civil engineering. One lecture and one laboratory period.

Text-books: Hubbard's Dust Preventives and Road Binders and Bulletin 38, office of Public Roads: Method for Examination of Bituminous Road Materials.

19. URINARY ANALYSIS. Two credits. Second semester. Laboratory work only. Associate Professor DEHN.

Practical methods of analysis of normal and pathological urines. Especially for students entering upon the study of medicine.

20-21. PHYSIOLOGICAL CHEMISTRY. Four credits. The year. Associate Professor DEHN.

A course designed for medical, chemical and general science students. Chemical composition of foods, tissues, secretions and excretions, their physiological and pathological changes, with special attention to the composition and chemical analysis of blood, milk and urine.

20a. PHYSIOLOGICAL CHEMISTRY. Four credits. Second semester. Primarily for pre-medical and home economics students. Associate Professor DEHN.

Essentially the same course at 20.

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* Not given 1914-1915.

FOR GRADUATES

22. PHYSICAL CHEMISTRY. Four credits. First semester. Three lectures and one laboratory period per week. Dr. TRUMBULL.

An elementary lecture course dealing with fundamental theories of chemistry based upon physical measurements.

23. ELECTRO CHEMISTRY. Four credits. Second semester. Professor BYERS and Dr. TRUMBULL.

The lecture course deals with the historical development of electro chemistry, the theories of electrolysis, migration of ions, concentration cells, solution pressure, etc. The laboratory work consists of the preparation of compounds by electrolysis and electro synthesis, electro-plating, etc., and of illustrations of the subject-matter of the lecture work.

24. INORGANIC PREPARATIONS. Credits to be arranged. Second semester. Twelve laboratory hours per week. Professor BYERS.

Methods of preparation of important inorganic compounds. Designed to illustrate special chemical principles.

25. ADVANCED PHYSICAL CHEMISTRY. Four credits. Second semester. Two lectures and six laboratory hours. Dr. TRUMBULL.

A course in chemical statics and dynamics with physical chemical measurements. Nernst and Ostwald-Luther used as texts.

26. INVESTIGATION. The year.

Any student who has completed at least three years' work in chemistry may undertake some original investigation under the direction of one of the instructors. Such work will not be encouraged, however, except when the student is presenting himself for an advanced degree.

27-28. CHEMICAL THEORY. Two credits. The year. Professor BYERS.

All graduate students registering in the department of chemistry will be expected to take a two-hour course throughout the year in the historical development of fundamental laws and theories.

29. ADVANCED ORGANIC PREPARATIONS. Four credits. The year. Associate Professor DEHN.

30. TEXTILE CHEMISTRY. Two credits. Second semester. For home economics students only. One lecture and three laboratory hours. Assistant Professor ROSE.

A course dealing with the composition of commercial fabrics and the chemical tests dealing with identification and detection of sophistications.

ENGLISH

(Offices, Rooms 45 and 42, Denny Hall)

PROFESSORS PADELFORD AND PARRINGTON; ASSOCIATE PROFESSORS BENHAM AND MILLIMAN; ASSISTANT PROFESSORS GARRETT, COX, AND DARBY; MR. JOHANSON, MR. SAWYER, MR. CHITTICK, MR. WITHERS, AND MR. HARRISON.

REQUIREMENTS FOR MAJOR STUDENTS

Major students who are candidates for the teacher's certificate in English, will be required to take course 35-36, and either course 7-8 or course 33-34. This prescription does not apply to major students who are not candidates for the teacher's certificate.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR FRESHMEN AND SOPHOMORES			
1	2	Composition	2-4	None	T. Th. at 8, 9 or 10; or M. W. F. at 8, 9, 10, or 2; or M. W. F. S. at 8, 9, or 10, or M. T. Th. F. at 2.
2	1	Composition	2-4	None	M. W. F. at 8 or 2.
1a		Composition	2	None	T. Th. or M. W. at 8.
	1a	Composition	2	None	T. Th. at 1.
2a		Composition	2		F. S. at 10.
1b	2b	Composition	2	None	T. Th. at 8, 9, or 11.
1bA	2bA	Composition	2	1b-2b	T. Th. at 10 or 11.
1c	2c	Composition	2	None	T. Th. at 11.
1d	2d	Freshman Literature	3	None	M. W. F. at 10.
3	4	English Literature	3		M. W. F. at 9 or 2.
5	6	Contemporary	3		T. Th. S. at 9 or 10.
9	10	English Verse	1		T. at 9.
11	12	Advanced Composition	3	1-2 or equiv	M. W. F. at 11.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR JUNIORS AND SENIORS			
7	8	Historical Grammar	2		T. Th. at 11.
13		Georgian Poets	3		M. W. F. at 9.
	14	Victorian Poets	3		M. W. F. at 9.
15	16	Comparative	3		M. W. F. at 9.
19	20	Amer. Literature to 1870.	3		M. W. F. at 11.
19a	20a	Amer. Lit. since 1870	2		T. Th. at 11.
19b	20b	Great Amer. Writers	2		T. Th. at 10.
21		Alfred to Chaucer	2		T. Th. at 1.
	22	Chaucer to Shakespeare	2		T. Th. at 1.
25	26	The Novel	3		M. W. F. at 2.
27	28	The Drama	3		M. W. F. at 11.
29	30	Folk-song	2		T. Th. at 1.
31	32	18th Century	2		T. Th. at 10.
33	34	Old and Middle English	3		M. W. F. at 8.
35	36	Teachers'	2		T. Th. at 9.
A	A	General Survey	1		1st Sem. T. 7 to 9; 2nd Sem. F. at 3.
		FOR GRADUATES			
Sem. I		Eng. Lit. Hist.			
B		1550-1660	2		T. 3 to 5.
C		1660-1830	1		Th. at 3.
Sem. 11		Amer. Lit. Hist.	2		M. 3 to 5.
Sem. 1VA		Poetry and Criticism	2		W. 3 to 5.
Sem. 1VB		Renaissance Lit. Types	2		Th. 7 to 9.
Sem. VA		Old and Middle Eng.	2		T. 7 to 9.
Sem. VB		Phonetics	1		F. at 3.

I. COMPOSITION

1-2. FRESHMAN COMPOSITION. Two to four credits. The year. Seventeen sections. Required of all freshmen in the College of Liberal Arts and the College of Science. If taken later than the freshman year, only half credit will be given. The hours of credit will vary according to the section to which the student is assigned; those whose preliminary training has been poor will be required to take four hours, those whose preliminary training has been fair will be required to take three hours, those whose preliminary training has been good will be required to take two hours, and those whose preliminary training has been superior will be excused from the course. Associate Professor MILLIMAN in charge.

The principles of composition, with practice in writing. Con-

ferences in theme criticism. All who receive a grade of A in course 1 are excused from course 2.

2. FRESHMAN COMPOSITION. Two to four credits. First semester. Two sections. A repetition of 2 above. Associate Professor MILLIMAN in charge.

1. FRESHMAN COMPOSITION. Two to four credits. Second semester. Two sections. A repetition of 1 above. Associate Professor MILLIMAN in charge.

1a. FRESHMAN COMPOSITION. Two credits. First semester. An adaptation of 1 for students in the College of Engineering. Six sections. Associate Professor MILLIMAN in charge.

2a-1a. FRESHMAN COMPOSITION. Two credits. First and second semesters. For students of engineering entering in mid-year. Two sections. Associate Professor MILLIMAN in charge.

1b-2b. FRESHMAN COMPOSITION. Two credits. The year. For students in the department of home economics. Three sections. Associate Professor BENHAM, Mr. SAWYER and Mr. WITHERS.

1bA-2bA. SOPHOMORE COMPOSITION. Two credits. The year. For sophomores in the department of home economics. Two sections. Assistant Professor GARRETT, and Miss GREGG.

1c-2c. FRESHMAN COMPOSITION. Two credits. The year. For students in the College of Forestry. Mr. HARRISON.

9-10. ENGLISH VERSE. One credit. The year. Professor PARRINGTON.

A study of the principles of English versification, with practice in verse-writing, and some consideration of present-day poetry.

11-12. ADVANCED PROSE COMPOSITION. Three credits. The year. Associate Professor MILLIMAN.

A course in the art of present-day writing. Current magazines are studied for the writer's attitude towards his reader, for structure and elements of style, and as models of contemporary discourse. By means of long and short themes on timely subjects, the student obtains abundant practice in writing and in self-criticism.

II. LANGUAGE

Primarily for juniors and seniors.

7-8. HISTORICAL ENGLISH GRAMMAR. Two credits. The year. Assistant Professor COX.

A study of the origin and development of the English language, with special reference to the vocabulary, construction, and pronunciation of modern English.

33-34. OLD AND MIDDLE ENGLISH. Three credits. The year. Assistant Professor GARRETT.

The first semester is devoted to the study of the elements of Old English grammar and to the reading of easy texts; the second semester is given over to a rapid and extensive reading in Middle English.

Either course 7-8 or 33-34 is required of candidates for a teacher's certificate in English.

III. INTRODUCTORY COURSES IN ENGLISH LITERATURE

Primarily for freshmen and sophomores.

1d-2d. FRESHMAN LITERATURE. Three credits. The year. Professor PADELFORD.

Literature dealing with the social, educational, scientific and religious questions of the day. Informal discussions, with papers. Intended primarily for freshmen who have been excused from all or part of the required course in composition.

3-4. AN INTRODUCTION TO ENGLISH LITERARY HISTORY. Three credits. The year. Assistant Professor COX and Mr. SAWYER.

A review of the chief periods and writers from the beginnings to the present.

5-6. CONTEMPORARY LITERATURE. Three credits. The year. Assistant Professor DARBY and Mr. CHITTICK.

The reading and discussion of significant works of the past thirty years.

IV. HISTORICAL DEVELOPMENT OF ENGLISH LITERATURE

Primarily for juniors and seniors.

The several courses grouped below are to be considered merely as convenient divisions of the body of English literature. It is urged that the student should conceive of the field as a whole, and plan his elections so as to read through as large a part of the total field as possible.

21. ENGLISH LITERATURE FROM ALFRED TO CHAUCER. Two credits. First semester. Assistant Professor GARRETT.

No knowledge of Old English is necessary, as the earlier texts are read in translation.

22. ENGLISH LITERATURE FROM CHAUCER TO SHAKESPEARE. Two credits. Second semester. Assistant Professor GARRETT.

A study of the late mediaeval and early renaissance literary production. Emphasis is laid upon the literary rather than the linguistic characteristics of the time.

*17-18. SHAKESPEARE. Three credits. The year. Mr. HARRISON.

27-28. THE ENGLISH DRAMA. Three credits. The year. Mr. HARRISON.

A study of important features of dramatic theory and technique, and some of the chief developments of the English drama, with a reading of plays of the several periods.

Courses 17-18 and 27-28 are given in alternate years.

31-32. ENGLISH LITERATURE IN THE EIGHTEENTH CENTURY. Two credits. The year. Assistant Professor DARBY.

A study of the literary and social movements of the period.

13. THE GEORGIAN POETS. Three credits. First semester, Assistant Professor DARBY.

A study of the English romantic movement. Wordsworth, Shelley, Keats and Byron.

14. THE VICTORIAN POETS. Three credits. Second semester. Assistant Professor DARBY.

A study of English poetry since 1830, with special attention to Tennyson and Browning.

25-26. THE NOVEL. Three credits. The year. Associate Professor MILLIMAN.

A study of the movements in English prose fiction, with an analysis of some of the principal works, and a discussion of the problems in ethics and esthetics involved.

*23-24. SOCIAL IDEALS IN ENGLISH LITERATURE. Three credits. The year. Associate Professor BENHAM.

*23a-24a. SOCIAL IDEALS IN SEVENTEENTH CENTURY ENGLISH LITERATURE. Two credits. The year. Associate Professor BENHAM.

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*Not given in 1914-15.

*23b-24b. SOCIAL IDEALS IN NINETEENTH CENTURY ENGLISH LITERATURE. Two credits. The year. Associate Professor BENHAM.

19-20. AMERICAN LITERATURE FROM THE BEGINNING TO 1870. Three credits. The year. Professor PARRINGTON.

A study in the development of national ideals. Emphasis will be laid upon the reflection of theological, political, and social movements in the literature.

19a-20a. AMERICAN LITERATURE SINCE 1870. Two credits. The year. Professor PARRINGTON.

An introduction to current literary movements and ideals in America.

Course 19-20 is intended for those who wish to make a serious study of the body of American literature and of the social forces that produced it; it deals with the chief literary figures down to and including the writers of the New England school. Course 19a-20a is designed for those who care mainly for recent and contemporary work, and deals with such men as Mark Twain, Howells, Riley, Norris, Herrick, and Moody.

19b-20b. GREAT AMERICAN WRITERS. Two credits. The year. Associate Professor MILLIMAN.

A critical study of Longfellow, Lowell, Emerson and Hawthorne.

15-16. COMPARATIVE LITERATURE. Three credits. The year. For men. Mr. JOHANSON.

A comparative study of representative European writers, with a view to cultivating broad literary sympathies and establishing principles of criticism.

29-30. THE FOLK-SONG, BALLAD AND EPIC. Two credits. The year. Assistant Professor COX.

A study of lyrical and narrative forms of poetry, and of the adaptation of folk themes in modern poetry. Illustrated by occasional musical recitals of folk-songs.

35-36. TEACHER'S COURSE. Two credits. The year. Required of major students who wish the recommendation of the department for the normal diploma. Assistant Professor GARRETT, Professor PARRINGTON, Associate Professor MILLIMAN, Mr. CHITTICK.

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*Not given in 1914-15.

A consideration of methods and problems in the teaching of English in the high school.

A. GENERAL SURVEY FOR MAJOR STUDENTS. One credit for the year. Mr. JOHANSON.

Individual conferences with major students for the purpose of guiding them in their reading and correlating their courses in the department. All senior majors will be expected to meet the instructor at least once every two weeks.

V. GRADUATE WORK.

All graduate work is conducted by means of seminars. The time devoted to the meetings is indicated in each case, but the number of credits which a student may elect in a given seminar varies from two to six at option. In every case, however, the number elected must be indicated at the time of enrollment.

*PRO-SEMINAR. THE HISTORY OF ENGLISH LITERATURE. Two Credits. The year. Associate Professor BENHAM.

SEMINAR I. ENGLISH LITERARY HISTORY.

*A. MEDIAEVAL LITERATURE. From the beginnings to 1550. Two credits. The year.

B. ENGLISH LITERATURE FROM 1550 TO 1660. Two credits. The year. Professor PADELFORD.

C. ENGLISH LITERATURE FROM 1660 TO 1830. One credit. The year. Assistant Professor DARBY.

SEMINAR II. AMERICAN LITERARY HISTORY. Two credits. The year. Professor PARRINGTON.

*SEMINAR III. MODERN ENGLISH LITERATURE. Two credits. The year. Associate Professor BENHAM.

SEMINAR IV. COMPARATIVE LITERATURE.

A. THEORIES OF POETRY AND CRITICISM. Two credits. The year. Assistant Professor COX.

B. RENAISSANCE LITERARY TYPES IN ENGLAND, FRANCE AND ITALY. Two credits. The year. Professor PADELFORD.

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*Not given in 1914-15.

SEMINAR V. THE ENGLISH LANGUAGE. Assistant Professor GARRETT.

A. OLD AND MIDDLE ENGLISH. Two credits. The year.

B. PHONETICS. One credit. The year.

*JOINT SEMINAR IN ENGLISH AND EDUCATION. Two credits. The year. Professors LULL and BENHAM.

The subject of this course, intended for seniors and graduate students in English and Education, will be the history of Educational theory and practice in England.

FRENCH

(Denny Hall.)

PROFESSOR FREIN, ASSISTANT PROFESSORS PATZER, ATKIN, RATTI, MR. WHITTLESEY, MR. HELMLINGE, MR. SBEDICO.

REQUIREMENTS OF THE DEPARTMENT

Courses 5-6 and 7-8, 9 and 33-34 are required of majors and of all who wish to be recommended as teachers.

I. FRENCH.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR UNDERGRADUATES			
1	2	Elementary	4	None	M. W. F. S. at 8, 9, 10 or 11; or M. T. Th. F. at 1 or 2.
	1	Elementary	4	None	M. W. F. S. at 8.
2	3	Advanced First year	4	1 Sem. French or 1 yr. H. S.	M. W. F. S. at 8, or M. T. Th. F. at
3	4	Reading and Syntax	4	2	M. W. F. S. at 9, 10, or 11.
4		Reading and Syntax	4	3	M. W. F. S. at 8.
5	6	Classical	3	4	M. W. F. at 10, 11 or 1.
	5	Classical	3	4	M. W. F. at 8.
6		Classical	3	5	M. W. F. at 8.
7	8	Composition and Conv.	3	4	M. W. F. at 9 or 11.
9	9	Phonetics	2	1	T. Th. at 10.

*Not given in 1914-15.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR UNDERGRADUATES AND GRADUATES			
21	22	French Novel	2	6	T. Th. at 1.
23	24	Lyric Poetry	2	6	T. Th. at 10.
25	26	French Drama	2	6	M. W. at 11.
27	28	Lit. 19th Century	2	6	T. Th. at 11.
29	30	Lit. 18 Century	2	6	M. W. at 10.
33	34	Teachers'	2	6 and 8	T. Th. at 9.
		FOR GRADUATES			
51	52	Lit. 16th Century	2	6	T. Th. at 9.
53	54	Middle French	2		T. Th. at 11.
55	56	Old French Reading	4		M. T. Th. F. at 2.
57	58	Old French Literature	2	53-54	T. Th. at 10.

FOR UNDERGRADUATES

1-2. ELEMENTARY. Four credits. The year. Six sections. Students entering for the second semester with one year of preparatory French may take course 2. Assistant professors and instructors.

Fraser and Squair's French Grammar, part 1; Halevy, L'Abbé Constantin; Labiche et Martin, La Poudre aux Yeux; Erckman-Chatrian, Le Conscrit de 1813.

Course 1 is repeated the second semester.

2-3. ADVANCED FIRST YEAR. Four credits. The year. Two sections. Prerequisite, one semester of French in the University or one year in high school. Those who have had three semesters of French in the high school may enter the class at the beginning of the second semester. Mr. HELMLINGE, Dr. PATZER.

3-4. READING AND SYNTAX. Four credits. The year. Four sections. Prerequisite, 2. Assistant professors and instructors.

One section of the class (Section D), devotes the entire time to reading. Those who intend to major in French should enter one of the sections taking syntax. Fraser and Squair's French Grammar, part II. Texts read 1913-1914: Loti, Pêcheur d'Islande; Pailleron, Le Monde où l'on s'ennuie; Daudet, Tartarin de Tarascon; Rostand, Cyrano de Bergerac; Hugo, Les Misérables.

Course 4 is repeated in the first semester. Open to students who have had two years of French in the high school.

5-6. CLASSICAL FRENCH. Three credits. The year. Three sections. Prerequisite, 4. Assistant Professor RATTI and instructors.

Reading of the masterpieces of Corneille, Molière, Racine, Boileau, La Fontaine, La Bruyère, La Rochefoucauld.

Course 5 is repeated the second semester for those who finish course 4 in February, and those who enter at that time with three years of French in high school.

7-8. COMPOSITION AND CONVERSATION. Three credits. The year. Assistant Professor RATTI and Mr. HELMLINGE.

9-9. PHONETICS. Two credits. Repeated second semester. Prerequisite, 1. Assistant Professor ATKIN.

This course is intended to furnish the student an opportunity to acquire a reasonably accurate pronunciation, based upon rules which will give him self assurance in reading ordinary French.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

21-22. THE FRENCH NOVEL. First and second semesters. Two credits. Prerequisite, 6. Mr. HELMLINGE.

History of the French novel from the beginning. Some of the most representative novels will be read in class, and others assigned for outside reading.

23-24. LYRIC POETRY. Two credits. The year. Prerequisite, 6.

History of lyric poetry. Canfield's French Lyrics. Mr. WHITTLESEY.

25-26. THE FRENCH DRAMA. Two credits. The year. Prerequisite, 6. Assistant Professor PATZER.

27-28. HISTORY OF THE FRENCH LITERATURE OF THE NINETEENTH CENTURY. Two credits. The year. Prerequisite, 6. Assistant Professor RATTI.

29-30. HISTORY OF THE FRENCH LITERATURE OF THE EIGHTEENTH CENTURY. Two credits. The year. Prerequisite, 6. Assistant Professor ATKIN.

*31-32. HISTORY OF THE FRENCH LITERATURE OF THE SEVENTEENTH CENTURY. Two credits. The year. Prerequisite, 6.

Lectures in French; assigned reading.

33-34. TEACHERS' COURSE. Two credits. The year. Prerequisites 6 and 8. Professor FREIN.

Special emphasis on the teaching of phonetics; both oral and written exercises. Review of grammar with students conducting the recitations.

FOR GRADUATES

51-52. HISTORY OF THE FRENCH LITERATURE OF THE SIXTEENTH CENTURY. Two credits. The year. Prerequisite, 6. Assistant Professor PATZER.

Lectures in French. Some texts of the sixteenth century will be assigned for outside reading, and some will be read in class. The French Renaissance will be compared with that of other countries.

53-54. MIDDLE FRENCH. Two credits. The year. Professor FREIN.

Lectures on the history of the Fourteenth and Fifteenth centuries will be given in French. Some texts will be read in class, and others will be assigned to be read out of class and reports made to the class.

55-56. OLD FRENCH READING. Four credits. The year. Professor FREIN.

Elements of Old French grammar, and translation from Old French into modern French of some of the texts in Bartsch, Chrestomathie de l'Ancien Francais, and a few of the old texts will be read in complete editions.

57-58. HISTORY OF OLD FRENCH LITERATURE. Two credits. The year. Open only to those who have a reading knowledge of Old French. Those who have had course 53-54 will ordinarily be prepared to follow the work. Course given in French. Professor FREIN.

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*Given in alternate years; not given in 1914-1915.

II. ITALIAN

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR UNDERGRADUATES			
1	2	Elementary	4	None	M. W. F. S. at 9, or M. T. Th. F. at 1.
3	4	Reading and Syntax	2	1-2	T. Th. at 9.
		FOR UNDERGRADUATES AND GRADUATES			
5	6	Dante	2		T. Th. at 10.

1-2. ELEMENTARY. Four credits. Two sections. The year. No student will be allowed to begin Italian and French (or Spanish) the same year. Dr. SBEDICO.

Grammar and reading.

3-4. READING AND SYNTAX. Two credits. The year. Dr. SBEDICO.

Classic and modern texts will be read. Constant practice in conversation.

FOR UNDERGRADUATES AND GRADUATES

5-6. DANTE. Two credits. The year. Dr. SBEDICO.

Selected cantos from the Divina Commedia.

GEOLOGY

(Office, Room 11, Science Hall.)

PROFESSOR LANDES, ASSISTANT PROFESSERS SAUNDERS, WEAVER AND BRETZ, MR. SALISBURY

REQUIREMENTS OF THE DEPARTMENT

(a) For the required 8 credits in biological science in the College of Liberal Arts: Courses 1-2 or 3-4.

(b) For a major: 24 credits in geology with 24 additional credits in the College of Science. Not more than 40 credits may be counted in the major department.

(c) For a teacher's certificate: The same as for a major. It is recommended that those preparing to teach physical geography

in the high school, or those entering the second semester, should take courses 3-4 instead of 1-2.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
1	2	General	4		M. W. F. at 8, or 10, or 11.
		Laboratory			T. or Th., 9 to 11; or T. 1 to 3.
1a		Eng. and Min.	4		T. Th. S. at 9.
		Laboratory			F. 2 to 5.
1b		Eng. and Min.	4		M. W. F. at 1.
		Laboratory			M. 2 to 5.
	1c	Eng. and Min.	4		T. Th. S. at 9.
		Laboratory			Th. 2 to 5.
	1d	Foresters	4		T. Th. S. at 8.
		Laboratory			F. 2 to 5.
1s	2s	Soils	4	1 yr. col. chemistry	M. W. F. at 9.
		Laboratory			W. 1 to 4.
3		Climatology	4		M. W. F. at 9.
		Laboratory			Th. 2 to 4.
	4	Physiography	4		M. W. F. at 9.
		Laboratory			W. 1 to 3.
5		Minerals	3	H. S. or col. chemistry	T. Th. at 11.
		Laboratory			W. 2 to 5.
6		Glacial	2	2 or 4	T. Th. at 8.
	7	Cont. Evolution	2	2 or 4	T. Th. at 8.
8		Physiography U. S.	3	2 or 4	M. W. F. at 11.
	9	Descriptive Mineralogy	4	1 yr. Chem.	T. Th. at 11.
		Laboratory			M. W. 2 to 5.
10		Advanced General	3	2 or 4	M. W. F. at 10.
	11	General Palaeont.	2	Gen. Geol.	T. Th. at 9.
12		Tertiary Forms	2	2	T. Th. at 9.
13		Optical Crystal.	4	9	M. W. at 8.
		Laboratory			M. W. 1 to 4.
14		Washington	2	Gen. Geol.	T. Th. at 10.
	15	Econ. Washington	2	Gen. Geol.	T. Th. at 10.
16		Petrology	3	1a, 9	T. Th. at 1.
		Laboratory			W. 1 to 4.
	17	Petrography	4	9, 13	M. W. at 11.
		Laboratory			M. W. 1 to 4.
	18	Economic	4	1a, 9, 17	M. W. F. S. at 11.
19		Palaeontology	4	2, or 1a	M. W. F. at 11.
		Laboratory			F. 1 to 4.
s	21	Field			To be arranged.
22	23	Advanced Petrography			To be arranged.
24	25	Advanced Palaeontology			To be arranged.
26	27	Research			To be arranged.

COURSES

1-2. GENERAL GEOLOGY. Four credits. The year. Three recitations and one 2 hour laboratory period per week, with occasional one-half day field trips. Laboratory fee $1 per semester. Assistant Professors SAUNDERS and BRETZ.

1a. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Required course for sophomores. Four credits. First semester. Laboratory fee, $1.00. Assistant Professor BRETZ.

1b. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Elective for freshmen. Four credits. First semester. Laboratory fee, $1.00. Assistant Professor BRETZ.

1c. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Four credits. Second semester. Laboratory fee, $1.00. Assistant Professor BRETZ.

1d. GEOLOGY FOR FORESTRY STUDENTS. Four credits. Second semester. Laboratory fee, $1.00. Assistant Professor BRETZ.

1s-2s. SOILS. Four credits. The year. Not accepted for science requirement. Prerequisite, one year college chemistry; laboratory deposit for course, $8, $6 payable the first semester and $2 the second. Credit given only upon completion of entire course. See Chem. 1s and 2s. Professors BENSON, LANDES, KINCAID, and HOTSON.

Treats of the relation of minerals, rocks, topography and climate to soil formation, distribution and classification.

3. CLIMATOLOGY. Four credits. First semester. Three recitations and one laboratory period per week. Laboratory fee $1.00. Assistant Professor SAUNDERS and Mr. SALISBURY.

A general consideration of the climatic elements of the atmosphere.

4. PHYSIOGRAPHY. Four credits. Second semester. Three recitations and one laboratory period per week. Laboratory fee $1.00. Assistant Professor SAUNDERS.

A study of the surface features of the earth with special reference to their origin, development, classification, and relation to geologic structure.

5. COMMON MINERALS AND ROCKS. Three credits. First semester. Two recitations and one laboratory period. Laboratory fee $1.00. Prerequisite, high school or university chemistry. Assistant Professor BRETZ.

6. GLACIAL GEOLOGY. Two credits. First semester. Two lectures or recitations per week. Prerequisites, geology 2 or 4. Assistant Professor BRETZ.

The characteristics of glaciers and the geological work they accomplish.

7. CONTINENTAL EVOLUTION. Two credits. Second semester. Two lectures or recitations per week. Prerequisite, geology 2 or 4. Assistant Professor WEAVER.

Studies in the geological history of sedimentation, volcanic activity, the major earth movements, and geographic changes in the development of the North American continent.

8. PHYSIOGRAPHY OF THE UNITED STATES. Three credits. First semester. Three lectures or recitations per week. Prerequisite, geology 2 or 4. Assistant Professor SAUNDERS.

The development of the physiographic features of the United States and the influences these features have exerted on the history and commercial growth of the country.

9. DESCRIPTIVE AND DETERMINATIVE MINERALOGY. Four credits. Second semester. Two recitations and two laboratory periods per week. For engineering and mining students. Laboratory fee $2.00. Prerequisite, one year of chemistry. Assistant Professor BRETZ.

10. ADVANCED GENERAL GEOLOGY. Three credits. First semester. Three lectures or recitations per week. Prerequisite, geology 2 or 4. Professor LANDES.

The development of geology as a science; its relation to the other sciences; the present lines of growth and research.

11. GENERAL PALAEONTOLOGY. Two credits. Second semester. Two lectures or recitations per week. Some knowledge of general geology is a prerequisite. Assistant Professor WEAVER.

A brief survey of the former animal and plant life of the earth.

12. GEOLOGY AND PALAEONTOLOGY OF THE TERTIARY FORMATIONS. Two credits. First semester. Two lectures or recitations per week. Prerequisite, geology 2. Assistant Professor WEAVER.

A comparative study of the geological history of the continents and the development of life during the Tertiary in its world wide application.

13. OPTICAL CRYSTALLOGRAPHY. Four credits. First semester. Two recitations and two laboratory periods per week. Assistant Professor WEAVER.

14. GEOLOGY OF WASHINGTON. Two credits. First semester. Two lectures or recitations per week. Professor LANDES.

15. ECONOMIC GEOGRAPHY OF WASHINGTON. Two credits. Second semester. Two lectures or recitations per week. Professor LANDES.

16. PETROLOGY. Three credits. First semester. A special course for coal mining men in the College of Mines. Laboratory deposit $2.00. Prerequisites, geology 1a and 9. Assistant Professor WEAVER.

17. PETROGRAPHY. Four credits. Second semester. Two recitations and two laboratory periods per week. Prerequisites, geology 9 and 13. Laboratory deposit $2.00. Assistant Professor WEAVER.

A study of the distinguishing characteristics of the different groups and species of rocks with practice in their determination by modern petrographical methods.

18. ECONOMIC GEOLOGY. Four credits. Second semester. Four recitations per week. Prerequisites, 1a, 9 and 17. Professor LANDES.

19. PALAEONTOLOGY. Four credits. First semester. Three recitations and one laboratory period per week. Chiefly for students in geology and mining. Prerequisites, geology 2 or 1a. Assistant Professor WEAVER.

20-21. FIELD WORK. Hours and credits to be arranged. The year. Professors LANDES, Assistant Professors SAUNDERS and WEAVER.

22-23. ADVANCED PETROGRAPHY. Hours and credits to be arranged. The year. Assistant Professor WEAVER.

24-25. ADVANCED PALAEONTOLOGY. Hours and credits to be arranged. The year. Assistant Professor WEAVER.

26-27. RESEARCH WORK. Hours and credits to be arranged. The year. Professor LANDES, Assistant Professors SAUNDERS and WEAVER.

SPECIAL SHORT COURSES

A. FORESTRY GEOLOGY. A course of twenty lectures on general geology given in January, February and March, to the students in the short course in the College of Forestry. Assistant Professor SAUNDERS.

B. PROSPECTOR'S GEOLOGY AND MINERALOGY. This course is given in January, February and March to the students in the short course for mining men offered by the College of Mines. Assistant Professor WEAVER.

GERMAN

PROFESSOR MEISNEST; ASSISTANT PROFESSORS BOETZKES, HOFF; DR. ECKELMAN, DR. ROLOFF, MR. ERNST, DR. TRESSMANN, MR. ————

REQUIREMENTS OF THE DEPARTMENT

For a major: 24 to 40 credits, including at least two of the following courses: 25, 26, 27, 28.

For the normal diploma: the same as for a major including course 29-30.

Students desiring the recommendation of the department to teach German should include courses 13-14, 15-16, 29-30.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR UNDERGRADUATES			
1	2	First year	4	None	M. W. F. S. at 8, 9, or 10; or M. T. Th. F. at 2.
	1	First year	4	None	M. W. F. S. at 8.
2a	3a	Advanced First Year	4	1, or 1 yr. H. S.	M. W. F. S. at 8; or M. T. Th. F. at 1.
3	4	Second Year	4	2, or 2 yrs. H.S.	M. W. F. S. at 8, 9 or 10; or M. T. Th. F. at 1 or 2.
3s		Second Year	4	For Engineers	M. W. F. S. at 10.
3s	4s	Second Year	4	Sc. students	M. W. F. S. at 9.
4a	5a	Advanced Second Year	4	3, or 3 hrs. H.S.	M. W. F. S. at 9 or M. T. Th. F. at 1.
5	6	Schiller and Goethe	3	4, or 4 yrs. H.S.	M. W. F. at 11 or 2.
7	8	Recent Writers	3	4, or 4 yrs. H.S.	M. W. F. at 11.
9	10	Pedagogical	2	4	W. 4 to 6.
11	12	Scientific	2	4	T. Th. at 9.
13	14	Conversation	2	4	M. W. F. at 8, 10, or 11.
15	16	Composition	2	4	T. Th. at 10 or 11.
17	18	Novel	2	4	Th. 4 to 6.
		FOR UNDERGRADUATES AND GRADUATES			
25		German Literature	3		M. W. F. at 10.
	26	Lyrics and Ballads	3		M. W. F. at 10.
27		Lessing	3		M. W. F. at 11.
	28	Faust	3		M. W. F. at 11.
29	30	Teachers'	2		T. Th. at 11

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR GRADUATES			
43	44	Romantic	3-4		Th. 4 to 6.
45	46	Nineteenth Century	2-4		W. 4 to 6.
51	52	German Language	1		W. at 3.
57	58	Gothic	2		M. 3 to 5.

FOR UNDERGRADUATES

1-2. FIRST YEAR. Four credits. The year. For beginners. Assistant Professor BOETZKES, Dr. ECKELMAN, Mr. ERNST, Dr. TRESSMANN, Mr. ————.

Stage pronunciation, grammar, reading of easy prose and verse and conversation. Students entering the second semester with one year of German in the high school may take course 2. Two semesters must be completed before credit is allowed.

1. FIRST YEAR. Four credits. Second semester. For beginners. Mr. ————.

The same as course 1. Two semesters must be completed before credit is allowed.

2a-3a. ADVANCED FIRST YEAR. Four credits. The year. Prerequisite, one semester or one year high school. Assistant Professor BOETZKES, Dr. TRESSMANN.

Continuation of grammar, reading of modern prose, conversation. Equivalents of 2 and 3.

3-4. SECOND YEAR. Four credits. The year. Prerequisite, 2 or two years high school.

Review of grammar, modern prose, at least one drama by Schiller, Goethe or Lessing during the second semester, conversation.

3s-4s. SECOND YEAR. Four credits. The year. Prerequisite, same as 3-4. Primarily for students in science, engineering and forestry. Two sections, the one for the engineers continuing for the first semester only. Dr. ROLOFF, Mr. ———— .

First semester: review of grammar, modern prose and drama, conversation. Second semester: introduction to scientific German.

4a-5a. ADVANCED SECOND YEAR. Four credits. The year. Prerequisite, 3 or three years high school. Assistant Professor BOETZKES, Mr. ————.

Schiller's Jungfrau von Orleans, Scheffel's Trompeter von Saekkingen, modern prose and dramas.

5. SCHILLER. Three credits. First semester. Prerequisite, 4 or four years high school. Assistant Professor Hoff, Dr. TRESSMANN.

Life and works. Wallenstein. Private reading: Wilhelm Tell or Maria Stuart.

6. GOETHE. Three credits. Second semester. Prerequisite, 4 or four years high school. Assistant Professor Hoff, Dr. TRESSMANN.

Life and works. Goetz von Berlichingen, Egmont and Iphigenie. Private reading Dichtung und Wahrheit.

7-8. RECENT WRITERS. Three credits. The year. Prerequisite, 4 or four years high school. Primarily for students not majors. Mr. ERNST.

Characteristic dramas, novels and lyrics representative of present-day literary movements. Schlaf, Holz, Hauptmann, Sudermann, Fulda, Wolzogen, Schmitzler, Hofmannsthal, Lienhard, Paul Ernst.

9-10. GERMAN PEDAGOGICAL LITERATURE. Two credits. The year. Prerequisite, 4. Dr. ROLOFF.

Schulze: Aus der Werkstatt der experimentellen Psychologie und Paedagogik, educational monographs and periodical literature.

11-12. SCIENTIFIC GERMAN. Two credits. The year. Prerequisite, 4. Dr. ROLOFF.

Scientific essays, monographs and technical periodicals.

13-14. CONVERSATION. Two credits. The year. Prerequisite, 4. Professor MEISNEST, Assistant Professors HOFF, BOETZNES.

Drill in stage pronunciation, conversation and expressive reading. Class work with about half the usual preparation.

15-16. COMPOSITION. Two credits. The year. Two sections. Assistant Professor HOFF, Dr. ECKELMAN.

Grammar and syntax, translations into German, reproductions, letter writing and themes.

17-18. MODERN NOVELS. Two credits. The year. Prerequisite, 4. Dr. ROLOFF.

Sudermann, Keller, C. F. Meyer, Freytag, Hauff, Ludwig.

*19-20. MODERN DRAMA. Two credits. The year Prerequisite, 4. Dr. ROLOFF.

*21-22. WAGNER. Two credits. The year. No language prerequisite. Open to students upon consultation with the instructor. Mr. ERNST.

FOR UNDERGRADUATES AND GRADUATES

25. HISTORY OF GERMAN LITERATURE. Three credits. First semester. Dr. ECKELMAN.

A general survey for students specializing in German. Thomas's German Anthology.

26. LYRICS AND BALLADS. Three credits. Second semester. Dr. ECKELMAN.

Characteristic lyrics and ballads of Goethe, Schiller, Uhland, Geibel, Moerike. Klenze's Deutsche Gedichte.

27. LESSING. Three credits. First semester. Professor MEISNEST.

Life, Emilia Galotti, Nathan der Weise, Hamburgische Dramaturgie or Laokoon.

28. FAUST, PARTS I AND II. Three credits. Second semester. Professor MEISNEST.

Interpretation, genesis, plan and purpose of the drama. Faust legend and Faust theme in literature.

29-30. TEACHERS' COURSE. Two credits. The year. Professor MEISNEST.

First semester: elementary phonetics and practice in stage pronunciation and expressive reading. Second semester: methods of teaching German, course of study for high schools, text-books and aids in teaching, observation.

FOR GRADUATES

*41-42. STORM AND STRESS PERIOD. Two to four credits. The year. Professor MEISNEST.

*Omitted in 1914-1915.

43-44. ROMANTIC SCHOOL. Two to four credits. The year. Professor MEISNEST.

Principal tendencies and characteristics of the early romantic movement in German literature and its relations to the Storm and Stress period. The principal writers studied are Goethe, Jean Paul, A. W. Schlegel, Friedrich Schlegel, Novalis, Wackenroder, Tieck, Brentano and Arnim.

45-46. NINETEENTH CENTURY. Two to four credits. The year. Dr. ECKELMAN.

Study of the drama and novel. Kleist, Grillparzer, Hebbel, Ludwig, Raabe, Keller, Storm, C. F. Meyer.

51-52. HISTORY OF THE GERMAN LANGUAGE. One credit. The year. Assistant Professor HOFF.

*53-54. MIDDLE HIGH GERMAN. Two credits. The year. Assistant Professor HOFF.

*55-56. OLD HIGH GERMAN. Two credits. The year. Assistant Professor HOFF.

57-58. GOTHIC. Two credits. The year. Assistant Professor HOFF.

GREEK

(Denny Hall)

PROFESSOR HAGGETT, ASSISTANT PROFESSORS DENSMORE AND SIDEY

REQUIREMENTS OF THE DEPARTMENT

For a major, at least 24 credits chosen from courses 3 to 12. The following courses may be counted toward the requirement of one year of ancient language and literature. (See p. 81.)

(a) Greek, 1-2 or 3-4.

(b) Latin A-B or 1-2.

(c) Greek civilization and Greek literature. (Greek 13-14.)

(d) Greek civilization and Roman civilization. (Greek 13 and Latin 12.)

(e) Greek literature and Roman literature. (Greek 14 and Latin 13.)

(f) Roman civilization and Roman literature. (Latin 11 and 13.)

(g) Oriental literature—Persian and Indian. (See department of Oriental literature.)

*Not offered in 1914-1915.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
1	2	Elementary	4		M. W. F. S. at 9.
3	4	Homer-Plato	3	1-2	M. W. F. at 9.
		FOR JUNIORS, SENIORS, AND GRADUATES			
5	6	Poetry	2	3-4	T. Th. at 9.
7	8	Lyric and Oratory	2	3-4	T. Th. at 10.
11	12	Advanced Reading	3	5-6	M. W. F. at 8.
17		Antiquities	2		T. Th. at 1.
		OPEN TO ALL			
13		Civilization	3	None	M. W. at 10. (Quiz to be arranged).
	13	Civilization	3	None	T. Th. S. at 10.
14		Greek Literature	3	See statement	M. W. F. at 1.
	14	Greek Literature	3	See statement	M. W. F. at 10.
15		Archaeology	2	None	T. Th. at 9.
	16	Poetry	2	None	T. Th. at 9.
19		History	3		M. W. F. at 2.

COURSES

1-2. ELEMENTARY GREEK. Four credits. The year. Assistant Professor DENSMORE.

3-4. HOMER-PLATO. Three credits. The year. Selections from the Odyssey; Plato's Apology, Crito, and parts of the Phaedo. Prerequisite, 1-2. Professor HAGGETT.

FOR JUNIORS, SENIORS AND GRADUATES

5-6. DRAMATIC POETRY. Two credits. The year. Selected plays from Euripides, Sophocles, and Aristophanes. Prerequisite, 3-4. Assistant Professor DENSMORE.

7. LYRIC POETRY. Two credits. First semester. Selections from the elegaic, iambic, and melic poets. Prerequisite, 3-4. Professor HAGGETT.

8. ORATORY. Two credits. Second semester. Selections from Lysias and Demosthenes. Prerequisite, 3-4. Professor HAGGETT.

*9. EPIC POETRY. Two credits. First semester. Rapid readings of selections from Homer and Hesiod. Prerequisite, 3-4. Professor HAGGETT.

*Omitted in 1914-1915.

*10. HISTORICAL PROSE. Two credits. Second semester. Selections from Herodotus and Thucydidies. Prerequisite, 3-4. Professor HAGGETT.

11-12. ADVANCED READING. Three credits. The year. Prerequisite, 5-6. Professor HAGGETT.

Rapid reading of the entire work (or a considerable portion) of some one author, or extensive work in some one department of Greek literature.

17. GREEK ANTIQUITIES. Two credits. First semester. For classical majors. To be followed by Latin 24. Assistant Professor SIDEY.

13. GREEK CIVILIZATION. Three credits. Either semester. Primarily for freshmen and sophomores. A knowledge of the Greek language is not required. To be followed by Greek 14 or Latin 12. Assistant Professor DENSMORE.

Part of the time will be devoted to the history of the Greek peoples, the remainder to their life and art, under such topics as (a) mythology and religion, (b) public and private life, (c) art and archaeology. Lectures (illustrated by photographs and slides) and collateral reading.

14. HISTORY OF GREEK LITERATURE. Three credits. Either semester. Associate Professor SIDEY and Assistant Professor DENSMORE.

Text-book, lectures, and readings from English translations, with assignments of selected work for special study and periodic written tests. Prerequisite, Greek 13 or at least two years of ancient language. A knowledge of the Greek language is not required. This course is intended to be followed by Latin 13.

15. GREEK ARCHAEOLOGY AND ART. Two credits. First semester. Knowledge of the Greek language is not required. Professor HAGGETT.

After a brief survey of the results of archaeological discoveries up to the present time, the main work of the course will be devoted to a discussion of some of the best examples of Greek architecture, sculpture and vase painting. The discussions will be illustrated by photographs and lantern slides.

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*Not offered in 1914-1915.

16. GREEK POETRY IN ENGLISH TRANSLATION. Two credits. Second semester. Knowledge of the Greek language is not required. Professor HAGGETT.

Lectures, assigned readings and discussions.

19. GREEK HISTORY. Three credits. First semester. See History 3, page 143. Assistant Professor DENSMORE.

HISTORY

(Office, Room 11, Denny Hall)

PROFESSORS MEANY, RICHARDSON; ASSOCIATE PROFESSORS MC MAHON AND BOWMAN; DR. LUTZ; TEACHING FELLOW ————.

REQUIREMENTS OF THE DEPARTMENT

THE EIGHT HOUR REQUIREMENT IN HISTORY may be satisfied by one of the following courses: MEDIEVAL AND MODERN EUROPEAN HISTORY (1-2). It is desirable that this course be selected in fulfilment of the history requirement and that it be taken in the freshman year. Students who enter the university in the second semester may enter this course, with the understanding that they will take the first semester's work in the following year. Juniors and seniors will receive only half credit.

HISTORY OF THE UNITED STATES (7-8). Primarily for sophomores; not open to freshmen except in the case of students in the Law School, or students who are taking work in the College of Liberal Arts to satisfy requirements for entrance to the Law School.

ENGLISH POLITICAL HISTORY (5-6). Primarily for sophomores and juniors; not open to freshmen except those specified in (b) below. To this course, however, course 1-2 is a prerequisite except in the case of (a) students admitted to advanced standing from other colleges and universities; (b) students in the Law School or students who are taking work in the Colleges of Arts and Science to satisfy requirements for entrance to the Law School; (c) majors in English literature and in political science; (d) students who receive the special permission of the instructor in charge of the course.

For a major at least eight credits shall be obtained in the most advanced undergraduate courses. Course 1-2 is required of all history majors. Course 42 does not count toward a major.

It is recommended that all history majors shall take, in excess of the 24 history credits and of the credits formally required in various other departments for graduation, additional work in History, Political and Social Science, Philosophy, Modern Languages, and English Literature.

Courses 3 and 4 are open to all, without prerequisite; courses 7-8, 9-10 and 42 are open, without prerequisite, to sophomores, juniors and seniors. Courses 11-34 inclusive, 39-40, 57-58, 59-60, are open to juniors, seniors and graduate students; but for prerequisites to some of these, see statement of the course. Courses 35-38 inclusive, are open to sophomores, juniors, seniors and graduate students, without prerequisites. Seniors are admitted, by permission, to courses 45-56 inclusive.

Course		Title	Credits	Prerequisites	Time Schedule
		FOR UNDERGRADUATES			
1	2	Medieval and Modern....	4	None.....	M. W. F. S. at 8 or 10; or M. T. Th. F. at 2.
3	4	Greece and Rome.....	3	None.....	M. W. F. at 2.
5	6	English Political	4	See statement	M. W. F. S. at 10.
7	8	United States.....	4	See statement	M. W. F. S. at 9.
9	10	Makers of Nation.....	2	S. standing...	T. Th. at 10.
71		American History.....	4	See statement	M. T. W. F. at 1.
		FOR JUNIORS AND SENIORS			
11	12	English Constitutional...	2	See statement	T. Th. at 8.
	14	Medieval Civilization....	2	1-2.....	T. Th. at 1.
15		Renaissance	3	1-2.....	M. W. F. at 1.
	16	Reformation	3	1-2.....	M. W. F. at 1.
17	18	Prussia	2	1-2.....	T. Th. at 9.
21		French Revolution.....	3	1-2.....	M. W. F. at 9.
	22	Europe since 1814.....	3	1-2.....	M. W. F. at 9.
23	24	Europe since 1870.....	2	1-2.....	T. Th. at 10.
27		Civil War	3	.....	M. W. F. at 8.
	28	National Development....	3	27.....	M. W. F. at 8.
29		Spain in America.....	3	.....	M. W. F. at 10.
	30	Development Pacific.....	3	.....	M. W. F. at 10.
31	32	American Diplomacy.....	2	.....	M. W. at 11.
33	34	Northwestern	2	.....	T. Th. at 11.
35	36	China	2	None.....	T. Th. at 9.
37	38	Japan	2	None.....	T. Th. at 8.
39	40	Colonial	3	.....	M. W. F. at 11.
	42	Contemporary	1	None.....	M. at 4.
43		Teachers'	2	.....	T. at 11.
57	58	International Arbitration	2	.....	T. Th. at 11.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR GRADUATES			
47	48	Hist. Method	1	See statement	To be arranged.
51	52	Seminar in Amer. Hist...	2	See statement	T. 4 to 6.
53	54	Joint Seminar	2	See statement	W. 4 to 6.
55	56	Seminar in Europ. Hist.	2	See statement	Th. 4 to 6.

1-2. MEDIEVAL AND MODERN EUROPEAN HISTORY. Four credits. The year. Associate Professor BOWMAN, Dr. LUTZ.

A general survey of the political, economic and social development of the principal medieval and modern European peoples down to the present time.

3. HISTORY OF GREECE. Three credits. First semester. Assistant Professor DENSMORE.

A general survey of Greek history from the earliest times to the Roman conquest, including some account of the eastern sources of the civilization and of the spread of Hellenism.

4. HISTORY OF ROME. Three credits. Second semester. Assistant Professor DENSMORE.

A survey of Roman history to the fall of the Western Empire. Attention is given to the development of Roman institutions and law.

5-6. ENGLISH POLITICAL HISTORY. Four credits. The year. Open to sophomores, juniors, seniors, and certain classes of freshmen. See requirements. Professor RICHARDSON.

A study of the political, social and intellectual development of the English people from the Saxon conquest to the end of the nineteenth century. Economic developments also receive attention.

7-8. HISTORY OF THE UNITED STATES. Four credits. The year. Open to sophomores, juniors, seniors, and certain classes of freshmen. See requirements. Associate Professor MCMAHON.

A general survey with emphasis upon political history. Lectures, text-book, collateral reading and topics.

9-10. MAKERS OF THE NATION. Two credits. The year. Professor MEANY.

Lectures on the lives of leading Americans with relation to the historic development of their times.

71. AMERICAN HISTORY. Four credits. First semester. Associate Professor MCMAHON.

A brief survey for engineering freshmen only.

FOR JUNIORS AND SENIORS

Students must have had at least one year of history to elect any course in this group except course 42, which is open to sophomores, juniors and seniors without prerequisite, but which does not count for a major.

11-12. ENGLISH CONSTITUTIONAL HISTORY. Two credits. The year. Open to juniors and seniors who have taken or are taking 5-6, and to pre-law students with consent of the instructor. Professor RICHARDSON.

The development of the legal and governmental institutions of the English people to the present time.

14. MEDIEVAL CIVILIZATION. Two credits. Second semester. Prerequisite, 1-2. Associate Professor BOWMAN.

A study of the medieval civilization and culture down to the thirteenth century. Associate Professor BOWMAN.

15. THE RENAISSANCE. Three credits. First semester. Prerequisite, 1-2. Associate Professor BOWMAN.

A study of the origin and development of the Renaissance and its spread among the European peoples.

16. THE REFORMATION. Three credits. Second semester. Prerequisite, 1-2. Associate Professor BOWMAN.

A study of the origin and development of the Reformation, and of its spread among the European peoples.

17-18. PRUSSIA AND NORTHERN EUROPE. Two credits. The year. Prerequisite, 2. Professor RICHARDSON.

This course deals with Sweden as a great power, its rise, progress, and decline; the rise of Russia and Prussia; the partition of Poland; and the beginnings of the Eastern Question. Special attention is paid to the economic, political and military development of the Prussian state from its foundation to the acquisition of world-power by Frederick the Great.

*19-20. HISTORY OF FRANCE FROM THE REFORMATION TO THE FRENCH REVOLUTION.

21. THE FRENCH REVOLUTION AND NAPOLEONIC ERA. Three credits. First semester. Prerequisite, 2. Professor RICHARDSON.

Among the principal topics considered are the following: the material conditions out of which, in France, the Revolution emerged, and the nature of the ideals which inspired it; contemporary conditions in the European states system which facilitated the extension of the Revolution over Europe; the epoch of International Wars, with especial reference to the territorial redistribution of Europe, the beginnings of modern liberalism, and the career of Napoleon.

22. EUROPE SINCE 1814. Three credits. Second semester. Prerequisite, 2. Professor RICHARDSON.

Mainly political, introductory to European politics of the present time. The course deals with the fundamental principles and policies of the Era of Reaction under Metternich and the subsequent triumph of liberalism. The chief emphasis is laid upon the establishment of constitutional government and national unity in Germany, Italy and the other states of Western Europe, and upon the careers of great leaders, notably Bismarck and Cavour.

23-24. EUROPE SINCE 1870, AND CONTEMPORARY EUROPE. Two credits. The year. Prerequisite, 2. Dr. LUTZ.

The first part of the course, based upon the study of contemporary histories, is introductory to the latter part, which is based upon the use of current periodicals, newspapers and other publications. Scientific methods of research are applied to the study of current historical events.

*25. HISTORY OF THE UNITED STATES, 1787-1828. Three credits. First semester. Associate Professor MCMAHON.

*26. HISTORY OF THE UNITED STATES, 1828-1860. Three credits. Second semester. Associate Professor MCMAHON.

27. CIVIL WAR AND RECONSTRUCTION. Three credits. First semester. Associate Professor MCMAHON.

A general study of the Civil war and the period of reconstruction.

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*Not given in 1914-15.

28. THE HISTORY OF NATIONAL DEVELOPMENT. Three credits. Second semester. Associate Professor MCMAHON.

A continuation of course 27, in which the development of the American nation will be traced from the close of the reconstruction period to the present time.

29. SPAIN IN AMERICA. Three credits. First semester. Professor MEANY.

A study of the rise and fall of Spanish power in the new world, and an outline of the history of the Spanish-American republics.

30. DEVELOPMENT OF THE PACIFIC. Three credits. Second semester. Professor MEANY.

History of the countries bordering upon the Pacific ocean, with special reference to the changes now in progress of development.

31-32. HISTORY OF AMERICAN DIPLOMACY. Two credits. The year. Professor MEANY.

A study of the treaties and foreign policy of the United States. Open to those who have taken a narrative course in American history.

33-34. NORTHWESTERN HISTORY. Two credits. The year. Professor MEANY.

From the earliest voyages to the settlement and organization of the territories.

35. THE EVOLUTION OF CHINA—TO THE MANCHU CONQUEST. Two credits. First semester. Professor GOWEN.

36. THE EVOLUTION OF CHINA—MODERN ERA. Two credits. Second semester. Professor GOWEN.

37. THE EVOLUTION OF JAPAN—FEUDAL ERA. Two credits. First semester. Professor GOWEN.

38. THE EVOLUTION OF JAPAN—MODERN ERA. Two credits. Second semester. Professor GOWEN.

39-40. ECONOMIC AND SOCIAL HISTORY OF THE AMERICAN COLONIES. Associate Professor MCMAHON.

42. CONTEMPORARY HISTORY. One credit. Second semester. Associate Professor BOWMAN, and other members of the history and other departments.

A lecture course dealing with various historical questions of the world of the present and immediate past.

43. METHODS OF TEACHING HISTORY. Two credits. First semester. Required of advanced students who expect to teach history. Associate Professor BOWMAN.

Text-books, assigned readings, courses of study and methods of presentation will be considered.

57-58. THE DEVELOPMENT OF INTERNATIONAL ARBITRATION AND CONCILLIATION. Two credits. The year. Dr. LUTZ.

A course of lectures and readings which exhibits the historical development of movements for international peace and which discusses the effects of war and the possibility of guaranteeing peace between nations.

*59-60. HISTORY OF ENGLAND SINCE THE ACCESSION OF GEORGE III. Two credits. The year. Prerequisite, 2 or 5-6. Dr. LUTZ.

GRADUATE COURSES

*45-46. HISTORIOGRAPHY. One credit. The year. Open to graduate students and to seniors by permission. Associate Professor BOWMAN.

47-48. METHODS OF HISTORICAL RESEARCH AND CRITICISM. One credit. The year. Open to graduates and a few seniors by permission. Time to be arranged. Professor RICHARDSON.

Study and discussion of the principles of historical criticism, accompanied with practical exercises with selected documents from various fields to illustrate problems of criticism. Exercises in this course may occasionally exceed the usual length of the class room hour.

*49-50. SEMINAR IN ENGLISH HISTORY. Two to four credits. The year. Open to graduates and a few seniors by permission. Professor RICHARDSON.

51-52. SEMINAR IN AMERICAN HISTORY. Two credits. The year. Associate Professor MCMAHON.

This course is primarily for graduates or other advanced students who may be admitted by permission.

*Not offered in 1914-1915.

53-54. JOINT SEMINAR. Two credits. The year. Open to graduate students and to a limited number of seniors on recommendation of their major professors. Professors MEANY, SMITH and CONDON.

Designed for study and reports upon the problems in the historical, political, and legal developments of the State of Washington and the Pacific Northwest.

55-56. SEMINAR IN EUROPEAN HISTORY. Two credits. The year. Quailified seniors may be admitted. Associate Professor BOWMAN.

HOME ECONOMICS

(Office, Home Economics Building)

ASSOCIATE PROFESSOR RAITT; ASSISTANT PROFESSOR DENNY; MISS CRUDEN, AND MISS ROTHERMEL.

Courses pertaining to the home are offered as part of a liberal education, as vocational training, and for the purpose of preparing teachers of home economics for high schools and colleges.

Students who major in other departments of the University may elect a maximum of 24 credits in the department of home economics.

Students in the College of Science may major in the department of home economics and will receive the degree of bachelor of science.

Students in the College of Liberal Arts may major in the department of home economics and will receive the degree of bachelor of arts.

Students who expect to teach should follow the prescribed course which leads to the degree of bachelor of science in home economics. Graduates of the girls' manual arts course prescribed by the state board of education are admitted to this course without condition.

Course No.	Title	Credits per Semester	Prerequisites	Time Schedule
	FOR UNDERGRADUATES			
A B	General	.....	None.....	T. Th. at 8.
	Laboratory	.....	.....	W. 1 to 4.
2	Foods	2	Chem. 1c.....	M. F. 8 to 10; W. S. 8 to 10; T. F. 10 to 12; Th. S. 10 to 12.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
	2	Foods	2	Chem. 1c	M. F. 8 to 10 or 10 to 12; W. S. 8 to 10 or 10 to 12.
3		Selection and Preparation	4	See statement	M. W. at 9.
		Laboratory			M. W. 10 to 12, or M. F. 1 to 3 or 3 to 5; T. Th. 3 to 5.
	3	Selection and Preparation	4	See statement	T. Th. at 9.
		Laboratory			T. Th. 10 to 12 or 1 to 3; or M. F. 3 to 5.
4		Experimental	2	3	T. Th. 1 to 3 or M. F. 3 to 5.
	4	Experimental	2	3	M. F. 8 to 10 or 1 to 3; or T. Th. 1 to 3 or 3 to 5.
5		Clothing	2	None	T. Th. 10 to 12 or 1 to 3; or W. S. 10 to 12.
	5	Clothing	2	None	T. Th. 1 to 3.
8		Clothing	4	5, or 2 yrs. H.S.	W. at 1.
		Laboratory			M. F. 1 to 3; W. 2 to 4.
	8	Clothing	4	5, or 2 yrs. H.S.	W. at 1.
		Laboratory			M. W. F. 8 to 10 or 10 to 12; or T. Th. S. 10 to 12.
9	10	Clothing	3	8	M. F. 2 to 5.
11		Needlework	2	8	M. F. 3 to 5.
	12	Needlework	2	11	M. F. 1 to 3.
	14	Nutrition	4	2, Chem. 1c-2c	T. Th. 9 to 12.
18		Millinery	2	5	M. F. 10 to 12.
	18	Millinery	2	5	T. Th. 8 to 10.
20		Laundering	2	Chem. 1c-2c	T. Th. 8 to 10.
	22	Decoration	3	Design	M. W. F. at 10.
27	28	Teachers'	2	3, 8, 15, 22, 24, & Educ. 1	M. W. at 11.
32		Economics of Clothing	3		M. W. F. at 9.
33		Costume	2	Design	T. Th. 10 to 12.
		FOR UPPERCLASSMEN AND GRADUATES			
15		Nutrition	4	3, Chem. 3c & 20a	T. Th. at 9.
		Laboratory			T. Th. 10 to 12.
	16	Nutrition	4	15	T. Th. at 1.
19		Home Nursing	2	2; 14 or 15	W. at 1.
		Laboratory			W. 2 to 4.
	24	House. Management	3	1 or 15 & Pol. Sci. 26	M. W. F. at 10.
25	25	Textiles	3	Chem. 1c-2c	T. Th. at 1.
		Laboratory			T. 2 to 4.
29		Food Problems	3	14 or 15	M. W. F. at 9.
31		Survey	2		M. W. at 10.
	35	Costume Design	2	Design 33	T. Th. 10 to 12.

FOR UNDERGRADUATES

A-B. GENERAL COURSE. The year. No prerequisites. Laboratory deposit $3. Associate Professor RAITT, Assistant Professor DENNY, Miss ROTHERMEL, Miss CRUDEN.

This course is planned for those students who will elect no other work in this department. It will include consideration of the selection, decoration and furnishing of the house. The organization of the household. The principles of food selection and preparation. Elements of nutrition. A study of textiles and clothing. Home care of the sick.

2. FOODS: PRINCIPLES AND PRACTICE OF FOOD PREPARATION. Two credits. Second semester. Prerequisite or parallel, chemistry 1c. Laboratory deposit $4. Miss ROTHERMEL.

Nature and use of food. Changes produced by heat, cold and fermentation upon typical food materials. Practice in fundamental cooking processes. Course 2 in 1914-15 will also be given in the first semester.

3. FOODS: SELECTION AND PREPARATION. Four credits. First semester. Prerequisite, home economics 2 or two years high school domestic science; chemistry 1c. Prerequisite or parallel, chemistry 2c. Laboratory deposit $4. Miss ROTHERMEL.

Continuation of course 2. Economic aspect of, selection and preparation of food. Production and manufacture of food, its nutritive value. Two lectures. Course 3 will in 1914-15 be repeated in the second semester.

4. FOODS: COMPARATIVE STUDIES OF FOOD MATERIALS AND COOKING PROCESSES. Two credits. Second semester. Prerequisite, home economics 3. Laboratory deposit $4. Miss ROTHERMEL.

Consideration of possible variations in fuels, utensils, methods and materials with reference to economy of time and labor and to nutritive value. Course 4 in 1914-15 will also be given in the first semester.

5. CLOTHING: PRINCIPLES OF HAND AND MACHINE SEWING. Two credits. First semester. Laboratory deposit $1. Assistant Professor DENNY, Miss CRUDEN.

Use and care of machines. Study of materials and design. Principles of construction. Comparison of home made and commercial clothing. Problem: garment making.

8. CLOTHING: SELECTION AND CONSTRUCTION. Four credits. Second semester. Prerequisite, home economics 5 or two years high school. Laboratory deposit $1.50. Assistant Professor DENNY, Miss CRUDEN.

Economic, hygienic and aesthetic aspects of dress. Adaptation of patterns, drafting. One lecture per week. Problem: shirt waist, simple gowns. Course 8 in 1914-15 will also be given in the first semester.

9-10. CLOTHING. Continuation of course 8. Three credits. The year. Prerequisite, home economics 8. Laboratory deposit $1. Assistant Professor DENNY, Miss CRUDEN.

Problem: lined dresses, draping. Consult instructor before electing.

11-12. NEEDLEWORK. Two credits. The year. Prerequisite 8. Laboratory deposit $1. Miss CRUDEN.

History and art of needlework, history of lace. Problems: marking of household linens, decorative stitches, fine mending. Consult instructor before electing.

14. NUTRITION: ELEMENTARY DIETETICS. Four credits. Second semester. Prerequisite or parallel, chemistry 1c-2c, home economics 2. Laboratory deposit $3. Associate Professor RAITT.

Functions and nutritive value of food. The fate of the foodstuffs in the body. Dietary standards. Computing of dietaries. Infant feeding. Two lectures per week. The course is designed for those students who wish to obtain a practical knowledge of nutrition as part of a liberal education but who are not preparing to teach the subject.

18. MILLINERY. Two credits. Second semester. Prerequisite, home economics 5. Laboratory deposit $1. Also given in the first semester 1914-15. Miss CRUDEN.

Study of trade conditions. Consideration of materials, suitability and cost. Problem: designing and drafting patterns for hats. Construction of types of frames. Coverings and trimmings.

20. LAUNDERING AND DYEING. Two credits. First semester. Prerequisite, chemistry 1c-2c. Laboratory deposit $2. Miss CRUDEN.

Principles and processes of laundering and dyeing.

22. HOME DECORATION. Three credits. Second semester. Prerequisite, design. Assistant Professor DENNY.

Study of color, space and line, and their application to home decoration. Economic and artistic problems of furnishing. Two lectures per week.

27-28. TEACHERS' COURSE. Two credits. The year. Prerequisite, home economics 3, 8, 15, 22, 24 and education 1. Associate Professor RAITT, Assistant Professor DENNY.

Curricula, methods of teaching, and equipment. Organization of courses of study in foods, nutrition, textiles, clothing, and the home. Adaptation to different grades and types of schools. Practice teaching. Two lectures per week.

32. ECONOMICS OF CLOTHING. Three credits. First semester. Elective. Assistant Professor DENNY.

The evolution of dress, its economic and psychological importance. Hygienic and artistic consideration in clothing. Comparative study of factory made, modiste and home made clothing Clothing budgets for various classes and incomes. Economic and sociological phases of the clothing industry. Three lectures per week.

33. COSTUME DESIGN. Two credits. First semester. Prerequisite, design. Assistant Professor DENNY.

Development of fashion from aucient times to the present with emphasis upon the best art periods. Study of historic textiles. Designing of costumes based upon this historic study and the principles of design and color harmony.

FOR UPPERCLASSMEN AND GRADUATES

15. NUTRITION. Dietetics. Four credits. First semester. Prerequisites, home economics 3, chemistry 3c, chemistry 20a. Laboratory deposit $3. Associate Professor RAITT.

Principles of human nutrition. Application to needs of individuals and groups under varying conditions. Dietary standards. Method of computing dietaries. Two lectures per week.

16. NUTRITION. Continuation of course 15. Two credits. Second semester. Prerequisite, home economics 15. Associate Professor RAITT.

Study of the development of the science of nutrition. Review of present status. Original sources. Library research. Two lectures per week.

19. HOME NURSING. Two credits. First semester. Prerequisites, home economics 2 and 14 or 15. Laboratory deposit $2. Miss ROTHERMEL.

Emergencies, first aid, and simple procedure in home care of the sick. Planning and serving meals adapted to the needs of the sick and convalescent. One lecture per week.

24. HOUSEHOLD MANAGEMENT. Three credits. Second semester. Prerequisites, home economics 14 or 15 and political science 26. Associate Professor RAITT.

Organization of the household. The budget and its apportionment. Housewifery. Application of the principles of scientific management to the household.

25. TEXTILES. Three credits. Either semester. Prerequisite, chemistry 1c-2c. Laboratory deposit $1. Assistant Professor DENNY.

Evolution of spinning and weaving. Study of wool, cotton, silk, linen, and minor textile fibers from raw product to finished material, including hygienic, economic and aesthetic considerations. Laboratory work in the identification of fabrics. Physical, chemical and microscopic tests. Two lectures per week.

29. SPECIAL FOOD PROBLEMS. Three credits. First semester. Prerequisite, home economics 14 or 15. Laboratory deposit $1. Associate Professor RAITT.

Marketing, cold storage, dietaries, adulterations, preservatives. A consideration of food habits. Given to seniors only. Three lectures.

31. GENERAL SURVEY. Two credits. First semester. Associate Professor RAITT.

The social, economic and educational function of the household, traced from primitive ages to modern times. Modern movements that affect the home. The functions and ideals of the home. The home economics movement. Two lectures per week.

35. ADVANCED COSTUME DESIGN. Continuation of course 33. Two credits. Second semester. Prerequisites, design, home economics 33.

Modification of extreme fashions. Choice of design and color to meet requirements of the individual.

HYGIENE

(See Physical Training)

ITALIAN

(See French)

JOURNALISM

(Education Building)

PROFESSOR KANE, MR. GETZ, MR. KENNEDY, MR. AGNEW.

Men and women planning to go into newspaper work are provided with a course of study especially designed to help to qualify them for journalism. Practical journalism is studied, the studies following as closely as feasible the work in a newspaper office. Every effort is made to reproduce as faithfully as is possible within the limits of a collegiate curriculum the conditions under which newspapers are produced. To this end certain equipment is maintained, certain methods practiced, and certain relations induced.

A well-equipped printing department, organized on efficiency principles, offers a wide range of laboratory function for the students of journalism. The University of Washington Daily's staff is open to the competitive efforts of the students. The department receives a daily telegraphic report through the United Press Association's service, and this is utilized for practice in editing, copy-reading, head-writing, and re-writing. Through the courtesy of the Seattle Times, the department has access to one page of the Sunday edition, the material for which is written and edited and made up by students in the department. All the leading daily and weekly newspapers, the state over, have regular correspondents, most of them chosen from the ranks of the students of journalism, who cover the news of the University for them. The instructional staff of the department is supplemented by a score of non-resident lecturers, who are in active newspaper work, in the different departments of newspaper production and direction.

The work in journalism, as arranged through a reorganization effected in 1913, is a set course. It is divided into editorial and advertising and business administration sections. This division is made to permit specialization by the student on those studies which will contribute most directly toward qualifying him for the phase of newspaper work which he intends to enter. The

student who contemplates entering the editorial room of the newspaper, to begin as a reporter, with the hope of working up to one of the executive or editorial writing positions, will take the editorial section of the course. The student who intends to enter the business office of the newspaper, to begin as advertising solicitor or circulation assistant, will take the advertising and business administration section. Both sections begin with the same study—the Elements of Journalism—then diverge into specialization, and return, to meet in a general study of newspaper policy and the institution of the newspaper. Within the editorial section there are some electives which allow for the finer specialization, between the capacity for editing and making-up and the capacity for writing.

The set course, without regard for this division into sections, requires the student to present for graduation with the degree of bachelor of arts, 128 credits, plus the usual eight credits required in Military Science and Tactics, Hygiene, or Physical Training. The student is required to designate his major in the department, and his election as between the divisions, at the beginning of the sophomore year. The minimum number of credits which a student may present in journalistic studies for the satisfaction of the major is 36, and the maximum number of credits in journalistic studies which he may present for graduation with the degree of bachelor of arts is 36. If the student wishes to take more journalistic studies than those which total 36 hours, he may take them, but the credit earned in them will not apply toward a bachelor of arts degree.

In arranging this curriculum such reinforcing subjects were prescribed as are most profitable in developing that broad scholarship, which, in addition to his technical training, will help the graduate to meet the requirements of modern newspaper work. These subjects seek especially to familiarize the student with social, political and industrial conditions of the times.

No deviation from the requirements established for the Bachelor of Arts degree, except those indicated in the set course, will be permitted, and the system of prerequisites adopted for the journalistic studies will be adhered to rigidly in the interest of class efficiency.

The curriculum will be found on page 86.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
1	2	Elementary	3	27-28 Concur't	M. W. F. at 8.
2	1	Elementary	3		M. W. F. at 10.
3	4	Editing	3	1-2, 27-28	M. W. F. at 8.
5	6	Features	2	1-2, 3-4, 27-28	T. Th. at 8.
7		History and Principles	2	1-2, 3-4, 27-28	T. Th. at 9.
	10	Newspaper Jurisprudence	2	1-2, 3-4, 27-28, or 1-2, 21-22, 27-28	To be arranged.
11	12	Editorial	3	1-2, 3-4, 27-28, & 5-6, or 7, or 17-18	M. W. F. at 9.
13	14	Policy	3	See statement	M. W. F. at 10.
17	18	Short Story	3	1-2, 3-4, 27-28	M. W. F. at 2.
21	22	Principles Advertising	3	1-2, 27-28	M. W. F. at 9.
23	24	Advanced Advertising	2	1-2, 27-28, 21-22	T. Th. at 10.
25		News. Administration	3	1-2, 21-22, 23-24, 27-28, 29-30	M. W. F. at 11.
	26	Newspaper Revenue	3	25	M. W. F. at 11.
27	28	Printing	1		M. at 3.
29	30	Business Administration.	2	1-2, 21-22, 27-28	T. Th. at 3.

1-2. ELEMENTS OF JOURNALISM. Three credits. The year. Laboratory deposit two dollars. Professor KANE.

Reporting; definition and study of the news story and the feature story; general survey of field, with some consideration of news sources and services; assignments, required reading. Journalism 27-28 required in conjunction.

2-1. A class in Elements of Journalism is begun at the opening of the second semester, and the work carried through for a year as in 1-2. Mr. GETZ.

3-4. EDITING. Three credits. The year. Prerequisite, Journalism, 1-2 and 27-28. Mr. GETZ.

Copy reading; head writing; evaluation of news; advanced news and feature story; correspondence, with special attention to the preparation of queries and the handling of district, state or sectional news. Assignments, required reading. The United Press daily telegraphic report is furnished for the especial use of this class.

OPEN TO JUNIORS AND SENIORS

5-6. FEATURES AND EXCHANGES. Two credits. The year. Prerequisite, Journalism 1-2, 3-4, 27-28. Mr. GETZ.

Rewriting; handling of "grapevine;" syndicate matter; Sunday stories; special editions; sport extras; "society," and other departmental concerns. Assignments, required reading. Elective.

7. HISTORY AND PRINCIPLES OF JOURNALISM. Two credits. First semester. Prerequisite, Journalism 1-2, 3-4, 27-28. Mr. GETZ.

A study of the development of Journalism; the services performed by the press in different periods, and its standards and ideals in each such period; the part taken by the newspaper in large social and political movements. Inseparable from this is a review of the lives of those individual editors and publishers who have left their impress on journalism. Elective.

10. NEWSPAPER JURISPRUDENCE. Two credits. Second semester. Prerequisite, Journalism 1-2, 3-4, 27-28; or Journalism 1-2, 21-22, 27-28. Mr. ————.

Libel and copyright laws; laws governing publication of advertisements; Federal statutes requiring publicity as to ownership, circulation, etc.

11-12. EDITORIAL. Three credits. The year. Prerequisite, Journalism 1-2, 3-4, 27-28, and 5-6 or 7 or 17-18. Professor KANE.

News interpretation; study of the editorial styles of leading daily and weekly publications; close consideration of current tendencies and movements in politics, science, literature and art, with an attempt to trace their origins and determine their influence. Practice in the writing of editorials; preparation of weekly resume of the news.

13-14. NEWSPAPER POLICY. Three credits. The year. Prerequisite, Journalism 1, 2, 3, 4, 10, 11, 12, 27, 28, and one of the elective courses, 5-6, 7, or 17-18; or, if student of advertising, Journalism 1, 2, 21, 22, 23, 24, 27, 28, 29, 30. Professor KANE.

Definition; formulation of a general policy; expression of such policy in specific applications; consideration of the policies (so far as they are manifest) of leading dailies and weeklies; "campaigns."

*15-16. THE NEWSPAPER. Two credits. The year. Prerequisite, the same as for 13-14. Professor KANE.

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*Not given in 1914-15.

17-18. THE SHORT STORY. Three credits. The year. Prerequisite, Journalism 1, 2, 3, 4, 27, 28. Mr. GETZ.

Practical instruction in producing and marketing the modern short story; a critical appreciation of the short story and its place in literature. Evolution of the short story. Consideration of story material. Analysis of dramatic narrative. Study of the types of story. Lectures, class exercises and writing. Elective.

*19-20. CARTOONING AND ILLUSTRATING. Two credits. The year. Prerequisite, Journalism 1, 2, 27, 28. Mr.————

ADVERTISING

21-22. PRINCIPLES OF ADVERTISING. Three credits. The year. Prerequisites, Journalism 1, 2, 27, 28. MR. AGNEW.

Underlying principles of salesmanship and advertising. General methods of distribution. Technical structure of advertisements, with much practice in writing copy and in laying out for compositor. Mapping campaigns for each system of distribution, with consideration of best media. Mapping similar campaigns for retailers. Open to juniors and seniors.

23-24. ADVANCED ADVERTISING. Two credits. The year. Prerequisite, Journalism 1, 2, 27, 28, 21, 22. Mr. AGNEW.

Critical study of some representative national compaigns. Extended study in mapping national campaigns, railway, insurance, state, municipal and specialties, with analytical examination of current advertising. Agency work, and a study of the expense of different methods per unit of population, estimating results of given expenditure, and the percentage of selling price that can be spent on advertising. Each member of the class will be assigned to a special problem for examination, and required to prepare a thesis on its solution. Journalism 29-30 to be taken in conjunction.

25. NEWSPAPER ADMINISTRATION. Three credits. First semester. Prerequisite, Journalism 1, 2, 21, 22, 23, 24, 27, 28, 29, 30. Mr. AGNEW.

The field of daily, weekly and trade journal. Equipment. Mechanical get-up of paper. Files. Organization. News sources.

26. NEWSPAPER REVENUE. Three credits. Second semester. Prerequisite, Journalism 1, 2, 21, 22, 23, 24, 27, 28, 29, 30, 25. Mr. AGNEW.

Advertising. Circulation. Commercial printing department.

PRINTING

27-28. THE MECHANICS OF PRINTING. One credit. The year. One lecture and two laboratory hours a week. Laboratory deposit two dollars. Mr. KENNEDY.

Instruction in faces and type value in relation to heads and advertising. Proof reading. Printer's technical terms. Copyright laws. History and use of paper. Engravings. Practice work on University of Washington Daily.

OPEN TO JUNIORS AND SENIORS

29-30. BUSINESS ADMINISTRATION. Two credits. The year. Two lectures and one laboratory hour a week. Laboratory deposit, two dollars. Mr. KENNEDY.

Cost finding. Estimating. Simplified accounting. Office management. Buying and selling. Efficiency. These subjects are intended for students who enter the newspaper field with the prospect of becoming owners, publishers, managers, and the work is confined to the printing profession. These courses are to be taken in conjunction with courses as indicated in editorial and advertising studies. Prerequisite, Journalism 1, 2, 27, 28, 21, 22. This course is elective except as required.

LATIN.

(Office, Room 28, Denny Hall.)

PROFESSOR THOMSON, ASSOCIATE PROFESSOR SIDEY, DR. CLARK

REQUIREMENTS FOR A MAJOR

1. Four years of preparatory Latin.

2. One year of Greek. Students are strongly urged to present at least two.

3. Courses 1, 2, 3, 4, 24, 25, 26, and others to the amount of at least eight credits.

For the normal diploma with Latin as a major, courses 1, 2, 3, 4, 9, 10, 24 25-26, must be taken.

The requirement of one year's work in ancient language and literature may be satisfied by:

a. Greek civilization and Roman civilization (Gr. 13, Lat. 12).
b. Greek civilization and Greek literature (Gr. 13 and 14).
c. Greek literature and Roman literature (Gr. 14 and Lat. 13).
d. Roman civilization and Roman literature (Lat. 11 and 13).
e. Courses A-B, C-D, or 1-2.
f. Greek 1-2 or 3-4.
g. Oriental literature—Persian and Indian.

Courses A-B, and C-D do not count toward the major of 24 hours. If taken to satisfy entrance requirements they count each as one unit.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR UNDERGRADUATES			
A	B	Cicero	4		T. Th. S. at 10 and a fourth hour to be arranged.
1	2	Cicero and Plautus	4	4 yrs. Latin	M. W. F. S. at 8 or 10.
3	4	Catullus and Tacitus	3	1-2	M. W. F. at 10.
		FOR JUNIORS, SENIORS, AND GRADUATES			
5	6	Pliny and Tacitus	2	3-4	T. Th. at 11.
9	10	Teachers'	3	5-6 or 7-8	M. W. F. at 11.
	24	Antiquities	2		T. Th. at 1.
		FOR GRADUATES			
18	19	Lucretius and Cicero	2		T. Th. at 9.
20	21	Quintilian and Tacitus	2		T. Th. at 10.
22		Latin of Empire	2		M. W. at 11.
	23	Tacitus	2		M. W. at 11.
		OPEN TO ALL			
11		Civilization	3		M. W. F. at 9.
	12	Civilization	3		M. W. F. at 10.
	13	Literature	3	2 yrs. Latin	M. W. F. at 1 or 9.
13		Literature	3	2 yrs. Latin	M. W. F. at 10.
	15	History	3		M. W. F. at 2.
16	17	Law	4	2 yrs. Latin	M. W. F. S. at 9.
25	26	Composition	2	4 yrs. Latin	T. Th. at 9.

A. CICERO. Orations. Four credits. First semester. Dr. CLARK.

B. CICERO. Orations. Four credits. Second semester. Dr. CLARK.

*C. VERGIL. Aeneid. I-III. Four credits. First semester. Dr. CLARK.

*D. VERGIL. Aeneid. IV-VI. Four credits. Second semester Dr. CLARK.

1. CICERO. De Senectute. SALLUST, Catiline. Four credits. First semester. Primarily for freshmen. Professor THOMSON, Dr. CLARK.

2. PLAUTUS. Captivi and Trinummus. TERENCE, Adelphi. Four credits. Second semester. Professor THOMSON, Dr. CLARK.

Prerequisite for 1 and 2, four years of preparatory Latin.

3. CATULLUS, HORACE, OVID. Three credits. First semester. Primarily for sophomores. Prerequisite, 1-2. Associate Professor SIDEY.

4. TACITUS. Germania. LIVY, Book I. Three credits. Second semester. Prerequisite, 1-2. Associate Professor SIDEY.

JUNIORS, SENIORS AND GRADUATES

5. PLINY, Letters. MARTIAL, Selected Epigrams. Two credits. First semester. Prerequisite, 3-4. Professor THOMSON.

6. TACITUS, Annals. JUVENAL, Satires. Two credits. Second semester. Prerequisite, 3-4. Professor THOMSON.

9-10. TEACHERS' COURSE. Three credits. The year. Prerequisite, 5-6 or 7-8; or may be taken along with either of these. Associate Professor SIDEY.

Selected portions of Caesar. Bell. Gall. V-VII and Bell. Civile; Suetonius, Julius Caesar; Cicero's Letters; Vergil, Bucolics and Georgics; Ancient Lives of Vergil. Review of the Caesar, Cicero and Vergil usually read in high schools. Methods of teaching Latin and discussion of the problems likely to arise in the classroom. Teaching by members of the class, under the supervision of the instructor. Visits to schools where Latin is taught and reports on the teaching observed.

24. ROMAN ANTIQUITIES. Two credits. Second semester. For classical majors. To follow Greek 17. Associate Professor SIDEY.

*Not offered in 1914-1915.

FOR GRADUATES

18. LUCRETIUS. Books I and III; CICERO, Tusculan Disputations I and IV. Two credits. First semester. Professor THOMSON.

19. CICERO. De Officiis. SENECA, Moralia. Two credits. Second semester. Professor THOMSON.

20. QUINTILIAN. X, XII. Two credits. First semester. Associate Professor SIDEY.

21. TACITUS. Histories I, II. Two credits. Second semester. Associate Professor SIDEY.

22. LATIN OF THE EMPIRE. Gudeman's Selections. Two credits. First semester. Professor THOMSON.

23. TACITUS, Dialogus. QUINTILIAN, Book I. Two credits. Second semester. Professor THOMSON.

OPEN TO ALL STUDENTS

11. ROMAN CIVILIZATION. Three credits. First semester. Dr. CLARK.

This course is designed to give a clear notion of the part played in history by the Romans and to set forth their contributions to civilization in general. A general survey of Roman history will serve as a basis for the discussion of the religious, political and legal systems of the Romans, their literature and art, and their family life. Lectures (illustrated, when possible, by slides) and collateral reading.

12. ROMAN CIVILIZATION. Course 11 repeated. Three credits. Second semester. Dr. CLARK.

13. HISTORY OF ROMAN LITERATURE. Three credits. First semester. Prerequisite, two years of Latin. Associate Professor SIDEY, Dr. CLARK.

Mackail's Latin Literature, supplemented by lectures and collateral reading. Illustrative selections from English versions of the more important authors.

Course 13 is repeated in the second semester.

15. ROMAN HISTORY. See history 4. Assistant Professor DENSMORE.

16-17. ROMAN LAW. Four credits. The year. (Law Latin and selections from Roman Law). Primarily for prospective law students. Prerequisite, two years of preparatory Latin. Professor THOMSON.

25-26. LATIN PROSE COMPOSITION. Two credits. The year. Required of Latin majors and those who intend to teach Latin. Prerequisite, four years of preparatory Latin. Dr. CLARK.

LIBRARY ECONOMY.

(Office, The Library.)

TEACHING STAFF: WILLIAM E. HENRY, A. M.; CHARLES W. SMITH, A. B., B. L. S,; MAUD OSBORN, A. B., B. L. S.; MARY HUBBARD, A. B., B. L. S.

The department of library economy seeks to give such instruction and practice in all essential lines of library activity as will enable a capable student to enter as an assistant in any large library or as librarian of a small library.

In this curriculum librarianship is the central idea and such lines of academic scholarship are made preparatory and collateral to it as will give at once a liberal education and the best undergraduate preparation for library service.

The library courses extend through the junior and senior years and consist of five recitations per week through the four semesters and six laboratory, or practice, hours per week through the last three semesters. In the junior year the class meets on M. T. W. Th. F. at 2 o'clock; in the senior year it meets on the same days at 8 o'clock. One-fourth of the senior practice is in the Seattle Public Library, largely in the branches. Upon the completion of this curriculum the degree of Bachelor of Arts is granted. A limited number of graduate students may be admitted, completing the work in one year by devoting their entire time to it.

Students taking the library curriculum must offer for entrance the requirements for admission to any group of the College of Liberal Arts or the College of Science and must have completed the first two years of the curriculum before being admitted to any course in library economy.

The curriculum for the freshman and sophomore years includes all the prescriptions for the bachelor of arts degree, within those years, so that if at the end of the sophomore year a student

wishes to major in some other subject the change can be made without loss. Also by this arrangement a student who has not elected the library economy curriculum until the beginning of the junior year may make the election then if desired.

A student offering for entrance one or more years of high school credit in any of the sciences offered in the freshman year of this curriculum will be expected to pursue one of the other two sciences for the year.

No student will be admitted to the junior year of this curriculum who has not completed the equivalent of at least sixteen college credits in German and eight college credits in French. The curriculum is open only to students majoring in library economy. For definite outline see page 87.

MATHEMATICS

I. MATHEMATICS

(Office, Room 1, Science Hall.)

PROFESSOR MORITZ, ASSOCIATE PROFESSORS MORRISON AND BOOTHROYD, ASSISTANT PROFESSORS GAVETT AND CARPENTER, DRS. NEIKIRK, BELL, SMAIL, WEAR AND ALTSHILLER, ————

REQUIREMENTS OF THE DEPARTMENT

For a major in mathematics, 24 credits, including course 5-6.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
0	0	Solid Geometry.....	2	Plane geom'ty	T. Th. at 4, or M. W. at 4.
1	1	Trigonometry	2	1½ H. S. Alg. Plane geom'ty	T. Th. at 8, 9, 10; 11, 1, or 3; M. W. at 11; M. F. at 1 or 3.
1e		Trigonometry	4	See 1 above...	M. W. F. S. at 9.
	1e	Trigonometry	4	See 1 above...	M. W. F. S. at 9; or M. T. Th. F. at 1.
1b	2b	College Mathematics.....	4	See 1 above...	M. W. F. S. at 9.
2	2	College Algebra.....	2	See 1 above...	M. W. at 10.
3	4	An. Geom. and Calculus.	3	1.....	M. W. F. at 9 or 10.
3b	4b	Statistical Methods.....	3	1.....	M. W. F. at 8.
5	6	Calculus	3	4.....	M. W. F. at 10.
5b		Spherical Trigonometry.	2	1 or 1a.....	M. W. at 11.
	6b	Analytical Geometry.....	2	4 or 3a.....	M. W. at 11.
5c	6c	Higher Mathematics.....	2	5 or 4a.....	M. W. at 11.

Course		Title	Credits per Semester	Prerequisites	Time Schedule
1a		Trig. and Algebra.....	4	1½ H. S. Alg. Plane geom'ty	M. W. F. S. at 8; M. W. Th. F. at 1 or 2; T. W. Th. F. at 1 or 2; M. T. W. Th. at 2; M. T. W. F. at 2.
	1a	Trig. and Algebra.....	4	1½ H. S. Alg. Plane geom'ty	M. W. F. S. at 8; M. T. Th. F. at 2.
	2a	Analytical Geometry	4	1a.....	M. W. F. S. at 8; M. W. Th. F. at 2; T. W. Th. F. at 1; M. T. Th. F. at 2; M. T. W. Th. at 2.
2a		Analytical Geometry.....	4	1a.....	M. W. F. S. at 9.
1f	2f	Foresters'	4	See 1 above...	M. W. F. S. at 10.
3a	4a	Eng. Calculus.....	4	2a.....	M. W. F. S. at 10 or 9.
	3a	Eng. Calculus	4	2a.....	M. W. F. S. at 8 or 9.
4a		Eng. Calculus.....	4	3a.....	M. W. F. S. at 8.
5a		App. Calculus	2	4a.....	T. Th. at 8 or 10.
	5a	App. Calculus.....	2	4a.....	T. Th. at 8.
7	8	Diff. Equations	3	5 or 4a.....	M. W. F. at 11.
9	10	Vector Analysis.....	4	.....	T. Th. at 9.
17	18	Real Variable	2	5 or 4a.....	T. Th. at 10.
19		Modern Geometry.....	3	5 or 4a.....	M. W. F. at 11.
	20	Differential Geometry....	3	15.....	M. W. F. at 11.
21		Equations	3	5 or 4a.....	T. Th. S. at 11.
	22	Modern Algebra.....	3	21.....	T. Th. S. at 11.
27	28	Complex Variable.....	2	5 and 6.....	T. Th. at 11.

COURSES FOR UNDERGRADUATES

a. FOR STUDENTS IN LIBERAL ARTS, PHARMACY, EDUCATION, LAW

(Courses 1 or 1b-2b satisfy the mathematics requirements except when trigonometry has been offered for admission, in which case one of the courses 2 or 1b-2b may be offered.)

1. PLANE TRIGONOMETRY. Two credits. The year. Fifteen sections. Prerequisites, one and a half year entrance algebra, one year plane geometry. Juniors and seniors who complete this course will receive only half credit.

Sections A and B are honor sections open only to students who wish to do strong work in mathematics, or who are looking forward to making mathematics their major. Students in these sections whose work falls below a C grade will be transferred to some other section.

The course covers the following topics: The trigonometric functions of any angle, the use of natural functions and logarithmic tables, the solution of right and oblique plane triangles,

solution of trigonometric equations, construction of trigonometric graphs, and trigonometric representation of complex numbers.

1e. PLANE TRIGONOMETRY. Four credits. Either semester.

Same as course 1, completing the whole course in one semester.

1b-2b. COLLEGE MATHEMATICS. Four credits. The year. Prerequisites, the same as for course 1. Professor MORITZ.

A survey course dealing with graphic methods, the elements of trigonometry through the solution of right triangles, logarithms, selected topics from higher algebra, the elements of analytical geometry and the underlying conceptions and simple applications of the differential and integral calculus.

b. FOR STUDENTS IN THE COLLEGE OF SCIENCE

1. PLANE TRIGONOMETRY. (See under *a*, above.)

2. COLLEGE ALGEBRA. Two credits. The year. Prerequisites, same as for Math. 1.

Permutations and combinations, mathematical induction, determinants, undetermined coefficients, partial fractions, probability, infinite series and summation of series, elements of the theory of equations.

This course should be taken together with course 1 by freshmen who wish to continue their mathematics in the sophomore year. DR. BELL.

3. ANALYTICAL GEOMETRY. Three credits. First semester. Two sections. Prerequisites, Math. 1.

A thorough study of the elements.

4. DIFFERENTIAL AND INTEGRAL CALCULUS. Three credits. Second semester. Two sections. Prerequisites, Math. 3.

This is only a half course and should be followed by Math. 5.

3b-4b. PROBABILITY AND STATISTICAL METHODS. Three credits. The year. Dr. ALTSHILLER.

The first semester will be devoted to topics necessary for a scientific study of statistical methods, such as graphic methods, permutations, combinations, errors, probability and the method of least squares. This is followed in the second semester by the various methods of scientifically handling statistical material, with abundant applications drawn from the biological and social sciences.

5-6. DIFFERENTIAL AND INTEGRAL CALCULUS. Three credits. The year. Continuation of course 4. Professor MORITZ.

5b. SPHERICAL TRIGONOMETRY. Two credits. First semester. Prerequisite, Math. 1 or 1a. Professor MORITZ.

6b. SOLID ANALYTICAL GEOMETRY. Two credits. Second semester. Prerequisites, Math. 4 or 3a. Professor MORITZ.

5c-6c. HIGHER MATHEMATICS FOR STUDENTS IN CHEMISTRY AND PHYSICS. Two credits. The year. Prerequisites, Math. 5 or 4a. Dr. BELL.

Selected topics applying the principles of the Infinitessimal Calculus to problems in chemistry and physics.

c. FOR STUDENTS IN THE COLLEGE OF ENGINEERING, SCHOOL OF MINES, AND SCHOOL OF FORESTRY

0-0. SOLID GEOMETRY. Two credits. The year. Prerequisite, plane geometry.

Required during the freshman year of all students in the colleges of Engineering, Forestry and Mines who do not offer solid geometry for admission.

1a. TRIGONOMETRY AND ALGEBRA. Four credits. First or second semesters. Prerequisites, same as for Math. 1.

Primarily for students in the colleges of Engineering, Forestry, and Mines. The elements of plane trigonometry and supplementary work in algebra equivalent to one hour per week.

2a. ANALYTICAL GEOMETRY AND ALGEBRA. Four credits. First or second semester. Prerequisites, Math. 1a.

Primarily for students in the Colleges of Engineering, Forestry, and Mines. The elements of analytical geometry and supplementary work in algebra equivalent to one hour per week.

1f-2f. FORESTER'S COURSE. Four credits. The year. Prerequisites, same as for Math. 1. Assistant Professor GAVETT.

A year's course in Numerical and Graphic methods, solution of Plane Triangles, the elements of Coordinate Geometry, and Derivatives and Integrals with applications to problems involving Maxima and Minima, Rectifications, Quadratures, and Cubatures.

3a. CALCULUS FOR ENGINEERS. Four credits. First or second semester. Prerequisite, Math. 2a.

✓4a. CALCULUS FOR ENGINEERS. Four credits. First or second semester. Continuation of Math. 3a.

5a. APPLICATIONS OF THE CALCULUS FOR ENGINEERS. Two credits. First or second semester. Prerequisite, Math. 4a.

d. FOR UPPERCLASSMEN AND GRADUATES

7-8. ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS. Three credits. The year. Prerequisite, Math. 5 or Math. 4a. For seniors and graduates. Dr. NEIKIRK.

Introductory course. Solutions of the equations of the first and second order. Determination of constants of integration from initial conditions. Application to physics, chemistry and astronomy.

9-10. VECTOR ANALYSIS. Four credits. The year.

*11, 12. PROJECTIVE GEOMETRY. Two credits. The year. Prerequisite, two years of college mathematics. For juniors, seniors and graduates. Mr. CARPENTER.

*13-14. DESCRIPTIVE GEOMETRY AND CURVE TRACING. Four credits. The year. Prerequisites, Math. 5 or Math. 4a. For juniors, seniors and graduates. Mr. CARPENTER.

*15-16. NON-EUCLIDEAN GEOMETRY. Two credits. The year. Prerequisites, two years of college mathematics. For juniors seniors and graduates. Assistant Professor GAVETT.

17-18. THEORY OF FUNCTIONS OF A REAL VARIABLE. Two credits. The year. Prerequisite, 5 or 4a. Dr. SMAIL.

Rational and irrational numbers, the general function concept, continuity, integrability, and differentiability of functions, discontinuous functions, infinite series and products, series of functions, uniform convergence, multiple series, definite integrals, curvilinear integrals.

*30. TEACHERS' COURSE. Four credits. Second semester. Prerequisites, Math. 5. For juniors and seniors. Required of those who make mathematics their major study and who are applicants for the teacher's certificate. Mr. CARPENTER.

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*Not given in 1914-15.

FOR GRADUATES

19. MODERN GEOMETRY. Three credits. First semester. Prerequisites, Math. 5 or Math. 4a. For seniors and graduates. Associate Professor MORRISON.

An introductory course in modern analytical geometry and higher plane curves.

20. DIFFERENTIAL GEOMETRY. Three credits. Second semester. Prerequisite, Math. 15. For seniors and graduates. Associate Professor MORRISON.

Applications of the calculus to the metrical properties of twisted curves and surfaces.

21. THEORY OF EQUATIONS. Three credits. First semester. Prerequisites, Math. 5 or 4a. Professor MORITZ.

22. MODERN ALGEBRA. Three credits. Second semester. Prerequisite, Math. 21. Professor MORITZ.

*23-24. FOUNDATIONS OF MATHEMATICS. Two credits. The year. Prerequisite, Math. 6. For seniors and graduates. Dr. NEIKIRK.

*25-26. THEORY OF NUMBERS. Two credits. The year. Prerequisites, Math. 5 or Math. 4a. For juniors, seniors and graduates. Dr. BELL.

27-28. THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. Two credits. The year. Prerequisites, Math. 5 and Math. 6. For seniors and graduates. Dr. BELL.

An introductory course; principally on the theories of Cauchy and Weierstrass; Riemann surfaces. In the second half of the course the elements of the Weierstrass theory of elliptic functions will be developed and used to illustrate the general principles. Illustrations from geometry and physics.

31. MATHEMATICS JOURNAL AND RESEARCH CLUB. Meets on the second Tuesday of each month in Science building, room 2, at 8 p. m. The club consists of advanced students and teachers in the department of mathematics. The purpose of the club is to primarily discuss the research work carried on by members of the club, and secondarily to review important recent mathematical literature.

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*Not given in 1914-1915.

II. ASTRONOMY

(The Observatory.)

PROFESSOR MORITZ, ASSOCIATE PROFESSOR BOOTHROYD

The work in astronomy is planned for three classes of students: (a) those who desire some knowledge of astronomy as a part of a liberal education; (b) engineers and others who need some knowledge of astronomy as a part of their technical training; and (c) those who wish to pursue the subject more intensively than either of the other classes.

GRADUATION REQUIREMENT

Courses 1-2 fulfill the 8 credits of physical science required for graduation of students in the Colleges of Liberal Arts and Science.

REQUIREMENTS FOR A MAJOR IN ASTRONOMY

24 credits, but 1-2 and 1a-2a cannot both be counted. Reinforcing subjects of not less than 32 credits selected from mathematics, physics, chemistry, and geology, are recommended.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
1	2	General	4	Math 1-2 or 1a	T. Th. at 8 or 1.
		Laboratory			T. Th. 9 to 11 or T. Th. 2 to 4.
1a	2a	Descriptive	2	None	M. W. at 8.
3		Astro-Physics	3	See statement	M. W. F. at 10.
	4	Eclipses	3	See statement	M. W. F. at 10.
3a	4a	Geodesy	3	See statement	M. W. F. at 9.
5		Observations	2	See statement	M. W. at 2.
6		Mechanics	3	See statement	M. W. F. at 11.

FOR UNDERGRADUATES

1-2. GENERAL ASTRONOMY. Four credits. The year. Laboratory deposit, $1.00. Prerequisites, preceded or accompanied by mathematics 1-2 or mathematics 1a. Associate Professor BOOTHROYD.

This course is especially desirable for those who contemplate a scientific career. It is required for students majoring in astronomy and is strongly recommended for engineers and for majors in mathematics, physics and geology. It is designed to give a broad and comprehensive view of the subject with sufficient prac-

tice with the instruments of the observatory to acquaint the student with precise scientific methods.

1a-2a. DESCRIPTIVE ASTRONOMY. Two credits. The year. For sophomores, juniors and seniors. Associate Professor BOOTHROYD.

A course designed to give such general knowledge of the subject as every well-educated person should possess. The 6-inch equatorial telescope and other equipment of the observatory will be used for illustration and demonstration. For those who can possibly take the extra time course 1-2 is recommended in preference to this.

FOR UNDERGRADUATES AND GRADUATES

3. ELEMENTARY ASTRO-PHYSICS. Three credits. First semester. Open to sophomores, juniors and seniors. Prerequisites, physics 1-2, chemistry 1-2. Must be preceded or accompanied by mathematics 3-4 or mathematics 3a-4a. Associate Professor BOOTHROYD.

A broad survey of the field of astro-physics together with a study of spectroscopy and its relations to solar and stellar physics. Laboratory work in spectroscopy and solar physics.

4. COMPUTATION OF ECLIPSES. Three credits. Second semester. Open to sophomores, juniors and seniors. Prerequisites, astronomy 1-2, must be preceded or accompanied by mathematics 3-4 or mathematics 3a-4a. Associate Professor BOOTHROYD.

The subject of spherical astronomy will first be taken up in so far as it is necessary for the subsequent development of the general theory of eclipses, after which the general theory of eclipses and the computation of the elements of lunar and solar eclipses will be considered.

3a-4a. ELEMENTARY GEODESY AND GEODETIC ASTRONOMY. Three credits. The year. Prerequisites, preceded or accompanied by mathematics 3-4 or by mathematics 3a-4a. Associate Professor BOOTHROYD.

Geodetic surveying methods and elements of geodesy, mapping and map projection, practical astronomy as applied to surveying. During the second semester actual determinations of time, latitude and azimuth with the theodolite, and time, latitude and longitude with the sextant will be made. This course is especially arranged for engineering students.

5. ADJUSTMENTS OF OBSERVATIONS. Two credits. Second semester. Open to seniors, graduates and engineers. Prerequisite, first semester of astronomy 3a-4a must precede this and the second semester of the same course must precede or accompany it. Associate Professor BOOTHROYD.

The best methods for the adjustment of observations. For engineering students the applications to surveying will be especially considered.

7. ANALYTICAL MECHANICS. Three credits. First semester. Open to juniors, seniors, graduates. Prerequisites, preceded or accompanied by mathematics 5 or mathematics 4a, physics 1-2. Associate Professor BOOTHROYD.

Mathematical treatment of the laws of force and motion.

*8. CELESTIAL MECHANICS. Three credits. Second semester. Open to juniors, seniors, graduates. Prerequisite, astronomy 7. Associate Professor BOOTHROYD.

*9-10. ADVANCED ASTRONOMY. Four or six credits. Either semester. Open to seniors, graduates. Prerequisites, 16 credits in astronomy, 16 credits in mathematics. Associate Professor BOOTHROYD.

MILITARY SCIENCE AND TACTICS

(Office, The Armory.)

EDWARD E. MC CAMMON, FIRST LIEUTENANT THIRD INFANTRY, U. S. A., COMMANDANT.

A course of two years in military training is required. All able-bodied male students (except those from foreign countries, not intending to become naturalized) must take the course which by regulation of the University is required during the first and second year. Three hours a week are devoted to military training, for which two credits are given each semester.

*Not given in 1914-15.

ORIENTAL HISTORY, LITERATURE AND INSTITUTIONS

(Law Building)

PROFESSOR GOWEN

The requirement of one year's work in ancient language and literature may be satisfied by courses 5 and 6. Courses 1, 2, 3 and 4 count for credits in the department of history.

1. THE EVOLUTION OF CHINA—BEFORE THE MANCHU CONQUEST. Two credits. First semester.

The same as history 35.

2. THE EVOLUTION OF CHINA—MODERN ERA. Two credits. Second semester.

The same as history 36.

3. THE EVOLUTION OF JAPAN—FEUDAL ERA. Two credits. First semester.

The same as history 37.

4. THE EVOLUTION OF JAPAN—MODERN ERA. Two credits. Second semester.

The same as history 38.

5. THE LITERATURE OF INDIA. Four credits. First semester. Time to be arranged.

6. THE LITERATURE OF PERSIA. Four credits. Second semester. Time to be arranged.

7-8. SANSKRIT. Four credits. The year. Time to be arranged.

9-10. HEBREW. Four credits. The year. Time to be arranged.

PHILOSOPHY

(Office, Room 7, Denny Hall)

PROFESSOR SAVERY, ASSOCIATE PROFESSOR SMITH, ASSISTANT PROFESSOR ELKIN, DR. DUCASSE, MR. WILCOX, MISS WILKINSON.

Majors in philosophy should take 31 and 2 or 4 in the sophomore year. Students may major in psychology.

The requirements in philosophy may be satisfied by eight hours in the following courses: 1, 2, 3, 4, 9, 10, 31, 33, 34, 35, 36; or by 5-6.

Courses 1, 2, 3 and 31 are adapted to arts-law students.

Course 31 is a prerequisite to the study of education, unless the student has taken elsewhere general psychology.

Course 5-6 is the best general introduction to philosophy.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
1		Introduction	4	None	M. W. F. S. at 10 or 11; M. T. Th. F. at 1.
2		Ethics	4	None	M. W. F. S. at 8.
	2	Ethics	4	None	M. W. F. at 10.
3		Logic	4	None	M. T. Th. F. at 2.
	4	Logic	4	None	M. T. Th. F. at 2.
5	6	History	4	None	M. W. F. S. at 8.
7	8	Principles	3	Two courses	M. W. F. at 9.
9	10	Philosophy of Science	2	1 or 5-6	T. Th. at 9.
11	12	History Religion	2	None	T. Th. at 10.
15	16	English Literature	2	See statement	T. Th. at 11.
19	20	Esthetics	2	None	T. Th. at 2.
	22	Advanced Logic	2	3 or 4	To be arranged.
23	24	Contemporary	2	1 or 5-6	To be arranged.
25	26	Seminary	2-3	See statement	To be arranged.
	28	Personal Problems	1	None	To be arranged.
31		General Psychology	4	None	M. W. F. at 10.
		Laboratory			1 to 3 on day to be arranged.
	31	General Psychology	4	None	M. W. F. at 9.
		Laboratory			To be arranged.
33		Physiol. Psychology	4	31	To be arranged.
	34	Experimental	4	31	To be arranged.
35	36	Principles	3	31	To be arranged.
37		Animal Behavior	3	31	M. W. F. at 10.
	38	Educational	3	31	M. W. F. at 10.
	40	Abnormal	3	See statement	M. W. F. at 2.
41		Psychology Advertising	2	31	T. Th. at 1.
	42	Psychology of Testimony	1	None	To be arranged.
45		Exceptional Children	3	31	M. W. F. at 11.
	46	Mental & Physical Tests	2	45	To be arranged.
49	50	Research	3	33 or 34	To be arranged.

1. INTRODUCTION TO PHILOSOPHY. Four credits. First semester. Professor SAVERY and Assistant Professor ELKIN.

An elementary study of the main problems of philosophy.

2. ELEMENTS OF ETHICS. Four credits. Either semester. Professor SAVERY and Assistant Professor ELKIN.

Study of value, the good, duty, virtue. Application of ethical principles to problems of economic life, government, law, art and religion. Three lectures, two discussion hours.

3. ELEMENTS OF LOGIC. Four credits. First semester. For arts-law students. Dr. DUCASSE.

The logical structure of an action at law. The ways of logically establishing or invalidating any statement illustrated at length, considerable drill being given in the various processes of proof and disproof. The logic of testimony, circumstantial evidence, pleas of guilty with extenuating circumstances, special pleading, etc. Stress will be laid throughout on the practical rather than on the theoretical side of logic.

4. ELEMENTS OF LOGIC. Four credits. Second semester. Dr. DUCASSE.

The nature and tests of clear and valid thinking. Analysis or fallacies, methods of obtaining true propositions and of testing the truth of a proposition.

5-6. HISTORY OF PHILOSOPHY. Four credits. The year. Dr. DUCASSE.

Ancient, Mediaeval and Modern. The views of the classical philosophers on the nature of the universe and man, the values of life, the ideal form of society, the origin and limits of knowledge, the relation of the individual to the world, etc. Portions of the most improtant works of the greater philosophers will be read. Some of the more recent philosophical movements, such as Pragamatism and Neo-Realism will be very briefly touched upon at the end of the course.

7-8. PRINCIPLES OF PHILOSOPHY. Three credits. The year. Prerequisite, 8 credits in philosophy. Professor SAVERY.

A course in systematic philosophy. (1) The meaning and tests of truth, with special reference to Pragmatism. (2) The construction of a theory of the universe, including an account of the nature of the human self, its relation to the body, the nature of matter, the problem of the freedom of the will. Study of idealism. (3) The foundation of morality, pessimism and optimism, the evolution and destiny of man.

9-10. PHILOSOPHY OF SCIENCE. Two credits. The year. Prerequisite, 1, or 5, 6. Professor SAVERY.

An account of scientific methods and of the fundamental laws and concepts of the sciences—mathematical, physical and biological. Interpretation of the scientific view of the world and its place in the human economy. Primarily for majors in science.

11-12. HISTORY OF RELIGION. Two credits. The year. Assistant Professor ELKIN.

The nature, origin and early development of religion, and its advanced types in Brahmanism, Buddhism, Confucianism, Zoroastrianism, and Judaism.

*13-14. PHILOSOPHY OF RELIGION. Two credits. The year. Prerequisite, one course in philosophy. Professor SAVERY.

Alternates with 11-12.

15-16. PHILOSOPHY IN ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Two credits. The year. Prerequisite, one course previous or concurrent. Required for seniors in library training course. Professor SAVERY.

Conceptions of the universe, evolution, the destiny of man, the individual and social ideal in Wordsworth, Shelley, Emerson, Browning, Tennyson, Fitzgerald's Omar Khayyam, James Thompson, Arnold, Swinburne, Meredith and Whitman. An account of the social ideals of Carlyle, Ruskin, Morris, Shaw, Dickinson, Wells and Chesterton.

*17-18. PHILOSOPHY IN THE MODERN DRAMA. Two credits. The year. Prerequisite, one course previous or concurrent. Required for seniors in Library Training Course.

Alternates with 15-16.

19-20. ESTHETICS. Two credits. The year. Required for seniors in music. Mr. WILCOX.

The origins and motives of art, and the esthetic principles of architecture, sculpture, painting, music, poetry, the drama, and the decorative arts. The nature of beauty, the sublime, the comic, the tragic. Standards of criticism. Social and democratic theories of art.

22. ADVANCED LOGIC. Two credits. Second semester. Prerequisite, 3 or 4. Time to be arranged. Dr. DUCASSE.

Primarily intended for students interested in logic for its own sake, and for those desirous of attaining to accuracy in thinking of a highly abstract nature. Discussion of the logical catagories, exposition and illustration of the elements of symbolic logic, consideration of some of the chief types of order, of the logical characteristics of quantitative fields, and of the number concept.

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*Not offered in 1914-1915.

23-24. CONTEMPORARY PHILOSOPHY. Two credits. The year. Prerequisite, 1 or 5, 6. Time to be arranged. Dr. DUCASSE.

Present tendencies in philosophy. The materialism of Haeckel; the naturalism of Spencer, Mach, and Pearson; the idealism of Bradley and Royce; the pragmatism of James; and the new realism of Bergson and the American realists.

25-26. SEMINARY—MODERN IDEALISM. Two or three credits. The year. Open to students upon approval of instructor. One evening a week. Time to be arranged. Dr. DUCASSE.

A study of the philosophical system of Royce: metaphysics, ethics and philosophy of religion. Relation to other forms of idealism.

28. PERSONAL PROBLEMS AND PHILOSOPHY. One credit.. Second semester. No prerequisites. Time to be arranged. Dr. DUCASSE.

The existence of personal problems connected with the meaning of life, and with some of its most significant situations is, for many students, the source of their interest in philosophy. This course expressly recognizes this, and aims to bring to clear consciousness the ultimate issues upon which depends the solution of such problems for each person. The work will consist of lectures, discussions, private conferences and assigned reading.

31. GENERAL PSYCHOLOGY. Four credits. Either semester. Required for all courses in education. Laboratory deposit $2.00.

The facts and laws of consciousness and their connection with the nervous system. Three lectures, one recitation, one laboratory period.

33. PHYSIOLOGICAL PSYCHOLOGY. Four credits. First semester. Prerequisite, 31. One lecture, one recitation, two laboratory periods. Laboratory deposit $2.00.

The human brain and spinal cord, summation of stimuli, inhibition, rate of transmission of the nerve impulse, Weber's law and space perception.

34. EXPERIMENTAL PSYCHOLOGY. Four credits. Second semester. Prerequisite, 31. One lecture, one recitation and two laboratory periods. Laboratory deposit $1.00. Mr. WILCOX.

Training in methods of experimentation. Qualitative and quantitative experiments in sensation, perception, attention, association of ideas.

35-36. PRINCIPLES OF PSYCHOLOGY. Three credits. The year. Prerequisite, 31.

A systematic study. Students are urged to precede this by physiological or experimental psychology.

37. ANIMAL BEHAVIOR. Three credits. First semester. Prerequisite, 31. Mr. WILCOX.

The evolution of mind in animals.

38. EDUCATIONAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 31. Mr. WILCOX.

The psychological basis of education. Perception, the learning process, practice, memory, habit, judgment, attention, and motor functions, with reference to age, sex, race, and individual differences.

40. ABNORMAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 31. For pre-medical students and others by permission of instructor. Mr. WILCOX.

Sleep, dreams, hypnotism, mediumships, possessions, hallucinations, motor automatisms, double personality and the subconscious.

41. PSYCHOLOGY OF ADVERTISING. Two credits. First semester. Prerequisite, 31. Mr. WILCOX.

Laws of attention, suggestion, belief, and the emotions, with application to advertising.

42. PSYCHOLOGY OF TESTIMONY. One credit. Second semester. Dr. DUCASSE.

Primarily for students of law. Sources of error in testimony. Illusions, delusions, suggestions, fidelity of report.

45. PSYCHOLOGY OF EXCEPTIONAL CHILDREN. Three credits. First semester. Prerequisite, 31. Associate Professor SMITH.

The nature and cause of mental defects and peculiarities of children, with special reference to methods of diagnosis and to physical pathology. Prerequisite to the course in the Education of Exceptional Children and to Philosophy 46.

46. METHODS OF MENTAL AND PHYSICAL TESTS AND METHODS OF MEASUREMENT. Two credits. Second semester. Prerequisite, 45. Laboratory deposit $1.00. Associate Professor SMITH and Miss WILKINSON.

Laboratory course with conferences. The student will be given practical training in Clinical Psychology and in Experimental Child Psychology.

49-50. RESEARCH IN PSYCHOLOGY. Three credits. First and second semester. Prerequisite, 33 or 34. Associate Professor SMITH.

Opportunity for original investigation.

PHYSICAL TRAINING

(Office, the Gymnasium)

DIRECTOR HALL, PROFESSOR WEINZIRL, MISS MERRICK, MISS FITCH, MISS JOHNSON, MR. SIPPRELL.

REQUIREMENTS FOR GRADUATION

The requirements in physical training for the several schools are as follows:

Colleges of Arts, Science, Engineering, and Forestry: Physical Training 1-4 inclusive.

College of Pharmacy, B. S.: Physical Training 1-4 inclusive.

College of Pharmacy, Ph. C.: Physical Training 1-2 inclusive.

The requirements in physical training for all able bodied men are satisfied by an equal number of credits in the department of military science and tactics.

REQUIREMENTS FOR A MAJOR

The completion of twenty-four hours exclusive of the eight hours of practice required in the sophomore and freshmen years.

Course No.	Title	Credits per Semester	Prerequisites	Time Schedule
1	Personal Hygiene (Men).	.....	None.....	M. or T. at 11. (Names from A to M inclusive.)
2	Public Hygiene (Men)....	.....	None.....	M. or T. at 11. (Names from N to Z inclusive.)
2	Public Hygiene (Women)	.....	None.....	W. or Th. at 11.
1	Pers. Hygiene (Women)..	.....	None.....	W. or Th. at 11.

Course		Title	Credits per Semester	Prerequisites	Time Schedule
1	2	Calisthenics (Men)	2	None.....	M. W. F. at 11, or T. Th. F. at 11.
3	4	Gymnastics	2	1-2.....	M. W. F. at 11, or T. Th. F. at 11.
1	2	Calisthenics (Women)....	2	None.....	M. W. at 9, 10, 11, or 3; or T. Th. at 9, 10, or 2.
3	4	Gymnastics	2	1-2.....	M. W. F. at 9, 10, or 2; or T. Th. F. at 9, 10, or 11; or T. Th. F. at 3 (Special).
5	6	Methods and Practice.....	2	.....	T. Th. at 1.
7		Kinesiology	2	.....	M. W. at 1.
	8	Organization	2	.....	F. at 1.
9		Hygiene (Adv.).....	2	.....	T. Th. at 10.
10		Physical Examination...	2	.....	T. Th. at 9.
11		Anthropometry	2	.....	T. Th. at 2.
	12	Corrective	2	.....	T. Th. at 9.
	13	History	2	.....	M. W. at 1.
14		Playgrounds (Theory)...	3	.....	M. W. F. at 2.
	15	Emergencies	2	.....	T. Th. at 10.
17	18	Teachers'	2	.....	T. Th. at 4.
19	19a	Advanced Gym.....	None	.....	M. W. at 4.
	20	Playgrounds (Practice)..	3	.....	M. W. F. 3 to 5.

I. HYGIENE

All freshmen are required to complete a given amount of hygiene. This is carried out as a part of physical training and military science and tactics.

MEN

1. PERSONAL HYGIENE. First semester only. Director HALL.

2. PUBLIC HYGIENE. First semester only. Professor WEINZIRL.

WOMEN

2. PUBLIC HYGIENE. First semester. Professor WEINZIRL.

1. PERSONAL HYGIENE. Second semester. Director HALL.

II. PHYSICAL TRAINING

Courses 1 and 3 for both men and women are divided into two periods by the Thanksgiving recess. During the first period the work is carried on out-of-doors and consists of gymnastic games and athletic sports. The second period is devoted to indoor training.

Courses 2 and 4 are similarly divided by March 15th. The second period is devoted to out-of-door work.

Upon approval by the director training on athletic teams may be substituted by a limited number for required courses.

Courses 1, 2, 3, 4, for both men and women must be taken during the freshman and sophomore years unless deferred by the director and dean.

To be eligible to compete in the various athletic contests every student must pass a satisfactory physical examination and have practiced at least thirty days.

A uniform gymnasium suit including shoes are necessary. They may be purchased after entering college.

Courses 9, 11, 13, 14, 15, 16, 17 and 18 may be elected by students in the Colleges of Arts and Science for which credit is given above the required eight hours.

All courses are open to election with credit by students majoring in the departments of education and zoology.

1-2. CALISTHENICS AND ATHLETICS. Two credits. The year. Introductory course for first year men. Director HALL, Mr. SIPPRELL.

1-2. CALISTHENICS AND ATHLETICS. Two credits. The year. Introductory course for first year women.

3-4. GYMNASTICS AND ATHLETICS. Two credits. The year. For second year men. Director HALL, Mr. SIPPRELL.

3-4 GYMNASTICS AND ATHLETICS. Two credits. The year. For second year women.

5-6. METHODS AND PRACTICE OF TEACHING. Two credits. The year.

A study of the various methods and systems of physical training; their application and adaptability to different ages and conditions. Miss MERRICK.

7-8. KINESIOLOGY AND ORGANIZATION. Two credits. The year. Miss MERRICK.

9. ADVANCED HYGIENE. Two credits. First semester. Director HALL.

A study of the forces that make for or against the perfect health of the individual.

10. PHYSICAL EXAMINATIONS. Two credits. First semester. Director HALL.

11. ANTHROPOMETRY. Two credits. First semester. Miss MERRICK.

12. CORRECTIVE GYMNASTICS AND PRESCRIPTION OF EXERCISE. Two credits. Second semester. Director HALL.

13. HISTORY OF PHYSICAL TRAINING. Two credits. Second semester. Miss MERRICK.

14. PUBLIC PARKS AND PLAYGROUNDS. Three credits. First semester. Miss FITCH.

15. HYGIENE: EMERGENCIES. Two credits. Second semester. Director HALL.

Especially accidents that may arise on athletic fields, on public playgrounds or in the gymnasium.

*16. PHYSIOLOGY OF BODILY EXERCISE. Two credits. First semester. Director HALL.

17-18. PHYSICAL TRAINING. Two credits. The year. Director HALL and Misses MERRICK, FITCH and JOHNSON.

A course designed especially for teachers who may wish to conduct classes in physical training in conjunction with other school courses.

19-19a. ADVANCED GYMNASTIC EXERCISES. No credit. Miss MERRICK.

20. PLAYGROUNDS. Three credits. Second semester. Miss FITCH.

Their practical application to various ages. Their organization and management. The training of playground leaders.

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*Not offered in 1914-1915.

PHYSICS

(Office, Basement, Denny Hall)

PROFESSOR OSBORN, ASSISTANT PROFESSOR BRAKEL, DR. ANDERSON, MR. VORIS AND TEACHING FELLOWS

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
1	2	General	4	H. S. Physics.	T. Th. at 11.
		Laboratory			T. or Th. 8 to 11; or M. 1 to 4.
3	4	Music	4	H. S. Physics.	M. W. F. at 11.
		Laboratory			W. 1 to 4.
5		Heat	3 or 4	See statement	M. W. F. at 9.
		Laboratory			F. 1 to 4.
6		Sound	4	1-2 & Calculus	To be arranged.
8		Electricity	4	1-2; 4 hrs. Math.	M. W. F. at 1.
		Laboratory			M. 2 to 5.
	9	Alternating Currents	4	8 or 5a; Math. 8 hrs.	M. W. F. at 1.
		Laboratory			M. 2 to 5.
10		Mechanics	3	1-2; Math. 8 hrs.	M. W. F. at 10.
11	11	Teachers'	2	See statement	T. Th. at 10.
12	12	History	1	16 hrs. Physics	To be arranged.
16	16	Dynamics	2	10 and Math. 7-8.	To be arranged.
17	17	Elect. and Mag.	2	16 hrs. Physics 16 hrs. Math.	To be arranged.
18		Optics	2		To be arranged.
19	19	Thermodynamics	2	5, 10.	To be arranged.
	20	High Temperature	1	5.	To be arranged.
	21	Elect.-Chemistry	3		To be arranged.
22	22	Elect. Theory	2	See statement	To be arranged.
1a	1a	Mechanics	4	H. S. Physics; 8 hrs. Math.	1st sem. M. W. F. S. at 8; 2nd sem. at 10.
2a	2a	Elect. and Heat	4	1a	1st sem. M. W. F. S. at 10; 2nd sem. at 8.
1b		Measurements	2	Taking 1a.	T. or Th. or F. 1 to 5.
	1b	Measurements	2	Taking 1a.	F. 1 to 5.
2b		Measurements	1	Taking 2a.	W. 2 to 5.
	2b	Measurements	1	Taking 2a.	W. or Th. 1 to 4.
3a	4a	General	4	H. S. Physics & Trig.	T. Th. at 8.
		Laboratory			M. 1 to 5.
5a	5a	Elect. Measurements	4	2a	T. Th. at 1.
		Laboratory			T. Th. 2 to 5.
	6a	Home	4	H. S. Physics	M. W. F. at 11.
		Laboratory			T. or Th. 1 to 4; or F. 2 to 5.

(a) PRIMARILY FOR STUDENTS IN ARTS AND SCIENCE

1-2. GENERAL PHYSICS. Four credits. The year. Three class periods and one laboratory period. Prerequisite, High School

Physics. Open to juniors and seniors as a half credit course. Professor OSBORN.

3-4. MECHANICS, SOUND AND MUSIC. Four credits. The year. Prerequisite, High School Physics. Dr. ANDERSON.

A course for the students in the music department.

5. HEAT. Three or four credits. First semester. Prerequisites, 1 and 2. Mathematics, 8 hours. Three class periods and one laboratory period. May be taken without laboratory work for three credits. Dr. ANDERSON.

An experimental and theoretical treatment of the subject.

6. VIBRATORY PHENOMENA AND SOUND. Four credits. First semester. Prerequisites, Physics 1, 2 and Calculus. Professor OSBORN.

The course takes up the development and discussion of the mathematical expressions for wave motions, and various types of vibrations.

*7. LIGHT. Four credits. First semester. Prerequisite, Physics 1, 2. Math. 8 hours. Professor OSBORN.

8. ELECTRICITY AND MAGNETISM. Four credits. First semester. Three class periods and one laboratory period. Prerequisites, Physics 1, 2. Math. 4 hours. Professor BRAKEL.

This course is planned with a view to familiarize the student with the more important experimental and theoretical aspects of the subject.

9. PHYSICS OF A. C. AND D. C. CIRCUITS. Four credits. Second semester. Prerequisites, Physics 8 or 5a and Mathematics, 8 hours. Professor BRAKEL.

A study of the fundamental principles of direct and alternating currents and the development of methods for the solution of practical problems. Three class periods and one laboratory period.

10. THEORETICAL MECHANICS. Three credits. First semester. Prerequisites, 1 and 2. Mathematics, 8 hours. Dr. ANDERSON.

An elementary mathematical discussion of the subject with special emphasis on the physical interpretation and historical development. Three class periods.

*11. TEACHER'S PHYSICS. Two credits. The year. Open only to seniors. Prerequisites, not less than 12 hours of physics and 24 hours of other science. Professor OSBORN.

12. HISTORY OF PHYSICS. One credit. The year. Prerequisite, 16 hours of physics. Professor OSBORN.

16. DYNAMICS. Two credits. The year. Prerequisites, physics 10, and Differential Equations. Dr. ANDERSON.

A rigorous mathematical treatment of fundamental principles.

17. THEORETICAL ELECTRICITY AND MAGNETISM. Two credits. The year. Prerequisites, physics 16 hours, Math. 16 hours. Professor BRAKEL.

A rigorous mathematical treatment of the fundamentals.

18. ADVANCED OPTICS. Two credits. First semester. Special problems. Professor OSBORN.

19. THERMODYNAMICS AND KINETIC THEORY OF GASES. Two credits. The year. Two class periods. Prerequisites, Physics 5 and 10. Dr. ANDERSON.

20. HIGH TEMPERATURE THERMOMETRY. One credit. Second semester. Prerequisite, Physics 5. One laboratory period. Dr. ANDERSON.

21. ELECTRO-CHEMISTRY AND THEORIES OF E. M. F. Three credits. Second semester. Professor BRAKEL.

22. ELECTRON THEORY. Two credits. The year. Prerequisites, 16 hours physics and 16 hours math., or special arrangement. Dr. ANDERSON.

Discussion of recent researches in Conduction of Electricity through Gases, Photoelectric effect and Radioactivity with bearing on the Electron Theory. Two class periods.

24. COLLOQUIUM.

Laboratory deposit is $2.50 per semester for courses 1, 2, 3, 4, 5, 6, 7, 8, 9, 18, 20, 21.

(b) PRIMARILY FOR STUDENTS IN APPLIED SCIENCE

1a. MECHANICS, WAVE MOTION AND LIGHT. Four credits. First or second semester. Prerequisites, High School Physics and Mathematics, 8 hours. Dr. ANDERSON.

2a. ELECTRICITY AND HEAT. Four credits. Second or first semester. Prerequisite, 1a. Professor BRAKEL.

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*Not given in 1914-15.

1b. PHYSICS MEASUREMENTS. Two credits. First or second semester. Taking 1a. Mr. VORIS.

2b. PHYSICS MEASUREMENTS. One credit. Second or first semester. Taking 2a. Mr. VORIS.

3a-4a. GENERAL PHYSICS. Four credits. The year. Prerequisites, High School Physics and Trigonometry. Mr. VORIS.

This course is an abridgment of 1a and 2a and is open only to students in forestry, pharmacy and medicine. Three class periods and one laboratory period.

5a. ELECTRICAL MEASUREMENTS. Four credits. First or second semester. Prerequisite, 2a. Two class periods and two laboratory periods. Professor BRAKEL.

6a. PHYSICS OF THE HOME. Four credits. Second semester Prerequisite, High School Physics. Professor OSBORN.

A course for students in domestic science. Three class periods and one three hour laboratory.

NOTE.—The laboratory deposit is six dollars per year for courses 1b, 2b, 3a-4a, 5a, and $2.50 for 6a.

POLITICAL AND SOCIAL SCIENCE

(Office, Room 3A, Denny Hall)

PROFESSOR SMITH, PROFESSOR BEACH, ASSISTANT PROFESSOR CUSTIS, ASSISTANT PROFESSOR BERGLUND, DR. MC MAHON, DR. JANES

The general requirement of six credits in Political and Social Science may be satisfied by courses 1-2, 3 and 4, 19 and 20, or 1a, and any other three-hour course in Economics for which 1a is prerequisite.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR FRESHMEN, SOPHOMORES, JUNIORS AND SENIORS			
1	2	El. Economics	3	None	T. Th. at 8.
1a	1a	El. Economics	3	None	M. W. F. at 8, 9, 10, 11, 1, or 2.
3		Sociology	3	None	T. Th. at 1; (Quiz M. or W. or F. at 1).
	4	Social Problems	3	3	T. Th. at 1; (Quiz M. or W. or F. at 1).

Course		Title	Credits per Semester	Prerequisites	Time Schedule
	8	Ind. Organization	3	1-2 or 1a	M. W. F. at 8.
	10	Public Finance	3	1-2 or 1a	M. W. F. at 9.
11		Transportation	3	1-2 or 1a	M. W. F. at 8.
	12	History of Commerce	3	1-2 or 1a	M. W. F. at 1.
	14	Modern Tariff	2	1-2 or 1a	T. Th. at 10.
15		Money and Banking	3	1-2 or 1a	M. W. F. at 9.
19		American Government	3	None	T. Th. at 10.
	20	American Government	3	19	T. Th. at 10.
	24	International Law	2	None	T. Th. at 9.
	26	Standards of Living	2	1-2 or 1a	T. Th. at 9.
27		Markets	3	1-2 or 1a	M. W. F. at 2.
	28	Trade of Pacific	3	39 & 1-2 or 1a	M. W. F. at 10.
31		Development Ind. Society	3	1-2 or 1a	M. W. F. at 1.
	32	Eco. History U. S.	3	1-2 or 1a	M. W. F. at 2.
39		Commercial Geography	3	None	M. W. F. at 10.
	44	The Family	3	3	M. W. F. at 11.
		FOR JUNIORS AND SENIORS			
17		Colonial Government	2	6 cred. in Govt.	T. Th. at 11.
	18	Municipal Government	2	1-2, 1a, 3 or 19	T. Th. at 9.
23		Government of England.	2	6 cr. in Govt.	T. Th. at 11.
	40	Corporation Finance	3	6 hrs. in Econ.	M. W. F. at 1.
47		Accounting	3	1-2 or 1a	M. W. F. at 1.
	48	Insurance	3	1-2 or 1a	M. W. F. at 11.
49		Statistics	3	1-2 or 1a	M. W. F. at 11.
	50	International Exchange	3	15	M. W. F. at 8.
		FOR JUNIORS, SENIORS, AND GRADUATES			
21	22	Political Theory	2	6 cr. in Govt.	M. 4 to 6.
29		Social Amelioration	3	3 and 4	M. W. F. at 9.
	30	Social Psychology	3	6 hrs. in Dept.	M. W. F. at 9.
33	34	Joint Seminar	2	Sp. permission	W. 4 to 6.
35	36	Principles Economics	3	6 hrs. in Econ.	M. F. 4 to 5:30.
37		Labor Problems	3	1-2 or 1a	M. W. F. at 10.
	38	Labor Legislation	3	37	M. W. F. at 10.
		FOR GRADUATES ONLY			
45	46	Seminar	2		To be arranged.

OPEN TO FRESHMEN, SOPHOMORES, JUNIORS AND SENIORS

1-2. ELEMENTS OF ECONOMICS. Three credits. The year. Dr. MCMAHON.

A study of the principles of economics and of economic problems.

1a. ELEMENTS OF ECONOMICS. Three credits. First semester. Course 1a is repeated in the second semester.

3. ELEMENTS OF SOCIOLOGY. Three credits. First semester. Professor BEACH.

4. SOCIAL PROBLEMS. Three credits. Second semester. Prerequisite, 3. Professor BEACH.

8. INDUSTRIAL ORGANIZATION. Three credits. Second semester. Prerequisite, 1-2 or 1a. Assistant Professor CUSTIS.

A study of modern industry with special reference to trusts and "industrial" monopolies. This course is practically a continuation of Course 11 (Transportation), but may be taken by students who have not taken that course.

10. PUBLIC FINANCE AND TAXATION. Three credits. Second semester. Prerequisite, 1-2 or 1a. Assistant Professor CUSTIS.

Special attention will be given to the problems now before the United States and the several states, particularly Washington.

11. TRANSPORTATION. Three credits. First semester. Prerequisite, 1-2 or 1a. Assistant Professor CUSTIS.

Primarily a study of railway transportation in the United States.

12. HISTORY OF COMMERCE AND COMMERCIAL POLICIES. Three credits. Second semester. Prerequisites, 1-2 or 1a. Assistant Professor BERGLUND.

14. MODERN TARIFF SYSTEMS. Two credits. Second semester. Prerequisite, 1-2 or 1a. Assistant Professor BERGLUND.

15. MONEY AND BANKING. Three credits. First semester. Prerequisite, 1-2 or 1a. Assistant Professor CUSTIS.

Deals chiefly with the systems of money and banking prevailing in different countries, especially the United States, and with international exchange.

19. AMERICAN GOVERNMENT (NATIONAL). Three credits. First semester. Professor SMITH.

20. AMERICAN GOVERNMENT (STATE AND LOCAL). Three credits. Second semester. Prerequisite, 19. Professor SMITH.

24. PUBLIC INTERNATIONAL LAW. Two credits. Second semester. Dr. JANES.

The history and development of public international law.

26. STANDARDS OF LIVING. Two credits. Second semester. Prerequisite, Economics 1-2 or 1a. Assistant Professor BERGLUND.

Designed for students in Home Economics, but open to others. A study of the consumption of wealth with reference to the household as an economic unit.

27. DOMESTIC AND FOREIGN MARKETS. Three credits. First semester. Prerequisite, 1-2, or 1a. Assistant Professor BERGLUND.

A study of the forces determining the movement of commodities from producing areas to consuming centers, organizations for marketing products at home and abroad and combinaitons formed for the control of the market.

28. THE TRADE OF THE PACIFIC. Three credits. Second semester. Prerequisites, 39, and 1-2 or 1a.

A study of lines and conditions of the trade of the Pacific, with special reference to the commercial relation of the Pacific Northwest with the Orient and with South American countries.

31. THE DEVELOPMENT OF INDUSTRIAL SOCIETY. Three credits. First semester. Prerequisite, or concurrent, 1-2 or 1a. Assistant Professor CUSTIS.

Devoted chiefly to the economic history of England with special reference to the rise of modern industry.

32. ECONOMIC HISTORY OF THE UNITED STATES. Three credits. Second semester. Prerequisite, 1-2 or 1a. Assistant Professor BERGLUND.

A study of the industrial development and financial policies of the United States from the colonial period to the present time.

39. COMMERCIAL GEOGRAPHY. Three credits. First semester.

An elementary study of the geographic basis of modern commerce, including such subjects as the location, classification and transformation of raw materials, the description of trade routes and the varieties and control of natural powers.

44. THE FAMILY. Three credits. Second semester. Prerequisite, 3. Professor BEACH.

A brief consideration of the origin and early forms of the family, followed by a study of the conditions which have led to its modification in the past and in recent times, including the problem of eugenics.

OPEN TO JUNIORS AND SENIORS

17. COLONIAL GOVERNMENT. Two credits. First semester.

A study of the systems of colonial government and administrations.

18. MUNICIPAL GOVERNMENT. Two credits. Second semester. Prerequisite, 1-2, 1a, 3, or 19. Professor SMITH.

40. CORPORATION FINANCE. Three credits. Second semester. Prerequisite, 6 hours in economics. Assistant Professor CUSTIS.

A study of the promotion and capitalization of modern corporations, their financial policies, and the market for their securities.

47. ACCOUNTING. Three credits. First semester. Prerequisite, 1-2 or 1a.

A study of the fundamental principles of accounting, including assets, material and immaterial, depreciation, capital stock, funded and current liabilities, sinking funds, profits, reserves, cost accounts, etc.

48. INSURANCE. Three credits. Second semester. Prerequisite, 1-2 or 1a.

A study of the varied forms of insurance with relation to the principles involved and their importance for public welfare.

49. STATISTICS. Three credits. First semester. Prerequisite, 1-2 or 1a. Assistant Professor BERGLUND.

A study of statistical forms and methods of compiling statistical data with application to industrial, commercial and social life.

50. INTERNATIONAL EXCHANGE. Three credits. Second semester. Prerequisite, 15.

A study of the instruments and methods by which international exchanges are effected, and an analysis of the financial and political principles and consequences involved.

OPEN TO JUNIORS, SENIORS AND GRADUATES

21-22. POLITICAL THEORIES. Two credits. The year. Prerequisite, six credits in Government. Professor SMITH.

A study of the political ideas that have influenced constitutional development and legislation in England and the United States.

23. THE GOVERNMENT OF ENGLAND. Two credits. First semester. Prerequisite, six credits in Government. Professor SMITH.

29. SOCIAL AMELIORATION. Three credits. First semester. Prerequisites, 3 and 4. Professor BEACH.

A study of the attempt of society under the present industrial system, to effect improvement in the life of the less fortunate classes.

30. SOCIAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 6 hours in the department. Professor BEACH.

The growth and nature of custom and convention, and the formation of public opinion. It is desirable that the student should have had philosophy 15.

33-34. JOINT SEMINAR. Two credits. The year. Professor SMITH, Professor CONDON and Professor MEANY.

Designed for study and reports upon the problems in the historical, political and legal development of the state of Washington and the Pacific Northwest.

35-36. PRINCIPLES OF ECONOMICS. Three credits. The year. Prerequisite, 6 hours in Economics. Assistant Professor CUSTIS.

A study of the production, distribution, exchange, and consumption of wealth with special reference to present day problems.

37. LABOR PROBLEMS. Three credits. First semester. Prerequisite, 1-2 or 1a. Dr. MCMAHON.

This course covers the topics of strikes, trade unions, employers' associations, arbitration, immigration, child labor.

38. LABOR LEGISLATION. Three credits. Second semester. Prerequisite, 37. Dr. MCMAHON.

American and foreign. A study of wages, hours, accidents, industrial hygiene.

OPEN TO GRADUATES ONLY

45-46. SEMINAR IN POLITICAL AND SOCIAL SCIENCE. Two credits. The year.

Primarily for graduate students majoring in the department.

PUBLIC SPEAKING AND DEBATE

(Office, Room 7, Auditorium)

ASSOCIATE PROFESSOR GORSUCH AND MR. LA FOLLETTE.

For a major, twenty-four hours, eight hours of which must be taken in freshman composition. Not more than sixteen hours in this department may be counted toward the A. B. degree.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
1	2	Public Speaking.....	3	English 1.....	M. W. F. at 9.
2	1	Public Speaking.....	3	English 1.....	M. W. F. at 10.
3	4	Oration	2	English 1.....	T. Th. at 1.
5	6	Dramatic Reading.....	2	1-2.....	T. Th. at 9.
7	8	Argument	3	English 1-2...	M. W. F. at 8 or 2.
9	10	Oratory	2	.....	T. Th. at 8 or 2.
11	12	Vocational Speaking.....	2	Jr. standing..	T. Th. at 10.

FOR FRESHMEN AND SOPHOMORES

1-2. PRACTICAL PUBLIC SPEAKING. Three credits. The year. Associate Professor Gorsuch.

An introductory course. Principles of public speaking are studied and short, original talks are prepared and delivered. The aim of the course is to accustom students to think while standing before the audience and to use definite means for definite purposes. Clear statement, sound argument, effective presentation, and development of will and personality are sought.

1. PRACTICAL PUBLIC SPEAKING. Three credits. Second semester. Associate Professor GORSUCH.

2. PRACTICAL PUBLIC SPEAKING. Three credits. First semester. Prerequisite, 1. Associate Professor GORSUCH.

A continuation of course 1.

3-4. THE ORATION. Two credits. The year. Prerequisites, 1-2, English 1. Mr. LA FOLLETTE.

Study of problems involved in public speaking with practice in the preparation and delivery of original speeches for special occasions.

5. DRAMATIC READING. Two credits. First semester. Prerequisite, 1-2. Associate Professor GORSUCH.

Several plays, classical and modern, are studied and read aloud.

6. DRAMATIC READING. Two credits. Second semester. Prerequisite, 5. Associate Professor GORSUCH.

Scenes from modern dramas are presented.

7-8. ARGUMENTATION AND DEBATING. Three credits. The year. Prerequisite, English 1-2. Mr. LA FOLLETTE.

Analysis, briefing, and complete development of written argument, followed by practice in formal debate.

9-10. FORENSIC ORATORY. Two credits. The year. Prerequisite, 3-4. Mr. LA FOLLETTE.

Analysis of the problems of forensic oratory and practice in the preparation and delivery of forensic speeches.

FOR JUNIORS AND SENIORS

11. VOCATIONAL SPEAKING. Two credits. First semester. Associate Professor GORSUCH.

Intended for those who plan to practice law, teach, or enter any other field that necessitates the preparation and delivery of public addresses.

12. VOCATIONAL SPEAKING. Two credits. Second semester. Prerequisite, 11. Associate Professor GORSUCH.

A continuation of course 11.

SCANDINAVIAN

(Room 26, Law Building)

PROFESSOR VICKNER.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR UNDERGRADUATES			
1	2	Swedish	4	None	M. W. F. S. at 9.
3	4	Norwegian-Danish	4		M. W. F. S. at 10.
5	6	Norwegian-Danish Lit.	2		M. W. at 11.
7	8	Swedish Literature	2		To be arranged.
11	12	Modern Swedish	2		T. Th. at 9.
13	14	Mod. Norwegian-Danish	2		To be arranged.
15	16	Modern Authors	2		To be arranged.
		FOR UNDERGRADUATES AND GRADUATES			
9	10	Icelandic	2		To be arranged.
17	18	Old Swedish	2		To be arranged.
		FOR GRADUATES			
19	20	Scandinavian Literature.	2		To be arranged.

FOR UNDERGRADUATES

1-2. SWEDISH LANGUAGE. Four credits. The year.
Grammar and reading. Composition and oral exercises.

3-4. NORWEGIAN-DANISH LANGUAGE. Four credits. The year.
Grammar and reading. Composition and oral exercises.

5-6. NORWEGIAN-DANISH LITERATURE. Two credits. The year.
Representative authors are read in connection with a general survey of the Norwegian-Danish literature.

7-8. SWEDISH LITERATURE. Two credits. The year.
Representative authors are read in connection with a general survey of the Swedish literature.

11-12. MODERN SWEDISH LITERATURE. Two credits. The year.
Representative writers of the nineteenth and twentieth centuries are read, including Selma Lagerlof, Strindberg, Froding. Study of the culture and history of Sweden.

13-14. MODERN NORWEGIAN-DANISH LITERATURE. Two credits. The year.
Representative writers of the nineteenth and twentieth centuries are read, including Ibsen, Björnson, Kielland, Jacobsen, Drachmann. Study of the culture and history of Denmark and Norway.

15-16. STUDY OF MODERN SCANDINAVIAN AUTHORS IN ENGLISH TRANSLATION. Two credits. The year.
A study of Ibsen and Strindberg the main features of the course. Brief survey of Scandinavian culture and history.

FOR UNDERGRADUATES AND GRADUATES

9-10. OLD ICELANDIC. Two credits. The year.
Grammar, prose selections, poems from the Edda, lectures on Scandinavian mythology and antiquities, Scandinavian philology.

17-18. OLD SWEDISH. Two credits. The year.
This course includes a study of the origin and development of the Swedish language.

FOR GRADUATES

19-20. SCANDINAVIAN LITERATURE IN THE NINETEENTH CENTURY. Two credits. The year.
Other graduate work with the consent of the head of the department.

SPANISH

(Denny Hall)

PROFESSOR OBER, ASSISTANT PROFESSORS UMPHREY, STRONG AND ATKIN.

For a major, 24 to 40 credits, including 7-8 and at least one year course of the second division. Course 11 is required of all those recommended as teachers.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
		FOR UNDERGRADUATES			
1	2	Elementary	4	None	M. W. F. S. at 8, or 9, or 10; or M. T. Th. F. at 1.
2	1	Elementary	4	None	M. W. F. S. at 8, or M. T. Th. F. at 2.
3	4	Commercial	3	1-2	M. W. F. at 10, or 1.
5	6	Literary	3	1-2	M. W. F. at 9.
7	8	Comp. and Conversation	2	See statement	T. Th. at 9, 10, or 1.
		FOR UNDERGRADUATES AND GRADUATES			
11		Teachers'	2		T. Th. at 9.
13	14	Cervantes	2	5-6	T. Th. at 10.
15	16	Lope De Vega	3	5-6	M. W. F. at 11.
17	18	Novel	3	5-6	M. W. F. at 11.
21	22	Lyric and Ballad	2	5-6	T. Th. at 1.
		FOR GRADUATES			
23	24	Old Spanish	2		T. Th. at 2.

FOR UNDERGRADUATES

1-2. ELEMENTARY. Four credits. The year. Professor OBER, Assistant Professors UMPHREY, STRONG and ATKIN.

Course 1 is repeated in the second semester and followed by course 2 which is repeated in the first semester. Assistant Professors STRONG and ATKIN.

Students will please notice that Courses 3-4 and 5-6 are both open to those who have completed 1-2 or its equivalent, and that 7-8 should be taken, if possible in connection with either 3-4 or 5-6.

3-4. COMMERCIAL. Three credits. The year. Prerequisite, 1-2. Professor OBER.

Business correspondence and commercial terms. Readings from Spanish newspapers.

5-6. LITERARY. Three credits. The year. Spanish literature of the nineteenth century. Prerequisite, 1-2. Assistant Professor UMPHREY.

7-8. COMPOSITION AND CONVERSATION. Two credits. The year. This course should be taken in connection with 3-4 or 5-6 and is open only to those who are taking or have taken one of these courses. Assistant Professors UMPHREY and STRONG.

FOR UNDERGRADUATES AND GRADUATES

11. TEACHERS' COURSE. Two credits. First semester. Professor OBER.

13-14. CERVANTES. Two credits. The year. Prerequisite, 5-6. Assistant Professor UMPHREY.

Life and writings, with special study of Don Quijote de la Mancha.

15-16. LOPE DE VEGA AND CALDERON. Three credits. The year. Prerequisite, 5-6. Professor OBER.

17-18. THE NOVEL. Three credits. The year. Prerequisite, 5-6. Assistant Professor STRONG.

The origins of the Spanish novel and its development. Reading of selected texts; collateral reading and reports.

*19-20. THE DRAMA. Three credits. The year. Prerequisite, 5-6. Assistant Professor UMPHREY.

21. LYRIC POETRY. Two credits. First semester. Prerequisite, 5-6. Assistant Professor UMPHREY.

22. THE SPANISH POPULAR BALLAD. Two credits. Second semester. Prerequisite, 5-6. Assistant Professor UMPHREY.

FOR GRADUATES

23-24. OLD SPANISH. Two credits. The year. Philology. Assistant Professor UMPHREY.

History of Spanish literature to the sixteenth century. Reading of the Poema del Cid and selections from other early Spanish writings. Reports on special topics.

*Not given in 1914-1915.

ZOOLOGY

(Science Hall)

PROFESSOR EMERITUS JOHNSON, PROFESSOR KINCAID, ASSISTANT PROFESSOR E. VICTOR SMITH, MR. OSTERUD.

A laboratory deposit of two dollars is required for all courses except 14, 15 and 16.

Course No.		Title	Credits per Semester	Prerequisites	Time Schedule
1	2	Elementary	4	None	M. W. at 11 or T. Th. at 8.
		Laboratory			T. Th. 1 to 3 or 9 to 11.
1a		Elements	4		M. W. at 9.
		Laboratory			T. Th. 1 to 3.
	1a	Elements	4		T. Th. at 11.
		Laboratory			M. F. 1 to 3.
	2s	Biol. Soils	4	1 yr. college	M. W. F. at 11.
		Laboratory		chemistry	W. 1 to 4.
3	4	Vertebrate	4	1-2 or 11	T. Th. at 11.
		Laboratory			T. Th. 2 to 5.
5		Normal Histology	4	1-2	M. W. at 9.
		Laboratory			T. Th. 1 to 4.
	6	Embryology	4	5 or 7	M. W. at 9.
		Laboratory			T. Th. 2 to 5.
7		Comp. Histology	4	1-2	M. W. at 10.
8		Neurology	4	5 or 7	M. W. at 8.
		Laboratory			T. Th. 9 to 11.
10		Physiology	4		M. F. at 1.
		Laboratory			M. F. 2 to 4.
	10	Physiology	4	None	M. F. or T. Th. at 1.
		Laboratory			M. F. or T. Th. 2 to 4.
11		General Physiology	4		M. W. at 11.
		Laboratory			M. W. 2 to 5.
	12	Advanced Physiology	4	10 or 11	M. W. at 11.
		Laboratory			M. W. 2 to 5.
13		Forest Entomology	4		M. W. at 9.
		Laboratory			W. 1 to 5.
	14	Forest Zoology	2		W. F. at 8.
15		Ethnology	2		T. Th. at 11.
	16	Evolution			T. Th. at 9 or 11.
17	18	General Entomology	4	2	To be arranged.
19	20	Museum and Field	4	4, 6 or 18	To be arranged.
21	22	Research		See statement	To be arranged.

1-2. ELEMENTS OF ZOOLOGY. Four credits. The year. Professor KINCAID and Mr. OSTERUD.

A general review of zoological science.

Course 1 is repeated in the second semester for the benefit of students entering at that time.

1s-2s. SOILS. Four credits. The year. Not accepted for science requirement. Prerequisite, one year college chemistry; laboratory fees for course $8.00, $6 payable the first semester and $2 the second. Credit given only upon completion of entire course. See chemistry 1s-2s. Professors BENSON, LANDES, KINCAID, and HOTSON.

Relation of animal life to the soil, injurious insects, insect control, insecticides.

3-4. VERTEBRATE ANATOMY. Four credits. The year. Assistant Professor SMITH.

Comparative structure of vertebrates.

5. NORMAL HISTOLOGY. Four credits. First semester. Mr. OSTERUD.

Mammalian histology, especially for pre-medical students.

6. EMBRYOLOGY. Four credits. Second semester. Mr OSTERUD.

Comparative developmental history of vertebrates.

7. COMPARATIVE HISTOLOGY. Four credits. First semester. Mr. OSTERUD.

8. NEUROLOGY. Four credits. First semester. Assistant Professor SMITH.

Comparative structure and genesis of sense organs and central nervous system.

10. ELEMENTARY PHYSIOLOGY. Four credits. First or second semester. Assistant Professor SMITH.

Especially for students registered in department of home economics, but open to others.

11. GENERAL PHYSIOLOGY. Four credits. First semester. Assistant Professor SMITH.

12. ADVANCED PHYSIOLOGY. Four credits. Second semester. Assistant Professor SMITH.

13. FOREST ENTOMOLOGY. Four credits. First semester Professor KINCAID.

Relation of insects to the forest.

14. FOREST ZOOLOGY. Two credits. Second semester. Professor KINCAID.

Habits and economic relations of typical forest animals.

15. ETHNOLOGY. Two credits. First semester. Professor KINCAID.

Origin, migration, distribution and customs of the races of man. Illustrated by lantern slides.

16. EVOLUTION. Two credits. Second semester. Professor KINCAID.

Lectures upon important biological problems related to organic evolution, including variation, selection, heredity and eugenics. Illustrated by stereopticon views.

17-18. GENERAL ENTOMOLOGY. Four credits. The year. Professor KINCAID.

Introduction to study of insects, their structure, classification, ecology and economic relations.

19-20. MUSEUM AND FIELD WORK. Four credits. The year. Professor KINCAID.

Systematic investigation of the local fauna including studies based upon material in the state museum.

21-22. RESEARCH. First and second semesters. Students capable of carrying on independent research will be allowed to do so under the direction of the instructors in charge.

FACULTY OF THE SCHOOL OF EDUCATION

*THOMAS FRANKLIN KANE, PH. D., (Johns Hopkins University), President.

HENRY LANDES, A. M., (Harvard University), Acting President.

FREDERICK ELMER BOLTON, PH. D., (Clark University), Professor of Education and Dean of the School of Education.

CAROLINE HAVEN OBER, Professor of Spanish.

TREVOR KINCAID, A. M., (University of Washington), Professor of Zoology.

FREDERICK MORGAN PADELFORD, PH. D., (Yale University), Professor of English.

ARTHUR SEWALL HAGGETT, PH. D., (Johns Hopkins University), Professor of Greek and Dean of the College of Liberal Arts.

FREDERICK ARTHUR OSBORN, PH. D., (University of Michigan), Professor of Physics and Director of the Physics Laboratories.

WILLIAM SAVERY, PH. D., (Harvard University), Professor of Philosophy.

DAVID THOMSON, A. B., (University of Toronto), Professor of Latin.

PIERRE JOSEPH FREIN, PH. D., (Johns Hopkins University), Professor of French.

THEODORE CHRISTIAN FRYE, PH. D., (University of Chicago), Professor of Botany.

ROBERT EDOUARD MORITZ, PH. D., (University of Nebraska), PH. N. D., (Strassburg), Professor of Mathematics and Astronomy.

FREDERICK WILLIAM MEISNEST, PH. D., (University of Wisconsin), Professor of German.

DAVID CONNOLLY HALL, SC. M., M. D., (University of Chicago), Director of Physical Training.

WALTER GREENWOOD BEACH, A. M., (Harvard University), Professor of Social Science.

IRVING MACKEY GLEN, A. M., (University of Oregon), Professor of Music.

JOHN WEINZIRL, PH. D., (University of Wisconsin), Professor of Bacteriology.

EDWIN JOHN VICKNER, PH. D., (University of Minnesota), Professor of the Scandinavian Languages.

* Leave of absence, January 1 to August 1. Retires August 1, 1914.

HERBERT GALEN LULL, PH. D., (University of California), Professor of Education.

EDWARD MCMAHON, A. M., (University of Wisconsin), Associate Professor of American History.

STEVENSON SMITH, PH. D., (University of Pennsylvania), Associate Professor of Orthogenics.

EFFIE ISABEL RAITT, B. S., (Columbia University), Associate Professor of Home Economics.

WILLIAM PIERCE GORSUCH, A. B., (Knox College), Associate Professor in charge of Public Speaking and Debate.

EDWIN JAMES SAUNDERS, A. M., (Harvard University), Assistant Professor of Geology.

JOSEPH KINMONT HART, PH. D., (University of Chicago), Assistant Professor of Education.

ROBERT EVSTAFIEFF ROSE, PH. D., (University of Leipzig), Assistant Professor of Chemistry.

ROBERT MAX GARRETT, PH. D., (University of Munich), Assistant Professor of English.

GEORGE WALLACE UMPHREY, PH. D., (Harvard University), Assistant Professor of Spanish.

DAVID ALLEN ANDERSON, PH. D., (University of Iowa), Assistant Professor of Education.

WILLIAM BAIRD ELKIN, PH. D., (Cornell University), Acting Assistant Professor of Philosophy and Psychology.

ALLEN FULLER CARPENTER, A. M., (University of Nebraska), Instructor in Mathematics.

ERNEST OTTO ECKELMAN, PH. D., (University of Heidelberg), Instructor in German.

HENRY SLATER WILCOX, A. M., (Harvard University), Instructor in Psychology.

JOHN CURT DUCASSE, PH. D., (Harvard University), Instructor in Philosophy and Psychology.

FLOYD THOMAS VORIS, A. M., (Columbia University), Instructor in Physics.

GERTRUDE CRUDEN, A. B., (Smith College), B. S., (Columbia University), Instructor in Domestic Art.

ROBERT ALEXANDER CUMMINS, A. M., (University of Illinois), Instructor in Psychology.

ISABELLA AUSTIN, A. B., (University of Minnesota), Lecturer on Education, Dean of Women.

LUCY K. COLE, (Supervisor of Public School Music, Seattle), Teacher of Public School Music.

AGNES BIRKMAN, (Vassar School of Art and Pratt Institute, Instructor in Applied Design, West Seattle High School), Instructor in Drawing.

PAUL J. KRUSE, A.M., (University of Washington), Graduate Assistant in Education.

FRANCIS E. MILLAY, A.B., (University of Washington), Graduate Assistant in Education.

SCOPE AND AIMS

The purpose of the School of Education is to bring together and correlate all of the forces of the University which contribute in a professional way to the preparation of educational leaders. The School provides a curriculum containing a broad range of cultural work, places due emphasis upon a specialized field in which the candidate expects to teach, and gives a proper professional setting through the work in education. By the establishment of this advanced curriculum it is hoped to set a high standard for the training of teachers in the State of Washington and in the Northwest.

The curriculum of the School is based upon the assumption that teachers should have first of all, and fundamental to all other preparation, a broad and liberal education; second, that they should be masters of some special subjects which they expect to teach; and third, that this training should be supplemented by professional education which gives a knowledge of the pupils to be taught, the problems to be met, and new meaning to the subjects of instruction, as well as fundamental methods of teaching.

The School of Education is especially fitted to provide teachers of the following types:

1. High school teachers; 2. High school principals; 3. Superintendents of public schools; 4. Grammar school principals; 5. Supervisors of primary schools; 6. Supervisors and teachers of music, drawing, manual training, home economics, physical training and other special subjects; 7. Normal school and college instructors in education; 8. Specialists in the education of defectives; 9. Playground directors; 10. Y. M. C. A. and Y. W. C. A. workers; 11. Juvenile court workers; 12. High class grade and primary school teachers.

GENERAL ACADEMIC WORK

Because of the variety of work which every teacher is likely to be required to do upon beginning to teach, at least elementary college courses should be taken in not less than four subjects which are taught in the high schools.

SPECIALIZED ACADEMIC WORK

Each teacher should have thorough, extended preparation in one subject and reasonable preparation in at least two additional subjects. Experience has shown that the following combinations are most frequently demanded: Latin, German; English, German; English, History, Civics; English, Latin, History; Mathematics, Physics, Chemistry; Botany, Zoology, Physiology, Physiography. In the larger schools Greek is sometimes given with Latin; and French with German; Home Economics alone or in connection with one or two other subjects; Manual Training alone or in connection with one or two other subjects; Athletics in combination with other work. One teacher is frequently required to teach all of the sciences. Public speaking is desirable as a part of the preparation for teaching English.

PROFESSIONAL WORK

The requirements for the academic major and minors secure a proper distribution of the academic subjects. The professional work consists (a) of the courses given in the Department of Education, (b) the teachers' courses given in the various academic departments, and (c) the courses closely allied to and fundamental to those in Education, viz., those in Zoology, Psychology, Sociology and Ethics.

SPECIAL TEACHERS' COURSES

Nearly all of the academic departments have teachers' courses for the purpose of studying the problems of teaching those subjects in the high schools. Work in special methods relating to particular subjects is given by those dealing most directly with the given subject matter. Foundation principles of general method as based upon the laws of learning and teaching are developed in the subject of Education.

OBSERVATION AND PRACTICE TEACHING

By an arrangement between the University and the schools of Seattle, students in the School of Education may observe the regular work in certain schools (at present nine are used) and do cadet work under direction of the regular teachers and the professor in charge of the practice work. In this way students have an opportunity to observe and gain valuable experience

under exceptionally favorable conditions. A semester of such experience under guidance and expert criticism is far superior to several years of the trial and error method through which many teachers are obliged to go.

MATERIAL EQUIPMENT OF DEPARTMENT OF EDUCATION

The Department of Education occupies a suite of seven rooms on the second floor of the Education Building, comprising four offices, two lecture rooms and a seminar room, also used as a department library. The Gatzert Foundation equipment for defective children is in Science Hall. The department is equipped with the standard educational works, besides many special books and monographs in English, German, and French. All the American educational journals of importance, and many English, German, and French periodicals are on file. In all about fifty journals are received. The equipment is especially good for work in educational psychology, philosophy of education, child study, educational organization and administration, and current school problems.

BAILEY AND BABETTE GATZERT FOUNDATION

A thirty thousand dollar foundation, known as the Bailey and Babette Gatzert Foundation of Child Welfare of the University of Washington, has been established by Sigmund Schwabacher and the executors of the will of the late Abraham Schwabacher. The object of the foundation is to furnish relief for defective children. The foundation represents philanthropic work of the most advanced type. The deed conveying the gift makes the following conditions concerning the purposes and management of the Foundation:

"Said sum of money shall be safely invested by the said trustees in interest-bearing securities, and the income thereof shall be used to maintain a bureau of child welfare in the department of Education of the University of Washington, the work of said bureau to consist in the promotion in various ways of education for the better care and treatment of children suffering from defects, either physically or mentally, especially such defective children as can, in spite of their defects, attend school of some sort and benefit by some form of school education and training. Said bureau to be known in perpetuity as the *Bailey and Babette Gatzert Foundation of Child Welfare of the University of Washington*, and to be at all times in charge of a competent expert,

and any expense in maintaining the bureau in excess of such income to be provided out of the University or other funds."

With the facilities thus provided very thorough work in the study of defective children is made possible. One associate professor devotes his entire time to this work. He gives two courses each year in the psychological study of defectives and two courses of equal length in the department of Education, paying special attention to educational methods of treating defectives. The remainder of his time is devoted to the clinical examination of defective children brought to the University for diagnosis, to a study of delinquents in the juvenile court, to studying the defectives in a school for subnormals, and to visiting various public schools in the state and speaking to teachers and others interested in the subject.

Not only are children tested by current standard methods, but an attempt is made to do original investigation in studying new problems. Several research students have done special work under the guidance of the Foundation. The Foundation makes possible exceptional facilities for the study of subnormal children. Few other institutions in the country offer such extensive opportunities for preparing persons to teach exceptional children or to supervise their education in the public schools or in special institutions.

EDUCATIONAL EXHIBITS

Large portions of the educational exhibits in the Educational and California Buildings, and all of the Alaska and Japanese exhibits, were turned over to the Museum at the end of the Alaska-Yukon-Pacific Exposition. These exhibits consist of over 6,000 specimens of the work done in the kindergarten and primary grades, in the grammar school and in the high school. It is planned that the Museum shall offer special facilities to the school teachers of the state in showing some of the best examples of school work and what the latest methods in teaching have developed. Included in the specimens from Alaska are many examples of art and industrial work which will be especially valuable illustrations of these up-to-date methods, and are hard to excel anywhere. There are about forty cabinets of the work done by the various grades in all departments of the school curriculum which are on exhibition or easy of access to those especially interested along these lines. The Museum was very

fortunate in securing the industrial exhibit made by the Los Angeles Polytechnic High School, which attracted so much attention in the California Building during the Exposition, and it may be considered as one of the best examples in industrial training for boys. There are also specimens of sewing and needlework done by pupils from the lower grades through the high school.

ORGANIZATION OF THE WORK IN THE SCHOOL OF EDUCATION

Three lines of work are provided in the School of Education: (a) The course leading to the degrees of Bachelor of Arts in Education and Bachelor of Science in Education; (b) The course leading to the degree of Master of Arts in Education and Master of Science in Education; (c) work leading to the Normal Diploma in connection with a degree from the College of Liberal Arts or the College of Science or the School of Education.

The School is organized on the assumption that the professional work of the teacher should begin with the junior year in college. A degree may be obtained at the end of the fourth year, but the standard which the University encourages and hopes to establish for high school teaching is the five-year course, consisting of two years of collegiate work and three years of professional work combined with advanced academic study. Students expecting to teach are encouraged to begin on entering the junior year to plan their courses for the master's degree in education. While the extended period is preferred it is possible for students with adequate preparation to secure the masters' degrees in a year of graduate work. The masters' degrees in education are specifically intended as teachers' degrees representing mastery of an extensive field of scholarship plus professional training, rather than intensive research in a limited field of investigation.

REQUIREMENTS FOR THE DEGREES OF BACHELOR OF ARTS IN EDUCATION AND BACHELOR OF SCIENCE IN EDUCATION

ENTRANCE REQUIREMENTS: Two years of collegiate work, 68 credits, distributed as indicated below:

It is understood that 16 of these credits may be taken after admission to the School of Education in case the student presents

an equivalent number of credits from his major and minor subjects.

Graduates from the advanced course of the Washington State Normal Schools will be admitted to the School of Education with provisional junior standing. The remaining work necessary to full junior standing may be made up after admission to the School of Education. Graduates from the advanced courses of other state normal schools will ordinarily receive the same standing as they would be accorded in the schools of education of their own state universities.

Graduates of approved normal schools receive 48 scholastic credits plus 8 in physical training. For graduation they must present the following specific requirements; Ancient foreign language or literature, 8 hours; modern foreign language, 8 hours; physical science, 8 hours; biological science, 8 hours; economics, 8 hours; philosophy, 8 hours; major subject, 24 hours. On all these points, however, (except major) they may have the benefit of the stated exemptions (see page 209) for entrance subjects, and they may also be excused from any prescribed subject for which they have completed a fair equivalent in the normal school, such excuse to be granted by the dean of the respective college upon the recommendation of the major professor.

I. For the degree of Bachelor of Arts in Education, 68 credits from the specific requirements of the College of Liberal Arts which at present are as follows:

a. Ancient Language and Literature.....8 credits
b. Modern foreign language.....8 credits
c. Rhetoric .....4 or 8 credits
d. Mathematics .....4 credits
e. Physical science .....8 credits
f. Biological science .....8 credits
g. History .....8 credits
h. Philosophy .....8 credits
i. Political science .....6 credits
j. Physical training or military science....8 credits
k. College Problems .....1 credit

II. For the Degree of Bachelor of Science in Education:

The completion of the first two years of work required in one of the courses in the College of Science, at present, as follows:

MAJOR Ast., Chem., Math., Phys.	MAJOR Bot., Geol., Zool.	MAJOR Home Ec.	MAJOR Phys. Tr.	MAJOR Psych.
Fresh. Cred.	*Fresh.* Cred.	*Fresh.* Cred.	*Fresh.* Cred.	*Fresh.* Cred.
Ast. Chem. or Phys. 8	Bot., Geol., Zool. ... 8	Home Ec.. 4	Math. 4	Math. 4
Math. 4	Math. 4	Chem. 8	Zool. 8	Zool. 8
English .. 8	English .. 8	English .. 8	English .. 8	English .. 8
For. Lang. 8	For. Lang. 8	For. Lang. 8	For. Lang. 8	For. Lang. 8
Col. Prob.. 1	Col. Prob.. 1	Col. Prob.. 1	Col. Prob.. 1	Col. Prob.. 1
Phys. Tr.. 4	Phys. Tr.. 4	Phys. Tr.. 4	Phys. Tr.. 4	Phys. Tr.. 4
Soph.	*Soph.*	*Soph.*	*Soph.*	*Soph.*
Science .. 8	Science .. 8	Home Ec.. 4	Chem. 8	Major 4
For. Lang. 8	For. Lang. 8	Chem. 8	Zool. 8	Math. 4
Hist. 8	Hist. 8	Math. 4	Hist. 8	Phys. 8
Pol. Sci... 6	Pol. Sci... 6	Zool. 8	For. Lang. 8	Hist. 8
Phys. Tr.. 4	Phys. Tr.. 4	For. Lang. 8	Phys. Tr.. 4	For. Lang. 8
		Phys. Tr.. 4		Phys. Tr.. 4

The following regulations are in force in the College of Liberal Arts, the College of Science, and apply to students entering the School of Education through those colleges:

A student entering with less than four years of foreign language must make a total of five years in high school and college combined.

A student who completes the first semester of rhetoric with a grade of "A" will not be required to take that subject during the second semester.

COLLEGE PROBLEMS. Freshmen are required also to take one hour a week in instruction in the use of the library and the use of books and in instruction on the choice of studies and the choice of a vocation. One credit for the year's work.

EXEMPTIONS: A student may be exempted from certain of the above requirements on the following conditions:

From (*a*) if he presents for entrance 4 units of ancient language.

From (*b*) if he presents for entrance 4 units of modern foreign language.

From (*d*) if he presents for entrance 3½ units of mathematics; viz., 1½ units of algebra, 1 unit of plane geometry, ½ unit of solid geometry and ½ unit of trigonometry.

From (*e*) if he presents for entrance 3 units of science, viz., 1 unit of physics, 1 unit of chemistry, and 1 unit of any other science.

From (*f*) if he presents for entrance 3 units of science, viz., 1 unit of biological science, 1 unit of physics, and 1 unit of any other science.

From (*g*) if he presents for entrance 3 units of history.

NOTE: A student cannot obtain exemption from both *e* and *f*.

PENALTIES: Of the above requirements (*c*) must be completed within the first year, otherwise only ½ credit will be allowed; (*a*) or (*b*), (*d*), (*e*) or (*f*), (*g*) must be completed within the first two years, otherwise only ½ credit will be allowed.

GENERAL NOTE: A student is to be held for the admission and graduation requirements of either the catalogue under which he enters or the one under which he graduates.

REQUIRED FOR GRADUATION WITH THE DEGREE OF BACHELOR OF ARTS IN EDUCATION OR BACHELOR OF SCIENCE IN EDUCATION

1. Entrance credits as stated above.
2. One semester in Zoology, Psychology, Sociology, Ethics, (3 or 4 hours, depending upon the length of courses offered).
3. Education 12 hours. (This is the minimum and students may add more as free electives.)
4. An academic major of 24 hours.
5. Two academic minors of at least 16 hours each.
6. A teachers' course in the academic major; maximum 6 hours.
7. Total 136 hours, including credits for entrance to the School of Education.

NOTE 1. Whatever part of the graduation requirements have been included in the entrance requirements need not be repeated. Upon approval of the professor in charge of the academic major, a part of the work for the major may be taken in allied departments.

NOTE 2. Students in the College of Liberal Arts have the right to major in the Department of Education. Students majoring in education must take 24 hours in education.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN EDUCATION OR MASTER OF SCIENCE IN EDUCATION

1. Registration in the School of Education at least one year before graduation. (The student may register in the School of Education as early as the beginning of the junior year and is urged to do so if he plans to prepare for teaching.)

2. A bachelor's degree from this University or from some other institution of recognized standing.

3. Education, 24 hours.

4. A major academic subject, 24 to 32 hours at the option of the major professor.

5. Two academic minors of at least 16 hours each.

6. A teachers' course in the academic major, maximum 6 hours.

7. At least 3 hours in psychology.

8. Total 158 hours, including credits for entrance to the School of Education.

9. Upon completion of the course for the degree of M. A. in Education or M. S. in Education the candidate shall be examined in the academic major, the two academic minors and in Education under regulations which apply to the examination of candidates for masters' degrees in the graduate school.

NOTE 1. Such of the above requirements as have been included in the work taken for the bachelor's degree need not, of course, be taken a second time.

NOTE 2. Upon approval of the professor in charge of the academic major a part of the work for the major may be taken in allied lines.

REQUIREMENTS FOR THE NORMAL DIPLOMA

The University is authorized by law to issue teachers' diplomas, valid in all public schools of the state, as described below. Candidates for these diplomas should register in the department of Education as early as possible after the beginning of the junior year, and should consult with the department from time to time as to their work for the diploma and their preparation for teaching.

The University Five-Year Diploma, valid in all public schools in the state for a period of five years from date of issue, is granted on the following conditions:

1. Attainment of a bachelor's degree equivalent to that from the College of Liberal Arts, the College of Science or the School of Education of the University of Washington, or from an institution with equivalent standards. In order to receive this diploma and the bachelor's degree the candidate must present 132 credits instead of 128.

2. Registration in the School of Education at least one year before graduation.

3. A teachers' course in the major academic subject, if offered; maximum 6 hours.

4. Completion of at least twelve hours in the Department of Education, including Principles of Education, 3 hours, History of Education, 3 hours, Childhood and Adolescence, or High School, 3 hours, and either Observation and Teaching or Methods of Instruction, 3 hours. The department reserves the right to adjust these requirements to the needs of individual cases. Variations will sometimes need to be made in the case of normal school students, persons who have taken education courses in summer sessions, and teachers with considerable experience. No deviations will be permitted except on approval of the head of the Department of Education.

5. Evidence of such general scholarship and personal qualities as give promise of success and credit in the profession of teaching. Legible handwriting, good spelling, and correct English are indispensable. Active interest in the prospective work as a teacher will be considered.

6. The University Life Diploma is granted to candidates who fulfill the requirements for the University Five-Year Diploma, and also give satisfactory evidence of having taught successfully for at least twenty-four months.

COURSES IN EDUCATION

(Office, Room 4, Education Building)

PROFESSOR BOLTON, PROFESSOR LULL, ASSOCIATE PROFESSOR SMITH, ASSISTANT PROFESSOR HART, ASSISTANT PROFESSOR ANDERSON, MISS AUSTIN.

Students are not regularly admitted to the department before the junior year.

Elementary psychology is prerequisite to all courses. Some knowledge of ethics, sociology, and zoology is also very desirable, and is required of students doing major work in education.

The courses in principles of education, history of education, childhood and adolescence or in the high school, and in observation and teaching or methods of instruction, are fundamental and prerequisite to all others in education. They fulfill the requirements in education for the teachers' diplomas. Students should take psychology in the sophomore year, principles of education in the junior year, and follow in the same year with childhood and adolescence or the high school. It is desirable to take the observation and teaching in the senior year, but this course or method of instruction may be taken at any time after the work in the principles of education. History of education should come after the principles, but for the present may be taken at any time. Deviations will doubtless sometimes be necessary to arrange schedules, also in the case of normal school students, persons who have taken some work in education during summer sessions, and experienced teachers. Deviations and changes from the foregoing may be made only with approval of the head of the department. Students who major in the department should take all of the fundamental courses and then elect enough to total 24 hours in the department. Candidates for the master's degree should have at least one-third of the work in strictly graduate courses. (Group C.)

Elementary psychology should be taken in the sophomore year. Until a sufficient number of sections may be maintained to accommodate all to the schedule some exceptions will have to be made as to the time of taking psychology.

A. COURSES FOR UNDERGRADUATES

1-1. PRINCIPLES OF EDUCATION. Three credits. Either semester. First semester, M. W. F. at 9, 10, or 2. Second semester, M. W. F. at 10 or 11. Professor BOLTON and Assistant Professor ANDERSON.

Education considered from the standpoint of (1) biology, (2) neurology, (3) psychology, (4) anthropology, (5) sociology. Representative topics: educational bearings of instinct, heredity, habit, culture epochs, individual differences, imitation, suggestion; training of senses, memory, imagination, emotions, will, motor activities, moral nature; formal discipline, educational aims and values, social education; relation of the foregoing to the school curriculum. Text: Bolton's *Principles of Education.*

3-3. HISTORY OF EDUCATION. Three credits. Either semester. First semester, M. W. F. at 11 or 1. Second semester, M. W. F. at 8, 9 or 2. Assistant Professor HART and ————————.

A general survey of educational forces, institutions, theories and practices in the development of the past, and their integration in the present.

5-5. METHODS OF INSTRUCTION. Three credits. Either semester. First semester, M. W. F. at 8 or 11. Second semester, M. W. F. at 8 or 11. Professor LULL and ————————.

Those psychological elements which have direct application to teaching problems. Methods of instruction in secondary and in elementary branches. A study of text-books. A small amount of observation in the city schools of Seattle will be required in connection with this course.

7-7. OBSERVATION AND TEACHING. Three credits. Either semester or the entire year. Students electing this course should have free two consecutive hours in the forenoon or the entire afternoon. The class will meet the instructor once a week, Wednesday at 4 o'clock. Assistant Professor ANDERSON.

Observation and teaching in the elementary and high schools of Seattle.

9-9. CHILDHOOD AND ADOLESCENCE. Three credits. Either semester. M. W. F. at 3. Professor BOLTON.

Scope, methods, literature, problems, relation to education; value for parents and teachers. Illustrative special topics; physical, intellectual, emotional, moral and religious growth periods and appropriate education; imitation, play, imagination, language, adolescence, the high school period.

11-11. THE HIGH SCHOOL. Three credits. Either semester. M. W. F. at 9. Professor LULL.

Development and tendencies of secondary education from 1635 traced to aid in understanding current problems of secondary education. Professed aims and actual practice of secondary education. The early New England college. The Latin Grammar schools. Influence of academies upon the colleges. Aims, psychology and methods of secondary instruction. College admission requirements. Effect of the German scientific movement. Report of the Committee of Ten. Organization of the socialized high school. Lectures, readings, individual problems, discussions.

12a-12b. EDUCATION AND THE CITIZEN. One credit. The year, or either semester. Th. at 11. Assistant Professor HART.

A survey of the field of educational activity and reconstruction for the general student, and with special reference to the problems of citizenship in relation to the schools. Open to general election without prerequisites in Education.

13-13. THE PRIMARY SCHOOL. One credit. Either semester. T. at 10. Dean AUSTIN.

A consideration of the aims, practices, and curriculum of the primary school. Intended for those who may teach in or supervise primary schools. Lectures, readings, discussions and visits to primary schools.

B. COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

At least twelve hours in Education and an elementary course in psychology are prerequisite to all courses in this group (B) and the following (C). Mature students with considerable teaching experience may be admitted to these groups without the specific number of hours of prerequisites by consent of the head of the department.

15. PROBLEMS IN VOCATIONAL EDUCATION. Two credits. First semester. T. Th. at 9. Assistant Professor HART.

The vocational movement, its meaning and purpose; relation to liberal education; psychological considerations; social phases; vocational guidance.

16. EDUCATIONAL PROBLEMS OF THE STATE. Two credits. Second semester. T. Th. at 9. Assistant Professor HART.

A study of the problems that confront the educational forces in the state; general and theoretical, social and practical.

17. SOCIAL ASPECTS OF EDUCATION. Three credits. First semester. M. W. F. at 8. Assistant Professor HART.

The social institutions and conditions which form the background of all the work of the school, reinforcing and limiting that work. The real task of the school.

*18. SCHOOL GROUNDS, BUILDINGS AND EQUIPMENT. Two credits. Second semester. Assistant Professor HART.

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* Not given in 1914-1915.

19-20. THE ELEMENTARY SCHOOL CURRICULUM. Two credits. The year. S. 10 to 12. Assistant Professor ANDERSON.

The function, character, and organization of the elementary school curriculum. A consideration of what subject matter and experiences are of greatest worth for the individual. Adaptation of the curriculum to growth periods. The curriculum from the standpoint of the immediate interests, needs, and future efficiency of the child. Minimum essentials in and possibilities for the enrichment of the courses of study. The time is especially arranged for Seattle teachers.

21-22. EXPERIMENTAL EDUCATION. Two credits. The year or either semester. T. Th. at 10. Mr. ———— .

(a) A survey of the extensive literature of recent experimental studies in education. (b) Methods of investigation and interpretation of results. (c) Problems suitable for class and individual experimentation. Data will be obtained from various public schools. Problems will deal with questions such as modes of learning various activities, economy in memorizing, habit formation, the learning of arithmetic, spelling, writing, type-writing, stenography, etc.

*23-24. EPOCHS OF EDUCATIONAL HISTORY. Two credits. The year. Assistant Professor HART.

26. HISTORY OF EDUCATION IN THE UNITED STATES. Three credits. Second semester. M. W. F. at 2. Professor LULL.

From 1647 to the present; a study of the growth of elementary, secondary, and, to some extent, higher education. The main emphasis of the course will be laid upon the period from the beginning of the "Common School Revival," 1830, to the present time.

27. THE FUNDAMENTALS OF TEACHING. Two credits. First semester. Saturday, 9-11. Professor LULL.

This course is designed especially for teachers in Seattle and vicinity. A study of the fundamental principles of method as related to actual practice in the schoolroom. The problem of the course will be how to increase the teaching efficiency of each member of the class.

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*Not given in 1914-1915.

28. SUPERVISION AND MANAGEMENT. Three credits. Second semester. M. W. F. at 10. Professor LULL.

For those who are preparing for supervision, principalships or teaching positions. Practical problems of school organization and administration, such as the making and administration of courses of study; functions of school boards, superintendents, and principals; supervision of class work, teachers' meetings, student organizations.

29. SCHOOL HYGIENE. Two credits. First semester. T. Th. at 3. Professor WEINZIRL.

Problems of school hygiene, including: heating, lighting, and ventilation; school diseases and medical inspection of schools; hygiene of various school activities.

30. THE EDUCATION OF EXCEPTIONAL CHILDREN. Three credits. Second semester. Prerequisite, Philosophy 31, besides the general regulations pertaining to this group. M. W. F. at 11. Associate Professor SMITH.

Methods of instruction for backward, feeble-minded, and deaf children, and for those suffering from speech defects and physical defects. The course will include motor training, perception training and introduction to reading and number work.

31-32. ADOLESCENCE AND THE HIGH SCHOOL. Two credits. The year. S. 10 to 12. Professor BOLTON.

A critical consideration of the physical, intellectual, emotional, moral and social characteristics of adolescence and the educative activities suited to the period of secondary school education. Especially designed for teachers of Seattle.

33-34. PRINCIPLES OF EDUCATION. (Advanced Course.) Two credits. The year. Th. 4 to 6. Professor BOLTON.

A course for mature students who have taught considerably or who have done some previous work in the subject and can therefore progress more rapidly and also do more critical work than the beginner. Especially designed for teachers of the Seattle schools. Text: Bolton, *Principles of Education.*

C. COURSES FOR GRADUATES ONLY

Concerning prerequisites see note under "B."

35. ADMINISTRATION OF EDUCATION IN THE UNITED STATES. Three credits. First semester. M. W. F. at 10. Professor LULL.

The important problems of educational administration in the United States, national, state and local; relation to the other branches of civil administration. The financing of public education. The administration of the different forms of vocational education. Each student will be assisted in giving special attention to his own problems of school administration. Special reference to the educational problems of the Northwest.

37. STATE SCHOOL SYSTEMS. Two credits. First semester. Time to be arranged. Professor LULL.

An intensive study of the organization and administration of public education in various state school systems. Special attention will be given to the county unit and county supervision.

38. CITY SCHOOL SYSTEMS. Two credits. Second semester. Time to be arranged. Professor LULL.

An intensive study of the organization and administration of education in large and in small cities.

39-40. FOREIGN EDUCATIONAL SYSTEMS. Two credits. The year. T. 4 to 6. Professor BOLTON and Assistant Professor ANDERSON.

A critical study of current educational organization and practice in foreign countries, especially in Germany, France, England, Norway, Sweden and Canada. Texts: Bolton, *Secondary School System of Germany*, Farrington, *Primary and Secondary Education in France*, and Anderson, *The School System of Norway*. Time arranged for Seattle teachers.

41. LABORATORY COURSE IN THE EDUCATION OF EXCEPTIONAL CHILDREN. Two credits. First semester. Time to be arranged. Associate Professor SMITH.

The training of typical cases. Two hours of laboratory work and a one-hour conference each week. The students will be supervised in the instruction of children with various mental peculiarities. The methods considered in Course 30 in Education will be applied.

*42. MORAL EDUCATION. Two credits. Second semester. Professor BOLTON.

43-44. ADVANCED EDUCATIONAL PSYCHOLOGY. Two credits. The year. M. 3:30 to 5:30. Assistant Professor HABT.

A study of special problems in the field of educational psychology; expression and impression, the social nature of perception,

the nature and development of ideas, "motive" in educational practice, etc. Time arranged for Seattle teachers.

45-46. INDIVIDUAL RESEARCH AND THESIS WORK. Three credits. The year. Time to be arranged.

Intensive study and original investigation of special problems. Results are reported in the Seminar and when especially meritorious may be published. The special problems are directed by different members of the department. Consult head of the department regarding registration.

47-48. GRADUATE SEMINAR. Two credits. The year. T. 7 to 9, or at time to be arranged. Professor BOLTON.

For graduate students doing intensive study and research. Critical consideration of technical educational literature and of modern educational problems. Reports on individual problems. Technique of research, interpretation of results and thesis writing.

*49-50. SEMINAR IN ENGLISH EDUCATION. Two credits. The year. May be elected for either semester. Time to be arranged. Professor LULL and Associate Professor BENHAM.

PSYCHOLOGY AND ETHICS

General Psychology, course 31, four credits, is required as prerequisite to all courses in Education. Elements of Ethics, course 2, four credits, is required of all candidates for the degree of Bachelor of Arts in Education or Bachelor of Science in Education. The other courses in Psychology listed below are very closely related to the work in Education and should be liberally elected by candidates for advanced degrees in Education.

2. ELEMENTS OF ETHICS. Four credits. First or second semester. First semester, M. W. F. S. at 8; second semester, M. W. F. S. at 10. Professor SAVERY, Dr. DUCASSE.

Study of value, the good, duty, virtue. Application of ethical principles to problems of economic life, government, law, art, and religion. Three lectures, one or two discussion hours.

31. GENERAL PSYCHOLOGY. Four credits. First or second semester. First semester, M. W. F. at 10; second semester, M. W. F. at 9. Required for all courses in education. Laboratory deposit, $2.00.

The facts and laws of consciousness and their connection with

*Not given in 1914-1915.

the nervous system. Three lectures, one recitation, one laboratory period.

34. EXPERIMENTAL PSYCHOLOGY. Four credits. Second semester. Prerequisite, 31. One lecture, one recitation and two laboratory periods. Time to be arranged. Laboratory deposit, $1.00. Mr. WILCOX.

Training in methods of experimentation. Qualitative and quantitative experiments in sensation, perception, attention, association of ideas.

35-36. PRINCIPLES OF PSYCHOLOGY. Three credits. First and second semester. Prerequisite, 31. Time to be arranged.

A systematic study. Students are urged to precede this by physiological or experimental psychology.

37. ANIMAL BEHAVIOR. Three credits. First semester. M. W. F., at 10. Prerequisite, 31. Mr. WILCOX.

(1) The evolution of mind in animals. (2) The mental development of the child.

38. EDUCATIONAL PSYCHOLOGY. Three credits. Second semester. M. W. F. at 10. Prerequisite, 31. Mr. WILCOX.

The psychological basis of education. Perception, the learning processes, practice, memory, habit, judgment, attention and motor functions, with reference to sex, age, race and individual differences.

40. ABNORMAL PSYCHOLOGY. Three credits. Second semester. M. W. F. at 2. Prerequisite, 31. Mr. WILCOX.

Sleep, dreams, hypnotism, mediumships, possessions, hallucinations, motor automatisms, double personality and the subconscious.

45. THE PSYCHOLOGY OF EXCEPTIONAL CHILDREN. Three credits. First semester. M. W. F. at 11. Prerequisite, Psychology 31. Associate Professor SMITH.

The nature and cause of mental defects and peculiarities of children, with special reference to methods of diagnosis and to physical pathology. Prerequisite to the course in the Education of Exceptional Children and to Philosophy 46.

46. METHODS OF MENTAL AND PHYSICAL TESTS AND METHODS OF MEASUREMENT. Two credits. Second semester. Prerequisite, 45. Laboratory deposit, $1. Time to be arranged. Associate Professor SMITH.

Laboratory course with conferences. The student will be given practical training in Clinical Psychology and in Experimental Child Psychology.

Physiological Psychology (Phil. 33), and Research in Psychology (Phil. 49, 50), are also open to students in Education.

SOCIOLOGY

An approved course in sociology is required of all candidates for the degree of B. A. in Education or B. S. in Education and is recommended for all candidates for the normal diploma and the degree of M. A. in Education and the degree of M. S. in Education. The following course is recommended:

SOCIOLOGY 3, ELEMENTS OF SOCIOLOGY. Three credits. First semester. T. Th. at 1. Professor BEACH.

ZOOLOGY

One semester of zoology is required of candidates for the degree of B. A. in Education or B. S. in Education, and is recommended for all candidates for the normal diploma and for the degrees of M. A. in Education or M. S. in Education. The following course, or its equivalent, will be required:

ZOOLOGY 1. Four credits. First semester. Professor KINCAID, Mr. OSTERUD.

A general review of zoological science. This course is repeated in the second semester for the benefit of students entering at that time.

TEACHERS' COURSES IN ACADEMIC DEPARTMENTS

Besides the foregoing courses there are teachers' courses in the following academic departments: Botany, English, French, German, History, Home Economics, Latin, Mathematics, Music, Physical Training, Physics, Spanish. Others will doubtless be offered soon. A candidate for the University Normal Diploma must include a teachers' course in his major, if offered.

BOTANY 35. Three credits. First semester. Time to be arranged. Prerequisites, 1 year of Botany and junior standing. Professor FRYE.

The subject matter, aim and manner of presentation of high school botany. Practice teaching.

DRAWING 1-2. Public School Drawing. Two credits. The year. T. Th. 4 to 6. Miss BIRKMAN.

ENGLISH 35-36. Two credits. The year. T. Th. at 9. Assistant Professor GARRETT, Professor PARRINGTON, Associate Professor MILLIMAN, Mr. CHITTICK.

Required of students who wish the recommendation of the department for the normal diploma. A consideration of methods and problems in the teaching of English in the high school.

FRENCH 33-34. Two credits. Prerequisites, 6 and 8. The year. T. Th. at 9. Professor FREIN.

A considerable attention is given to pronunciation and the methods by which inaccuracies may be corrected. Review of the grammar from the standpoint of the teacher. Beginners' classes will be visited by the class.

GERMAN 29-30. Two credits. The year. T. Th. at 11. Professor MEISNEST.

Phonics, drill in stage pronunciation, methods of teaching, review of grammar. Required of students preparing to teach German.

HISTORY 39-40. One credit. The year. Required of advanced students who expect to teach history. M. W. F. at 11. Assistant Professor MCMAHON.

Text-books, assigned readings, courses of study and the best method of presentation will be considered.

HOME ECONOMICS 27-28. Two credits. The year. M. W. at 11. Prerequisites, 3, 8, 15, 21, 22, 24, and Education 1. Miss RAITT, Miss ————

Lesson plans and organization of courses of study in foods, nutrition, textiles, clothing and the home. Adaptation to different grades and types of schools. Equipment.

LATIN 9-10. Three credits. The year. Prerequisites, 5-6 or 7-8; or may be taken along with either of these. M. W. F. at 11. Assistant Professor SIDEY.

Selected portions of Caesar, Bell. Gall. V-VII and Bell. Civile; Seutonius; Julius Caesar; Cicero's Letters; Vergil, Bucolics and Georgics; Ancient Lives of Vergil. Review of the Caesar, Cicero and Vergil usually read in high schools. Methods of teaching Latin and discussion of the problems likely to arise in the classroom. Teaching by members of the class, under the supervision of the instructor. Visits to schools where Latin is taught and reports on the teaching observed.

*MATHEMATICS 30. Four credits. Second semester. Prerequisite, Math. 5. Required of juniors and seniors who make mathematics their major study and who are applicants for the teachers' certificate. Mr. CARPENTER.

MUSIC 21-22. Public School Music. Two credits. The year. M. W. at 10. Miss COLE.

PHYSICS 11. Two credits. The year. T. Th. at 10. Open only to seniors. Prerequisites, not less than 8 hours of Physics and 24 hours of other science. Professor OSBORN.

SPANISH 11. Two credits. First semester. T. Th. at 9. Professor OBER.

Discussion of methods of teaching Spanish; outlines of practical lessons. Practice work. Conversation.

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*Not given in 1914-1915.

COLLEGE OF ENGINEERING

FACULTY

*THOMAS FRANKLIN KANE, PH. D., (Johns Hopkins), PRESIDENT.

HENRY LANDES, A. M., (Harvard), ACTING PRESIDENT.

ALMON HOMER FULLER, M. S. C. E., (Lafayette), Professor of Civil Engineering, DEAN.

HORACE G. BYERS, PH. D., (Johns Hopkins), Professor of Chemistry.

FREDERICK MORGAN PADELFORD, PH. D., (Yale), Professor of English.

FREDERICK ARTHUR OSBORN, PH. D., (Michigan), Professor of Physics and Director of the Physics Laboratories.

ROBERT EDOUARD MORITZ, PH. D., PH. N. D., (Strassburg), Professor of Mathematics and Astronomy.

CARL EDWARD MAGNUSSON, PH. D., E. E., (Wisconsin), Professor of Electrical Engineering.

EVERETT OWEN EASTWOOD, B. S., C. E., M. A., (Virginia), Professor of Mechanical Engineering.

ELMER JAMES MCCAUSTLAND, C. E., M. C. E., (Cornell), Professor of Municipal and Highway Engineering.

CHARLES CHURCH MORE, M. S., C. E., (Lafayette), Professor of Civil Engineering.

HENRY KREITZER BENSON, PH. D., (Columbia), Professor of Industrial Chemistry.

JOHN WEINZIRL, PH. D., (Wisconsin), Professor of Bacteriology.

EDWARD EUGENE MCCAMMON, First Lieutenant, Third Infantry, U. S. A., Professor of Military Science and Tactics.

SAMUEL LATIMER BOOTHROYD, B. S., M. S., (Colorado), Associate Professor of Astronomy and Mathematics.

GEORGE SAMUEL WILSON, B. S., (Nebraska), Assistant Professor of Mechanical Engineering.

CHARLES W. HARRIS, C. E., (Cornell), Assistant Professor of Civil Engineering.

†GEORGE IRVING GAVETT, B. S., C. E., (Michigan), Assistant Professor of Mathematics.

EDGAR ALLEN LOEW, B. S., E. E., (Wisconsin), Assistant Professor of Electrical Engineering.

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* Leave of absence, January 1 to August 1. Retires August 1, 1914.
† Absent on leave, 1913-1914.

JOSEPH DANIELS, S. B., M. S., (Lehigh), Assistant Professor of Mining Engineering and Metallurgy.

ORVILLE PORTER COCKERILL, A. B., LL. B., (Ohio), Assistant Professor of Law.

ABRAHAM BERGLUND, PH. D., (Columbia), Assistant Professor of Economics.

HORACE JAMES MACINTIRE, M. M. E., (Harvard), Assistant Professor of Mechanical Engineering.

J. HARLEN BRETZ, PH. D., (Chicago), Assistant Professor of Geology.

FRANK EDWARD JOHNSON, E. E., (Minnesota), Instructor in Electrical Engineering.

SAMUEL THOMAS BEATTIE, Instructor in Woodwork.

SANDY MORROW KANE, Instructor in Metalwork.

JOHN WILLIAM MILLER, B. S., C. E., (Nebraska), Instructor in Civil Engineering.

**WALTER AUSTIN GLEASON, S. B., (Massachusetts Institute of Technology), Instructor in Civil Engineering.

*WILLIAM CHARLES MUEHLSTEIN, B. S. (C. E.), (Wisconsin), Instructor in Civil Engineering.

LEWIS IRVING NEIKIRK, PH. D., (Pennsylvania), Instructor in Mathematics.

CHARLES E. NEWTON, E. M., (Michigan School of Mines), Instructor in Civil Engineering.

HARLAN LEO TRUMBULL, PH. D., (Chicago), Instructor in Chemistry.

SAMUEL HERBERT ANDERSON, PH. D., (Illinois), Instructor in Physics.

LESLIE FORREST CURTIS, B. S., (Tufts), Instructor in Electrical Engineering.

THOMAS WITHERS, C. E., (Virginia), Instructor in English.

CHARLES C. MAY, B. S., (C. E.), (Washington), Instructor in Civil Engineering.

EDWIN LEONARD STRANDBERG, B. S. (C. E.), (Washington), Instructor in Civil Engineering.

FRANK M. WARNER, B. S. (C. E.), (Wisconsin), Instructor in Civil Engineering.

CHARLES GLENN BURRITT, B. S. (C. E.), (Wisconsin), Instructor in Civil Engineering.

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* Resigned, January 1, 1914.
** Resigned, February 1, 1914.

SIDNEY HOWARD GEORGE, Instructor in Civil Engineering.

CHARLES EVAN FOWLER, M. Am. Soc. C. E., Lecturer on Specifications and Bridge Construction.

MAGNUS T. CRAWFORD, E. E., Lecturer on Power Transmission.

SPECIAL LECTURES

During the past year special lectures have been delivered before the students of the College of Engineering as follows:

DR. E. R. KELLEY, State Commissioner of Health.
"Public Water Supplies."

MR. R. H. OBER, Superintendent of Buildings, City of Seattle.
"The Columbia River Bridge of the C., M. & St. P. Ry."

MR. C. E. FOWLER, Consulting Engineer, Seattle.
"Superintendence of Engineering Work."
"Bridge Erection."
"Bridge Architecture."
"Harbor Improvements."
"Foundations."
"Movable Bridges."

MR. R. H. THOMSON, Chief Engineer, Strathcona Park, British Columbia.
"Problems Confronting the Engineer a Few Years After Graduation."

MR. G. H. SMITH, Assistant Electrical Engineer, Seattle.
"Some Engineering Features of the Seattle Municipal Plant."

MR. MAGNUS T. CRAWFORD, Superintendent of Transmission, P. S. T. L. & P. Co.
"Electric Transmission Problems."

MR. JOHN R. KING, Rate Engineer, P. S. T. L. & P. Co., Seattle.
"Rates for Electric Energy."

MR. W. A. DANIELSON, Manager of the Elwah Electric Power Co., Seattle.
"The Elwah Power System."

CURRICULA

The College of Engineering offers two four-year curricula in each of the departments of chemical, civil, electrical and mechanical engineering. One of these leads to the degree of bachelor of science in the respective branches of engineering, as B. S. in civil engineering. The other is offered to meet the need for a broader foundation of general training than is possible in the regular four-year curricula. This curriculum in each department leads to the degree of bachelor of science (B. S.), and is followed by a year of graduate work which, under the University regulations for advanced degrees, leads to the degree of master of science in the respective lines.

Thus in five years it will be possible to cover all of the subjects in a regular engineering curriculum and add nearly a year's work in general training and a certain amount of advanced engineering work. This should insure greater efficiency in all of the work as well as broaden the general education.

The freshman work in the several departments is identical, thus making it possible for a student to delay the definite choice until the beginning of the sophomore year.

All freshman and much sophomore work will be repeated each semester. Additional courses will be repeated whenever practicable, provided the demand is sufficient to warrant full sections, but not for less than six students. This will make it possible for freshmen to enter in February with the assurance of continuity of work for at least two years. This plan also provides a possibility for taking some desirable elective courses or for engaging in practical work for a semester and a summer consecutively before completing the curriculum.

Attention is called to the fact that all curricula, as announced in this bulletin, differ somewhat from those in force for the past few years.

The essential changes are that a certain amount of elective work is made available and, in the department of civil engineering, that a portion of surveying and railroad engineering is transferred to a six weeks summer camp of surveying to be established in the summer of 1916.

The remaining work of the classes of 1915, '16 and '17 will be arranged to conform as closely as possible to the new curricula,

but it cannot follow them literally. The courses to be offered each semester may, as a rule, be noted from the announcements under Departments of Instruction, page 239. Replies will gladly be made to any questions of doubt that may be asked. The summer camp of surveying will not be required for the above mentioned classes.

DEGREE WITH HONORS

A degree with honors in engineering may be conferred upon any student of the College of Engineering who, upon recommendation of the engineering faculty, of the honors committee and upon vote of the university faculty, may be declared worthy of unusual distinction.

ADVANCED DEGREES

The degree of master of science in civil engineering (M. S. in C. E.), master of science in electrical engineering (M. S. in E. E.), master of science in mechanical engineering (M. S. in M. E.) and master of science in chemical engineering (M. S. in Ch. E.), respectively, will be conferred upon those who complete the year of graduate work following the respective curriculum leading to the degree of bachelor of science and maintain a grade of A or B in all subjects, pass a formal examination open to all members of the faculty, and submit a satisfactory thesis.

The degree of master of science in the various departments of engineering, as indicated in the preceding paragraph, will be conferred upon graduates of this College, or other engineering colleges of recognized standing, who complete a year (32 credit hours) of graduate work, including a satisfactory thesis, with the grade of A or B. The candidate must also pass a formal examination open to all members of the faculty. The selection of work for this degree must, in each case, be approved by the head of the department in which the student majors.

The professional degrees, civil engineer (C. E.), electrical engineer (E. E.), and mechanical engineer (M. E.), will be conferred in two years on graduates of this college holding the degree (M. S.) and in three years on those with (B. S.) in their respective lines, who give evidence of having been engaged continuously in acceptable engineering work and who present satisfactory theses.

ADMISSION

The requirements for admission to the freshman class in the courses leading to the degree of bachelor of science are:

English	3
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
A foreign language	2
History (American history preferred) or U. S. History and civics	1
Elective	5
Total	15

The requirements for admission to the freshman class of the courses leading to the degree B. S. in chemical engineering, B. S. in civil engineering, B. S. in electrical engineering, and B. S. in mechanical engineering are the same as the above with the exception that chemistry (one unit) is added to the fixed requirements; four units elective instead of five are allowed.

Students entering the college of engineering must have a *working knowledge* of the fundamentals of arithmetic, algebra and geometry. It is therefore desirable for the student to review his preparatory mathematics *just before entering college.* By such a step much time will be saved and the work of the college will be rendered far more valuable to him.

THESIS

The graduating thesis will consist of research or design in some branch of engineering, or the review of some existing construction. The subject must be approved by the professor in charge of the department under which it is classified, not later than the first of January in the senior year.

GOVERNMENT TIMBER TESTING SERVICE

The United States government through its forest service has located at the University of Washington a government timber testing station. Three timber testing engineers of the forest service are stationed here, and actual work in the investigation of the mechanical properties of Northwest timber is regularly car-

ried on. The structural materials testing laboratory is used jointly for this work and for University instruction and investigation.

CURRICULUM IN CHEMICAL ENGINEERING

Leading to the Degree of Bachelor of Science in Chemical Engineering.

(For description of each subject, see page 239, and following.)

FRESHMAN YEAR

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
Mathematics 1a (plane trig. and algebra	4	Mathematics 2a (analytical geometry)	4
Chemistry 1a (general)	4	Chemistry 2a (general)	4
Civil Eng. 1 (drawing)	2	Civil Eng. 3 (drawing)	4
English 1a	2	Civil Eng. 20 (surveying)	4
Elective (restricted)	3	Drill 2	2
Drill	2	Mechanical Eng. 2 (shop)	2
Mechanical Eng. 1 (shop)	2		
	15+4		16+4

Freshman Electives:

Continuation of the foreign language studied in the High School, 4 hours; Economics 1a, 3 hours; U. S. History, 4 hours; Sociology 3, 3 hours; Geology 1a, 4 hours; or any course approved by the head of the department.

SOPHOMORE YEAR

Mathematics 3a (calculus)	4	Mathematics 4a (calculus)	4
Physics 1a, 1b	6	Physics 2a, 2b	5
Chemistry 8 (qualitative)	4	Mechanical Eng. 21 (steam)	2
Civil Eng. 4 (drawing)	2	Chemistry 9 (quantitative)	4
Mechanical Eng. 3 (shop)	2	English 2a	2
Drill	2	Mechanical Eng. 4 (shop)	2
		Drill	2
	16+4		17+4

JUNIOR YEAR

Civil Eng. 41 (Mechanics)	4	Mechanical Eng. 10 (Mach. design)	3
Chemistry 3 (organic)	4	Chemistry 4 (organic)	4
Chemistry 13 (industrial)	4	Chemistry 14 (industrial)	4
Electrical Eng. 5	4	Mechanical Eng. 40 (exp.)	2
		Elective	4
	16		17

SENIOR YEAR

Chemistry 22 (physical)	5	Chemistry 23 (Electro)	4
Metallurgy 1 (fire assaying)	4	Thesis	4
Mech. Eng. 15 (Chem., Mach.)	2	Elective	8
Elective	5		
	16		16

Junior and Senior Electives:
Chemistry 15 (water exam.), 3 hours; Geology 1a, 9, 8 hours; Bacteriology 103, 104, 8 hours; Civil Eng. 50 (hydraulics), 4 hours; Economics, 1, 2, 6 hours; Civil Eng. 65 (struct. materials), 3 hours; Civil Eng. 56, 3 hours; Chemistry 25 (adv. physical), 4 hours; Chemistry 9a (adv. quant.), 4 hours; Chemistry 5-6 (adv. organic), 8 hours; Chemistry 27 (theory), 4 hours; Foreign Language, 4 hours; Law, 2 hours; Sociology 3-4, 6 hours; Mathematics 5a, 2 hours.

CURRICULUM IN CHEMICAL ENGINEERING

Leading to the Degree of Bachelor of Science

	Hours
Mathematics 1a, 2a, 3a, 4a	16
Civil Engineering 1, 3, 4 (drawing)	8
English 1a, 2a	4
Physics 1a, 1b, 2a, 2b	11
Civil Engineering 20, 41	8
Chemistry 1, 2, 8	12
Mechanical Engineering 1, 2, 3, 4, 10, 21	5+ 8
Military Training 1, 2, 3, 4	+ 8

Electives:

Prescribed from junior and senior electives	24
From the Department of Chemistry	20
General	20
	128+16

NOTE.—A maximum of 48 hours from the department of chemistry will be allowed for the B. S. degree.

GRADUATE YEAR

Leading to the Degree of Master of Science in Chemical Engineering.

(a) The degree of B. S. in chemical engineering or the degree of B. S. as above.

(b) The completion of the following supplemental work:

	Hours
Chemistry 27, 28	4
Thesis	8
Elective	20
	32

(c) The equivalent of 9 weeks of work in some chemical industry approved by the department of chemistry.

CURRICULUM IN CIVIL ENGINEERING

Leading to the Degree of Bachelor of Science in Civil Engineering.

(For description of each subject, see page 239, and following.)

FRESHMAN YEAR

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
Mathematics 1a (plane trig. and algebra)	4	Mathematics 2a (anal. geom.)	4
Chemistry 1a	4	Chemistry 2a	4
English 1a	2	Civil Eng. 3 (drawing)	4
Civil Eng. 1 (drawing)	2	Civil Eng. 20 (surveying)	4
Elective (restricted)	3	Military training 2	2
Military training 1	2	Mechanical Eng. 2 (shop)	2
Mechanical Eng. 1 (shop)	2		
	15+4		16+4

Freshman Electives:

Continuation of the foreign language studied in the High School, 4 hours; Economics 1a, 3 hours; U. S. history, 4 hours; Sociology 3, 3 hours; Geology 1a, 4 hours; or any course approved by the head of the department.

SOPHOMORE YEAR

Mathematics 3a (calculus)	4	Mathematics 4a (calculus)	4
Physics 1a, 1b	6	Physics 2a, 2b	5
Geology 1a	4	Chemistry 12 (engineering)	3
Civil Eng. 4 (drawing)	2	English 2a	2
Military training 3	2	Civil Eng. 7 (drawing)	1
		Civil Eng. 21 (surveying)	2
		Military training 4	2
	16+2		17+2

Surveying in summer camp between the sophomore and junior years, 6 weeks, 6 credits, beginning with the summer of 1916.

JUNIOR YEAR

Mathematics 5a (calculus)	2	Civil Eng. 32 (rail. const.)	2
Civil Eng. 8 (drawing)	1	Civil Eng. 42 (mechanics)	3
Civil Eng. 22 (surveying)	2	Civil Eng. 45 (masonry const.)	5
Civil Eng. 31 (railway operation)	2	Civil Eng. 50 (hydraulics)	4
Civil Eng. 41 (mechanics)	4	*Elective	3
Civil Eng. 70 (highways)	2		
Electrical Eng. 5	4		
	17		17

* The electives in the junior year are restricted in the consideration of the head of the department. The following subjects are suggested: Political science, general bacteriology, a continuation of language, philosophy, logic, ethics.

SENIOR YEAR

Civil Eng. 51 (hydraulic power)	3	Civil Eng. 56 (sanitary engineering)	3
Civil Eng. 55 (water supply and irrigation)	3	Civil Eng. 62 (bridges)	3
Civil Eng. 61 (bridges)	4	Law 80 (contracts and spec.)	2
Civil Eng. 65 (structural materials)	3	Thesis or elective	3
Elective	4	Elective	4
	17		15

The senior electives will be chosen with the consent of the class adviser from the following groups:

GROUP 1

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
Astronomy 3a (elementary geodesy)	4	Astronomy 4a (geodetic astronomy)	2
		Astronomy 5 (observations)	2

GROUP 2

Civil Eng. 71 (highway construction)	4	Civil Eng. 72 (city streets and pavements)	2
		Chem. 18 (road materials)	2

GROUP 3

Civil Eng. 43 (advanced mechanics)	2	Civil Eng. 44 (advanced mechanics)	2
Civil Eng. 63 (bridges)	2	Civil Eng. 64 (bridges)	2

GROUP 4

Civil Eng. 57 (water supply and irrigation design)	2	Civil Eng. 58 (sanitary engineering design)	2
Chemistry 15 (water anal.)	3	Bacteriology 110	2

GROUP 5

Civil Eng. 33 (railway transportation)	2	Civil Eng. 34 (tunneling and track elevation)	2
Electrical Eng. 44 (electric railways)	3	Civil Eng. 35 (yards and terminals)	2

GROUP 6

Eight hours of advanced work in any department in the University approved by the head of the department of civil engineering.

CURRICULUM IN CIVIL ENGINEERING

Leading to the Degree of Bachelor of Science.

(For description of each subject, see page 239, and following.)

	Hours
Math. 1a, 2a, 3a, 4a, 5a	18
Chem. 1, 2, 3b, 12	15
Phys. 1, 1b, 2a, 2b	11
Geol. 1, 2	8
Pol. Sci. 1, 2	6
Eng. 1a, 2a	4
E. E. 5, 15	8
M. E. 1, 2, 10, 21	5+ 4
C. E. 1, 3, 4, 20, 21, 22, 32, 41, 42, 45, 50, 70	38
*Surveying in summer camp 6 weeks	+ 6
Elective Group A	17
Drill 1, 2, 3, 4	+ 8
	130+18

Leading to the Degree of Master of Science in Civil Engineering.

	Hours
C. E. 51, 55, 56, 61, 62, 65	19
Law 80	2
Thesis	3
Elective Group B	8
	32

GROUP A—ELECTIVES

Continuation of a foreign language—8, 12 or 16 hours; bacteriology, chemistry, geology, history, mathematics, philosophy, physics, political and social science, mechanical and electrical engineering.

GROUP B—ELECTIVES

Same as arranged for degree of B. S. in C. E.

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* To follow Course 21 and to precede Course 22.

CURRICULUM IN ELECTRICAL ENGINEERING

Leading to the Degree of Bachelor of Science in Electrical Engineering.

(For description of each subject, see page 239, and following.)

FRESHMAN YEAR

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
Mathematics 1a (plane trig. and algebra)	4	Mathematics 2a (analytical geometry)	4
Chemistry 1a	4	Chemistry 2a	4
Civil Eng. 1 (drawing)	2	Civil Eng. 3 (drawing)	4
English 1a	2	Civil Eng. 20 (surveying)	4
*Elective (restricted)	3	Mechanical Eng. 2 (shop)	2
Mechanical Eng. 1 (shop)	2	Military training 2	2
Military training 1	2		
	15+4		16+4

SOPHOMORE YEAR

Mathematics 3a (calculus)	4	Mathematics 4a (calculus)	4
Physics 1a, 1b	6	Physics 2a, 2b	5
Civil Eng. 4 (drawing)	2	Mech. Eng. 10 (machine design)	3
Mech. Eng. 20 (mechanism)	2	English 2a	2
Chem. 12 (engineering)	3	Mech. Eng. 21 (steam engineering)	2
Mech. Eng. 3 (shop)	2	Mech. Eng. 4 (shop)	2
Military training 3	2	Military training 4	2
	17+4		16+4

JUNIOR YEAR

Electrical Eng. 1 (direct currents)	3	Electrical Eng. 3 (direct currents)	3
Elec. Eng. 2 (dynamo lab.)	1	Electrical Eng. 4 (dynamo lab.)	4
Civil Eng. 41 (mechanics)	4	Civil Eng. 42 (mechanics)	3
Mech. Eng. 11 (machine design)	2	Civil Eng. 50 (hydraulics)	4
Mathematics 5a (calculus)	2	Mechanical Eng. 40 (experimental)	2
Physics 5a (electrical measurements)	4		
Political Science 1a	3		
	18		16

*_Freshman Electives:_

Continuation of the foreign language studied in the High School, 4 hours; Economics 1a, 3 hours; U. S. History, 4 hours; Sociology 3, 3 hours; Geology 1a, 4 hours; or any course approved by the head of the department.

SENIOR YEAR

Electrical Eng. 21 (alternating currents)	4	Electrical Eng. 23 (alternating currents)	4
Electrical Eng. 22 (alternating currents lab.)	4	Electrical Eng. 24 (alternating currents lab.)	2
Electrical Eng. 36 (dynamo design)	2	Thesis	4
*Elective (restricted)	6	*Elective (restricted)	6
	16		16

Total hours—128 plus 16.

GROUP A

Math. 7, 8; physics 5a; E. E. 27, 31, 32, 37, 41, 44, 46, 48, 51, 52, 58. C. E. 21, 53, 65; M. E. 25, 30, 33, 41.

GROUP B

Political and Social Science; Law; History; and advanced courses in English and Foreign Languages.

CURRICULUM IN ELECTRICAL ENGINEERING

Leading to the degree of Bachelor of Science, and to the degree of Master of Science in Electrical Engineering.

(For description of each subject, see page 239, and following.)

Required work for the B. S. degree:	Hours
Math. 1a, 2a, 3a, 4a, 5a	16
Chem. 1, 2, 8b	12
Phys. 1a, 1b, 2a, 2b	11
Eng. 1a, 2a	4
Political Science 1a	3
M. E. 1, 2, 3, 4, 20, 21, 10, 11	9+8
E. E. 1, 2, 3, 4, 21, 22, 36	22
C. E. 1, 3, 4, 20, 41, 42, 50	23
Drill or Psyh. Cul. 1, 2, 3, 4	+8
*From Group A	10
*Elective	16
	128+16

Required work for M. S. in E. E. degree:

(a)	For students having completed the B. S. course.	
	E. E. 23, 24, 51, 52	10
	Thesis	4
	*From Group A	8
	*Elective	10
		32
(b)	For students having completed the B. S. in E. E. course.	
	E. E. 51, 52	4
	Thesis	4
	*From Group A	8
	*Elective	16
		32

Senior Electives:
The student must elect at least 8 hours from Group A. It is recommended that 4 hours be elected from Group B. The choice of electives must in all cases be approved by the head of the department.

*Selection of courses from Group A and choice of electives must in each case be approved by the head of the department.

CURRICULUM IN MECHANICAL ENGINEERING

Leading to the degree of Bachelor of Science in Mechanical Engineering.

(For description of each subject, see page 239, and following.)

FRESHMAN YEAR

FIRST SEMESTER	Hours		SECOND SEMESTER	Hours	
Mathematics 1a (plane trig. and algebra)	4		Mathematics 2a (analytical geometry)	4	
Chemistry 1a	4		Chemistry 2a	4	
Civil Eng. 1 (drawing)	2		Civil Eng. 3 (drawing)	4	
English 1a	2		Civil Eng. 20 (surveying)	4	
*Elective	3		Mechanical Eng. 2 (shop)		2
Mechanical Eng. 1 (shop		2	Military training		2
Military training		2			
	15	+4		16	+4

SOPHOMORE YEAR

Mathematics 3a	4		Mathematics 4a (calculus)	4	
Physics 1a, 1b	6		Physics 2a, 2b	5	
Mechanical Eng. 20 (mechanism)	2		Mechanical Eng. 10 (machine design)	3	
Chemistry 12 (engineering)	3		English 2a	2	
Civil Eng. 4 (drawing)	2		Mechanical Eng. 21 (steam)	2	
Mechanical Eng. 3 (shop)		2	Mechanical Eng. 4		2
Military training		2	Military training		2
	~~17~~	~~+4~~ 19 +2		~~16~~	~~+4~~ 18 +2

JUNIOR YEAR

Mechanical Eng. 22 (engines and boilers)	2		Civil Eng. 42 (mechanics)	3	
Civil Eng. 41 (mechanics)	4		Electrical Eng. 15	4	
Electrical Eng. 1, 2	4		Civil Eng. 50 (hydraulics)	4	
Mechanical Eng. 11 (machine design)	2		Mechanical Eng. 23 (engine and boiler design)	3	
Mechanical Eng. 41 (experimental)	3		Mechanical Eng. 24 (valve gears)	2	
Mathematics 5a (Calculus)	2		Mechanical Eng. 6 (shop)		2
Mechanical Eng. 5 (shop)		2			
	17	+2		16	+2

**Freshman Electives:*

Continuation of the foreign language studied in the High School, 4 hours; Economics 1a, 3 hours; U. S. History, 4 hours; Sociology 3, 3 hours; Geology 1a, 4 hours; or any course approved by the head of the department.

SENIOR YEAR

Civil Eng. 53 (hydraulic design)	2	Mechanical Eng. 25 (gas engines)	2
Mechanical Eng. 12 (machine design)	2	Mechanical Eng. 13 (machine design)	2
Mechanical Eng. 30 (steam turbines)	2	Mechanical Eng. 29 (mechanical refrigeration)	2
Mechanical Eng. 33 (thermodynamics)	2	Mechanical Eng. 31 (heating and ventilating)	2
Civil Eng. 65 (structural materials)	2	Mechanical Eng. 32 (power plants)	2
Mechanical Eng. 42 (experimental)	3	Mechanical Eng. 43 (experimental)	2
*Elective	3	Elective	4
	16		16

CURRICULUM IN MECHANICAL ENGINEERING

Leading to the degree of Bachelor of Science.

	Hours	
Math. 1a, 2a, 3a, 4a, 5a	18	
Chem. 1, 2, 8b, 12	15	
English 1a, 2a	4	
Phys. 1a, 1b, 2a, 2b	11	
C. E. 1, 2, 3, 20, 41, 42, 50, 53	25	
E. E. 1, 2, 15	9	
Mech. Eng. 10, 11, 12, 20. 21, 22, 23, 24, 32, 33, 41, 42	28	
*Elective	18	
Mech. Eng. 1, 2, 3, 4, 5, 6		12
Mil. Training		8
		128+20

GRADUATE YEAR

Leading to degree of Master of Science in Mechanical Engineering.

	Hours
Mech. Eng. 13, 25, 26, 28, 30, 31, 34, 43	16
Elective	12
Thesis	4
	32

*Electives must be approved by the head of the department.

DEPARTMENTS OF INSTRUCTION

CHEMISTRY

(Bagley Hall)

PROFESSOR BYERS, PROFESSOR BENSON, ASSOCIATE PROFESSOR DEHN, ASSISTANT PROFESSOR ROSE, DR. TRUMBULL, DR. BELL, MRS. DAVIS

1-2. GENERAL CHEMISTRY. Four credits. The year. Lect. T. Th. at 11; Lab., T. Th., M. W., or F. S. 8 to 11, or T. Th. or M. F. 1 to 4. Freshman engineers. Professor BYERS, ————.

To meet the needs of students who have not had chemistry in the preparatory schools, a course is offered consisting of two lectures and six hours laboratory work per week. Textbooks: Smith's College Chemistry and Laboratory Manual.

1a-2a. GENERAL CHEMISTRY. Four credits. The year. Lect. M. W. at 11; Lab. F. S. 8 to 11. Freshman engineers. Professor BYERS, DR. TRUMBULL.

Two lectures and six laboratory hours per week. At least one of these laboratory hours will be devoted to quiz work upon the subject matter of the lectures. Textbooks: Smith's General Chemistry, Smith's Laboratory Manual, and Byers and Knight's Qualitative Analysis.

1b. GENERAL CHEMISTRY. Four credits. Second semester. Lect. T. Th. at 8; Lab. T. Th. 9 to 12 or M. F. 1 to 4. Assistant Professor ROSE.

Repetition of 1a. Strong students or those carrying light course will be permitted to elect this course without the prerequsite high school course; but to satisfy the required work of the engineering curricula, such students must elect some other four-hour course in the department of chemistry.

2b. GENERAL CHEMISTRY. Four credits. First semester. Lect. T. Th. at 8; Lab. T. Th. 9 to 12. Assistant Professor ROSE.

Continuation of 1b.

3-4. ORGANIC CHEMISTRY. Four credits. The year. Junior chemical engineers. Lect. M. W. F. at 8; Lab. M. or W. or F. 1 to 5. Associate Professor DEHN.

Bernthsen-Sudborough's text is used as a reference book in connection with the lectures and Sudborough-James' laboratory manual is used as a laboratory guide.

8. ADVANCED QUALITATIVE ANALYSIS. Four credits. First semester. Sophomore chemical engineers. Lect. T. Th. at 10; Lab. M. W. 1 to 4. Professor BYERS.

Lectures on the theory of solution as applied to analytical work. Laboratory work on the analysis of alloys and minerals and illustrations of the subject-matter of the lectures. Two lectures and six laboratory hours per week.

8b. ELEMENTARY QUALITATIVE ANALYSIS. Four credits. Either semester. Sophomore chemical engineers. Lect. M. W. at 11; Lab. T. Th. 2 to 5. MRS. DAVIS.

Chemistry 1-2 is followed by a course in qualitative analysis. The course consists of two lectures and six laboratory hours per week. Textbook: Byers and Knight.

9. QUANTITATIVE ANALYSIS. Four credits. The year. Sophomore chemical engineers. Lect. Th. at 8; Lab. T. F. 1 to 4, T. 8 to 11. Dr. BELL.

Gravimetric and volumetric analysis. Moody's Quantitative Analysis. Twelve laboratory hours and one recitation per week.

12. ENGINEERING CHEMISTRY. Three credits. Either semester. Sophomore engineers. Prerequisite, 2a, 2b or 8b. Lect. M. W. at 11; Lab. T. 1 to 4. Professor BENSON.

Chemistry of the materials of engineering. Two lectures and one laboratory period. Textbook: Benson's Industrial Chemistry for Engineering Students.

13-14. INDUSTRIAL CHEMISTRY. Four credits. The year. Junior chemical engineers. Prerequisite, Chemistry 9. Lect. T. Th. at 11; Lab. M. Th. 1 to 4. Professor BENSON.

A course dealing with a detailed study of chemical industries. Two lectures and two laboratory periods.

15. WATER EXAMINATION. Three credits. First semester. Lect T. Th. at 8; Lab. T. Th. 9 to 12. Professor BENSON.

Option for students in Chemical and Civil Engineering. Two lectures and one laboratory period. The course deals with the sanitary aspects of water supplies and the chemistry of water purification.

*16. FOREST PRODUCTS. Three credits. First semester. Option for students in Forestry. Two lectures and one laboratory period. Professor BENSON.

A detailed study of the chemical processes involved in the utilization of wood.

18. ROAD MATERIALS. Two credits. Second semester. Option for students in Civil Engineering. One lecture and one laboratory period. Lect. T. at 8; Lab. W. 1 to 4. Professor BENSON.

Textbooks: Hubbard's Dust Preventives and Road Binders and Bulletin 38, Office of Public Roads, Method for Examination of Bituminous Road Materials.

22. PHYSICAL CHEMISTRY. Five credits. First semester. Senior and graduate chemical engineers. Prerequisites, 8, 9, college physics. Lect. M. W. at 11; Lab. M. W. 1 to 4. Dr. TRUMBULL.

An elementary course dealing with fundamental theories of chemistry based upon physical measurements. Three lectures and one laboratory period per week.

23. ELECTRO CHEMISTRY. Four credits. Second semester. Senior and graduate chemical engineers. Prerequisites, 8 and college physics. Lect. M. W. at 10; Lab. M. F. 1 to 4. Professor BYERS and Dr. TRUMBULL.

The lecture course deals with the historical development of electro chemistry, the theories of electrolysis, migration of ions, concentration cells, solution pressure, etc. The laboratory work consists of the preparation of compounds by electrolysis and electro synthesis, electro-plating, etc., and of illustrations of the subject matter of the lecture work.

27. CHEMICAL THEORY. Two credits. The year. Chemical engineers. T. 7 to 9 p. m. Professor BYERS.

All graduate students registering in the department of chemistry will be expected to take a two-hour course throughout the year in the historical development of fundamental laws and theories.

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*Not given in 1914-1915.

CIVIL ENGINEERING

(Engineering Building)

PROFESSOR FULLER, PROFESSOR MC CAUSTLAND, PROFESSOR MORE, ASSISTANT PROFESSOR HARRIS, MR. MILLER, MR. NEWTON, MR. MAY, MR. STRANDBERG, MR. WARNER, MR. BURRITT, MR. GEORGE, MR. FOWLER.

1. ENGINEERING DRAWING. Two credits. The year. All freshman engineers. Prerequisite, plane geometry. 1st sem., M. F. 2 to 5, F. S. 8 to 11, W. F. 2 to 5, M. W. 8 to 11 or T. Th. 8 to 11. 2nd sem., T. W. or M. W. 2 to 5. Assistant Professor HARRIS, Mr. GLEASON, Mr. MAY, Mr. STRANDBERG, Mr. WARNER.

Linear drawing, Roman and Gothic capital letters; free hand lettering.

3. ENGINEERING DRAWING. Four credits. The year. All freshman engineers. Prerequisites, solid geometry, preceded or accompanied by drawing 1. 1st sem. One section. T. Th. at 1, T. Th. 2 to 5. 2nd sem. Six sections. M. W. at 9, T. F. 2 to 5; M. W. at 1, T. Th. 8 to 11; M. W. at 9, W. F. 2 to 5; T. Th. at 1, T. Th. 8 to 11; T. Th. at 1, F. S. 8 to 11; M. W. at 1, M. 2 to 5, F. 8 to 11. Assistant Professor HARRIS, Mr. STRANDBERG and Mr. WARNER.

The elements of descriptive geometry, including the principles of shades, shadows and perspective.

4. ENGINEERING DRAWING. Two credits. The year. All freshman engineers. Prerequisite, 3. T. Th. 1 to 4.

Continuation of drawing 3. Problems and tracings.

7-8. ENGINEERING DRAWING. One credit. The year. Sophomore civil engineers. Prerequisite, 4. 1st sem., M. 1 to 4. 2nd sem., M. 8 to 11. Assistant Professor HARRIS, Mr. MAY.

Working drawings, including tracings.

17. FOREST SURVEYING. (Short session in Forestry, first year, Jan.-Mar.). Laboratory deposit, three dollars. M. W. at 9, Th. F. 8 to 12. Mr. NEWTON.

Engineering drawing, topographical and map drawing. Instructions and field practice in the use of the chain, hand compass, and Forest Service compass, hand level, clinometer and transit in direct application to the requirements of the U. S. Forest Service.

18. FOREST SURVEYING. (Short session in Forestry, second year, Jan.-Mar.). Laboratory deposit, three dollars. Lect. M. W. at 11; Lab. T. Th. 8 to 12. Mr. NEWTON, Mr. BURRITT.

Traversing by various conventional methods, mining claim surveys, plane triangulation and topographical work. U. S. Public Land Subdivision.

19. MINE SURVEYING. (Short session in Mining, Jan.-Mar.). Laboratory deposit, three dollars. Lect. M. W. at 8; Lab. M. 1 to 5, S. 8 to 12. Mr. NEWTON.

Instruction and field practice in the use of simple instruments for making surface and underground surveys. The elements of drawing, lettering, sketch mapping and field work. Judicial functions of the mine surveyor and the rules governing mineral surveys.

20. ELEMENTARY PLANE SURVEYING. Four credits. First or second semester. All freshman engineers. Prerequisites, Math. 1a and C. E. 1. Laboratory deposit, three dollars. Two recitations and two three-hour laboratory periods. 1st sem., M. W. at 8; W. F. 1 to 4; 2nd sem., W. F. at 1, M. W. 2 to 5; Th. F. at 1, F. S. 8 to 11; T. Th. at 2, F. S. 8 to 11; T. Th. at 3, M. W. 8 to 11; M. W. at 1, T. Th. 8 to 11; T. Th. at 3, T. Th. 8 to 11. Mr. MILLER, Mr. NEWTON, Mr. BURRITT and assistants.

Adjustment of instruments, trigonometric computations, mapping of simple surveys, and a brief introduction to the U. S. system of Public Land surveying.

*21. FIELD GEOMETRY AND CONSTRUCTION SURVEYING. Two credits. First or second semester. Sophomore C. E. Prerequisites, Math. 2a and C. E. 20. Laboratory deposit, three dollars. Two three-hour laboratory periods. Mr. MILLER.

Theory of circular and parabolic curves. Staking out engineering work and the computation of earth work. Use of mass diagram and construction profiles.

*22. SURVEYING CAMP. Six weeks following the second semester sophomore work. Class will start for camp immediately following the commencement in June. Required of all C. E. stu-

*For the year 1914-15 these courses will be given as follows:
21—Mapping and Topographic Drawing. Three credits. The year. 1st sem., M. at 1, M. W. 2 to 5, or M. at 1, M. T. 2 to 5. 2nd sem., M. at 9, M. W. 2 to 5.
22—Construction Surveying. Three credits. The year. 1st sem., Th. at 11, T. 1 to 5; 2nd sem., W. at 9, Th. 1 to 5.
23—Topographic Surveying. Three credits. First semester. W. at 10, Th. 1 to 5.

dents, beginning with the summer 1916. Prerequisites, C. E. 21 and C. E. 7. Mr. MILLER and ————.

Railway and topographic surveying. Elementary triangulation and the use of the plane table and stadia. Precise measurement of short base lines with the steel tape. Railway preliminary and location surveys. Cross sectioning and referencing the line and making the necessary right of way surveys.

*23. SURVEYING OFFICE WORK. Two credits. First semester. Junior C. E. Prerequisite, C. E. 22. Mr. MILLER.

Computations and maps of summer camp surveys.

24-25. FOREST SURVEYING. Six credits. The year. Sophomore and junior Forestry. Prerequisites, Math. 1a and Forestry 2. Laboratory deposit, three dollars. M. W. at 10, T. Th. 1 to 5. Mr. NEWTON.

Engineering lettering and map drawing. Chain, compass, transit and level surveying, with reference to work in forest. United States subdivision of public lands.

26. FOREST TOPOGRAPHY. Four credits. First semester. Junior Forestry. Prerequisite, C. E. 25. Laboratory deposit, three dollars. M. W. at 11, F. 1 to 5. Mr. NEWTON.

Topographic surveys as applied to forestry. Reconnoissance and sketch maps, and exercises in reading and adjusting triangulation systems. Filling in topographic details with plane table and transit. Beginning of elementary railroad surveying.

27. LOGGING RAILROADS. Four credits. Second semester. Junior Forestry. Prerequisites, C. E. 26. Laboratory deposit, three dollars. M. W. at 11, F. 1 to 5. Mr. MILLER.

Elementary railroad engineering including curves and earthwork and the economic location of logging railways. Cost estimates.

28. MINE SURVEYING. Three credits. The year. Sophomore mining engineers. Prerequisite, C. E. 20. Laboratory deposit, three dollars. T. at 11, W. 1 to 5. Mr. NEWTON.

Surface and underground practice. Observation for meridian.

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*For the year 1914-15 these courses will be given as follows:
21—Mapping and Topographic Drawing. Three credits. The year. 1st sem., M. at 1, M. W. 2 to 5, or M. at 1, M. T. 2 to 5. 2nd sem., M. at 9, M. W. 2 to 5.
22—Construction Surveying. Three credits. The year. 1st sem., Th. at 11, T. 1 to 5; 2nd sem., W. at 9, Th. 1 to 5.
23—Topographic Surveying. Three credits. First semester. W. at 10, Th. 1 to 5.

Topography. Mining claim surveys. Plane triangulation. Tunnel and vertical shaft work and connections. Mapping.

31. RAILWAY OPERATION. Two credits.* First semester Junior C. E. Prerequisites, 22, accompanied by 41. Laboratory deposit, three dollars. M. W. at 11, S. 9 to 12. Mr. MILLER.

Economics of the operation of railways from an engineering standpoint. Train weights and resistances, costs, etc. Maintenance of way and equipment.

32. RAILWAY CONSTRUCTION. Two credits. Second semester. Junior C. E. Prerequisite, 31. Laboratory deposit, three dollars. M. W. at 10, T. 1 to 4. Mr. MILLER.

The economics of railway location and the relation of location to operation. Contracts and specifications.

33. RAILWAY TRANSPORTATION. Two credits. First semester. Senior and graduate C. E. Prerequisite, 32. W. at 8, F. 8 to 11. Mr. MILLER.

The economics of railway transportation from an engineering standpoint. Traffic statistics and the choice of route and motive power.

34. TUNNELLING AND TRACK ELEVATION. Two credits. Second semester. Senior and graduate C. E. Prerequisite, 32. Mr. MILLER.

The problems confronting the engineer in track elevation and the construction of subways.

35. YARDS AND TERMINALS. Two credits. First semester. Senior and graduate C. E. Prerequisite, 32. Mr. MILLER.

The design and operation of the large yards of modern railway organizations, and the control of trains by means of signaling and interlocking.

41-42. MECHANICS. 41, either semester. Four credits. First semester, M. W. F. 1 to 4 or M. W. F. 9 to 12. Second semester, M. W. F. 9 to 12. 42, either semester, three credits. First semester, T. Th. 8 to 11. Second semester, M. W. 2 to 5 or T. Th. 1 to 4. All junior engineers. Prerequisites, mathematics 4a, physics 1a. Professor MORE, Assistant Professor MACINTIRE, Mr. MAY.

Statics, dynamics and mechanics of materials.

*Three credits for the year 1914-15.

43-44. ADVANCED MECHANICS. Two credits. The year. Senior and graduate engineers. Prerequisites, 42 and 45. First semester, M. W. at 8. Second semester, F. at 8, F. 1 to 4. Professor MORE.

General theories of flexure, elasticity and least work, with applications.

45. MASONRY CONSTRUCTION. Five credits. Second semester. Junior C. E. Prerequisites, 8, preceded or accompanied by 42. T. Th. at 11, T. Th. S. 8 to 11. Professor MORE and Mr. MAY.

Foundations, piers, retaining walls, dams and arches. Reinforced concrete.

50. HYDRAULICS. Four credits. The year. All junior engineers. Prerequisite, preceded or accompanied by 42. M. W. F. at 9, Th. 1 to 4; M. W. F. at 11, F. 1 to 4; or M. W. F. at 11, T. 8 to 11. Assistant Professor HARRIS and Mr. STRANDBERG.

Flow of water through pipes and orifices, over weirs and in open channels; energy, impulse and reaction of jets with application to impulse wheels. Review of hydrostatics.

51. HYDRAULIC POWER. Three credits. First semester. Senior and graduate C. E. Prerequisite, 50. M. W. at 8, T. 1 to 4. Assistant Professor HARRIS.

Stream flow, storage and generation of power. Development and theory of turbines, design of a spillway, penstock and turbines; test of an existing powerplant.

53. HYDRAULIC MOTORS. Two credits. First semester. Senior and graduate E. E. and M. E. Prerequisite, 50. F. at 10, M. 1 to 4. Assistant Professor HARRIS.

Development and theory of water wheels and turbine pumps; design of a reaction turbine.

54. HYDRAULIC MINING. (Short session in Mining, Jan.-Mar.) T. Th. at 8. Professor MCCAUSTLAND.

A course of two lectures per week on theory and practice of hydraulic mining.

55. WATER SUPPLY AND IRRIGATION. Three credits. First semester. Senior and graduate C. E. Prerequisite, 50. M. W. at 9, M. 1 to 4. Professor MCCAUSTLAND.

A study of the principal engineering operations necessary to secure suitable water supplies for cities and towns and water for irrigation. The purification of water supplies.

56. SANITARY ENGINEERING. Three credits. Second semester. Senior and graduate C. E. Prerequisite, 55. T. Th. at 10, Th. 1 to 4. Professor MCCAUSTLAND.

A study of the design and construction of sewerage systems, both combined and separate. Sewage treatment.

57. WATER SUPPLY AND IRRIGATION PROBLEMS. Two credits. First semester. Senior and graduate C. E. T. Th. at 10. Professor MCCAUSTLAND.

Supplementary to course 55, with special problems and investigations.

58. SEWAGE TREATMENT. Two credits. Second semester. Senior and graduate C. E. and Chem. E. M. W. at 9. Professor MCCAUSTLAND.

Supplementary to course 56, with special problems in matters relating to public health.

61-62. BRIDGES. Four credits first semester. T. Th. at 9, W. F. 1 to 4. Three credits second semester. W. at 10, M. W. 1 to 4. Senior and graduate C. E. Prerequisite, 45. Professor FULLER.

Stresses, design and deflection of simple trusses. Detail drawings. Estimates.

63-64. HIGHER STRUCTURES. Two credits. The year. Senior and graduate C. E. Prerequisite, preceded or accompanied by 61-62. First semester, T. at 10, F. 8 to 11. Second semester, W. at 9, F. 9 to 12. Professor FULLER.

Primary and secondary stresses. Design.

65. STRUCTURAL MATERIALS. Three credits. First semester. Senior C. E and M. E. and graduate E. E. Prerequisite, 42. Laboratory deposit, three dollars. T. at 11, T. 1 to 5; or M. at 11, Th. 1 to 5. Professor FULLER and Mr. MAY.

An experimental study of the physical properties of materials of construction.

70. HIGHWAYS. Two credits. Second semester. Junior C. E. M. W. at 8. Professor MCCAUSTLAND.

A general survey of the location, construction and maintenance of country roads and city streets, with special emphasis upon the construction of the cheaper roads; *i. e.* earth, sand, clay and gravel up to $5,000 per mile.

71. HIGHWAY CONSTRUCTION. Four credits. First semester, Senior C. E. Prerequisites, 32 and 70. M. W. F. at 11, F. 8 to 11. Professor MCCAUSTLAND.

The economics of highway location, construction, and maintenance of the more permanent character, *i. e.* $5,000 per mile and up. All standard laboratory tests of highway metals.

72. CITY STREETS AND PAVEMENTS. Two credits. Second semester. Senior C. E. Prerequisite, 71. M. W. F. at 11, F. 8 to 11. Professor MCCAUSTLAND.

A study of city streets and pavements, including estimates and inspection; also, a study of the manufacture and testing of materials of paving.

ELECTRICAL ENGINEERING

(Engineering Building)

PROFESSOR MAGNUSSON, ASSISTANT PROFESSOR LOEW, MR. JOHNSON, MR. CURTIS, MR. CRAWFORD.

1. ELECTRICAL ENGINEERING. Three credits. Either semester. Junior E. E and M. E. Prerequisites, Mathematics 4a, physics 2a, 2b. M. W. F. at 8. Assistant Professor LOEW and Mr. CURTIS.

Theory of the electric and magnetic circuits; construction, operation and characteristics of direct current generators and motors.

2. DYNAMO LABORATORY. One credit. Either semester. Junior E. E and M. E. Prerequisites, Mathematics 4a, physics 2a, 2b. First semester, M. 1 to 4, or S. 9 to 12; Second semester F. 1 to 4. Assistant Professor LOEW and Mr. CURTIS.

Laboratory work on direct current machinery to be taken in connection with Course 1.

3. ELECTRICAL ENGINEERING. Three credits. Either semester. Junior E. E. Prerequisites, E. E. 1 and 2. First semester, M. W. F. at 11; Second semester, M. W. F. at 10. Assistant Professor LOEW.

Continuation of Course 1 in direct current machinery. Storage batteries. Regulation and control of direct current systems.

4. DYNAMO LABORATORY. Four credits. Either semester. Junior E. E. Prerequisites, Mathematics 4a, physics 2a, 2b. To be taken in connection with Course 3. First semester, W. F. 1 to 5; Second semester, T. Th. 8 to 12, or M. 1 to 5, S. 8 to 12. Assistant Professor LOEW.

Experimental work on direct current dynamo machinery and storage batteries.

5. ELECTRICAL ENGINEERING. Four credits. Either semester. Junior C. E. and Ch. E., Forestry and Mining. Prerequisites, Mathematics 4a, Physics 2a, 2b. First semester, T. Th. at 8, F. 8 to 12; or T. Th. at 9, T. 1 to 5; Second semester, T. Th. at 11, Th. 1 to 5. Assistant Professor LOEW, Mr. CURTIS and Mr. JOHNSON.

A short course giving the fundamental principles of direct currents with experimental tests on commercial dynamos and motors.

10. ELEMENTARY ELECTRICAL ENGINEERING. Four credits. First semester. Electricians. M. 7 to 9 p. m. W. 7 to 11 p. m.

The laws of the electric and magnetic circuits with application to direct current machinery without the use of advanced mathematics. For students having at least two years of practical experience with electrical machinery and appliances.

15. ALTERNATING CURRENTS. Four credits. Second semester. Junior M. E. and electricians. Prerequisites, E. E. 5 or 10. M. 7 to 11 p. m. W. 7 to 9 p. m. Assistant Professor LOEW and Mr. CURTIS.

An introduction to alternating current theory with experimental work on alternating current machinery.

FOR UNDERGRADUATES AND GRADUATES

21. ALTERNATING CURRENTS. Four credits. First semester. Senior E. E. Prerequisites, E. E. 3 and 4. M. T. Th. F. at 9. Professor MAGNUSSON.

The theory of the generation of single phase and polyphase currents. Energy storage in the magnetic and dielectric fields. Vector diagrams and symbolic methods of analysis. Power factors and the measurement of power. The theory of the transformer, polyphase induction motors, synchronous motors, rotary converters, and transmission lines.

22. ALTERNATING CURRENT LABORATORY. Four credits. First semester. Prerequisites, E. E. 3 and 4. Senior E. E. W. Th. F. 1 to 5. Mr. CURTIS.

Experimental work on alternating current machinery. To be taken in connection with Course 21.

23. ALTERNATING CURRENTS. Four credits. Second semester. Prerequisites, E. E. 21 and 22. M. T. Th. F. at 9. Professor MAGNUSSON.

Continuation of course 21. The theory of the single phase induction and commutator motors. The effects of induction and synchronous motors on transmission systems. Phase control and regulation. Interlinked polyphase systems.

24. ALTERNATING CURRENTS LABORATORY. Two credits. Second semester. Prerequisites, E. E. 21 and 22. Seniors in E. E. To be taken in connection with course 23. M. 1 to 5, or W. 1 to 5. Mr. CURTIS.

A continuation of course 22 with tests on large commercial machines.

27. ELECTRIC LIGHTING. Three credits. First semester. Senior E. E. M. F. at 10, W. 8 to 11. Professor MAGNUSSON.

Electric lamps. Commercial photometry. Wiring. Adaptation of electric lighting to commercial requirements.

31. TELEPHONES. Two credits. Either semester. Junior and senior E. E. Prerequisites, E. E. 1 and 2, or 5. T. Th. at 11. Mr. JOHNSON.

Theory, construction and operation of telephone systems. Central station practice.

32. TELEPHONES AND TELEGRAPHS. Two credits. Second semester. Prerequisite, E. E. 31. Seniors in E. E. M. at 11, Th. 1 to 4. Mr. JOHNSON.

Details of automatic and manual switchboards. Testing and locating faults. Multiplex and wireless telegraphy. Railway signal systems.

36. DYNAMO DESIGN. Two credits. First semester. Prerequisites, E. E. 3 and 4. Seniors in E. E. T. 1 to 5. Assistant Professor LOEW.

Complete design of one direct current generator or motor.

37. DESIGN OF ELECTRICAL APPARATUS. Two credits. Second semester. Prerequisite, E. E. 36. Seniors in E. E. F. 1 to 5. Assistant Professor LOEW.

Design of switchboards, transformers, alternators or a. c. motors.

41. METERS. Two credits. Second semester. Prerequisites, E. E. 3 and 4. F. at 11, W. 8 to 11. Seniors in E. E. Mr. JOHNSON.

Detail study of different types of meters and the problems arising in the measurements of electrical energy for various commercial requirements.

44. ELECTRIC RAILWAYS. Three credits. First semester. Prerequisites, E. E. 3, 4 or E. E. 5. Seniors in E. E. and C. E. M. W. F. at 11. Mr. CURTIS.

Electrical equipment and rolling stock; roadbed; construction and operation of direct current, single phase, and polyphase systems.

46. CENTRAL STATIONS. Two credits. Second semester. Prerequisites, E. E 21 and 22. Seniors in E. E. M. F. at 10. Mr. CURTIS.

Location, design and operation of electric central stations.

48. POWER TRANSMISSION. Two credits. Second semester. Prerequisites, E. E. 21 and 22. Seniors and graduates in E. E. T. Th. at 10. Assistant Professor LOEW.

Location, design and operation of electric power transmission systems.

51-52. TRANSIENT ELECTRICAL PHENOMENA. Two credits. The year. Prerequisites, E. E 21 and 22. Graduate E. E. Th. 7 to 9 p. m. Professor MAGNUSSON.

The exponential law of simple transients. Single and double energy transients. Current oscillations and traveling waves. Natural periods of transmission lines. Short circuits transients. Surges. Corona. Lightning phenomena.

58. THESIS. Four credits. The year. Senior and graduate E. E. T. 1 to 5, W. 8 to 12. Professor MAGNUSSON and Assistant Professor LOEW.

After consultation with the head of the department each student selects a suitable problem for investigation. Reports of

progress are made weekly to the instructor in charge of the work selected. A complete report of the semester's work is typewritten and bound and one copy deposited in the University library.

MECHANICAL ENGINEERING

(Engineering Building)

PROFESSOR EASTWOOD, ASSISTANT PROFESSOR WILSON, ASSISTANT PROFESSOR MACINTIRE, MR. BEATTIE, MR. KANE

1. CARPENTRY AND WOOD-TURNING. Two credits. The year. Freshman and sophomore M. E., C. E., E. E., and Ch. E. First semester, W. 1 to 5, T. 1 to 5, M. 1 to 5, F. 1 to 5, S. 8 to 12, Th. 1 to 5, T. Th. 8 to 10, or M. W. 8 to 10. Second semester, T. Th. 10 to 12, F. 1 to 5. Mr. BEATTIE.

2. PATTERN MAKING AND CABINET WORK. Two credits. The year. Freshman and sophomore M. E., C. E., E. E., and Ch. E. First semester, M. 1 to 5. Second semester, Th. 1 to 5, T. 1 to 5, M. 1 to 5, W. 1 to 5, F. 1 to 5, or S. 8 to 12. Mr. BEATTIE.

3. FORGE AND FOUNDRY. Two credits. The year. Sophomore and junior M. E., E. E., and Ch. E. First semester F. 1 to 5, or Th. 1 to 5. Second semester, Th. 1 to 5 or W. 1 to 5. Mr. KANE.

4. MACHINE WORK. Two credits. The year. Sophomore and junior M. E., E. E. and Ch. E. First semester, M. 1 to 5. Second semester, M. 1 to 5, or T. 1 to 5. Mr. KANE.

5. MACHINE WORK. Two credits. First semester. Junior and senior M. E. First semester, T. 1 to 5. Second semester, F. 1 to 5. Mr. KANE.
Advanced.

6. MACHINE WORK. Two credits. Second semester. Junior and senior M. E. First semester, T. 1 to 5. Second semester, F. 1 to 5. Mr. KANE.
Advanced.

7. MANUAL ARTS, WOODWORK. Two credits. The year. Mr. BEATTIE.
For teachers.

8. MANUAL ARTS, METALWORK. Two credits. The year. Mr. KANE.
For teachers.

9. MINE TIMBER FRAMING. Two credits. Second semester. Sophomore mining engineers. W. at 4, W. 1 to 4. Mr. BEATTIE and Assistant Professor DANIELS.

10. MACHINE DESIGN. Three credits. The year. Sophomore and junior M. E., E. E., Ch. E. and junior C. E. Prerequisite, engineering drawing 4. First semester, W. at 1, M. W. 2 to 5, or M. at 1, T. Th. 8 to 11. Second semester, M. at 1, T. Th. 8 to 11. Assistant Professor MACINTIRE.

A study of the design of machine details, giving practice in the application of modern formulae and manufacturers' standards.

11. MACHINE DESIGN. Two credits. The year. Sophomore and junior M. E. and E. E. Prerequisite, 10, preceded or accompanied by mechanism 20. First semester, T. Th. 2 to 5. Second semester, W. 10 to 12, F. 1 to 5. Assistant Professor MACINTIRE.

A continuation of course 10, consisting in the design of gearing, cone pulleys and belt transmission. Practice in tracing and blueprinting.

12. DESIGN OF SPECIAL MACHINERY. Two credits. First semester. Senior M. E. Prerequisites, 11 and mechanics 41. W. F. 1 to 4. Assistant Professor WILSON.

Special problems in the design of hoisting and pumping machinery.

13. ADVANCED MACHINE DESIGN. Two credits. Second semester. Senior and graduate M. E. Prerequisites, 12, 20, and mechanics 42. Th. F. 1 to 4. Assistant Professor WILSON.

Special problems in the design of machine tools, and automatic machinery.

15. CHEMICAL MACHINERY. Two credits. First semester. Senior Ch. E. Prerequisites, 10 and mechanics 41. T. Th. 2 to 5. Assistant Professor MACINTIRE.

Special problems in the design of chemical machinery.

20. MECHANISM. Two credits. First or second semester. Sophomore and junior M. E. and E. E. First semester, T. Th. at 10. Second semester, T. Th. at 9 or 10. Assistant Professor WILSON.

A study of the operation of machines involving the transmission of forces and the production of determinate motions.

21. STEAM ENGINEERING. Two credits. The year. Junior M. E. and C. E.; junior and senior E. E.; sophomore and junior Ch. E. First semester, T. Th. at 9 or M. W. at 9. Second semester, T. Th. at 9 or M. W. at 11. Professor EASTWOOD.

The various forms of steam apparatus used in modern power plants, considering the construction, use and reasons for installing such apparatus.

22. ENGINES AND BOILERS. Two credits. Second semester. Junior and senior M. E. Prerequisite, 21. M. W. at 9. Professor EASTWOOD.

The generation and use of steam in boilers and engines; valve gears; governors; the conditions necessary for maximum efficiency; the influence of economizers, feed-water heaters, etc., upon the engine and boiler performance.

23. ENGINES AND BOILER DESIGN. Three credits. First semester. Senior M. E. Prerequisites, 11, 22 and mechinics 41. W. F. 9 to 12. Professor EASTWOOD.

One complete problem will be assigned for solution in the class room.

24. VALVE GEARS. Two credits. Second semester. Junior M. E. Prerequisite, 21 or 22. M. at 10, M. 1 to 4. Assistant Professor WILSON.

The theory and practice of designing the various kinds of valve gears for steam engines.

25. GAS ENGINES. Two credits. Second semester. Senior and graduate M. E. Prerequisite, 21. M. W. at 11. Assistant Professor WILSON.

The development of gas engineering, including the different types of gas engines, and gas producers and methods of testing.

26. GAS ENGINE DESIGN. Two credits. First semester. Graduate M. E. Prerequiste, 25. W. F. 1 to 4. Assistant Professor WILSON.

Calculations and plans for the design of a given type of gas engine.

29. MECHANICAL REFRIGERATION. Two credits. Second semester. Senior and graduate M. E. Prerequisite. Physics 2a and 2b. T. Th. at 11. Assistant Professor MACINTIRE.

The theory and application of mechanical refrigeration.

30. STEAM TURBINES. Two credits. First semester. Senior and graduate M. E. and E. E. Prerequisite, 21. T. Th. at 10. Professor EASTWOOD.

The theory, construction and design of steam turbines.

31. HEATING AND VENTILATING. Two credits. Second semester. Senior and graduate M. E. Prerequisite, 21. M. W. at 10. Professor EASTWOOD.

The various systems of heating and ventilating, methods of design and tests.

32. POWER PLANTS. Two credits. Second semester. Senior M. E. Prerequisite, 22. T. Th. at 10. Professor EASTWOOD.

The design of power plants involving their location, buildings, prime movers, power transmission, etc.

33. THERMODYNAMICS. Two credits. First semester. Senior M. E. Prerequisites, 21 or 22, physics 2a, and mathematics 4b. T. Th. at 11. Professor EASTWOOD.

The fundamental principles underlying the transformation of heat into work, with reference to the steam engine, the gas engine and hot air engine, and the operation of refrigerating machinery; efficiency of the simple, compound, and multiple expansion engine.

34. GRAPHIC STATUS OF MECHANISM. Three credits. First semester. Graduate M. E. Prerequisite, mechanics 41. Professor EASTWOOD.

The graphic determination of the forces acting at different points in machines used for hoisting, crushing, punching and power transmission. The effects of friction and the stiffness of ropes and belts.

40. EXPERIMENTAL ENGINEERING. Two credits. First or second semester. Junior and senior E. E., junior and graduate Chem. Eng. Prerequisite, preceded or accompanied by 21. First semester, Th. at 11, Th. 1 to 3. Second semester, W. at 9, W. 1 to 3. Assistant Professor WILSON.

Calibrations of thermometers, gages, indicator springs, etc. Friction and mechanical efficiency tests of the simple steam engine. One complete engine and boiler test with report.

41. EXPERIMENTAL ENGINEERING. Three credits. First semester. Junior and senior M. E. Same as 40 except an additional

laboratory period is provided. Th. at 11, Th. 1 to 5. Assistant Professor WILSON.

42. EXPERIMENTAL ENGINEERING. Two credits. First semester. Senior M. E. Prerequisite, 41. M. at 10, T. 1 to 5. Assistant Professor WILSON.

A continuation of course 40, involving more extended and complete investigations. Special attention is given to the theory involved and previous experiments. Gas and fuel analysis.

43. EXPERIMENTAL ENGINEERING. Two credits. Second semester. Senior and graduate M. E. Prerequisite, 42. T. 1 to 5. Professor EASTWOOD and Assistant Professor WILSON.

An advanced course in commercial testing.

45. STEAM LABORATORY. Two credits. First semester. Prerequisite, 21. M. 1 to 5. Assistant Professor WILSON.

Arranged especially for students in the College of Forestry. Consists of two laboratory periods and is intended to familiarize the student with the fundamental equipment for steam generation and use. Practice will be given in the care and manipulation of the steam engine and boiler, and auxiliary apparatus.

50. NAVAL ARCHITECTURE. Two credits. First semester. Elective. Time to be arranged. Professor EASTWOOD.

The calculations common to ship construction, accompanying regular drafting room work.

51. SHIP DRAWING AND DESIGN. Two credits. Second semester. Elective. Time to be arranged. Professor EASTWOOD.

An application of the principles of naval architecture to the design of a steamship for a definite purpose.

SUBJECTS PRESENTED BY THE FACULTIES OF OTHER COLLEGES OF THE UNIVERSITY

ASTRONOMY

(See Mathematics)

BACTERIOLOGY

(Science Hall)

103. GENERAL BACTERIOLOGY. Four credits. First semester. For chemical engineers. Prerequisites, junior standing; botany or zoology, 1 year; chemistry, 1 year. T. Th. at 1, T. Th. 2 to 4 or M. W. 2 to 4. Professor WEINZIRL and Mr. VELDEE.

Methods of growing bacteria and studying their structure, functions and distribution.

104. SANITARY AND INDUSTRIAL BACTERIOLOGY. Four credits. Second semester. For chemical engineers. Prerequisite, bacteriology 3. T. Th. at 1, T. Th. 2 to 4 or 4 to 6. Professor WEINZIRL and Mr. VELDEE.

A brief survey of disease bacteria. Most of the time is given to sanitation and industry. Inspection trips.

110. BACTERIOLOGY FOR ENGINEERS. Two credits. Second semester. Laboratory deposit $2.00. Professor WEINZIRL.

General course. Application to sewage disposal and water supplies.

ENGLISH

(Room 45, Denny Hall)

1a-1b. FRESHMAN COMPOSITION. Two credits. Either semester. All freshmen engineers. First semester. T. Th. or M. W. at 3. Second semester, T. Th. at 1.

2a. FRESHMAN COMPOSITION. Two credits. First semester. For students of engineering entering at mid-year. F. S. at 10. Associate Professor Milliman in charge.

GEOLOGY

(Science Hall)

1-2. GENERAL GEOLOGY. Four credits. The year. Three recitations and one 2 hour laboratory period per week, with occasional one-half day field trips. Laboratory fee $1 per semester. Assistant Professors SAUNDERS and BRETZ.

1a. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Required course for sophomores. Four credits. First semester. Laboratory fee $1.00. T. Th. S. at 9. Laboratory F. 2 to 5. Assistant Professor BRETZ.

1b. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Elective for freshmen. Four credits. First semester. Laboratory fee $1.00. M. W. F. at 1. Laboratory M. 2 to 5. Assistant Professor BRETZ.

1c. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Four credits. Second semester. T. Th. S. at 9. Laboratory, Th. 2 to 5. Laboratory fee $1.00. Repetition of 1a. Assistant Professor BRETZ.

9. MINERALOGY. Four credits. Second semester. Junior chemical engineers and for students in mining. T. Th. at 11. Laboratory, M. W. 2 to 5. Assistant Professor BRETZ.

LAW

(Office, Law Building)

80. ENGINEERING CONTRACTS. Two credits. Second semester. Senior and graduate C. E. Assistant Professor COCKERILL and special lecturers.

MATHEMATICS

(Office, Science Hall)

I. MATHEMATICS

0. SOLID GEOMETRY. Two credits. The year. Prerequisite, plane geometry. T. Th. or M. W. at 4.

Required during the freshman year of all students in the Colleges of Engineering, Forestry and Mines who do not offer solid geometry for admission.

1a. TRIGONOMETRY AND ALGEBRA. Four credits. First or second semester. All freshmen engineers. Prerequisites, alg. 1½, plane geom. 1. First semester, M. W. F. S. at 8, or M. W. Th. F. at 1 or 2; T. W. Th. F. at 1 or 2; M. T. W. Th. at 2; M. T. W. F. at 2. Second semester, M. W. F. S. at 8 or M. T. Th. F. at 2.

2a. ANALYTICAL GEOMETRY AND ALGEBRA. Four credits. First or second semester. All freshman engineers. Prerequisite, Math.

1a. First semester, M. W. F. S. at 9. Second semester, M. W. F. S. at 8; M. W. Th. F. at 2; T. W. Th. F. at 2; or M. T. W. Th. at 2.

3a. CALCULUS FOR ENGINEERS. Four credits. First or second semester. All sophomore engineers. Prerequisite, Math. 2a. First semester, M. W. F. S. at 10 or 9. Second semester, M. W. F. S. at 8 or 9.

4a. CALCULUS FOR ENGINEERS. Four credits. First or second semester. All sophomore engineers. Continuation of Math. 3a.

5a. APPLICATIONS OF THE CALCULUS FOR ENGINEERS. Two credits. First or second semester. Junior engineers. First semester, T. Th. at 8 or 10. Second semester T. Th. at 8.

II. ASTRONOMY

(Astronomy Building)

3a-4a. ELEMENTARY GEODESY AND GEODETIC ASTRONOMY. Four credits, first semester; two credits, second semester. Prerequisites, preceded or accompanied by mathematics 3-4 or by mathematics 3a-4a. M. W. F. at 9. Associate Professor BOOTHROYD.

Geodetic surveying methods and elements of geodesy, mapping and map projection, practical astronomy as applied to surveying. During the second semester actual determinations of time, latitude and azimuth with the theodolite, the time, latitude and longitude with the sextant will be made. This course is especially arranged for engineering students.

5. ADJUSTMENTS OF OBSERVATIONS. Two credits. Second semester. Open to seniors, engineers, and graduates. Prerequisites, the first semester of astronomy 3a-4a must precede this and the second semester of the same course must precede or accompany it. M. W. at 2. Associate Professor BOOTHROYD.

The best methods for the adjustment of observations. For engineering students the application to surveying will be especially considered.

6. ANALYTICAL MECHANICS. Three credits. First semester. Open to juniors, seniors, graduates. Prerequisites, preceded or accompanied by mathematics 5 or 4a, physics 1-2. M. W. at 11. Associate Professor BOOTHROYD.

Mathematical treatment of the laws of force and motion.

7. LEAST SQUARES. Two credits. Second semester. Open to juniors, seniors and graduates. Prerequisites, astronomy 5, except for engineering students who must have had astronomy 3-4 instead. Astronomy 5 is considered very desirable. Associate Professor BOOTHROYD.

The best methods for the adjustment of observations. For engineering students the applications to surveying will be especially considered.

MILITARY SCIENCE AND TACTICS

(The Armory)

EDWARD E. MC CAMMON, LIEUTENANT THIRD INFANTRY, U. S. A., COMMANDANT

A course of two years in military training is required. All able-bodied male students (except those from foreign countries, not intending to become naturalized) must take the course which by regulation of the University is required during the first and second year. Three hours a week are devoted to military training, for which two credits are given each semester. M. W. F. at 11, or T. Th. F. at 11.

PHYSICS

(Basement, Denny Hall)

1a. MECHANICS AND WAVE MOTION. Two credits. First or second semester. Prerequisite, 8 hours in mathematics. All sophomore engineers. First semester M. W. F. S. at 8. Second semester at 10. Dr. ANDERSON.

This course must be accompanied by 1b.

1b. PHYSICS MEASUREMENT. Two credits. First or second semesters. All sophomore engineers. One four-hour laboratory period. Six dollars deposit per year. First semester T. or Th. or F. 1 to 5. Second semester F. 1 to 5. Mr. VORIS.

2a. LIGHT, HEAT, ELECTRICITY. Four credits. First or second semester. Sophomore and junior engineers. Prerequisite, 1a. First semester, M. W. F. S. at 10. Second semester at 8. Assistant Professor BRAKEL.

This course must be accompanied by 2b.

2b. PHYSICS MEASUREMENTS. One credit. First or second semester. Sophomore and junior engineers. One three-hour laboratory period. Six dollars deposit per year. First semester, W. 2 to 5. Second semester, W. or Th. 1 to 4. Mr. VORIS.

5a. ELECTRICAL MEASUREMENTS. Four credits. First or second semester. Junior E. E. Two class periods. Prerequisite, 2a. Laboratory deposit six dollars per year. T. Th. at 1; T. Th. 2 to 5. Assistant Professor BRAKEL.

POLITICAL AND SOCIAL SCIENCE

(Office, Room 3A, Denny Hall)

1a. ELEMENTS OF ECONOMICS. Three credits. First or second semester. Sophomore and junior E. E. and M. E.; senior C. E. M. W. F. at 8, 9, 10, 11, 1, or 2.

18. MUNICIPAL GOVERNMENT. Two credits. Second semester. Prerequisite, 1-2, 1a, 3, or 19. T. Th. at 9. Professor SMITH.

FINE ARTS

(MUSIC)

(Office, Room 5, Auditorium)

*THOMAS FRANKLIN KANE, PH. D., (Johns Hopkins), PRESIDENT.

HENRY LANDES, A. M., (Harvard), ACTING PRESIDENT.

IRVING MACKEY GLEN, A. M., (Oregon), Director.

WALTER EDMUND SQUIRE, (Berlin, Paris), A. A. G. O., Assistant to the Musical Director.

MORITZ ROSEN, (Warsaw, Russia), Violin.

ADA DEIGHTON HILLING, (Trinity, London), Harmony.

A. F. VENINO, (Leschetizky), Piano.

GRACE BLANCHE ZIMMERMAN, A. B., (U. of W.), Piano.

GRACE TERRY, Mus. Bac., (Knox), Vocal Music.

LUCY K. COLE, Public School Music.

ANNE VOLKER, (Oberlin), Piano.

KARL GOULD, A. B., (Harvard), Beaux Arts (Paris), Lecturer in Architecture.

AGNES BIRKMAN, Public School Drawing.

HELEN BALCH CULVER, Design.

BRUCE MACDOUGAL, Band Master.

At the January meeting of the University Regents in 1913, a plan for the organization of a college of fine arts, previously recommended by the University faculty, was approved. Instruction is now being offered in theoretical and applied music, with courses leading to the bachelor's degree in music, public school drawing, and in some phases of dramatic art. Announcements will be made from time to time as additional instruction is offered.

*Leave of absence, January 1 to August 1. Retires August 1, 1914.

I. MUSIC

PROFESSOR GLEN, MR. SQUIRE, MR. ROSEN, MRS. HILLING, MR. VENINO, MISS TERRY, MISS ZIMMERMAN, MISS COLE, MR. MAC DOUGAL, MISS VOLKER.

1-2. FUNDAMENTALS OF MUSIC. Two credits. The year. T. Th. at 9. Mr. SQUIRE.

A lecture course in the fundamentals of musical composition and criticism, dealing with elementary theory. This course aims to show development of musical forms from the traditional chant to the symphony, and is intended to make music more intelligible to the listener.

3-4. HARMONY. Two credits. The year. T. Th. at 10. Mrs. HILLING.

Study of intervals, construction, relation and progression of chords, and harmonization of melodies, comparative study of systems of presenting the subject of harmony.

5-6. MUSIC FORM. Two credits. The year. T. Th. at 9. Mrs. HILLING.

An essential study of music leading directly to composition.

7-8. ADVANCED HARMONY. Two credits. The year. T. Th. at 9 or 11. Mrs. HILLING.

Analysis, form, counterpoint, in three or more parts. Composition.

9-10. HISTORY OF MUSIC. Two credits. The year. M. W. at 10. Professor GLEN.

A survey course, covering the progress of musical development from the primitive period to the modern.

12. MUSICAL APPRECIATION. Two credits. Second semester. T. Th. at 2. Professor GLEN.

A course planned to make music contribute to liberal culture. Actual presentation of musical masterpieces of different periods, by mechanical devices.

13-14. CHORAL STUDY. One credit. The year. W. at 7:30. Professor GLEN.

The University chorus provides the opportunity, for those qualified, to study the more serious as well as the lighter forms of choral composition. Candidates must satisfy the director as to the extent of their musical ability.

15-16. APPLIED MUSIC. One to four credits. The year.

(a) Piano.....Mr. SQUIRE, Mr. VENINO, Miss ZIMMERMAN, Miss VOLKER.

(b) Violin .....Mr. ROSEN.

(c) Voice .....Miss GRACE TERRY.

B. A. students may earn one or two credits a semester; Mus. Bac. students carry a larger number of credits—two to four—as indicated in the set courses. Students enrolled in these courses will be given opportunity, upon demonstration of the required ability, to participate in the public recitals of the department.

Unless excused by reason of advanced standing upon entrance, students who major in courses in applied music will require two lessons a week, ordinarily, in order to cover the work necessary for a degree.

17-18. ORCHESTRAL STUDY. One credit. The year. T. evening. Professor GLEN.

The University orchestra offords an unusual opportunity for the study of the various forms of orchestral composition. None admitted without the recommendation of the director.

19-20. SIGHT READING. Two credits. The year. W. F. at 5. Miss COLE.

A course designed for those who may be naturally well equipped for choral work, but who do not possess the requisite ability to read music.

21. NOTATION AND TERMINOLOGY. Two credits. First semester. M. W. at 10. Miss COLE.

A course intended to familiarize the student with the signs and symbols of musical notation and their application, particularly in vocal scores. This course is open to all students and is specially planned for those who have little or no knowledge of the technical language of music.

22. EAR-TRAINING AND DICTATION. Two credits. Second semester. M. W. at 10. Miss COLE.

A course supplementing course 21. Its purpose is to stimulate musical thinking, to quicken the senses of rhythm and melody, to increase the accuracy of hearing, reproducing, and writing simple melodies in both major and minor modes.

23. TONE-THINKING AND MELODY-WRITING. Two credits. First semester. T. Th. at 10. Miss COLE.

A study of tonality, the mental effects of tones, the tendency of tones toward motion or repose in melodic progression. Melodic form and construction will be considered and special emphasis will be placed upon ability to think and write in musical sentences.

24. ELEMENTARY THEORY. Two credits. Second semester. T. Th. at 10. Miss COLE.

A study of the structure of music, its origin and development. This will include the formation, singing, and writing of scales from any given tonic in both major and minor modes. Ear-training and writing in two and three parts from hearing and dictation.

25. THE VOICE. Two credits. First semester. M. W. at 9. Miss COLE.

A study of the child's voice. The adolescent and the high school periods are also included. Directions for the use and preservation of the voice. Suitable material for study in primary, grammar, and high school grades.

26. MUSIC APPRECIATION. (For grades.) Two credits. Second semester. M. W. at 9. Miss COLE.

A course designed to supplement the use of school readers, illustrating by means of mechanical devices work suitable for presentation to graded and ungraded schools.

27-28. METHODS. Two credits. The year. T. Th. at 11. Miss COLE.

A course in methods covering the eight grades of the usual school system. Psychological and pedagogical principles underlying the development of the subject. Study and analysis of suitable material.

29-30. ADVANCED METHODS. (High and Normal Schools.) Two credits. The year. M. W. at 11. Miss COLE.

Outlining and developing courses in music suitable for any high school or normal school. Organizing and conducting orchestras and choruses. Suitable musical material for high school and normal school libraries. Civic and municipal music.

31-32. CHAMBER MUSIC. One credit. The year. Th. at 7:30. Mr. ROSEN.

Advanced students in the study of stringed instruments may have the opportunity of studying the musical literature for string trios, quartets and quintets.

33-34. ENSEMBLE SINGING. One credit. The year. M. at 5. Miss TERRY.

A choral course for women. Only advanced students will be admitted to this course.

Credit in courses 13-14 and 17-18 will be given only upon the recommendation of the director, and in course 15-16 upon the recommendation of the instructor in charge and the director.

CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH VOCAL MUSIC MAJOR

FRESHMAN	Cr.
Vocal Music	6
History of Music	4
English	8
Modern Language	8
Fundamentals	4
Sight Reading	4
Phys. Trg. or Drill plus	34

SOPHOMORE	Cr.
Vocal Music	6
Harmony	4
Choral Study	2
Modern Language	8
Physics	8
Form and Analysis	4
Adv. Mus. Hist.	2
Phys. Trg. or Drill plus	34

JUNIOR	
Vocal Music	6
Harmony	4
Choral Study	2
Modern Language	8
Political Science	6
Counterpoint	4
	30

SENIOR	
Vocal Music	6
Choral Study	2
Musical Appreciation	4
Program	2
Composition	4
Philosophy	4
Elective	8
	30

CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH INSTRUMENTAL MUSIC MAJOR

FRESHMAN	Cr.
Instrumental Music	8
History of Music	4
English Composition	8
Fundamentals	4
Modern Language	8
Choral Study or Elective	2
Phys. Trg. or Drill plus	34

SOPHOMORE	Cr.
Instrumental Music	8
Harmony	4
Modern Language	8
Physics	8
Adv. Mus. Hist.	2
Form and Analysis	4
Phys. Trg. or Drill plus	34

JUNIOR		SENIOR	
Instrumental Music	8	Instrumental Music	8
Harmony	4	Musical Appreciation	4
Modern Language	8	Philosophy	4
Political Science	6	Program	2
Counterpoint	4	Composition	4
		Elective	6
	30		30

CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN MUSICAL THEORY

FRESHMAN	Cr.	SOPHOMORE	Cr.
English Composition	8	Modern Language	8
Modern Language	8	Physics	8
Harmony	4	Advanced Harmony	4
Form and Analysis	4	Adv. Mus. History	2
History of Music	4	Analysis	2
Choral Study or Elective	2	Composition	2
Applied Music	4	Choral Study or Elective	2
		Applied Music	4
Phys. Trg. or Drill plus	34	Phys Trg. or Drill plus	34

JUNIOR		SENIOR	
Modern Language	8	Philosophy	4
Political Science	6	Vocal Composition	4
Counterpoint	4	Instrumental Composition	4
Vocal Composition	4	Canon and Fugue	2
Applied Music	4	Applied Music	4
Analysis	2	Choral Study or Elective	2
Choral Study or Elective	2	Elective	10
	30		30

CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN PUBLIC SCHOOL MUSIC

FRESHMAN	Cr.	SOPHOMORE	Cr.
English Composition	8	Modern Language	8
Modern Language	8	Physics	8
Notation and Terminology, (First Semester)	2	Harmony	4
Ear Training and Dictation (Second Semester)	4	Musical History	4
Tone Thinking and Melody Writing. (First Semester)	2	Voice (Child, Adolescent and High School)	2
Elementary Theory (Second Semester)	4	Mus. Appreciation (Grades)	2
Sight Singing	2	Applied Music	4
Folk Dancing	2	Choral Study	2
Applied Music	4		
Choral Study	2	Phys Trg. or Drill plus	34
Phys. Trg. or Drill plus	34		

JUNIOR		SENIOR	
Modern Language	8	Philosophy	4
Political Science	6	Form and Analysis	4
Education	6	Counterpoint	4
Harmony	4	Advanced Methods (High School and Normal School Conducting)	4
Methods	4	Musical Appreciation	4
Applied Music	4	Applied Music	4
	32	Education	6
			30

COURSE IN ART FOR CERTIFICATES OF PROFICIENCY FOR SUPERVSIORS OF ART

FIRST YEAR	Cr.	SECOND YEAR	Cr.
English Composition	8	Applied Design	4
Design	4	Water Color	4
Water Color	4	Pose Drawing and Sketching	4
Drawing	4	Education	6
Construction	4	Methods	4
Modern Language	8	Modern Language	8
Art History and Appreciation	2	Mechanical Drawing	2
		Art History and Appreciation	2
Phys. Trg. or Drill plus	34	Phys. Trg. or Drill plus	34

NOTE.—A total of two years of German and two years of French pursued either in high school or in the University is required for the degree. If a student has finished this language work in the high school he shall substitute electives in the University. If he presents neither French nor German for admission he must supply the deficiency above the sixteen hours allowed for in the outlined courses, without credit.

If a student has had two years of Latin he may be excused from the second required year of French or German, at the discretion of the head of the department of music.

The requirements for admission to the courses leading to the degree of bachelor of music shall be identical in academic subjects with those admitting to any course in the Colleges of Arts and Science. In addition thereto, there shall be required the equivalent of four years' work in music of the following character:

First Year: Rudiments of music. Melody and rhythm. Principles of touch and technique. Major scales. Studies by Gurlitt, Gaynor, Martin, Lambert, etc.

Second Year: Continuation of work in melody and technique. All major scales. Begin the study of chords in three tones. Studies by Lynes, Behr, Lambert, Tschaikowski, etc.

Third Year: Begin minor scales, essential chords of scales in three positions. Studies by Bertini, Berens, Czerny, Kohler, Clementi, Moszkowski, etc.

Fourth Year: Scales, chords of scales in all positions. Studies by Bertini, Czerny, Loeschorn; easier Mozart and Haydn sonatas, Bach (Little Preludes and Fugues), Schumann.

NORMAL DIPLOMA. Graduates in music may receive in addition to their bachelor of music degree a normal diploma, entitling them to teach music in the public schools, by meeting the requirements of the department of education and such departmental requirements as the department of music may see fit to institute. This will necessitate a total of at least 132 credits.

CERTIFICATES OF PROFICIENCY FOR MUSIC SUPERVISORS. These may be issued by the head of this department to students who may not have completed the requirements for the degree, but who have satisfactorily completed certain stipulated courses at the discretion of the department. These courses include History of Music, Musical Theory, Elementary Harmony, Education, Public School Music, Vocal Music and Drawing.

COLLEGE COURSES IN APPLIED MUSIC. The courses outlined are not necessarily arbitrary. They simply indicate the amount and character of the work that the student is expected to cover for his musical degree. Credit will be given for equivalent courses pursued elsewhere prior to entering the University.

PIANO

Freshman: All major and minor scales, chords, in four-note forms, diminished seventh, arpeggios of all common chords, major and minor fundamental position. Studies, Czerny, Op. 299; selected studies of Cramer, Berens, Op. 61; sonatas, Reinecke, Krauss, Mozart, Haydn; two part inventions, Mendelssohn songs, Schuman, Op. 15, McDowell, etc.

Sophomore: Chords in inversions. Studies of Cramer, Czerny, two and three-part inventions of Bach, Haydn, and Mozart, Sonatas; Weber, Schubert, Mendelssohn, Greig, and Moszkowski.

Junior: Scales in thirds, sixths, and tenths. Studies, Op. 740 Czerny, Clementi, Gradus ad Parnassum; Bach's French and English suites and fugues; Beethoven, Schumann; easier concertos of Mozart, Mendelssohn; Chopin nocturnes and waltzes.

Senior: Studies in Chopin, Clementi, Bach; Well-tempered Clavichord, Brahms, Greig, Korsakow, MacDowell, etc.

VOCAL MUSIC

The course in vocal music is even more flexible than that outlined for piano study. The purpose is to develop the voice and musical understanding so that the best in vocal music may be faithfully interpreted. The fact of having studied vocal music for four years will not necessarily entitle a student to graduation.

Freshman: Practical work in voice placing, breathing, studies from among the following: Concone, Op. 9; Marchesi, Op. 1; Panofka, Op. 85; Vaccai, Book I; simple Italian and English songs.

Sophomore: Progressive tone work; Bordogni, Concone, Marchesi, Panofka, simple Italian arias, Italian and English songs.

Junior: Tone work; advanced technique. Arias from Italian, French and German operas. German song classics; modern French and English songs.

Senior: Tone work and technique. Repertoire in opera and oratorio. Recitals; Senior Program.

VIOLIN

Freshman: Violin schools, Dancla, DeBeriot; Exercises, Wohlfahrt, Op. 45; Etudes, Kayser.

Sophomore: Scales, Hrimaly; Studies, Blumenstengel Op. 33, Mazas, Books I and II; Concerto, Accoly; Scene de Ballet, DeBeriot.

Junior: Exercises. Schraedieck, Books I and II; Etudes, Kreutzer, Fiorillo; Rode: Concertos, De Beriot 7 and 9, Sophr 2 and 8.

Senior: Scales, Rosen; Etudes, Gavini; Dont Op. 35; Bach Sonata for voilin alone; Concertos, Bruch, Mendelssohn, Wieniaski, D-Minor, Vieuxtemps, No. 4.

NOTE.—In the last semester the student is obliged to memorize one sonata by Bach for violin alone and one of the concertos given in the fourth year.

FEES. Since most of the work in the courses in applied music must necessarily be of the character of private or individual instruction, the student will be required to pay tuition fees for this work. These fees are payable to the University Bursar and are collected in advance for the entire semester. No rebate will be made for the loss of lessons falling on national or University holi-

days nor will such lessons be made up by the teacher. The rate charged takes these into consideration. The following quotations are based on one lesson per week. More than one lesson per week will be charged for at the same rate. All lessons are one-half hour in length:

Piano: Mr. Squire or Mr. Venino, $24.00 per semester; Miss Zimmerman, $20.00 per semester; Miss Volker, $16.00 per semester.

Vocal Music: Miss Terry, $24.00 per semester.

Violin: Mr. Rosen, $24.00 per semester.

It has been necessary in some cases, and for special reasons, for the director to give private instruction. In such instances the fee is $40 per semester for one lesson weekly. Arrangements may be made for individual instruction in other musical courses if necessary or desirable.

Piano for practice may be rented at the Music department at the following rates:

One hour daily, $4.00 per semester.

Two hours daily, $7.50 per semester.

Additional hours, $2.50 per semester.

All rental charges must be paid in advance. No rebate in these charges will be allowed. Lessons lost through enforced absence may not be made up unless the teacher in charge has been previously notified of the intended absence and is willing to accept the excuse for the absence.

II. DRAWING

1-2. PUBLIC SCHOOL DRAWING. Two credits. The year. T. Th. 4 to 6. Miss BIRKMAN.

A course, which combined with regular work in methods, is primarily intended for those who wish to teach or supervise drawing in the public schools. The course includes: drill in line drawing; placing and proportion; comparative measurements; free hand practice; principles of perspective; drawing from objects and nature; use of pencil and charcoal; water color theory of color; painting from nature; elementary design and composition; principles of design; practice in simple, abstract designs; landscape and flower composition; free hand lettering.

III. DESIGN

1-2. PRINCIPLES OF DESIGN. Two credits. The year. M. F. or W. S. 8 to 10; or T. F. or Th. S. 10 to 12. Mrs. CULVER.

A study of line, dark, and color. To develop power of appreciation and creation of good design. Two laboratory periods a week.

3-4. FREEHAND DRAWING. Two credits. The year. M. F. or W. S. 8 to 10; or M. F. or W. S. 10 to 12. Mrs. CULVER.

A course planned for a progressive growth in appreciation and power of expression, developing freedom and skill in drawing and painting.

IV—ARCHITECTURE

1. HOME ARCHITECTURE. Three credits. First semester. M. W. at 10; Lab. W. 1 to 3. Mr. GOULD.

A course in home architecture and decoration. Lectures and laboratory work.

V. RELATED COURSES

Students interested in fine arts will find the following courses in the College of Liberal Arts helpful and stimulating: Greek 15 [Greek Art]; Philosophy 19-20 [Esthetics]; Public Speaking 1, 2, 5, 6 [Oral Expression and Dramatic Reading].

COLLEGE OF FORESTRY

FACULTY

*THOMAS FRANKLIN KANE, PH. D., (Johns Hopkins), PRESIDENT.

HENRY LANDES, A. M., (Harvard), ACTING PRESIDENT.

HUGO WINKENWERDER, M. F., (Yale), Professor of Forestry, DEAN.

BURT P. KIRKLAND, A. B., (Cornell), Associate Professor of Forestry.

E. T. CLARK, M. F., (Yale), Assistant Professor of Forestry.

BROR LEONARD GRÖNDAL, M. S. F., (Washington), Instructor in Forestry.

L. A. NELSON, Instructor in Scaling.

C. W. ZIMMERMAN, A. B., (Washington), Lecturer in Timber Physics.

TREVOR KINCAID, A. M., (Washington), Professor of Zoology.

HENRY KREITZER BENSON, PH. D., (Columbia), Professor of Industrial Chemistry.

DAVID CONNOLLY HALL, SC. M., M. D., (Chicago), Director of Physical Training.

GEORGE SAMUEL WILSON, B. S., (Nebraska), Assistant Professor of Mechanical Engineering.

GEORGE IRVING GAVETT, B. S., (C. E.), (Michigan), Assistant Professor of Mathematics.

J. HARLEN BRETZ, PH. D., (Chicago), Assistant Professor of Geology.

ABRAHAM BERGLUND, PH. D., (Columbia), Assistant Professor of Economics.

JOHN WILSON HOTSON, PH. D., (Harvard), Instructor in Botany.

CHARLES EDWARD NEWTON, E. M., (Michigan College of Mines), Instructor in Civil Engineering.

WALTER EDWARD ROLOFF, PH. D., (Wisconsin), Instructor in German.

FLOYD T. VORIS, A. M., (Columbia), Instructor in Physics.

*Leave of absence, January 1 to August 1. Retires August 1, 1914.

SPECIAL LECTURERS

GEORGE H. CECIL, District Forester, United States Forest Service, Lecturer on Forest Administration.

R. E. BENEDICT, Forest Inspector, Canadian Forest Service, Lecturer on Forest Protection.

R. H. MACMILLAN, Chief Forester, British Columbia, Lecturer on Forest Administration.

THORNTON T. MUNGER, Chief of Silvics, District 6, United States Forest Service, Lecturer on Silvics and Planting.

CHAS. H. FLORY, Assistant District Forester, District 6, United States Forest Service, Lecturer on Forest Fires.

C. J. BUCK, Assistant District Forester, District 6, United States Forest Service, Lecturer on Forest Law.

LEWIS SCHWAGER, Schwager-Nettleton, Inc., Lecturer on Sawmilling.

JOHN ADAMS, Insurance Appraiser, Lecturer on Lumber Insurance.

J. P. VAN ORSDELL, Supt. of Logging, Portland Lumber Co., Lecturer on Scientific Logging.

THORP BABCOCK, Secretary West Coast Lumberman's Association, Lecturer on Milling and Association Work.

LUMBERMEN'S ADVISORY COMMITTEE

GEO. S. LONG, Weyerhauser Timber Co., Tacoma.
J. J. DONOVAN, Bloedel-Donovan Lumber Mills, Bellingham.
EDW. P. BLAKE, Wash. Log. Brokerage Co., Seattle.

PURPOSE AND LOCATION

The school of Forestry was established in 1907. It has a two-fold purpose; first, to afford instruction in the principles and practice of forestry; second, to promote the interests of forestry in the State of Washington by encouraging the right use of forest resources.

The school has exceptional advantages in its location. The University campus comprises 355 acres, a portion of which is in timber, and offers splendid opportunities for field work in silviculture and forest measurements. Other excellent forests are within walking distance of the campus. The University also owns large forest tracts in various parts of the state, where students

may conduct extensive research work. The immense national forests within a few hours' ride of Seattle afford practical object lessons in the art of forest management. The city of Seattle is in the center of the timber industry of Washington and the Northwest. In its many sawmills and wood-working industries, the student has unrivaled opportunities for studying wood utilization.

ADMISSION

FRESHMAN CLASS	Credits*
English	3
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
United States history and civics, or a history	1
Botany	1
One foreign language	2
Elective	4
Total	15

Students may be admitted:

(1) By presenting a certificate of graduation from an accredited school covering the above subjects.

(2) By passing a satisfactory examination in the above subjects.

ADVANCED STANDING

Credit will be given for subjects pursued at other colleges of recognized rank upon presentation of certificates that such subjects have been satisfactorily completed, or upon examination. Graduates of this institution and others of similar rank are admitted to graduate standing.

SPECIAL STUDENTS

Persons twenty-one years of age or over, who are not regularly qualified for admission, but who have pursued special lines of studies related to forestry may be admitted as special students, on giving satisfactory evidence of their ability to pursue the work.

*A unit of credit in a given subject means that it is taught five times a week, in forty-five minute periods for a school year of not less than thirty-six weeks.

SPECIAL SHORT COURSES FOR FOREST RANGERS AND LUMBERMEN
(See page 294.)

Applicants must be at least twenty years old and show ability to carry the work with profit to themselves. Admission to classes is without examination.

FOREST LABORATORIES

DENDROLOGY. Individual lockers, compound microscopes, gas and water. An herbarium of fruits, twigs and trunk sections of trees is well under way.

LUMBERING. Field work at logging camps and sawmills. A complete equipment for exercises in logging engineering; for demonstration, collections of lumber, showing grades, and defects, planing mill products, saws, axes, cables and other apparatus used in logging and milling. There are mills and camps about Seattle.

MENSURATION. Equipment selected to show all principal types of instruments in use. Those particularly adapted to the northwest provided in quantities sufficient for all practice work by students in cruising, and volume, growth and yield studies.

SILVICULTURE. Greenhouse space and a forest tree nursery are provided on the campus. The forests about Seattle offer wide opportunities for other practical studies and demonstrations.

TIMBER PHYSICS. The magnificiently equipped Government Timber Testing Laboratory, operated in cooperation with the University is used.

WOOD TECHNOLOGY. Same room as Dendrology laboratory. Individual lockers, gas, water, Lietz compound microscopes and all apparatus necessary for sectioning and preparing microscopic sections in the study of woody tissue. Extensive collections of domestic and foreign commercial timbers, including collections of South American and Philippine hardwoods, and microscopic preparations. Research laboratory: equipped with microtome, water baths, drying ovens, balances, camera and apparatus required for photomicrography and all apparatus required for the detailed study of woody tissue.

WOOD PRESERVATION AND UTILIZATION. A modern open tank preservation plant and accessories. All equipment required for commercial testing of wood preservatives. Four large creosoting

plants, several smaller treating plants, and plants for the manufacture of paper, veneers, wood pipe, cooperage stock, excelsior, boxes, and numerous other secondary wood products are located in or near Seattle and are available for study.

ASSEMBLY ROOM. Supplied with Lietz lantern for episcopic, diascopic and microscopic projection.

EXPENSES

TUITION

There are no tuition charges for students, whether or not they are residents of the State of Washington.

LABORATORY DEPOSITS

Forestry courses 1, 4, and 19, $1.00; forestry courses 5, 6, 7, 7a, 7b, and 18, $2.00; botany, $3.00; chemistry, $10.00; geology 1d, $1.00; physics, $6.00 (for the year); zoology, $2.00.

NOTE.—The laboratory deposits in each case are for materials used and cover repairs of apparatus. The student is entitled to a refund for such portion of the fee as is not used.

FIELD EXCURSIONS

Much of the instruction in technical forestry is given in the field, necessitating frequent field excursions in nearby forests, logging camps and sawmills. The expenses of these excursions are about $10.00 for the freshman year, $15.00 for the sophomore year, $20.00 for the junior year, and $50.00 for the senior year.

SUMMER WORK

Students of forestry are urged to spend their summer vacations in some line of practical work connected with the forest industry. Situated, as the school is, in the heart of a great lumbering section and near extensive national forests, ample opportunity is offered for summer employment. Students not only acquire valuable experience in this way, but earn a considerable portion of their University expenses.

FOREST CLUB

The Forest Club is an organization open to all students of the College of Forestry. It aims—To secure full acquaintance and good fellowship among students and instructors—To keep in

touch with everyday problems in forestry and lumbering, and the men who are doing things worth while in these industries—To interest the public in the College of Forestry and in the forestry problems of the state.

The program for the year 1913-1914 is as follows:

September 30—Forest School Mixer, "Address of Welcome" by Hugo Winkenwerder, Dean, College of Forestry.

October 31—"Early History of Forestry at the University of Washington and in the Pacific Northwest"—Edmond S. Meany, Professor of History, University of Washington.

November 18—"State Evening" "Forestry Needs in Washington"—E. W. Ferris, Forest Fire Warden of State of Washington, Olympia.
"Land Policy of the State of Washington"—C. V. Savidge, Commissioner of Public Lands of Washington, Olympia.

December 2—"Handling Men"—J. E. Barnes, Manager, State Department, Employers' Association of Washington, Seattle.

December 18—"The Panama Canal and Lumber Markets of the Future"—J. J. Donovan, President Pacific Logging Congress, Bellingham, Wash.

January 20—"Lumber Publicity"—Robert B. Allen, Editor, West Coast Lumberman, Seattle.

February 10—"Forest Fire Evening"—E. T. Allen, Forester, Western Forestry and Conservation Association, Portland Oregon; Hon. D. P. Simmons, formerly Associate Fire Warden of Washington; Chas. H. Flory, Assistant District Forester, Portland, Ore.

February 24—"Future Opportunities in the Forest Service"—Thornton T. Munger, in charge of investigation work, forest service, Portland, Ore.

March 3—"The Logging Engineer of the Future"—James O'Hearne, Logging Engineer, English Logging Co., Mt. Vernon, Washington.

March 17—"The Man and the Machine"—John A. Goodell, Industrial Secretary, Y. M. C. A., Portland, Oregon.

March 31—Election of officers for ensuing year.

June 5—Foresters banquet to be held at Washington Annex Hotel.

Dates of following talks to be announced by special bulletin:

"General Problems of a Shingle Manufacturer"—Hon. Alex. F. McEwan, Seattle Cedar Lumber Mfg. Co.

"Education in Logging Engineering"—Geo. M. Cornwall, editor The Timberman, Portland, Ore.

"Future Problems of the Forest Service"—W. B. Greeley, Assistant Forester, U. S. Forest Service, Washington, D. C.

Officers of the Club for the year 1913-1914 are: President, J. S. Williams; vice president, H. I. Monks; secretary-treasurer, Frank J. Klobucher.

The Club puts out every May "The Forest Club Annual," a publication which contains articles and illustrations descriptive of the school, of scientific interest, and a complete roster of students, ex-students, and alumni.

COURSES AND DEGREES

In accordance with the announcement in the Bulletin of 1913-14, the College of Forestry, beginning with September, 1914, abandons its fixed four-year groups of study and will hereafter offer only one five-year course with a liberal allowance for electives. As technical forestry has now reached a stage where some specilization is almost necessary, this new arrangement will give the student ample opportunity for specialization along three distinct lines (1) Forest Service and State Work, (2) Logging Engineering, and (3) Forest Products. *This course may, however, be pursued for only four years and on the completion of four years of the work the student will be awarded the degree of bachelor of science.* It should be emphasized that this arrangement will allow the student to receive practically as broad a training in four years as heretofore, but that if he desires to specialize he should pursue the work for five years.

REQUIREMENTS FOR GRADUATION

UNDERGRADUATE WORK

For the degree of Bachelor of Science the student shall have completed, in addition to the required subjects outlined in the curriculum, at least 28 hours in subjects selected from forestry, engineering, or the botanical, chemical, or zoological sciences, the subjects to be approved by the students' class advisor, but in no case shall more than 12 elected credits in any one de-

partment be allowed toward graduation. The total number of credits required for graduation shall be 130 exclusive of shop and military training. Candidates for the degree must furthermore receive grades of "A," "B," or "C" in at least three-fourths of the credits required for the degree. (This requirement does not apply to grades given before the year 1913-1914.)

GRADUATE WORK

For the degree of Master of Science in Forestry, the student, in addition to being a graduate of this university or other institution of equal rank, and having a satisfactory knowledge of botany, geology, physics, chemistry, mathematics, surveying and languages, shall have been credited at this University with 166 hours, of which at least 52 are in technical forestry subjects, including silviculture, dendrology, wood technology, mensuration, management, lumbering, wood preservation, forest economics, and thesis. Only grades of "A," "B," and "C" can be counted toward a graduate degree.

Attention is called to the special advanced courses for graduate students. They are dendrology, silviculture, wood technology, timber physics, wood preservation, and research. Special facilities and apparatus are provided for advanced work of this nature. Emphasis is placed upon the fact that a graduate from a college of forestry of equal rank with the College of Forestry of this University may complete the requirements for the advanced degree in one year. Graduates from other institutions of equal rank, but giving no courses in technical forestry, may complete the required work in two years.

OUTLINE OF CURRICULUM

RECOMMENDATIONS FOR CHOICE OF STUDIES

For specialization in Forest Management, the following electives are recommended: C. E. 26, Botany 16, Zoology 14, Elementary Law, and Forestry, 7, 9, 13, 14, 19, 21, 22, 25, 24, 32, and 36.

For specialization in Logging Engineering: C. E. 26 and 27, Elementary Law, Zoology 14, Electrical Engineering 5, Mech. Engineering 21, Mechanical Engineering 45 and Forestry 7, 8, 14, 17, 18, 19, 21, 22, and 32.

For specialization in Forest Products: Chem. 3 and 4, or Chem. 8b, and 14, Botany 16, Electrical Engineering 5, Mechanical Engineering 21 and 45, and Forestry 7, 7b, 13, 16, 19, 21 and 22.

FRESHMAN YEAR

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
Mathematics 1a	4	Mathematics 2a (Anal. and Algebra)	4
English 1c	2	English 2c	2
Botany 11 (Gen. Botany)	4	Botany 12 (Morphology)	4
Forestry 1 (El. Dendrology)	4	Geology 1d (Gen. Geology)	4
Forestry 2	2	Forestry 3	2
Forestry 15 (Woodcraft)	1	Drill	2
Drill	2		
	16+3		16+2

SOPHOMORE YEAR

Modern language	4	Modern language	4
C. E. 24 (Surveying)	6	C. E. 25 (Surveying)	6
Chemistry 1 (Gen. Chem.)	4	Chemistry 2 (Gen. Chem.)	4
Forestry 5 (Mensuration)	4	Forestry 6 (Mensuration)	4
Elective M. E. (Shop)	2	Elective M. E. (Shop)	2
Drill	2	Drill	2
Required	18+4	Required	18+4

JUNIOR YEAR

Physics 3a	4	Physics 4a	4
Zoology 13 (Forest Entomology)	4	Forestry 4 (Silviculture)	6
*Forestry 33 (Products)	2	Forestry 34 (Products)	2
Political Science 1a	3	Botany 16 (Tree diseases)	4
Elective		Elective	
Chemistry 3 (Organic)	4	Chemistry 4 (Organic)	4
C. E. 26 (Topography)	4	M. E. 4	2
M. E. 2	2	C. E. 27 (R. R. Surveying)	4
Required	17	Required	18

SENIOR YEAR

Forestry 11 (Management)	4	Forestry 12 (Management)	5
*Forestry 35 (Gen. Lumbering)	4	Forestry 8 (For. Economics)	2
Elective		Electives	
M. E. 45	2	Elect. Eng. 5	4
M. E. 21	2	Elementary law	2
Forestry 9 (Hist. & Policy)	2	Chemistry 17	3
Chemistry 8b	4	Forestry 32 (Cruising and scaling)	2
Botany 43	4	Zoology 14	2
Forestry 24 (Adv. Silviculture)	2		
Required	16	Required	17

*The change from the three-group system to the new five-year course will need to be adjusted gradually. Therefore, starred courses will not be given as here outlined until such time when the conditions warrant it. Hence, also, course 21 in Utilization will be a four-hour course for the first semester, courses 16 and 16a in Wood Preservation and courses 19 and 19a in Timber Physics will not be combined and course 17 in Lumbering will remain a five-hour course for the present, and courses 32 to 36, inclusive, will not be given in 1914-1915.

GRADUATE YEAR

Forestry 7 (Technology)	3	All electives	
Thesis	4	Forestry 10 (Administration)	2
Elective		Forestry 22 (Sc. Management)	2
Forestry 13 (Adv. Den.)....	3	Forestry 21 (Utilization)...	5
Forestry 19 (Tim. Phys.) ..	4	Forestry 14 (Field Mensuration)	4
Forestry 17 (Log. Eng.)....	4	*Forestry 36 (Adv. For. Management)	6
Forestry 25 (Seminar)	1	Forestry 18 (Log. Engineering)	6
		*Forestry 16 (Preservation).	4
		Forestry 26 (Seminar)	1
		Forestry 7b (Adv. Technology)	2
		Forestry 27 (Research)	2
Required.....17		Required.....16	

*The change from the three-group system to the new five-year course will need to be adjusted gradually. Therefore, starred courses will not be given as here outlined until such time when the conditions warrant it. Hence, also, course 21 in Utilization will be a four-hour course for the first semester, courses 16 and 16a in Wood Preservation and courses 19 and 19a in Timber Physics will not be combined and course 17 in Lumbering will remain a five-hour course for the present, and courses 32 to 36, inclusive, will not be given in 1914-1915.

DEPARTMENT OF INSTRUCTION

SUBJECTS PRESENTED BY THE DEPARTMENT OF FORESTRY

1. ELEMENTARY DENDROLOGY. Four credits. Either semester. Required of freshmen. Two recitations, four hours laboratory work, field trips additional. Laboratory deposit $1.00. 1st sem., T. Th. at 9, W. F. 1 to 3; 2nd sem., T. Th. at 9, M. W. 1 to 3. Professor WINKENWERDER and Mr. GRÖNDAL.

The nomenclature and classification of trees. The use of keys. A study is made of one type species of each genus of the important timber trees of North America. Identification and distribution of the species of the Northwest. Texts: Sargent's Manual of the Trees of North America; Sudworth's Trees of the Pacific Slope.

Course 1 is repeated in the second semester for students entering at that time.

2-3. INTRODUCTION TO FORESTRY. Two credits. The year. Required of all freshmen. W. F. at 8. Professor WINKENWERDER.

A course of lectures intended to familiarize the student with the general nature of the field of work he is about to enter.

15. WOODCRAFT. One credit. First semester. Required of all freshmen in forestry. Assistant Professor CLARK and Dr. HALL.

Food lists, camp cooking, woods clothing, camp equipment, camp sanitation, packing a horse, general woodcraft. Course concludes with a half dozen lectures on first aid to the injured.

A special section in Forestry 15 will be arranged for students not regularly enrolled in Forestry providing at least six students apply for the course.

4. SILVICULTURE. Six credits. Second semester. Required of all juniors and graduates. Four recitations, one-half day field work. Laboratory deposit, $1.00. M. W. Th. F. at 9, T. 1 to 5. Professor KIRKLAND.

A study of the individual tree; forest ecology; the forest as a whole; treatment of the forest regions; forest types; silvical characters of trees; seed collecting; nursery practice; transplanting.

5. FOREST MENSURATION. Four credits. First semester. Two recitations and six hours field or laboratory work. Laboratory deposit, $2.00. Required of all sophomores and graduate students. T. Th. at 8, S. 8 to 3. Assistant Professor CLARK and Mr. GRÖNDAL.

The construction and use of common types of log rules and hypsometers; methods of computing volumes of logs and trees; the principles involved in the use of form factors; the construction and use of volume tables; the elements of scaling and cruising. Text: Graves' Forest Mensuration.

6. FOREST MENSURATION. Four credits. Second semester. Two recitations, six hours field or laboratory work. Laboratory deposit, $2.00. Required of all sophomores and graduate students. T. Th. at 8, S. 8 to 3. Professor WINKENWERDER and Mr. GRÖNDAL.

Methods of studying growth in diameter, height and volume. Sample plot methods. The construction of growth and yield tables. Text: Graves' Forest Mensuration.

7. WOOD TECHNOLOGY. Three credits. First semester. Primarily for seniors and graduate students. Laboratory deposit, $2.00. Th. at 1, T. Th. 1 to 4. Professor WINKENWERDER and Mr. GRÖNDAL.

Wood structure, leading to the identification of the commercial timbers of the United States. The physical properties of wood. Each student is required to prepare permanent microscopic mounts of fifty species. Text: Record's Economic Woods.

7a. WOOD IDENTIFICATION. Two credits. First semester. Open to students in other departments of the university who upon consultation can show ability to carry the work. T. Th. 1 to 4. Professor WINKENWERDER and Mr. GRÖNDAL.

This course includes only the laboratory work of course 7. Two three-hour laboratory periods a week. Laboratory deposit, $2.00. Text: Record's Economic Woods.

7b. ADVANCED WOOD TECHNOLOGY. Two credits. Second semester. Open to seniors and graduate students. Prerequisite: Forestry 7. Laboratory deposit $2.00. F. at 11, Th. 1 to 4. Mr. GRÖNDAL.

Advanced studies in the structure of woody tissue, including micro-chemical tests and photo-micrography. Preparation of ar-

tificial keys for the identification of native and exotic timbers. Effect of commercial treatments (fire-proofing, kiln-drying, preserving, etc.,) upon woody tissue, and other special problems.

8. FOREST ECONOMICS. Two credits. Second semester. Required in junior or senior year. T. Th. at 10. Associate Professor KIRKLAND.

The forest as a natural resource; the forest compared with other natural resources; history of the conservation movement; the special relation of forests to conservation problems; the relation of forests to climate, soil, erosion, irrigation, water-power, navigation, grazing, public health, industry and labor; forest taxation, and tariff on timber. Open to students in other departments.

9. FOREST HISTORY AND POLICY. Two credits. First semester. W. F. at 8. Associate Professor KIRKLAND.

Forest policy of the United States; forestry in the states and our island possessions; the rise of forestry abroad.

10. FOREST ADMINISTRATION. Two credits. Second semester. M. W. F. at 8. Assistant Professor CLARK.

Objects of forest administration; regulations and instructions governing disposal of timber, range, and all other forest resources; use and disposal of land; rights-of-way; protection against fire, and trespass; improvement work; fiscal matters; principles and details of each subject, including investigations, reports, permits, use of all forms, supervision of work; suggestions and demonstrations.

11-12. FOREST MANAGEMENT. Four credits, first semester. Five credits, second semester. Required of all students in senior year. 1st sem., M. T. Th. F. at 11; 2nd sem., M. W. Th. F. at 1. Associate Professor KIRKLAND.

Economic management of forest lands; consideration of the normal forest; forest valuation; forest finance; regulation of the yield; working plans; forest administration; forest management on national forests. In the second half of the second semester the work is transferred to the field.

13. ADVANCED DENDROLOGY. Three credits. First semester. Primarily for graduate students. T. Th. S. at 8. Professor WINKENWERDER.

An extension of course 1 covering the identification and distribution of all important commercial tree species of the United States.

14. FIELD FOREST MENSURATION. Two credits. Second semester. For seniors or graduates. Time to be arranged. Associate Professor CLARK.

This course will be given in the field the second half of the semester in connection with the field work in lumbering and forest management. It supplements and enlarges upon the work of timber estimating and mapping as given in courses 5 and 6.

16. WOOD PRESERVATION. Two credits. Second semester. Required of seniors in all groups. Prerequisite, one year of chemistry. M. W. F. at 9. Mr. GRÖNDAL.

The decay of timber and methods of preventing it; the various methods of preservative treatment; economics of wood preservation. Report work on local commercial treating plants.

16a. ADVANCED WOOD PRESERVATION. Two credits. First semester. Open to seniors or graduate students. Mr. GRÖNDAL.

Design and practical operation of commercial wood preserving plants. Testing of preservatives. Methods of procuring and applying experimental data. Special studies with treating plant of the College of Forestry and at local commercial treating plants.

17-18. LOGGING ENGINEERING. Five credits first semester. Six credits second semester. Required of all seniors and graduates. M. W. Th. F. at 10, T. 1 to 5. Assistant Professor CLARK.

The construction and use of all types of logging machinery and equipment. The organization of logging companies, capital required. Construction of logging railroads, landings, camps, water systems, etc. Topographic and railroad surveying applied to logging operations. Organization and cost of operations. Lectures, demonstrations at plants manufacturing logging machinery, field work in nearby logging camps. During the second half of the second semester the work is transferred to the field where extensive work in logging engineering is carried on.

19. TIMBER PHYSICS. Three credits. First semester. For seniors and graduate students. Laboratory deposit, $1.00. T. Th. at 9, T. 1 to 4. Mr. ZIMMERMAN.

Various stresses which wood must resist; methods of making tests; theory of flexure; relation between moisture and strength; between specific gravity and strength; mechanical properties of wood.

19a. ADVANCED TIMBER PHYSICS. Two credits. Either semester. For seniors and graduates. Elective. Mr. ZIMMERMAN.

A laboratory course which enlarges upon the work offered in course 19.

21. FOREST UTILIZATION. Four credits. First semester. Required of seniors and graduates in all groups. M. W. F. at 9, T. at 10. Mr. GRÖNDAL.

Secondary forest products; harvesting; conversion and marketing of same. Use of wood in the manufacture of boxes, mill work, and other special articles. Rubber culture, paper making, wood distillation, utilization of waste. Classroom work supplemented by visits to industries engaged in the utilization of secondary forest products.

22. SCIENTIFIC MANAGEMENT. Two credits. Second semester. M. W. at 1. Associate Professor KIRKLAND.

Fundamental principles of scientific management, with special reference to the lumber industry.

*24. ADVANCED SILVICULTURE. Two credits. First semester. For seniors and graduates. Prerequisite, forestry 4. Associate Professor KIRKLAND.

Advanced work for students who desire to specialize in silviculture and management.

25-26. SEMINAR. One credit. The year. For seniors and graduates. W. 2 to 4. Professor WINKENWERDER, Associate Professor KIRKLAND, Mr. GRÖNDAL.

Reviews, assigned readings, reports, and discussions on current periodical literature and the more recent Forest Service publications.

27-28. RESEARCH. Two credits. Either semester or both. For seniors and graduates. Time to be arranged.

*Not given in 1914-1915. Course alternates with course 22.

29. GENERAL FORESTRY. Two credits. First semester. Offered only to students not regularly enrolled in the College of Forestry, and may be taken at the University or as extension course by correspondence. T. Th. at 2. Professor WINKENWERDER.

The natural history of the tree and of the forest; the forests of Oregon and Washington; the forest as an economic factor (including forest influences); the nature and control of forest fires; harvesting the forest crop; the utilization of forest and wood waste; the status of forestry in the United States; forestry in the Pacific Northwest. Lectures, assigned readings and reports.

30. CHARACTERISTICS OF TREES. Two credits. Second semester. Offered only to students not regularly enrolled in the College of Forestry, and may be taken at the University or as a correspondence course. T. Th. at 2. Professor WINKENWERDER.

The identification, distribution, life-habits, and uses of the trees of the Pacific Northwest. Lectures supplemented by laboratory work and field trips.

31. TEACHER'S COURSE. One credit. Either semester. Offered only as a correspondence course. Must be accompanied or preceded by course 29. Professor WINKENWERDER.

The following subjects, scheduled in the new five year course will not be offered in 1914-15.

32. SCALING AND CRUISING. Two credits. Second semester. Assistant Professor CLARK, Mr. NELSON.

33-34. FOREST PRODUCTS. Two credits. The year. Professor WINKENWERDER.

35. GENERAL LUMBERING. Four credits. First semester. Assistant Professor CLARK and Special Lecturers.

36. ADVANCED FOREST MANAGEMENT. Six credits. Second semester. For graduate students only. Prerequisite Forestry 11 and 12. Associate Professor KIRKLAND.

The following additional changes made in the new five year course will not be in effect in 1914-15.

Courses 16 and 16a in Wood Preservation will be combined into one four-hour course. Likewise courses 19 and 19a in Timber Physics. Course 21 will be made a five-hour course with laboratory work. Course 17 will be changed from five to four hours.

SUBJECTS PRESENTED BY OTHER DEPARTMENTS OF THE UNIVERSITY

BOTANY

(Science Hall)

1. ELEMENTARY BOTANY. Four credits. First semester. M. F. at 1 or T. Th. at 1; Lab. M. F. 2 to 4, or T. Th. 2 to 4, or T. Th. 8 to 10. Professor FRYE.

The structure and functions of roots, stems, leaves and seeds. Only for those who have had no botany in the high school.

10. TAXONOMY. Four credits. Second semester. Prerequisite, botany 1 or its equivalent except for teachers and seniors. To take the place of botany 2 for those who expect to take botany 5 or 11. M. F. at 4, M. F. 1 to 4. Professor FRYE.

The science of the classification of plants. Plant analysis.

11. GENERAL BOTANY. Four credits. First semester. Prerequisite, botany 1, and 10 or 2. For forestry students. T. Th. at 1, T. Th. 2 to 4. Dr. HOTSON.

A study of types of the lower plants to illustrate the advance in complexity, thus preparing the way for the understanding of Spermatophyte structures.

12. MORPHOLOGY OF SPERMATOPHYTES. Four credits. Second semester. Prerequisite, botany 11. T. Th. at 1, T. Th. 2 to 4. Dr. HOTSON.

Structure, specially of the stem. Lectures on adaptation to environment.

43. PLANT PHYSIOLOGY. Four credits. First semester. Prerequisites, chemistry 1 and 2; botany 1 and 2, or 9 and 10, or 1 and 10. M. W. at 11, M. W. 2 to 5. Assistant Professor RIGG.

The physical and chemical processes in plants so far as the latter may be comprehended without organic chemistry.

16. FOREST PATHOLOGY. Four credits. Second semester. Prerequisites, botany 5 or 11. M. W. at 10, T. Th. 9 to 12. Dr HOTSON.

The fungus and bacterial diseases of trees.

CHEMISTRY.

(Bagley Hall)

1-2. GENERAL CHEMISTRY. Many students come from accredited schools in which chemistry is not required. To meet the

needs of such students, a course is offered consisting of two lectures and six hours laboratory work per week. Textbooks: Smith's College Chemistry and Laboratory Manual. Deposit ten dollars per semester. Lect. T. Th. at 11; Lab. T. Th. 8 to 11; M. W. 8 to 11; F. S. 8 to 11; T. Th. 1 to 4; or M. F. 1 to 4. Professor BYERS, Instructors and Assistants.

3-4. ORGANIC CHEMISTRY. Four credits. The year. M. W. F. at 8, M. or W. or F. 1 to 5. Assistant Professor DEHN.

Lecture course. Laboratory work on the preparation and testing of representative compounds. Bernthsen-Sudburough's text used in connection with Sudburough-James laboratory manual as laboratory guide.

8b. ELEMENTARY QUALITATIVE ANALYSIS. Four credits. Either semester. Two lectures and six laboratory hours per week. M. W. at 11, T. Th. 2 to 5.

*17. FOREST PRODUCTS. Three credits. First semester. Option for students in forestry. Professor BENSON.

A detailed study of the chemical process involved in the utilization of wood. Two lectures and one laboratory period.

CIVIL ENGINEERING

(Engineering Building)

17. FOREST SURVEYING. (Short session in Forestry, first year, January-March.) Two lectures and two four-hour laboratory periods. Laboratory deposit, three dollars. M. W. at 9, Th. F. 8 to 12. Mr. NEWTON.

Engineering drawing, topographical and map drawing. Instructions and field practice in the use of the chain, hand compass, and forest service compass, hand level, clinometer and transit in direct application to the requirements of the U. S. Forest Service.

18. FOREST SURVEYING. (Short session in Forestry, second year, January-March.) Two lectures and two four-hour laboratory periods. Laboratory deposit, three dollars. M. W. at 11, T. Th. 8 to 12. Mr. NEWTON and Mr. BURRITT.

Traversing by various conventional methods, June 11th and mining claim surveys, plane triangulation and topographical work. U. S. Public Land Subdivision.

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*Not given in 1914-1915.

24-25. FOREST SURVEYING. Six credits. First and second semesters. Sophomore and junior forestry. Two recitations and one four-hour laboratory period. Prerequisites, math. 1a. Laboratory deposit $3.00. M. W. at 10, T. Th. 1 to 5. Mr. NEWTON.

Engineering lettering and map drawing. Chain, compass, transit and level surveying, with reference to work in forest. United States subdivision of public lands.

26. FOREST TOPOGRAPHY. Four credits. First semester. Prerequisite, C. E. 25. Laboratory deposit $3.00. M. W. at 11, F. 1 to 5. Mr. NEWTON.

Topographic surveys as applied to forestry. Reconnoissance and sketch maps, and exercises in reading and adjusting triangulation systems. Filling in topographic details with plane table and transit. Beginning of elementary railroad surveying.

27. LOGGING RAILROADS. Four credits. Second semester. Junior Forestry. Prerequisite, C. E. 26. Laboratory deposit $3.00. M. W. at 11, F. 1 to 5. Mr. MILLER.

Elementary railroad engineering including curves and earthwork and the economic location of logging railways. Cost estimates.

ELECTRICAL ENGINEERING

5. ELECTRICAL ENGINEERING. Four credits. The year. Prerequisites, math. 4a, physics 2a, 2b. First semester, section A, T. Th. at 8, F. 8 to 12. Section B, T. Th. at 9, T. 1 to 5. Mr. CURTIS and Mr. JOHNSON. Second semester, T. Th. at 11, Th. 1 to 5. Assistant Professor LOEW and Mr. CURTIS.

A short course giving the fundamental principles of direct currents with experimental tests on commercial dynamos and motors.

ENGLISH

(Office, Room 45, Denny Hall)

1c-2c. FRESHMAN COMPOSITION. Two credits. The year. For students in the College of Forestry. T. Th. at 11. Mr. HARRISON.

GEOLOGY

(Science Hall)

1d. GEOLOGY FOR FORESTRY STUDENTS. Four credits. Second semester. Laboratory deposit, $1.00. T. Th. S. at 8, F. 2 to 5. Assistant Professor BRETZ.

LAW

(Office, Law Building)

80. ENGINEERING CONTRACTS. Two credits. Second semester. Assistant Professor Cockerill and special lecturers.

MATHEMATICS

(Science Hall)

0-0. SOLID GEOMETRY. Two credits. The year. Three sections. Prerequisite, plane geometry. T. Th. at 4 or M. W. at 4.

Required during the freshman year of all students in the Colleges of Engineering, Forestry and Mines who do not offer solid geometry for admission.

1f-2f. FORESTER'S COURSE. Four credits. The year. Prerequisites, same as for math. 1. M. W. F. S. at 10. Assistant Professor GAVETT.

A year's course in numerical and graphic methods, solution of plane triangles, the elements of coordinate geometry, and derivatives and integrals with applications to problems involving maxima and minima, rectifications, quadratures and cubatures.

2a-2a. ANALYTICAL GEOMETRY AND ALGEBRA. Four credits. First or second semester. Prerequisite, math. 1a. First semester, M. W. F. S. at 9. Second semester, M. W. F. S. at 8, M. W. Th. F. at 2, T. W. Th. F. at 1, M. T. Th. F. at 2, or M. T. W. Th. at 2.

The elements of analytical geometry and supplementary work in algebra equivalent to one hour per week.

MECHANICAL ENGINEERING

2. PATTERN MAKING AND CABINET WORK. First semester, M. 1 to 5. Second semester, Th. 1 to 5, T. 1 to 5, M. 1 to 5, W. 1 to 5, F. 1 to 5, S. 8 to 12. Mr. BEATTIE.

3. FORGE AND FOUNDRY. First semester, F. 1 to 5 or Th. 1 to 5. Second semester, W. 1 to 5 or Th. 1 to 5. Mr. KANE.

4. MACHINE WORK. Two credits. The year. First semester, M. 1 to 5. Second semester, M. 1 to 5 or T. 1 to 5. Mr. KANE.

21. STEAM ENGINEERING. The various forms of steam apparatus used in modern power plants, considering the construction, use and reason for installing such apparatus. First semester, T. Th. at 9 or M. W. at 9. Second semester, T. Th. at 9 or M. W. at 11. Professor EASTWOOD.

45. STEAM ENGINEERING LABORATORY. A laboratory course to accompany course 21. M. 1 to 5. Assistant Professor WILSON.

MILITARY SCIENCE AND TACTICS

(The Armory)

EDWARD E. MC CAMMON, FIRST LIEUTENANT THIRD INFANTRY, U. S. A., COMMANDANT

A course of two years in military training is required. All able bodied male students (except those from foreign countries, not intending to become naturalized) must take the course which by regulation of the University is required during the first and second year. Three hours a week are devoted to military training, for which two credits are given each semester. M. W. F. at 11, or T. Th. F. at 11.

MODERN LANGUAGE

NOTE.—One year of modern language is required. Although German is recommended, any modern language will be accepted. For description of courses see pages 125, 134, 193, and 195.

PHYSICS

(Basement, Denny Hall)

3a-4a. GENERAL PHYSICS. Four credits. First and second semesters. This course is an abridgment of 1a, 2a, and is open only to students in forestry, pharmacy, and medicine. Three class periods and one laboratory period. Prerequisite, mathematics, 4 hours. T. Th. at 8, M. 1 to 5. Mr. VORIS.

NOTE.—The laboratory deposit is six dollars per year.

POLITICAL AND SOCIAL SCIENCE

(Denny Hall)

1a. ELEMENTS OF ECONOMICS. Three credits. First or second semester. M. W. F. at 8, 9, 10, 11, 1, or 2. Dr. BERGLUND.

ZOOLOGY

(Science Hall)

14. FOREST ZOOLOGY. Two credits. Second semester. W. F. at 8. Professor KINCAID.

A discussion of the animal life characteristics of forest, including the classification, habits, economic relations, propagation, and protection of forest animals.

13. FOREST ENTOMOLOGY. Four credits. First semester. M. W. at 9, W. 1 to 5. Professor KINCAID.

A course dealing with the relation of insects to the forest, including the classification and habits of forest insects and the practical handling of insects injurious to forest welfare. Deposit, two dollars per semester.

SPECIAL SHORT COURSES IN FORESTRY AND LUMBERING

Session 1915—January 4 to March 27.

OBJECT. The short courses are planned to meet the needs of persons already engaged as forest rangers or guards, who are desirous of increasing their efficiency, of those who intend to take up this work, of timber land owners, and of lumbermen engaged in woods work.

NATURE OF THE WORK

The work is intensely practical in its nature. Instruction is given by lectures, demonstrations, and laboratory and field exercises. In so far as it may be advisable the student is allowed with the consent of the dean to select from the list of subjects offered those best adapted to meet his individual needs. The courses of study are arranged into 2 groups: I, The Ranger Group, and II, The Lumbermen's Group. See special statement under each below.

EXPENSES

Deposit for materials supplied	$3.00
Deposit to insure care in use of instruments (returnable)	$2.00
Board and lodging, per month	$20-$25.00
Books, drawing instruments, etc., about	$15.00
Field trips	$10-$15.00

NOTE.—The total expenses for the twelve weeks, exclusive of transportation to and from the University, need not exceed one hundred and twenty-five dollars.

REGISTRATION AND TERMS OF ADMISSION

Persons who intend to enroll for any of the short courses should present themselves for registration at the Good Roads building on the University grounds on January 4 or 5. Although students will be permitted to register later than the days

set it will be of advantage for the student to have his registration completed in time to take up the class room work promptly on Tuesday, January 6. At the close of the session a statement will be issued to each student showing the work which was satisfactorily completed.

Admission to classes is without examination, but applicants must be at least 20 years old and show ability to carry the work with profit to themselves. Those who wish to carry the work in lumbering should in addition have worked at least three months in a logging camp.

GROUP I. THE RANGER COURSE

This course may be pursued for either one or two years during the months specified. The work of the second year consists largely of a continuation of the subjects studied the first year, enlarging upon them and fitting the student to carry on the more difficult work he is likely to meet with in his profession. The United States Forest Service cooperates with the University in this course by assisting in the work of instruction. The subjects included in this course are the following:

OUTLINE OF SUBJECTS

Regular First Year Subjects.	*Regular Second Year Subjects.*
1s. Silviculture	13s. Silviculture
2s. Forest Measurements	14s. Forest Measurements
3s. Forest Surveying	15s. Forest Surveying
4s. Geology (rocks and soils)	16s. Forest Management
5s. Characteristics of Trees	17s. Logging

Additional subjects which may be taken either first or second year (electives):

6s. Forest Administration
7s. Forest Botany
8s. Forest Law
9s. First Aid to Injured
10s. Diseases of Trees
11s. English Composition

II. LUMBERMEN'S GROUP

This course of studies is offered for the benefit of men actively engaged in work in the woods who wish instruction and practice in cruising, scaling, simple methods of topographic and railroad

surveying, and the fundamental technical problems encountered in modern logging operations on the Pacific Coast. It is not expected that, in the short time allowed for this work, the men will become fully equipped logging engineers. The aim of the course is to help young men already familiar with the elementary principles to increase their efficiency in matters that demand some technical knowledge. For this reason all applicants should present evidence that they have worked at least three months in a logging camp.

REQUIRED SUBJECTS IN LUMBERMEN'S COURSE

2s. Forest Measurements
3s. Forest Surveying
18s. Logging
9s. First Aid to Injured

In addition to the above a limited number of subjects may be selected from the Ranger Group. Selections from the following are suggested:

5s. Characteristics of Trees
4s. Geology
8s. Forest Law
1s. Silviculture.

DESCRIPTION OF SUBJECTS

The subjects are here arranged according to number as scheduled in the outlines.

1s. SILVICULTURE. Three lectures or recitations a week, field work additional. Mr. GRÖNDAL and Mr. MUNGER.

The requirements of trees for soil, light, water and climate; the special requirements of the trees of the Northwest. The reproduction of trees, how to secure new growth after logging by natural reproduction; systems of cutting to this end. Reproduction by seeding and planting, seed collecting; nursery practice; transplanting.

2s. FOREST MEASUREMENTS. (a) General Mensuration. Two lectures and one-half day field work a week. Assistant Professor CLARK.

The theory of construction and the use of log rules; their comparative values; other units for measuring timber. The construction and use of height measures and diameter measures; how to make and use volume tables.

(b) Scaling. Lectures accompanied by extensive practical exercises in the woods. This work is given during the last four weeks of the course. Mr. NELSON.

Methods of deducting for defects; the keeping of scale records; log grading.

(c) Cruising and Mapping. Lectures accompanied by extensive field practice. The last two weeks of the course are largely given over to field practice. Assistant Professor CLARK.

The methods of cruising timber in use in the Northwest; how to tell defect and allow for it; woods mapping; preparation of cruising reports.

3s. (C. E. 17). FOREST SURVEYING. First year. Two lectures and two four-hour laboratory periods. Laboratory deposit three dollars. Mr. NEWTON.

Engineering drawing, topographical and map drawing. Instruction and field practice in the use of the chain, hand compass, and Forest Service compass, hand level, clinometer and transit in direct application to the requirements of the U. S. Forest Service.

4s. GEOLOGY. First year. Two lectures or recitations a week. Assistant Professor SAUNDERS.

Common minerals, manner of their occurrence and identification; mining lode and placer work; how to select ore samples and use gold pan; work confined mainly to that which will assist in determining the validity of mineral and coal claims. Soils, classification; liability to erosion.

5s. CHARACTERISTICS OF TREES. Two lectures or recitations and one two-hour laboratory period a week. Professor WINKENWERDER.

Simple characters by which the local trees may be recognized, both in the summer and winter condition; their classification, distribution and use.

6s. FOREST ADMINISTRATION. Three lectures or recitations a week. Assistant Professor CLARK, Mr. CECIL, Mr. MACMILLAN, Mr. BENEDICT.

(a) Policies. Objects of forest administration. Use of the national forests; timber sales; privileges, and grazing policies; organization of the Forest Service; duties and qualifications of forest officers.

(b) Methods. Regulations and instructions governing disposal of timber, range and all other forest resources; use and disposal of land; rights of way; protection against fire and trespass; improvement work; fiscal matters; investigations, reports, permits, use of forms and supervision of work.

7s. FOREST BOTANY. One two-hour laboratory period a week. Mr. HOTSON.

A study of roots, stems, leaves, flowers and their modifications. Fruits and seeds. How plants are named and how to find their names. Special emphasis is placed on range plants.

8s. FOREST LAW. A series of eight to twelve special lectures. Mr. BUCK.

Interpretation of state and federal land, mining, live stock, water and forest laws; rulings and decisions; rules of practice before U. S. land offices; what constitutes trespass; what constitutes evidence and how to get it; authority of forest officers; when and how to make arrests.

9s. FIRST AID TO INJURED. Ten lectures. Dr. HALL.

What to do in case of accidents, how to use bandages; the treatment of shock, bruises, cuts, burns, and poisoning. Demonstrations.

11s. DISEASES OF TREES. Six to ten lectures. Mr. HOTSON.

How fungi are distributed, how they get into the trees and what to do with them. General causes and nature of decay. The general principles underlying the treatment of diseased trees.

12s. ENGLISH COMPOSITION. A special class in English Composition will be arranged providing a sufficient number of men express a desire for this work.

13s. SILVICULTURE. For second year students. Three lectures a week, field work additional. Associate Professor KIRKLAND.

A continuation of course 1s. Forest ecology; forest regions, and forest types are emphasized. Silviculture systems of management.

14s. FOREST MEASUREMENTS. For second year students. Two lectures and one-half day field work. Professor WINKENWERDER.

(a) Advanced work in cruising, topographic mapping and reports. Reports will include detailed forest descriptions, stumpage

values, log grades, detailed cost and management of operations; additional practice in scaling.

(b) The construction of volume tables; valuation surveys by the volume curve and arbitrary group methods, methods of obtaining mean and periodic annual growth in height and diameter. Each part of the work demonstrated by field practice.

15s. (C. E. 18). FOREST SURVEYING. For second year men. Two lectures and two four-hour laboratory periods. Laboratory deposit three dollars. Mr. NEWTON.

Traversing by various conventional methods. June 11th and mining claim surveys, plane triangulation and topographical work. U. S. Public Land Subdivision.

16s. FOREST MANAGEMENT. For second year students. Three lectures or recitations a week. Associate Professor KIRKLAND.

Principles of compound interest as applied to forest property; valuation of forest land; methods of ascertaining the value of forest property; valuation of forest land; methods of ascertaining the value of the forest at different ages as a basis for sales; exchange and damage suits; determining the rotation; plans of management for continuous revenue; forest taxation.

17s. LUMBERING. For second year students. Two lectures per week. Assistant Professor CLARK.

General description of lumbering throughout the United States. Study of Pacific Coast logging; methods used; problems involved; costs. This course does not take up the surveying of logging spurs or any of the work connected with the planning out of logging operations.

18s. LOGGING. For students in Lumbermen's Course. Four lectures and one field period per week. Assistant Professor CLARK.

Construction and use of all types of logging machinery and equipment. Construction of logging railroads, camps, landings, etc. The making of topographic maps and the surveying of logging railroads. Students will actually make a topographic map and survey several miles of logging spurs in this course.

SCHOOL OF LAW

FACULTY

*THOMAS FRANKLIN KANE, PH. D., President.

HENRY LANDES, A. M., Acting President.

JOHN T. CONDON, LL. M., Dean and Professor of Law.

HARVEY LANTZ, A. M., LL. B., Professor of Law.

GEORGE S. COLE, LL. B., Professor of Law.

IVAN W. GOODNER, LL. B., Professor of Law.

ORVILLE PORTER COCKERILL, A. B., LL. B., Assistant Professor of Law.

EARL G. RICE, A. B., LL. B., Instructor in Law.

ADMISSION TO THE LAW SCHOOL

To be admitted to regular standing in the Law School students must, in addition to presenting credits or passing examinations entitling them to admission to any other school or college of this University, present credits or pass examinations equivalent to sixty college hours in the College of Liberal Arts of this University or other college or university of recognized standing, plus eight hours in physical training or its equivalent. Students entering the College of Liberal Arts of this University with the intention of pursuing the study of law, should enroll in the Pre-Law Course, as outlined below, or take a course including the regular freshman and sophomore prescription of that college.

PRE-LAW CURRICULUM

This curriculum is designed for students who will begin law after having taken only the two years college work as required for their admission to the Law School.

The student must take either the prescribed courses in the College of Liberal Arts or the course outlined below:

* Leave of absence, January 1 to August 1. Retires August 1, 1914.

FIRST YEAR

English (1, 2), Freshman composition.....8 hours
History, (English or American).....8 hours
Chemistry, Zoology or Botany.....8 hours
(Preferably in the order named.)
College Mathematics (1b, 2b) or foreign language.....8 hours
(If the student has taken two years of Latin, it is recommended that he take Roman Law.)
Physical or Military Training.
College Problems.

SECOND YEAR

Political and Social Science.....8 hours
(Either Principles of Sociology and Elementary Economics or American Government.)
Philosophy (Two of the following subjects):.....8 hours
Introduction to Philosophy; Ethics; Logic or Psychology; or History of Philosophy.
Sixteen hours from among the following subjects:
Physics; the continuation of a foreign language; English Constitutional History; Political and Social Science; Philosophy; English Literature; a year of Science.
Physical or Military Training.....8 hours

For the third and fourth years in the College of Liberal Arts students must classify themselves under some one of the groups as offered, either a regular course or the combined Arts-Law course.

ADVANCED STANDING

If, in addition to satisfying the entrance requirements for regular standing in the Law School, the student has earned credits in another law school of satisfactory standing, by regular attendance for at least one academic year of not less than eight months, he will ordinarily receive credit for such work, subject to the following restrictions: The work must equal in amount and character that required by this Law School. Not more than two years' credit will be allowed for such work. The right is reserved to refuse advance credit in law in whole or in part, save upon examination. Candidates for advanced standing must spend at least one full college year in this school.

SPECIAL STUDENTS

No person will be admitted as a special student in law unless he is twenty-one years of age and his general education is such as to entitle him to take the state bar examination.

Special students who comply with these requirements will be admitted to take such work in law as their previous preparation enables them to carry successfully, and upon satisfactory completion of sufficient law work to entitle them to take the state bar examination, will be given a certificate or affidavit entitling them to apply for examination. Students who intend to take this method must file notice of their intention to study law with the clerk of the Supreme Court as required by law.

SPECIAL STUDENTS BECOMING CANDIDATES FOR DEGREE

Special students may become candidates for a degree upon complying with all the entrance requirements as above set forth in reference to regular students. If a special student intends to become a candidate for a degree by clearing up his entrance requirements during his law studies, he must notify the Dean of the Law School upon registration. Such students will be permitted to carry a limited amount of work in the College of Liberal Arts or the College of Science to enable them to clear up their entrance requirements in law.

COMBINED CURRICULA IN ARTS AND LAW

This combined course allows the student with a good record to complete the A. B. and LL. B. in six years. It is open only to those students who have maintained a uniformly good record for scholarship during the first three years of Arts and Sciences.

The student is enrolled in the College of Liberal Arts during the first three years. If at the end of three years he has a uniformly good record for scholarship and has earned ninety or more credits, including all the required work and major and minor, he may for the fourth year register in the Law School for the first year's work in law and must earn in the College of Liberal Arts additional credits sufficient to make his total of arts and science credits amount to ninety-six, and earn in the Law School at least twenty-four credits in the first year law work, to apply on his A. B. degree, thus making his one hundred

twenty credits required for the A. B. degree. The A. B. degree will be granted upon the completion of both courses.

The last two years of this combined course are devoted to completing the rest of the required work in the Law School.

Students are strongly advised to complete their full ninety-six credits in Arts and Sciences by the end of the third year, so they can enter the law work clear in the fourth year.

Students from other schools entering this University with advanced standing may take advantage of this combined course, provided they are registered in the College of Liberal Arts for at least one full year's work and earn at least thirty credits in this University before entering the law work.

This privilege will not be extended to normal graduates attempting to graduate in two years nor to undergraduates of other colleges, who enter this University with the rank of senior.

THESIS

It is the desire of the faculty to encourage original investigation and research by the students. Each candidate for a degree is required to prepare and deposit with the Dean of the School of Law, before the beginning of the spring vacation of his senior year, a thesis of not less than thirty folios in length, upon some legal topic selected by the student and approved by the faculty. The student will be examined by the faculty upon this thesis. It must be printed or typewritten, and securely bound, and is to be kept permanently in the library of the Law School.

CARKEEK PRIZE FOR THESIS UPON WASHINGTON LAW

Mr. Vivian M. Carkeek, of the Seattle bar, a graduate of this Law School, class of '01 (the first class to graduate from this Law School) offers an annual prize of twenty-five dollars for the best thesis submitted by members of the senior class, candidates for the degree of bachelor of laws, upon a subject of Washington law, or upon a subject of peculiar interest to Washington lawyers, the subject to be selected by the Dean of the Law School.

EVENING COURSES IN LAW

The University offers courses in law in the evening, open to those who are not able to attend in the day time. The entrance and graduation requirements for the evening school are the same as for the day school. The studies pursued in the evening school

are exactly the same and the same textbooks are used, and the same instructors conduct the course. The evening classes meet three times each week, Monday, Wednesday and Friday.

INSTRUCTION IN OTHER DEPARTMENTS

Students in the Law School may pursue studies, for which they are prepared, in other departments of the University without charge except that in the laboratory courses the usual laboratory deposits will be required. Those wishing to take advantage of this opportunity must procure permission and proper credentials from the Dean of the Law School.

LIBRARIES

The library of the Law School contains about thirteen thousand well selected volumes, and considerable additions will be made to it each year.

The University library contains about sixty-two thousand volumes and is especially strong in reference works.

The public library of the city of Seattle is open to the free use of our students and is within easy distance of the campus by street car.

DEGREES

The degree of bachelor of laws (LL. B.) will be conferred on all students who comply with the entrance requirements for regular students stated hereinbefore, remain in residence in the school for three school years, successfully complete all the required law work provided in this Law School and in addition such electives as will with the required work aggregate eighty-two credits, and comply with all the rules and regulations of the faculty and board of regents of this University.

Students admitted to advanced standing based upon credits earned at another law school may count that work towards graduation, subject to the restrictions heretofore stated.

EXAMINATION

The members of each class are examined daily throughout the year in their studies, and may be subjected to written examinations at any time in the discretion of the faculty without notice. At the end of each semester the members of each class

are subject to written examinations on the courses during the year and their promotion is dependent on successfully passing such examination.

To receive the degree of bachelor of laws it is necessary to pass satisfactory examinations in the entire course of three years. Students who pass these examinations with distinguished excellence will receive the degree of bachelor of laws cum laude.

FEES

A tuition fee of forty dollars per annum for day students and twenty dollars per annum for evening students is charged in the Law School, one-half payable at the beginning of each semester.

A diploma fee of five dollars is charged all students to whom diplomas are issued.

ADMISSION TO THE BAR

It is provided by an act of the legislature of the State of Washington that the graduates of this Law School shall be admitted to the bar of the courts of this state upon motion without examination.

OTHER INFORMATION

Information on subjects not covered by the foregoing statement will be cheerfully furnished in answer to communications addressed to the Law School of the University of Washington, University Station, Seattle, Washington.

SCHOOL OF LAW

COURSE OF INSTRUCTION

FIRST YEAR

1. AGENCY. Two credits. First semester. Reinhard's Cases on Agency, supplemented by Washington Cases. T. Th. at 9. Professor GOODNER.

5, 6. CONTRACTS. Six credits. The year. Williston's Cases on Contracts. M. W. F. at 8. Professor LANTZ.

9. CRIMINAL LAW. Two credits. First semester. Mikell's Cases on Criminal Law and Criminal Procedure (Abridged Edition), supplemented by the Washington Criminal Code and Cases. W. F. at 9. Assistant Professor COCKERILL.

13. HOW TO FIND THE LAW. Two credits. First semester. This course consists of five lectures on legal bibliography followed by a study of the system of legal classification employed in the leading Digests, etc., used by lawyers, and a series of selected practical problems in finding and keeping a record of the law. M. W. at 10. Professor CONDON.

16. PERSONS. Two credits. Second semester. Woodruff's Cases on Domestic Relations and the Law of Persons, supplemented by Washington Cases. T. Th. at 9. Professor LANTZ.

19, 20. PLEADING. Four credits. The year. Ames' Cases on Pleading and Whittier's Cases on Common Law Pleading, first semester; Sunderland's Cases on Code Pleading and Hepburn's Development of Code Pleading as collateral reading, second semester. T. Th. at 8. Assistant Professor COCKERILL.

24. PROCEDURE. Two credits. Second semester. Mikell's Cases on Criminal Law and Criminal Procedure (Abridged Edition) first half of semester, second half of semester, civil actions in the Justice and Superior courts of the State of Washington. W. F. at 9. Assistant Professor COCKERILL.

27, 28. PROPERTY. Four credits. The year. Gray's Cases on Property, (second edition) Volumes I and II. M. at 9, F. at 10. Professor COLE.

30. STATUTORY INTERPRETATION. Two credits. Second semester. Washington Cases. M. W. at 10. Professor CONDON.

33, 34. TORTS. Four credits. The year. Ames' Cases on Torts. (3rd Ed.), first semester; Smith's Cases on Torts, (2nd Ed.), second semester. T. Th. at 10. Mr. RICE.

SECOND YEAR

REQUIRED WORK

37, 38. EQUITY. Six credits. The year. Ames' Cases in Equity Jurisdiction, volumes I and II, supplemented by Washington Cases. M. W. F. at 8. Professor GOODNER.

41, 42. EVIDENCE. Four credits. The year. Wigmore's Cases on Evidence, supplemented by Washington Cases and Statutes. T. Th. at 8. Professor CONDON.

45, 46. PROPERTY. Four credits. The year. Gray's Cases on Property, (2nd Ed.) volumes III and V. T. Th. at 10. Professor COLE.

ELECTIVES

In addition to the required courses second year students must elect from the following such courses as will, with their required work aggregate fourteen hours.

49. BILLS AND NOTES. Two credits. First semester. Huffcut's Cases on Negotiable Instruments. T. Th. at 11. Professor LANTZ.

52. CARRIERS. Two credits. Second semester. Green's Cases on Carriers. T. Th. at 11. Professor LANTZ.

56. DAMAGES. Two credits. Second semester. Mechem's and Gilbert's Cases on Damages, supplemented by Washington Cases. M. at 9, F. at 10. Assistant Professor COCKERILL.

60. PARTNERSHIP. Two credits. Second semester. Gilmore's Cases on Partnership. M. W. at 11. Assistant Professor COCKERILL.

63, 64. PRIVATE CORPORATIONS. Four credits. The year. Warren's Cases on Private Corporations, supplemented by Washington Cases. M. W. at 10. Professor COLE.

67. PROCEDURE. Two credits. First semester. This course will relate to the procedure in civil actions in the superior courts. M. at 9, F. at 10. Professor GOODNER.

72. QUASI-CONTRACTS. Two credits. Second semester. Woodruff's Cases on Quasi-Contracts. T. Th. at 9. Mr. RICE.

75. SALES. Three credits. First semester. Williston's Cases on Sales and Washington Statutes and Cases. M. W. F. at 11. Assistant Professor COCKERILL.

78. TAXATION. Two credits. Second semester. Goodnow's Cases on Taxation and Washington Statutes and Cases. W. F. at 9. Professor CONDON.

81. NEGLIGENCE. Two credits. First semester. Washington Cases. This course is designed to cover the Law of Negligence and the Workmen's Compensation Act for the State of Washington. T. Th. at 9. Mr. RICE.

85. WASHINGTON STATUTE LAW. Two credits. First semester. Washington Cases. W. F. at 9. Professor CONDON.

88. WILLS. Two credits. Second semester. Costigan's Cases on Wills. T. Th. at 9. Professor GOODNER.

THIRD YEAR

REQUIRED WORK

91, 92. CONSTITUTIONAL LAW. Four credits. The year. First semester, Federal; second semester, State of Washington. McClain's Cases on Constitutional Law and Washington Cases. 1st sem., M. at 8; Th. at 11; 2nd sem., M. at 8, W. at 11. Professor CONDON.

95, 96. PROPERTY. Four credits. The year. Gray's Cases on Property (2nd Ed.), volume VI for first semester and Washington Statutes and Cases on Community Property for second semester. T. Th. at 8. Professor COLE.

ELECTIVES

In addition to the required courses, third year students must elect from the following or any second year subjects which they have not taken in their second year, such courses as will, with the required work aggregate twelve hours.

99. ADMIRALTY. Two credits. First semester. Ames' Cases on Admiralty. T. Th. at 9. Professor LANTZ.

102. BANKRUPTCY. Two credits. Second semester. Williston's Cases on Bankruptcy and selected Cases. M. F. at 11. Professor GOODNER.

105. COMPARATIVE STATUTE LAW. Two credits. First semester. M. at 9, F. at 10. Professor CONDON.

108. CONFLICT OF LAWS. Two credits. Second semester. Lorenzen's Cases on Conflict of Laws. W. F. at 9. Professor LANTZ.

111. HISTORY OF LAW. Two credits. First semester. Textbook to be selected. T. F. at 11. Professor CONDON.

115. INSURANCE. Two credits. First semester. Textbook to be selected. W. F. at 9. Professor LANTZ.

118. JURISPRUDENCE. Two credits. Second semester. Textbook to be selected. M. at 9; F. at 10. Professor CONDON.

122. MINING AND IRRIGATION. Two credits. Second semester. Textbook to be selected. W. F. at 8. Professor ————

125. MORTGAGES. Two credits. First semester. Wyman's Cases on Mortgages and Washington Statutes and Cases. T. Th. at 10. Professor GOODNER.

128. MUNICIPAL CORPORATIONS. Two credits. Second semester. Smith's Cases on Municipal Corporations and Washington Constitution, Statutes and Cases. T. Th. at 11. Mr. RICE.

132. OFFICE PRACTICE. Two credits. Second semester. Conveyancing and examination of abstracts, care of a law office generally, drawing wills and contracts, preparation of briefs and office accounts. T. Th. at 9. Professor CONDON.

135, 136. PROCEDURE. Four credits. The year. This is designed as an advance course in Washington Practice. It will be largely probate and moot court work, involving the drafting of pleadings, jury trials in the Superior Court and the taking of appeals to the Supreme Court. M. W. at 10. Professor GOODNER.

139. PUBLIC SERVICE COMPANIES. Two credits. First semester. Wyman's Cases on Public Service Companies. M. W. at 11. Professor LANTZ.

143. SURETYSHIP. Two credits. First semester. Ames' Cases on Suretyship. W. F. at 8. Assistant Professor COCKERILL.

146. TRUSTS. Two credits. Second semester. Kenneson's Cases on Trusts. T. Th. at 10. Professor GOODNER.

No first year student may take more than fifteen hours, no second year student may take more than fourteen hours, and no third year student may take more than twelve hours, in any one semester, without special permission of the Law Faculty, except that a student may take one course in which he has failed to pass.

COLLEGE OF MINES

FACULTY

*THOMAS FRANKLIN KANE, PH. D., Johns Hopkins, PRESIDENT.

HENRY LANDES, A. M., Harvard, ACTING PRESIDENT.

MILNOR ROBERTS, A. B., Stanford, Professor of Mining Engineering and Metallurgy, DEAN.

HENRY LANDES, A. M., Harvard, Professor of Geology and Mineralogy.

ALMON HOMER FULLER, M. S., C. E., Lafayette, Professor of Civil Engineering.

JOHN THOMAS CONDON, LL. M., Northwestern, Professor of Law.

HORACE BYERS, PH. D., Johns Hopkins, Professor of Chemistry.

TREVOR KINCAID, A. M., Washington, Professor of Zoology.

FREDERICK ARTHUR OSBORN, PH. D., Michigan, Professor of Physics.

ROBERT EDOUARD MORITZ, PH. N. D., Strassburg, Professor of Mathematics and Astronomy.

CARL EDWARD MAGNUSSON, PH. D., E. E., Wisconsin, Professor of Electrical Engineering.

EVERETT OWEN EASTWOOD, C. E., A. M., Virginia, Professor of Mechanical Engineering.

D. C. HALL, PH. B., M. D., Sc. M., Chicago, Professor of Physical Training.

E. J. MCCAUSTLAND, B. C. E., M. C. E., Cornell, Professor of Civil Engineering.

CHARLES CHURCH MORE, M. S., C. E., Lafayette, Associate Professor of Civil Engineering.

HENRY KREITZER BENSON, PH. D., Columbia, Professor of Chemistry.

FRANK MARION MORRISON, PH. D., Chicago, Associate Professor of Mathematics.

LOREN DOUGLAS MILLIMAN, A. B., Michigan, Associate Professor of English.

JOSEPH DANIELS, S. B., M. S., Lehigh, Assistant Professor of Mining Engineering and Metallurgy.

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*Leave of absence, January 1 to August 1. Retires August 1, 1914.

VANDERVEER CUSTIS, PH. D., Harvard, Assistant Professor of Economics.

GEORGE SAMUEL WILSON, B. S., Nebraska, Assistant Professor of Mechanical Engineering.

CHARLES M. HARRIS, C. E., Cornell, Assistant Professor of Civil Engineering.

E. A. LOEW, B. S., Wisconsin, Assistant Professor of Electrical Engineering.

CLARENCE RAYMOND COREY, E. M., Montana, Assistant Professor of Mining Engineering and Metallurgy.

HENRY LOUIS BRAKEL, A. M., Washington, Assistant Professor of Physics.

FRANK EDWARD JOHNSON, E. E., Minnesota, Instructor in Electrical Engineering.

GEORGE IRVING GAVETT, B. S., C. E., Assistant Professor in Mathematics.

CHARLES EDWARD WEAVER, PH. D., Assistant Professor in Geology.

JOHN W. MILLER, B. S., Instructor in Civil Engineering.

CHARLES EDWARD NEWTON, E. M., Instructor in Civil Engineering.

SAMUEL THOMAS BEATTIE, Instructor in Woodwork.

J. EDWARD BERG, Assistant in Metallurgy.

L. HAROLD COGSWELL, Assistant in Mining.

EARL T. GODBE, Assistant in Stock Room.

HARVEY L. GLENN, B. S., Lecturer on Assaying of Bullion.

ROBERT F. MCELVENNY, E. M., Lecturer on Copper Smelting.

GEORGE BATES HARRINGTON, S. B., Mass. Inst. Tech., Lecturer on the Economics of Mining.

JAMES BAGLEY, State Coal Mine Inspector, Lecturer on Mine Regulations.

ADMISSION TO THE FRESHMAN CLASS

To be admitted to the freshman class, students must either (a) pass an examination based on a four-year course amounting in the aggregate to fifteen units, or (b) complete a course of the same length in an accredited school.

The requirements for admission to the freshman class of the College of Mines for curricula I, II, III and IV, leading to the degrees of bachelor of science in mining engineering, in geology

and mining, in metallurgical engineering or in coal mining engineering are as follows:

	Units
English	3
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
Chemistry	1
One foreign language	2
A history, American preferred	1
Or United States history, ½; civics, ½.	
Elective	4
Total	15

For curriculum leading to the degree of bachelor of science (B. S.), (V) the entrance requirements are the same as the above with the exception that chemistry (one unit) is not a fixed requirement; four instead of three units elective are allowed.

DEGREES

The four-year curricula in the College of Mines lead to the following degrees: Curriculum I, bachelor of science in mining engineering; curriculum II, bachelor of science in geology and mining; curriculum III, bachelor of science in metallurgical engineering; curriculum IV, bachelor of science in coal mining engineering.

In addition to the above, curriculum V, which leads to the degree of bachelor of science (B. S.), is offered. The entrance requirements for curriculum V are less technical than for the other curricula and the training given by it is broader. Students who graduate in this curriculum are advised to spend an additional year in study and research according to the schedule given for the degree of master of science in mining engineering (M. S. in Min. E.). A new curriculum in coal mining engineering is offered.

The degree of engineer of mines (E. M.) is given to graduates in mining engineering who have practiced their profession for at least three years, and who present a satisfactory thesis. Graduates in metallurgy may receive the degree of metallurgical engineer (Met. E.) under similar conditions.

MINING AND METALLURGICAL INDUSTRIES AVAILABLE FOR STUDY

Excellent opportunities for becoming familiar with mining and metallurgical operations are open to students in the College of Mines. The amount of time available during the college year for this purpose is not great and even by using the summer vacations it is impossible for a student to cover the whole field of local industries included in his chosen profession.

Mining machinery of the best type is in operation within easy reach of the University. Much of the heavy mining machinery used in the neighboring states and Alaska is built in the city of Seattle, while patented machines, such as drills and concentrating tables of all makes are kept in stock and as working exhibits by the firms that supply the North Pacific coast regions. The application of hydraulic mining methods to city grading is being carried on locally on a very large scale and with the most approved pumping and piping appliances and methods. Equally important to the mining engineer are the operations of the steam shovels, which are used largely now in iron, copper and gold mining. The engineers in charge of these plants have given the mining students every opportunity to become familiar with the methods of planning and carrying on the work, and the same statement applies to the mine operators throughout the state.

A brief list of the other available works of interest includes coal mines, with the largest production west of the Rocky mountains; metal mines of gold, silver, copper, arsenic, antimony, iron, etc.; cement plants, glass works, several stone quarries and dressing works; clay mines, clay and pottery works; gravel and sand pits with large production and approved methods; a region of varied geology with many economic minerals; the Tacoma and Everett smelters and refineries; the U. S. assay office; the Irondale steel plant of the Western Steel Corporation, and several plants engaged in metallurgical work.

MINING SOCIETY

The Mining Society, affiliated with the American Institute of Mining Engineers, has a membership composed of upperclassmen, graduate students and three sophomores, chosen for the excellence of their records in actual mining. At the monthly meetings of the society addresses are made by prominent mining engineers, and papers descriptive of their summer work are presented by the

student members. The officers for 1913-1914 are, L. H. Cogswell, president; A. H. Swart, vice-president; E. T. Godbe, secretary; A. C. Halferdahl, treasurer.

UNITED STATES MINE RESCUE TRAINING STATION

The United States Mine Rescue Training Station, operated in connection with the College of Mines, occupies a separate building. The "smokeroom" is the largest of its kind in the country, measuring 25 by 50 feet.

Several sets of oxygen apparatus and pulmotor are kept on hand for practice as well as for use in mine rescue work. The purpose of the station is to train miners in the use of oxygen helmets, which are used in cases of mine fires and explosions in both coal and metal mines. From ten days to two weeks' time is required for the course of training. The applicant is taught the construction of the apparatus and is required to wear it for four hours each day, in two periods of two hours each. The practice is carried on in a room filled with gas which cannot be breathed without immediate danger, and the work to be performed is the same as that which would be required in actual mining operations or rescue work. The smokeroom represents a portion of a mine, and is equipped with mine car, track, overcast, timbers and brick. First aid instruction is also given. Applicants who have completed the course of training receive a certificate from the U. S. Bureau of Mines.

INSTRUCTION FOR COAL MINING MEN

Miners taking the rescue training also receive instructions in the College of Mines on the subjects of mine gases, explosions, and the origin and distribution of Pacific Coast and Alaska coals. Laboratory experiments are carried on to show the methods of analyzing coals and determining the uses to which they may be put. The methods of testing for permissible explosives at the Pittsburg Station and the safe methods of charging, tamping and firing are explained.

CURRICULA IN THE COLLEGE OF MINES

FRESHMAN YEAR FOR ALL CURRICULA

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
Mathematics 1a	4	Mathematics 2a	4
Chemistry 1a	4	Chemistry 2a	4
Civil Engineering 1	2	Civil Engineering 3	4
English 1a	2	Civil Engineering 20	4
Geology 1a	4	Mech. Engineering 9	2
Mechanical Engineering 1	2	Drill	2
Drill	2		
	16+4		16+4

SOPHOMORE YEAR FOR ALL CURRICULA

Mathematics 3a	4	Mathematics 4a	4
Physics 1a	4	Chemistry 9	4
Physics 1b	2	Physics 2a	4
Civil Engineering 28	3	Physics 2b	1
Civil Engineering 4	2	Geology 9	4
Mining 4	2	Drill	2
Drill	2		
	17+2		17+2

OPTION I IN MINING ENGINEERING

JUNIOR YEAR

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
*Metallurgy 1	4	*Mining 9	1
*English 2a	2	*Metallurgy 2	4
*Mech. Engineering 3	2	*Economics 1a	3
*Mining 21	1	Civil Engineering 50	4
Civil Engineering 41	4	Geology 17	4
Geology 13	4	Mining practice in summer vacation.	
Mining 3	2		
	16+3		16

SENIOR YEAR

*Mining 1	4	*Mining 7	1
*Mining 6	1	*Mining 8	2
Metallurgy 5	3	Mining 2	4
Metallurgy 7	3	Mining 22	1
Geology 21	1	Geology 18	4
Electrical Eng. 5	4	Metallurgy 13	3
	16		15

*Required in all curricula.

OPTION II IN GEOLOGY AND MINING

JUNIOR YEAR

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
*Metallurgy 1	4	*Mining 9	1
*English 2a	2	*Metallurgy 2	4
*Mech. Engineering 3	2	*Economics 1a	3
*Mining 21	1	Metallurgy 12	3
Metallury 3	2	Geology 17	4
Geology 13	4	Geology or mining practice in summer vacation.	
Geology 20	1		
Civil Engineering 23	3		
	16+3		15

SENIOR YEAR

*Mining 1	4	*Mining 7	1
*Mining 6	1	*Mining 8	2
Metallurgy 5	3	Mining 2	4
Metallurgy 7	3	Mining 22	1
Geology 20	1	Geology 18	4
Geology 19	4	Geology 21	1
		Elective	3
	16		16

*Required in all curricula.

OPTION III IN METALLURGICAL ENGINEERING

JUNIOR YEAR

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
*Metallurgy 1	4	*Mining 9	1
*English 2a	2	*Metallurgy 2	4
*Mech. Engineering 3	2	*Economics 1a	3
*Mining 21	1	Metallurgy 4	3
Metallurgy 10	2	Civil Eng. 50	4
Civil Engineering 41	4	Mech. Eng. 4	2
Elec. Eng. 5	4	Metallurgical practice in summer vacation.	
	16+3		15+2

SENIOR YEAR

*Mining 1	4	*Mining 7	1
*Mining 6	1	*Mining 8	2
Metallurgy 3	2	Mining 2	4
Metallurgy 5	3	Metallurgy 6	3
Metallurgy 7	3	Metallurgy 8	3
Metallurgy 11	1	Geology 18	4
Metallurgy 13	3		
	17		17

*Required in all curricula.

OPTION IV IN COAL MINING ENGINEERING

JUNIOR YEAR

FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
*Metallurgy 1	4	*Mining 9	1
*English 2a	2	*Metallurgy 2	4
*Mech. Engineering 3	2	*Economics 1a	3
*Mining 21	1	Civ. Eng. 50	4
Mining 3	2	Mining 12	2
Civ. Eng. 41	4	Mining 13	2
Geology 16	3	Summer practice in coal mining.	
	15+3		16

SENIOR YEAR

*Mining 1	4	*Mining 7	1
*Mining 6	1	*Mining 8	2
Mining 14	2	Mining 11	2
Mech. Eng. 21 and 40	4	Mining 15	3
Elec. Eng. 5	4	Mining 20	3
Geology 20	1	Mining 16	2
		Metallurgy 14	3
	16		16

*Required in all curricula.

CURRICULUM V IN MINING ENGINEERING

Leading to Degree of Bachelor of Science.

	Hours.
Mathematics 1a, 2a, 3a, 4a	16
Chemistry 1, 2, 8b, 9	16
English 1a, 2a	4
Modern Foreign Language	12
Physics 1a, 1b, 2a, 2b	11
Civil Eng. 1, 3, 4, 20, 28, 41, 42	23
Mech. Eng. 1, 3, 9	6
Electrical Eng. 5	4
Mining 4, 9, 1, 2, 7	12
Metallurgy 1, 2, 8	10
Pol. Science 1a	3
Elective	2
Geology 1a, 9, 13, 17, 21	17
Drill	8

GRADUATE COURSE IN MINING ENGINEERING

Following Option I and leading to the degree of Master of Science in Mining Engineering.

	Hours		Hours
Mining 10	3	Mining 22	1
Mining 6	1	Mining 7	1
Metallurgy 7	3	Mining 8	2
Mining 3	2	Metallurgy 4	3
Metallurgy 13	3	Geology 18	4
Elective, engineering	4	Elective, engineering	3
Mining 21	1	Mining 11	2
	16+1		16

Equivalent courses in Coal Mining Engineering may be substituted for those listed above.

The degree of Master of Science in Mining Engineering will also be conferred upon graduates of this College or of other mining colleges of the first class who complete a year (32 credit hours) of graduate work, including a satisfactory thesis, with the grade of A or B. The candidate must also pass a formal examination open to all members of the faculty. The selection of work for this degree must in each case be approved by the head of the department in which the student majors.

VI. SHORT SESSION FOR MINING MEN

The eighteenth annual Short Session for mining men will open on January 4th, 1915, continuing until April 10. During this period each year twelve of the instructors in mining engineering offer a course for the benefit of persons who are interested in prospecting, mining, smelting, clay or metal-working. Admission to the classes is without examination. Instruction is given by lectures, laboratory exercises, and visits to mines and plants in

operation. The past experience and future aims of each student are taken into consideration, and the character of his work arranged accordingly.

No preparation is needed for this course. Many practical men with an interest in some branch of mining but without much education have obtained satisfactory results from the course; others with a college education and mining experience have gained much up-to-date training and information. Practically all the students attend the following subjects: Mining, field trips, mineralogy, geology, mining law; in addition to these subjects, fire assaying and general chemistry are studied by many of the quartz miners, while the placer men substitute placer mining and surveying. Assaying is accompanied by chemistry and mineralogy. Students who satisfactorily complete a course of study are given a certificate stating the amount and character of work done. For students who return a second year, a special course is arranged in continuation of their previous work.

The advantages of the University laboratories and libraries are open to all. Students may board and room at the dormitories or elsewhere, as preferred. There are no charges, except for material used. Deposits are made to cover the actual cost of supplies drawn by each student, the balance of the deposit being returned at the end of the course. All deposits are made at the beginning of the course.

SUBJECTS IN THE SHORT SESSION

A. MINING. Lectures on prospecting, development, boring, air-compression, drilling, mining systems, timbering and transportation. Practice in air-compression, machine-drilling and sampling. Study of mine maps, ore deposits and mining districts. Two lectures and one laboratory period a week. M. W. at 9, T. 1 to 5. Professor ROBERTS.

B. MILLING. Lectures and recitations on ore treatment and concentration. Laboratory practice in sampling, testing, and dressing, using breakers, rolls, screens, stamp battery, tables, vanners, jigs, and accessory machinery. Two lectures and one afternoon a week. M. F. at 10, T. 1 to 5. Assistant Professor DANIELS.

C. FIRE ASSAYING. Lectures on sampling, preparing ores for assay, furnaces, fuels, reagents, and the fire assay of gold, silver, lead, and tin ores. The laboratory work includes the testing of

reagents, and the assaying of various ores. One lecture and three afternoons a week in laboratory. Deposit, fifteen dollars. M. W. Th. 1 to 5. Assistant Professor COREY.

D. METALLURGY. A study of the principles of metallurgy for the benefit of those who are engaged in the metal trades or in the mining of ores requiring smelter treatment. Two lectures and one afternoon a week. Deposit, five dollars. Assistant Professor COREY.

E. FIELD TRIPS. An outline study of the operations at neighboring mines, mills, and smelters; geological field studies, followed by laboratory practice on the rocks and minerals found. Saturdays. Professor ROBERTS and Assistant Professor DANIELS.

CHEMISTRY 1d. GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS. Laboratory practice in the determination of the common elements. Three lectures a week, and Saturday laboratory. Deposit, ten dollars. Professor BENSON.

GEOLOGY B. MINERALOGY. Instruction and practice in blowpipe analysis, with lectures upon the common minerals, and practice in the identification of minerals by field tests. Twice a week Deposit, two dollars. Assistant Professor WEAVER.

GEOLOGY. Lectures on the elements of geology, the common varieties of rock, metalliferous vein and ore deposits, etc. Twice a week. Assistant Professor WEAVER.

MINING LAW. A series of lectures on the mining laws of the United States and Alaska. Illustrated by drawings and mine maps. Once a week. Time to be arranged. Assistant Professor DANIELS and special lecturers.

CIVIL ENG. 19. SURVEYING. Instruction and field practice in the use of simple instruments for making underground and surface surveys; the elements of drawing, lettering, sketch-mapping and field notes; the rules governing mineral surveys. Two lectures and two afternoons a week. Mr. NEWTON.

CIVIL ENG. 54. HYDRAULIC MINING. The elements of hydraulics; the flow of water in pipes, flumes and ditches; the methods and costs of placer mining in its various forms. Two lectures a week. Professor MCCAUSTLAND.

MECH. ENG. 3. FORGE. Practice in sharpening and tempering drill steel and picks; systematic training in the making and care

of fires, and the application of various heats, drawing, punching, riveting, bending, twisting, upsetting, welding iron and steel, and making and tempering machine tools. Deposit, two dollars. One afternoon a week. Mr. KANE.

MECH. ENG. 9. MINE TIMBER FRAMING. Shop work in the cutting, framing and erection of various types of timbers employed in mining operations. Deposit, two dollars. One afternoon a week. Mr. BEATTIE.

MINING 21. COAL MINING AND RESCUE TRAINING. For a description of the short courses in coal mining, first aid to the injured and rescue training, see under "Mine Rescue Training Station," page 314. Assistant Professor DANIELS and Government Engineers.

DEPARTMENTS OF INSTRUCTION

MINING ENGINEERING AND METALLURGY
(Mines Building)

PROFESSOR ROBERTS, ASSISTANT PROFESSOR DANIELS, ASSISTANT PROFESSOR COREY; LECTURERS, MR. MC ELVENNY, MR. HARRINGTON, MR. GLENN; ASSISTANTS, MR. COGSWELL, MR. BERG, MR. GODBE.

I. MINING ENGINEERING

Coal miners who are taking the ten days course in the U. S. Mine Rescue Training Station are given daily instruction and laboratory demonstrations in the subjects of mine gases, ventilation, the origin and composition of coals, and coal analysis.

1. MINING. Four credits. First semester. Prerequisite, Senior standing. Deposit, $3.00. M. W. Th. at 10; M. 1 to 4. Professor ROBERTS.

Three lectures and one laboratory period. Lectures on mining, power generation, air compression, hoisting and transportation. Practice with air compressors, machine drills and mine equipment in laboratories and local plants.

2. ORE DRESSING. Four credits. Second semester. Prerequisite, Mining 3. Senior or graduate. Deposit, five dollars. M. Th. at 9; W. Th. 1 to 4. Professor ROBERTS and Assistant Professor DANIELS, and Mr. COGSWELL.

Two lectures and two laboratory periods. A detailed study of certain branches of ore dressing followed by a full test of ores by mill run checked by assays.

3. MILLING. Two credits. First semester. Prerequisite, Junior standing. Deposit, $3.00. Th. at 9; Th. 2 to 5. Professor ROBERTS and Assistant Professor DANIELS, and Mr. COGSWELL.

One lecture and one laboratory period. Lectures and mill practice in the principles of ore dressing.

4. MINE OPERATION. Two credits. First semester. Prerequisite, Junior standing. M. W. at 9. Assistant Professor DANIELS.

A general study of mine development and operation, considering particularly layout of plant, haulage, hoisting, pumping, etc. The Renton mine is studied in detail.

5. FIELD WORK. One credit. First semester. Time to be arranged. Professor ROBERTS, and Assistant Professor DANIELS.

One laboratory period (or its equivalent in total time required) and monthly seminar. Class or individual visits to a mine, mill, smelter, or engineering work, to be followed by a report with field notes and sketches.

6. THESIS OUTLINE. One credit. First semester. One laboratory period. Time to be arranged. Professor ROBERTS, Assistant Professor DANIELS, and Assistant Professor COREY.

The outlining of senior thesis, the gathering of material, study of references, making of drawings, maps, etc. See mining 8. Senior or graduate.

7. MINE INSPECTION. One credit. Second semester. Time to be arranged. Professor ROBERTS, Assistant Professor DANIELS, and Assistant Professor COREY.

Ten days in the second semester. An excursion by the senior class to a mine or mining district.

8. THESIS. Two credits. Second semester. Two laboratory periods, T. 1 to 4, or S. 8 to 11. Time to be arranged. Professor ROBERTS, Assistant Professor DANIELS, and Assistant Professor COREY.

A continuation of Mining 6. Weekly consultation and seminars.

9. JUNIOR EXCURSION. One credit. Second semester. Required for senior standing. Time to be arranged. Professor ROBERTS, Assistant Professor DANIELS, and Assistant Professor COREY.

An excursion by the junior class to a mine or mining district. Sometimes made in connection with the senior excursion, mining 7.

10. MINING METHODS. Three credits. First semester. Senior or graduate. Time to be arranged. Professor ROBERTS.

Two lectures and one laboratory period. A detailed study of certain branches of mining.

11. MINE MANAGEMENT. Two credits. Second semester. Prerequisite, Senior or graduate standing. Two lectures, M. W. at 11. Assistant Professor DANIELS.

A study of the organization and administration of engineering plants, involving the keeping and interpretation of cost accounts, the efficiency of labor and methods, the financial, legal and social aspects of engineering operation.

12. COAL RESOURCES OF NORTH AMERICA. Two credits. Second semester. Two lectures. Prerequisite, Mining 4. M. W. at 9. Assistant Professor DANIELS.

The occurrence of coal in North America with especial reference to geographic and geologic distribution and structure; study of the various types of coals; classification of coals; commercial requirements of coals.

13. COAL MINING METHODS. Two credits. Second semester. Two lectures. Prerequisite, Mining 4. M. W. at 10. Assistant Professor DANIELS.

Methods of prospecting coal seams; determination of structure and content; methods of development and working, timbering, etc. A detailed study is made of a nearby mine.

14. MINE GASES AND VENTILATION. Two credits. First semester. Two lectures. Prerequisite, Mining 13. M. W. at 8. Assistant Professor DANIELS.

Composition and properties of mine gases, methods of testing. Lighting of mines. Principles of ventilation; ventilating machinery.

15. MINING PLANT. Three credits. First semester. Three drafting periods. Prerequisites, Mining 13, 14. Graduate. Time to be arranged. Assistant Professor DANIELS.

Design of plant and machinery employed in mining and preparing coal for market.

16. COAL MINING MACHINERY. Two credits. Second semester. Two lectures. Prerequisite, Senior standing. Graduate. T. Th. at 10. Assistant Professor DANIELS.

Study of coal cutting machines, mine locomotives, fans, hoists, pumps, and tipple or breaker machinery with special reference to application to coal mining.

20. COAL WASHING. Four credits. Second semester. Two lectures and two laboratory periods. Prerequisite, Mining 3. Graduate. Deposit, $5.00. T. Th. at 9; W. Th. 1 to 4. Assistant Professor DANIELS.

A detailed study of methods of preparing coal for market, together with laboratory tests and runs on various coal to determine best methods of preparation.

21. MINE RESCUE TRAINING. One credit. First semester. Twenty-five hours' instruction. Th. 10 to 12. Assistant Professor DANIELS.

Practice in the care and use of oxygen rescue apparatus, smoke-room training, and first-aid-to-the-injured work. Required of all students in the junior class.

22. MINING LAW. One credit. Second semester. One lecture. F. at 8. Assistant Professor DANIELS and special lecturers.

A series of lectures on the mining laws of the United States and Alaska, dealing particularly with the subject from the standpoint of the prospector, mining engineer and geologist. Illustrated by diagrams and mine maps.

24. INDUSTRIAL ORGANIZATION. Two credits. Second semester. Time to be arranged. Two lectures. Assistant Professor DANIELS.

A study of the principles of industrial organization and scientific management, involving the consideration of handling labor and materials, methods of operation, cost keeping and performance records, interpretation of efficiency data.

II. METALLURGY

1. FIRE ASSAYING. Four credits. First semester. Prerequisite, Chemistry 9. Deposit, fifteen dollars. T. at 11; F. 1 to 4; S. 8 to 3. Assistant Professor COREY, Mr. GLENN and Mr. BERG.

One lecture and three laboratory periods. The testing of reagents, the crushing, sampling and assaying of ores, furnace and mill products for lead, silver, gold and tin; also, the assay of base and gold bullion.

2. GENERAL METALLURGY. Four credits. Second semester. Deposit, ten dollars. Three lectures and one laboratory period.

T. Th. at 11; T. Th. 1 to 4. Professor ROBERTS, Assistant Professor COREY and Mr. MCELVENNY.

The properties of metals and alloys, fuels, refractory materials, furnaces and the extraction of the common metals from their ores. Visits to smelter.

3. METALLURGICAL FUELS. Two credits. First semester. Deposit, five dollars. W. at 11; T. 8 to 11. Assistant Professor DANIELS.

One lecture and one laboratory period. The composition, manufacture and metallurgical uses of natural and prepared fuels; the methods and costs of coking, gas making, and coal briquetting. Furnace and calorimeter tests of various types of fuels.

4. COPPER AND LEAD. Three credits. Second semester. M. W. F. at 10. Assistant Professor COREY.

Three lectures. The metallurgy of copper and lead, especially the methods of roasting, smelting and refining.

5. GOLD AND SILVER. Three credits. First semester. Deposit, $5.00. Two lectures and one laboratory period. M. W. at 9; W. 1 to 4. Assistant Professor COREY.

Amalgamation, cyaniding, and chlorination of gold and silver ores. Complete tests checked by assays.

6. MINOR METALS. Three credits. Second semester. Two lectures and one laboratory period. Deposit, five dollars. M. W. at 8; M. 1 to 4. Assistant Professor COREY.

The metallurgy of zinc, antimony, tin, aluminum, nickel, etc.; a study of the plant required, the methods and costs of treatment.

7. WET ASSAYING. Three credits. First semester. One lecture. Two laboratory periods. Prerequisite, Chemistry 9. Deposit, ten dollars. W. at 8; Th. 1 to 4; F. 8 to 11. Assistant Professor COREY.

Technical methods for the determination of copper, lead, zinc, etc., in ores and furnace products, etc.

8. METALLURGICAL ANALYSIS. Three credits. Second semester. One lecture. Two laboratory periods. Prerequisite, Chemistry 9. Deposit, ten dollars. W. at 9; T. 8 to 11; F. 1 to 4. Assistant Professor COREY.

Technical methods of analysis of slags and industrial products.

9. PYROMETRY AND ALLOYS. Two credits. Second semester. One lecture and one laboratory period. Deposit, three dollars. Time to be arranged. Assistant Professor COREY.

Methods of measuring high temperatures. Union of metals by fusion, compression and electro-deposition; the behavior of metals and alloys under heat. Laboratory practice in thermal measurements, synthesis and testing of alloys.

10. METALLOGRAPHY. Two credits. First semester. One lecture and laboratory period. Deposit, three dollars. Th. at 8; W. 1 to 4. Assistant Professor DANIELS.

The constitution and microstructure of metals and alloys, especially iron and steel. The preparation and study of metal sections, photomicrography and the use of the microscope to aid in testing structural iron and steel.

11. METALLURGICAL PROBLEMS. One credit. First semester. Prerequisites, Chemistry 9, and Metallurgy 2. M. at 11. Assistant Professor COREY.

Physical chemistry for the metallurgist, slag calculations, etc., illustrated by figures quoted from the present practice at a number of smelting plants.

12. REFRACTORIES. Three credits. Second semester. One lecture and two laboratory periods. Deposit, three dollars. M. at 9; Th. S. 8 to 11. Assistant Professsor COREY.

Methods of testing clays, refractory materials, cement-making materials.

13. DESIGN OF PLANT. Three credits. Either semester. Three drafting periods. Senior or graduate. 1st sem., T. F. 1 to 5; 2nd sem., M. F. 1 to 5. Professor ROBERTS and Assistant Professor DANIELS.

The designing of a piece of equipment or a structure for mining, milling or metallurgical purposes.

14. IRON AND STEEL. Three credits. Second semester. Three lectures. M. W. Th. at 8. Assistant Professor DANIELS.

The metallurgy and manufacture of commercial iron and steel, with special reference to their properties and uses in engineering work.

THESIS. See Mining 6 and 8.

SUMMER FIELD WORK. See Mining 7 and 8.

SUBJECTS PRESENTED BY DEPARTMENTS IN OTHER COLLEGES OF THE UNIVERSITY

CHEMISTRY

(Bagley Hall)

1, 2. GENERAL CHEMISTRY. Four credits. The year. Textbooks, Smith's College Chemistry and Laboratory Manual. T. Th. at 11; M. W. 8 to 11. Professor BYERS, Instructors and Assistants.

1a, 2a. GENERAL CHEMISTRY. Four credits. The year. Consists of two lectures and six laboratory hours per week. Textbooks, Smith's General Chemistry, Smith's Laboratory Manual, and Byers and Knight's Qualitative Analysis. Prerequisite, one year high school chemistry. M. W. at 11, M. W. 8 to 11. Professor BYERS, Dr. TRUMBULL and Assistants.

1b. GENERAL CHEMISTRY. Four credits. Second semester. Repetition of 1a. T. Th. at 8. Lab. T. Th. 9 to 12 or M. F. 1 to 4. Assistant Professor ROSE.

Strong students or those carrying light course will be permitted to elect this course without the prerequisite high school course; but to satisfy the required work of the engineering curricula, such students must elect some other four-hour course in the department of chemistry.

2b. GENERAL CHEMISTRY. Four credits. First semester. Continuation of 1b. T. Th. at 8, T. Th. 9 to 12. Assistant Professor ROSE.

1d. PROSPECTOR'S COURSE. Four credits. Deposit, ten dollars. T. Th. F. at 9, F. 1 to 4. Professor BENSON.

For miners who may enter January 1, and will continue to April 1. Does not require previous knowledge of chemistry, and will be merged into a course of qualitative analysis. The text is Brownlee.

9-9. QUANTITATIVE ANALYSIS. Four credits. Either semester. Gravimetric and volumetric analysis. Olson's Quantitative Analysis. Twelve laboratory hours and one recitation per week. Th. at 8, T. F. 1 to 4, T. 8 to 11. Dr. BELL.

CIVIL ENGINEERING
(Engineering Building)

1. ENGINEERING DRAWING. Two credits. The year. All freshman engineers. Prerequisites, plane geometry. First semester, T. Th. 8 to 11. Second semester, T. W. or M. W. 2 to 5. Assistant Professor HARRIS, Mr. GLEASON, Mr. MAY, Mr. STRANDBERG, Mr. WARNER.

Linear drawing, Roman and Gothic capital letters; free hand lettering.

3. ENGINEERING DRAWING. Four credits. The year. All freshman engineers. Prerequisites, solid geometry, preceded or accompanied by drawing 1. First semester, T. Th. at 1, T. Th. 2 to 5. Second semester, T. Th. at 1, F. S. 8 to 11. Assistant Professor HARRIS, Mr. STRANDBERG, Mr. WARNER.

The elements of descriptive geometry, including the principles of shades, shadows and perspective.

4. ENGINEERING DRAWING. Two credits. First semester. All freshman engineers. Prerequisite, 3. T. Th. 1 to 4. Mr. WARNER.

Continuation of drawing 3. Problems and tracing.

20. ELEMENTARY PLANE SURVEYING. Four credits. The year. All freshman engineers. Prerequisites, Math. 1a and C. E. 1. Laboratory deposit, three dollars. First semester, M. W. at 8, W. F. 1 to 4. Second semester, M. W. at 1, T. Th. 8 to 11. Mr. GLEASON, Mr. BURRITT and assistants.

Theory and use of chain, compass, transit and level. Adjustment of instruments. United States Public Land surveys. Maps and computation of areas.

23. TOPOGRAPHIC SURVEYING. Three credits. The year. Junior Min. E. Prerequisites, Math. 3a and C. E. 21. Laboratory deposit, three dollars. M. W. at 10, Th. 1 to 5. Mr. MILLER.

Base line measurement. Reading and adjusting and computing triangulation systems. Topographic surveying, including plane-table, photography and cartography.

28-28. MINE SURVEYING. Three credits. Either semester. Sophomore mining engineers. Prerequisite, C. E. 20. Laboratory deposit, three dollars. T. at 11, W. 1 to 5. Mr. NEWTON.

Surface and underground practice. Observation for meridian. Topography. Mining claim surveys. Plane triangulation. Tunnel and vertical shaft work and connections. Mapping.

41-42. MECHANICS. 41, four credits, the year. 1st sem., M. W. F. 1 to 4 or 9 to 12; 2nd sem., M. W. F. 9 to 12. 42, three credits, the year. 1st sem., T. Th. 8 to 11; 2nd sem., M. W. 2 to 5 or T. Th. 1 to 4. All junior engineers. Prerequisites, Math. 4a, physics 1a. Professor MORE, Assistant Professor MACINTIRE and Mr. MAY.

Statics, dynamics and mechanics of materials.

(NOTE: Students entering this course must give satisfactory evidence of a *working knowledge* of the fundamentals of arithmetic, algebra, geometry and trigonometry.)

50. HYDRAULICS. Four credits. Second semester. All junior engineers. Prerequisite, preceded or accompanied by 42. M. W F. at 9, Th. 1 to 4; M. W. F. at 11, F. 1 to 4; M. W. F. at 11, T. 8 to 11. Assistant Professor HARRIS and Mr. STRANDBERG.

Flow of water through pipes and orifices, over weirs and in open channels; energy, impulse and reaction of jets with application to impulse wheels. Review of hydrostatics.

54. HYDRAULIC MINING. (Short session in mining, January-March). Professor MCCAUSTLAND.

A course of two lectures per week on the theory and practice of hydraulic mining.

ELECTRICAL ENGINEERING

(Engineering Building)

5. ELECTRICAL ENGINEERING. Four credits. The year. Prerequisites: Math 4a; Physics 2a, 2b. First sem., T. Th. at 8, F. 8 to 12; T. Th. at 9, T. 1 to 5. Mr. CURTIS and Mr. JOHNSON. Second sem., T. Th. at 11, Th. 1 to 5. Assistant Professor LOEW and Mr. CURTIS.

A short course giving the fundamental principles of direct currents with experimental tests on commercial dynamos and motors.

ENGLISH

(Office, Room 45, Denny Hall)

1a-1a. FRESHMAN COMPOSITION. Two credits. First semester. An adaptation of 1 for students of engineering. 1st sem., M. W. at 3; 2nd sem., T. Th. at 1. Associate Professor MILLIMAN in charge.

2a. FRESHMAN COMPOSITION. Two credits. First and second semesters. For students of engineering entering at mid-year. F. S. at 10. Associate Professor MILLIMAN in charge.

GEOLOGY

(Science Hall)

1a. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Four credits. First semester. Required course for sophomores. Laboratory deposit, $1.00. T. Th. S. at 9. Laboratory F. 2 to 5. Assistant Professor BRETZ.

1b. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Elective for freshmen. Four credits. First semester. Laboratory deposit, $1.00. M. W. F. at 1. Laboratory M. 2 to 5. Assistant Professor BRETZ.

1c. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Four credits. Second semester. T. Th. S. at 9. Laboratory Th. 2 to 5. Laboratory deposit, $1.00. Repetition of 1a. Assistant Professor BRETZ.

9. MINERALOGY. Four credits. Second semester. Two laboratory periods. Descriptive and determinative mineralogy. Laboratory deposit, $2.00. T. Th. at 11. Laboratory, M. W. 2 to 5. Assistant Professor BRETZ.

13. OPTICAL CRYSTALLOGRAPHY. Four credits. First semester. Two recitations and two laboratory periods per week. Laboratory deposit, $2.00. M. W. at 8. Laboratory, M. W. 1 to 4. Assistant Professor WEAVER.

16. PETROLOGY. Three credits. First semester. One recitation and two laboratory periods. Laboratory deposit, $2.00. For coal mining engineers. T. Th. at 1. Laboratory, W. 1 to 4. Assistant Professor WEAVER.

A study of the principal types of rocks and practice in their determination by field methods.

17. PETROGRAPHY. Four credits. Second semester. Prerequisites, 1a, 9, 13. Laboratory deposit, $2.00. M. W. at 11. Laboratory, M. W. 1 to 4. Assistant Professor WEAVER.

A study of the distinguishing characteristics of the different groups and species of rocks with practice in their determination by modern petrographical methods.

18. ECONOMIC GEOLOGY. Four credits. Second semester. Four recitations per week. M. W. F. S. at 10. Professor LANDES.

19. PALEONTOLOGY. Four credits. First semester. Three recitations and one laboratory period per week. Chiefly for students in geology and mining. M. W. F. at 11. Laboratory, F. 1 to 4. Assistant Professor WEAVER.

20. FIELD WORK. One credit. First semester. Hours to be arranged.

21. FIELD WORK. One credit. Second semester. Hours to be arranged. Professor LANDES, Assistant Professors SAUNDERS and WEAVER.

B. PROSPECTOR'S GEOLOGY AND MINERALOGY. Lectures, recitations, and laboratory work in general geology and mineralogy. This course is given in January, February, and March, to the students in the short course for mining men. Laboratory deposit, $2.00. Assistant Professor WEAVER.

MATHEMATICS

(Science Hall)

0-0. SOLID GEOMETRY. Two credits. The year. Prerequisite, Plane Geometry. T. Th. or M. W. at 4.

Required during the freshman year of all students in the colleges of Engineering, Forestry and Mines who do not offer solid geometry for admission.

1a. TRIGONOMETRY AND ALGEBRA. Four credits. First or second semester. Prerequisites, same as for Math. 1-2. 1st sem., T. W. Th. F. at 2; 2nd sem., M. W. F. S. at 8, or M. T. Th. F. at 2.

Primarily for students in the colleges of Engineering, Forestry, and Mines. The elements of plane trigonometry and supplementary work in algebra equivalent to one hour per week.

2a. ANALYTICAL GEOMETRY AND ALGEBRA. Four credits. First or second semester. Prerequisite, Math 1a. 1st sem., M. W. F. S. at 9; 2nd sem., M. T. W. Th. at 2.

Primarily for students in the colleges of Engineering, Forestry, and Mines. The elements of analytical geometry and supplementary work in algebra equivalent to one hour per week.

3a. CALCULUS FOR ENGINEERS. Four credits. First or second semester. 1st sem., M. W. F. S. at 10 or 9; 2nd sem., M. W. F. S. at 8 or 9.

4a. CALCULUS FOR ENGINEERS. Four credits. First or second semester. 1st sem., M. W. F. S. at 8; 2nd sem., M. W. F. S. at 10 or 9.

Continuation of Math. 3a.

5a. APPLICATION OF THE CALCULUS FOR ENGINEERS. Two credits. First or second semester. Prerequisite, Math. 4a. 1st sem., T. Th. at 8 or 10; 2nd sem., T. Th. at 8.

MECHANICAL ENGINEERING

(Office, Engineering Building)

1. CARPENTRY AND WOODTURNING. Two credits. The year. 1st sem., S. 8 to 12; 2nd sem., T. Th. 10 to 12, F. 1 to 5. Mr. BEATTIE.

3. FORGE AND FOUNDRY. Two credits. The year. 1st sem., F. 1 to 5; Th. 1 to 5; 2nd sem., Th. 1 to 5, W. 1 to 5. Mr. KANE.

4. MACHINE WORK. Two credits. The year. 1st sem., M. 1 to 5; 2nd sem., M. 1 to 5, T. 1 to 5. Mr. KANE.

9. MINE TIMBER FRAMING. Two credits. Second semester. W. at 4, W. 1 to 4. Mr. BEATTIE, Assistant Professor DANIELS.

MILITARY SCIENCE AND TACTICS

(Office, The Armory)

EDWARD E. MC CAMMON, FIRST LIEUTENANT THIRD INFANTRY, U. S. A., COMMANDANT

A course of two years in military training is required. All able-bodied male students (except those from foreign countries, not intending to become naturalized) must take the course, which by regulation of the University is required during the first and second years. Three hours a week are devoted to military training, for which two credits are given each semester. M. W. F. at 11, or T. Th. F. at 11.

PHYSICS

(Basement, Denny Hall)

1a. MECHANICS AND WAVE MOTION. Four credits. First or second semester. Prerequisite, 8 hours in mathematics. This course must be accompanied by 1b. 1st sem., M. W. F. S. at 8; 2nd sem. at 10. Dr. ANDERSON.

2a. LIGHT, HEAT, ELECTRICITY. Four credits. First or second semester. This course must be accompanied by 2b. 1st sem., M. W. F. S. at 10; 2nd sem. at 8. Professor BRAKEL.

1b. PHYSICS MEASUREMENTS. Two credits. First or second semester. One four-hour laboratory period. Six dollars deposit per year. 1st sem., T. or Th. or F. 1 to 5; 2nd sem., F. 1 to 5. Mr. VORIS.

2b. PHYSICS MEASUREMENTS. One credit. First or second semester. One three-hour laboratory period. 1st sem., W. 2 to 5; 2nd sem., W. or Th. 1 to 4. Mr. VORIS.

POLITICAL AND SOCIAL SCIENCE

(Denny Hall)

1a. ELEMENTS OF ECONOMICS. Three credits. First or second semester. M. W. F. at 8, 9, 10, 11, 1, or 2.

COLLEGE OF PHARMACY.

FACULTY

*THOMAS FRANKLIN KANE, PH. D., Johns Hopkins, PRESIDENT.
HENRY LANDES, A. M., Harvard, ACTING PRESIDENT.
CHARLES WILLIS JOHNSON, PH. C., PH. D., Michigan, DEAN and Professor of Pharmaceutical Chemistry, STATE CHEMIST.
HORACE G. BYERS, PH. D., Johns Hopkins, Professor of Chemistry.
THEODORE CHRISTIAN FRYE, PH. D., Chicago, Professor of Botany.
JOHN WEINZIRL, PH. D., Wisconsin, Professor of Bacteriology.
ARTHUR WILSON LINTON, PH. G., B. S., Michigan, Associate Professor of Pharmacy.
WILLIAM MAURICE DEHN, PH. D., Illinois, Associate Professor of Organic Chemistry.
ELI VICTOR SMITH, PH. D., Northwestern, Assistant Professor of Zoology and Physiology.
†GEORGE BURTON RIGG, B. S., A. M., Washington, Assistant Professor of Botany.
EDITH HINDMAN, PH. C., B. S., Washington, Instructor in Pharmacy and Assistant State Chemist and Bacteriologist.
JAMES EDGAR BELL, PH. D., Illinois, Instructor in Chemistry.
CORNELIUS OSSEWARD, PH. G., Columbia, PH. C., Northwestern, Lecturer on Commercial Pharmacy.
HARRY SIEGEL, PH. C., B. S., Washington, Assistant State Chemist.
EARL M. PLATT, PH. C., Washington, Graduate Assistant in Pharmacy.
GLENN O. SEWALL, PH. C., Washington, Assistant in Pharmacy.
GERALD S. PATTON, Assistant in Pharmacy.

FREDERICK MORGAN PADELFORD, PH. D., Yale, Professor of English Literature.
FREDERICK ARTHUR OSBORN, PH. D., Michigan, Professor of Physics.
PIERRE JOSEPH FREIN, PH. D., Johns Hopkins, Professor of French.

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*Leave of absence, January 1 to August 1. Retires August 1, 1914.
†Absent on leave second semester (1913-1914).

ROBERT EDOUARD MORITZ, PH. N. D., Strassburg, Professor of Mathematics.

FREDERICK WILLIAM MEISNEST, PH. D., Wisconsin, Professor of German.

CURRICULA

Two curricula of study have been outlined. 1. A two-year course which prepares its graduates for responsible positions in the profession of pharmacy, and as pharmaceutical chemists. 2. A four-year course which includes the professional training of the two-year work, and which leads to a regular collegiate degree. Students taking the four-year course will be granted the degree of pharmaceutical chemist (Ph. C.) upon the completion of the work of the two-year course; and the degree of bachelor of science (B. S.) when four years of work is completed.

SPECIAL OPPORTUNITIES OF THE FOUR-YEAR COURSE

The four-year course is outlined to meet the needs of several classes of students. Those students who wish to extend the work of the two-year course will find opportunity in the third and fourth year for specializing in pharmaceutical chemistry and pharmacy, thus becoming proficient in the chemistry of alkaloids, volatile oils, and other plant principles; the testing of foods and drugs for adulteration, both chemically and by use of the microscope; also opportunity for training in bacteriology, zoology, modern foreign language, English, mathematics, and physics. Students with the four-year degree are well prepared not only to take up the regular practice of pharmacy, but also to fill positions as technical and manufacturing chemists and as teachers. The work of the four-year course forms an excellent foundation for the study of medicine. Many of our graduates go to eastern medical schools and find their pharmaceutical training of great help in their medical studies.

COLLEGE TRAINING A REQUIREMENT FOR REGISTRATION IN WASHINGTON

Copy of resolution passed by the Washington State Board of Pharmacy at the meeting held in Seattle, December 27, 28, 29, 1911:

"Whereas, section 4 of the pharmacy law of the State of Washington, chapter 213, specifically states that the board of pharmacy may prescribe the preliminary education of applicants

for examination, and whereas the board now assembled deems it proper that specific educational requirements should now be formulated; therefore, be it resolved, That on and after July 1st, 1913, the Washington State Board of Pharmacy shall require all applicants for examination as registered pharmacists to submit evidence of having satisfactorily completed one year of college work in a college of pharmacy recognized by the board, and on and after July 1st, 1914, the board shall require of said applicants for examination as registered pharmacists evidence of having graduated from a college of pharmacy embracing at least a two-year course and recognized by the board. Be it further resolved, That, since section 3 of the pharmacy law of the State of Washington, chapter 213, gives the board of pharmacy the power to approve certain colleges of pharmacy, this board shall recognize only the two state schools of pharmacy in Washington and such other schools and colleges in the country as hold membership in the American Conference of Pharmaceutical Faculties. Be it further resolved, That, since it is not the desire of the board of pharmacy to work hardship on any registered pharmacist now residing in another state who may in the future desire to become registered in the State of Washington, any pharmacist holding full registration papers obtained in another state prior to July 1st, 1912, shall be admitted to examination as candidate for registration in the State of Washington. Be it further resolved, That a copy of these resolutions shall be sent by the secretary to each registered pharmacist, registered assistant pharmacist and registered apprentice in the State of Washington, and to the Pharmaceutical Press of the United States on or before March 1, 1912."

ENTRANCE REQUIREMENTS

1. CANDIDATES FOR DEGREES

To be admitted clear, as candidate for a degree, in either the two or four-year course of the College of Pharmacy, the student must either (a) pass an examination based on a course amounting in the aggregate to fifteen units, or (b) present a certificate of having completed a four-year course in an accredited high school. Prospective students should mail to the Recorder of the University a detailed statement of studies completed in the high school. This statement must be signed by the principal of the

high school. As a rule, the accredited school list of other state universities will be accepted by the University of Washington.

The required subjects are as follows:

	Units
English	3
A foreign language	2
Algebra	1½
Plane geometry	1
Physics	1
History (American history preferred) or United States history and civics	1
Elective	5½
Total	15

Candidates may present for entrance any modern foreign language in which they have had a course fairly equivalent to a high school course in English, *i. e.*, which they have used as a spoken and written language and of which they have studied the grammar and literature.

NOTE 1.—To count as a "unit" a subject must be taught five times a week, in periods of not less than forty-five minutes, for a school year of not less than thirty-six weeks.

2. ENTRANCE REQUIREMENTS FOR STUDENTS NOT CANDIDATES FOR DEGREES

Students over twenty years of age may enter as specials and pursue the regular two-year course of study providing they present at least four entrance units as follows: English: one unit required, and three units selected from the following subjects: foreign language, algebra, science, history, commercial geography, bookkeeping. Such students will not be classed as candidates for a degree, but, upon satisfactorily completing the two-year course, as outlined, will receive recognition for it as explained under the heading of certificate graduates. Students desiring to enter under the above conditions should send to the Dean before the opening of the school year credentials signed by the proper school authorities giving detailed information concerning their preparation. Students who are not graduates of high schools will not be admitted as specials unless they have been out of high school at least

one year. Special students may become candidates for a degree upon clearing all entrance conditions as listed under the heading Candidates for Degrees.

DEGREES

1. The degree of pharmaceutical chemist (Ph. C.) will be granted to any student who has fulfilled the entrance requirements, and has completed the two-year course as outlined.

2. The degree of bachelor of science (B. S.) will be conferred upon those who comply with the entrance conditions and complete the four-year course. A degree with honors may be conferred upon a student of the College of Pharmacy, if recommended for this distinction by the dean.

3. The degree of master of science (M. S.) in pharmacy will be conferred upon graduates of the four-year course who complete at least one year of graduate work as outlined and present a satisfactory thesis.

CERTIFICATE GRADUATES

Students not candidates for degrees who satisfactorily complete the studies outlined in the two-year course will be granted a certificate of graduation.

REGISTRATION BY THE STATE BOARD OF PHARMACY

Graduates of the two-year course in pharmacy with either the degree of Pharmaceutical Chemist or the certificate are registered as pharmacists without examination by the State Board providing they have had at least two years of practical experience.

Graduates of the four-year course are registered after one year of practical experience.

Students who on graduation have not had the required amount of practical experience for full registration are registered as assistant pharmacists.

After July 1, 1914, all candidates for registration as pharmacists in the State of Washington must be graduates of one of the schools holding membership in the American Conference of Pharmaceutical Faculties.

FOOD AND DRUG LEGISLATION

The enactment of the Food and Drugs Act by Congress, and of similar legislation by most of the states (Washington included), has placed very great importance upon pharmaceutical education.

It is at once apparent that a knowledge of drugs is equally important with chemistry in the administration and enforcement of this legislation. The graduate in chemistry is not wholly qualified to act as food and drug inspection chemist for the government, states, private individuals, and corporations, if he is not trained in those subjects included in the collective name of pharmacy. These allied subjects are theory and practice of pharmacy, manufacturing pharmacy, drug assaying, pharmaceutical botany, study of the United States Pharmacopœia and National Formulary, pharmacognosy, materia media and therapeutics, etc. A great many pharmaceutical chemists are needed to carry out the analytical processes involved in the enforcement of this legislation, but the number of men adequately trained is very limited. Students with high school training are urged to consider these opportunities and to prepare themselves for such positions. The dean of the College of Pharmacy is chemist for the Washington State Department of Agriculture and is also in close touch with the government food and drug work. Courses are offered that will fit students for this line of work.

LABORATORY DEPOSIT

Pharmacy. The total deposit for first year students is twenty-eight dollars per semester. Second year students have a deposit of twenty dollars for the first semester and fifteen dollars for the second semester. The student pays only the actual cost of drugs and chemicals used; the remainder of the deposit, less breakage, is returned at the end of the semester.

LIBRARY FACILITIES

A branch of the University library containing books and current publications on pharmacy and chemistry is maintained in the pharmacy building. Practically all the domestic and some foreign journals on pharmacy are received by the college. The student is expected to make use of the library and to report from time to time on current topics of interest.

PHARMACY, MATERIA MEDICA AND CHEMISTRY LABORATORIES

Rooms devoted to pharmacy, materia medica and chemistry are located in Bagley Hall, a three-story fireproof building. Special sections are provided for pharmacy students in general, or-

ganic and qualitative chemistry. Work in prescription practice receives special attention in a room constructed and arranged as a model prescription pharmacy. The materia medica room contains a museum of several hundred samples of official and unofficial crude drugs. It also contains an extensive collection of commercial and biological products manufactured and donated by the H. K. Mulford Company of Philadelphia, Pa., Parke, Davis and Company of Detroit, Michigan, and Eli Lilly and Company, of Indianapolis, Indiana. One room is given to drug assaying and food analysis. The examination of official food and drug samples for the state is under the direction of the Dean of the College of Pharmacy. A well equipped laboratory is devoted to this purpose. Pharmacy students taking botany, physiology and bacteriology have well equipped laboratories in Science Hall.

CORRESPONDENCE

Inquires in regard to the College of Pharmacy may be addressed to the Dean of the College or to the Recorder of the University. Students desiring to enter the college will be furnished proper blanks for filing entrance credentials on request to the Recorder. Entrance credentials should be sent to the Recorder before August 15th. The student will then be notified if his credentials are satisfactory. Copies of the Bulletin of the College of Pharmacy may be had upon application.

REQUIREMENTS FOR GRADUATION

1. WITH DEGREE OF PHARMACEUTICAL CHEMIST
2. WITH CERTIFICATE OF GRADUATION

FIRST YEAR

	Hours		Hours
Chemistry 1e	4	Chemistry 2e	4
Chemistry 1f	4	Chemistry 2f	4
Pharmacy 1	4	Pharmacy 2	4
Botany 13	4	Botany 14	4
	16		16

SECOND YEAR

	Hours		Hours
Pharmacy 3	2	Pharmacy 4	4
Pharmacy 5	2	Pharmacy 6	3
Pharmacy 7 or 8	4	Pharmacy 8 or 7	4
Pharmacy 9	4	Pharmacy 10	4
Bacteriology 105 or Physiology 11	4	Pharmacy 18	1
	16		16

3. WITH DEGREE OF BACHELOR OF SCIENCE

For graduation with the degree of bachelor of science the student is required to do sufficient work in addition to that of the two-year course to make one hundred and twenty hours of credit. Of the additional work the following courses are required:

Rhetoric, 4 hours; trigonometry, 4 hours; modern language, two years; physics, 8 hours; laboratory science, 16 hours.

The work in laboratory science may be elected in bacteriology, botany, geology, pharmacy, pharmaceutical chemistry, physics, physiological chemistry, physiology, toxicology and zoology.

4. WITH DEGREE OF MASTER OF SCIENCE IN PHARMACY

Graduates of the four-year course may continue work for the master's degree as follows:

Not more than 16 hours work allowed outside of the department of pharmacy. Election may be made from one or more of the following studies:

Bacteriology, 8 to 16 hours; botany, 8 to 16 hours; physics, 8 hours; chemistry, 4 to 8 hours; zoology, 4 to 8 hours.

Not less than 16 hours work to be elected in the department of pharmacy from the following lines of work:

Manufacturing pharmacy, 4 to 8 hours; toxicology, 4 to 8 hours; chemistry of foods or drugs, 8 to 16 hours; plant analysis, 8 to 16 hours. At least 8 hours of the major work to be a research problem and preparation of a thesis. Examination and thesis to conform to the regulations of the graduate school.

MILITARY TRAINING AND PHYSICAL CULTURE

All men students in either the two or four-year course are required to take two years of military training. Women students in the two-year course are required to take one year of physical culture and in the four-year course to take two years of physical culture.

DEPARTMENT OF PHARMACY, PHARMACEUTICAL CHEMISTRY, AND MATERIA MEDICA

(Office, Room 203, Bagley Hall)

PROFESSOR JOHNSON, ASSOCIATE PROFESSOR LINTON, MISS HINDMAN, MR. SIEGEL, MR. PLATT, AND ASSISTANTS.

1. THEORY AND PRACTICE OF PHARMACY. Four credits. First semester. W. F. at 9. Lab., T. F. 1 to 4. Associate Professor LINTON.

The study of the prinicples of pharmaceutical operations, and the manufacture of such preparations as best illustrate these operations.

Deposit, ten dollars per semester.

2a-1a. THEORY AND PRACTICE OF PHARMACY. Four credits. First and second semester. M. W. at 10; Lab., M. W. 1 to 4. Associate Professor LINTON.

To meet the need of students entering the second semester courses 1 and 2 are repeated. Deposit, ten dollars per semester.

2. PHARMACEUTICAL PREPARATIONS. Four credits. Second semester. W. F. at 9; Lab., T. F. 1 to 4. Associate Professor LINTON.

The study and manufacture of galencial and other preparations. Deposit, ten dollars per semester.

3. U. S. PHARMACOPOEIA. Two credits. First semester. W. F. at 8. Associate Professor LINTON.

A study of the inorganic and organic chemicals included in the pharmacopœia. The manufacture, tests for purity, assay, medicinal properties and methods of identification.

4. U. S. PHARMACOPOEIA AND NATIONAL FORMULARY. Four credits. Second semester. M. W. F. S. at 8. Associate Professor LINTON.

A careful study of the United States pharmacopoeia and national formulary with the special object of explaining the chemistry involved in the manufacture of the various compounds and preparations.

5. PRESCRIPTIONS. Two credits. First semester. M. at 8; Lab., M. 1 to 4, T. 1 to 4 or W. 1 to 4. Associate Professor LINTON.

6. PRESCRIPTIONS. Three credits. Second semester. Deposit, five dollars per semester. T. Th. at 8; Lab., M. 1 to 4 or T. 1 to 4. Associate Professor LINTON.

Pharmacy 5 and 6 takes up the study of the problems in prescription practice, special attention being given to incompatibilities, and to the more important newer remedies. The students are required to criticise and compound approximately two hundred of the more difficult physician's prescriptions.

7. PHARMACOGNOSY. Four credits. Each semester. M. W. F. S. at 9. Mr. PLATT.

A study of crude drugs, their source, methods of collecting and preserving, identification, active constituents and adulteration.

8. PHARMACOLOGY AND THERAPEUTICS. Four credits. Each semester. M. W. F. S. at 10. Mr. PLATT.

A study of the action of chemicals, drugs and their preparations on the human organism in health and disease, also the physiological action of the various poisons, their antidotes and emergency treatment in cases of poisoning.

9-10. DRUG ASSAYING. Four credits. The year. W. at 11; Lab., T. Th. F. 1 to 4; W. Th. F. 1 to 4. Professor JOHNSON.

In first semester experiments in gravimetric and volumetric methods of analysis are given with the idea of training the students in the fundamental principles of quantitative chemistry, and at the same time making them familiar with the analysis of substances of pharmaceutical importance. The second semester's work includes methods of quantitatively estimating the active constituents of crude drugs and their preparations and the testing of alkaloids and organic analysis.

Deposit, ten dollars per semester.

11-12. ALKALOIDS AND DRUG ASSAYING. Four credits. The year. Time to be arranged. Professor JOHNSON.

A course for juniors and seniors in the study of alkaloids, and other plant principles and the analysis of medicinal preparations.

Deposit, ten dollars per semester.

13-14. FOOD ANLYSIS. Four credits. The year. Time to be arranged. Laboratory, three afternoons per week. Professor JOHNSON.

First semester includes the study of the source, preparation, chemical nature and analysis of fats and oils of food and pharmaceutical use. The second semester includes the analysis of the various food products on the market. Methods of the Association of Official Agriculture Chemists are used.

Deposit, ten dollars per semester.

15-16. MANUFACTURING PHARMACY. Credit and time to be arranged. Associate Professor LINTON.

An advanced course in pharmaceutical manufacturing, including the manufacture of some of the more difficult of pharm-

acopœial and national formulary preparations as well as a number of inorganic and organic compounds used in pharmacy and medicine.

Deposit, five or ten dollars, according to hours.

17. TOXICOLOGY. Credit and time to be arranged. The year. Professor JOHNSON.

A laboratory course on the detection and estimation of poisons in animal tissues and practice in the preparation of testimony for legal cases.

Deposit, five or ten dollars, according to hours.

18. COMMERCIAL PHARMACY. One credit. Second semester. M. at 11. Mr. OSSEWARD.

A lecture course covering the commercial problems of the practical pharmacist.

19. INVESTIGATION. Credit and time to be arranged. The year.

Senior and graduate students may undertake some original investigation in pharmacy, pharmaceutical chemistry or chemistry of foods under the direction of one of the instructors.

Deposit, five or ten dollars, according to hours.

BOTANY

(Science Hall)

1. BOTANY

13-14. PHARMACY BOTANY. Four credits. The year. T. Th. at 10. T. Th. 8 to 10. Assistant Professor RIGG.

Gross structure of vegetative and reproductive parts of seed plants. Brief study of spore plants. Microscopy of powdered drugs.

2. BACTERIOLOGY

103. GENERAL BACTERIOLOGY. Four credits. First semester. Prerequisites, junior standing; botany or zoology, 1 year; chemistry, 1 year. T. Th. at 1, T. Th. or M. W. 2 to 4. Professor WEINZIRL. and Mr. VELDEE.

Methods of growing bacteria and studying their structure, functions and distribution.

108. MEDICAL BACTERIOLOGY. Four credits. Second semester. Prerequisite, bacteriology 103. Required of medical students. T. Th. at 4, T. Th. 2 to 4. Professor WEINZIRL and Mr. VELDEE.

The study of pathogenic bacteria.

111. BACTERIOLOGICAL ANALYSIS. Two credits. First semester. Prerequisite, bacteriology 103. Time to be arranged. Professor WEINZIRL.

Analysis of water, sewage, milk, meat, etc. Laboratory work only.

112. LABORATORY DIAGNOSIS. Two credits. Second semester. Prerequisite, bacteriology 104 or 108. Time to be arranged. Professor WEINZIRL.

The diagnosis of disease by laboratory methods, mainly bacteriological.

113. SANITARY PROBLEMS. Two credits. First semester. Prerequisite, bacteriology 103. Time to be arranged. Professor WEINZIRL.

The sanitary problems relating to water, sewage, and food. Lectures only.

114. DIAGNOSTIC METHODS. Two credits. Second semester. Prerequisite, to be taken with bacteriology 112. Time to be arranged. Professor WEINZIRL.

The consideration of diagnostic methods and their application. Lectures only.

119-120. RESEARCH IN BACTERIOLOGY. Two or four credits per semester. The year. Open to qualified students after consultation. Time to be arranged. Professor WEINZIRL.

105. BACTERIOLOGY FOR PHARMACISTS. Four credits. First semester. Prerequisite, sophomore standing; botany, 1 year; chemistry, 1 year. T. Th. at 8, T. Th. 9 to 11. Professor WEINZIRL.

A general survey, including technique, biology, disease, immune sera, vaccines, disinfectants, etc.

CHEMISTRY

(Bagley Hall)

PROFESSOR BYERS, PROFESSOR JOHNSON, ASSOCIATE PROFESSOR DEHN, ASSISTANT PROFESSOR ROSE, DR. TRUMBULL, DR. BELL, MRS. DAVIS AND ASSISTANTS.

1e. GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS. Four credits. First semester. M. W. F. S. at 8.

A lecture and recitation course for pharmacy students to be accompanied by the laboratory work of course 1f.

1f. LABORATORY COURSE IN GENERAL AND QUALITATIVE CHEMISTRY. Four credits. First semester. M. W. Th. 1 to 4, S. 9 to 12.

Laboratory experiments in general chemistry during the first part of the semester followed by work in qualitative analysis.

Deposit, fifteen dollars per semester.

2e. ORGANIC CHEMISTRY. Four credits. Second semester. M. W. F. S. at 8.

A lecture and recitation course for pharmacy students, to be accompanied by the laboratory work of course 2f.

2f. LABORATORY COURSE, QUALITATIVE AND ORGANIC CHEMISTRY. Four credits. Second semester. M. W. Th. 1 to 4, S. 9 to 12.

Part time will be used to finish the work of qualitative analysis. The organic work will be the preparation and testing of representative organic compounds.

Deposit, fifteen dollars per semester.

1b. GENERAL CHEMISTRY. Four credits. Second semester. T. Th. at 8, T. Th. 9 to 12 or M. F. 1 to 4. Assistant Professor ROSE.

To meet the need of students entering at the beginning of the second semester.

Deposit, ten dollars.

2b. GENERAL CHEMISTRY. Four credits. First semester. T. Th. at 8, T. Th. 9 to 12. Assistant Professor ROSE.

Continuation of 1b of second semester.

3-4. ORGANIC CHEMISTRY. Four credits, first semester. Two credits, second semester. M. W. F. at 8, M. or W. or F. 1 to 5. Assistant Professor DEHN.

A lecture course on the chemistry of the compounds of carbon. Laboratory work on the preparation and testing of representative compounds. Deposit, ten dollars per semester.

5-6. ADVANCED ORGANIC CHEMISTRY. Four credits. The year. M. W. at 8, W. 1 to 4, S. 9 to 12. Assistant Professor ROSE.

Chemistry of volatile oils, dyestuffs, alkaloids and sugars. Special laboratory work can be arranged.

7. ORGANIC ANALYSIS AND GLASS BLOWING. Two or four credits. The year. Time to be arranged. Assistant Professor DEHN.

A laboratory course of either two or four hours. Individual instruction.

8. ADVANCED QUALITATIVE ANALYSIS. Four credits. First semester. Two lectures and six laboratory hours per week. T. Th. at 10, M. W. 1 to 4. Professor BYERS.

Lectures on theory of solution as applied to analytical work. Laboratory work on the analysis of alloys and minerals.

8b. ELEMENTARY QUALITATIVE ANALYSIS. Four credits. Second semester. M. W. at 11, T. Th. 2 to 5. Assistant Professor DEHN.

Two lectures and six laboratory hours per week. Deposit, ten dollars per semester.

10-11. FOOD ANALYSIS. Four credits. The year. Laboratory, three afternoons per week. Time to be arranged. Professor JOHNSON.

First semester includes the study of the source, preparation, chemical nature and analysis of fats and oils of food and pharmaceutical use. The second semester includes the analysis of the various food products on the market. Methods of the Association of Official Agriculture Chemists are used.

Deposit, ten dollars per semester.

11c. CHEMISTRY OF FOODS. Four credits. Second semester. Prerequisites, chemistry 1c, 2c, 3c. Laboratory deposit ten dollars T. Th. at 11, M. W. 1 to 4. Professor JOHNSON.

A course in chemistry of foods for home economics students.

19. URINARY ANALYSIS. Two credits. Second semester. Laboratory work only. Time to be arranged. Assistant Professor DEHN.

Practical methods of analysis of normal and pathological urines. Especially for students entering upon the study of medicine.

20-21. PHYSIOLOGICAL CHEMISTRY. Four credits. First semester. Time to be arranged. Assistant Professor DEHN.

A course designed for medical, chemical and general science students. Chemical composition of foods, tissues, secretions and excretions, their physiological and pathological changes, with special attention to the composition and chemical analysis of blood, milk and urine.

22. PHYSICAL CHEMISTRY. Four credits. First semester Three lectures and one laboratory period per week. M. W. at 11, M. W. 1 to 4. Dr. TRUMBULL.

An elementary course dealing with fundamental theories of chemistry based upon physical measurements.

23. ELECTRO CHEMISTRY. Four credits. Second semester. M. W. at 10. M. F. 1 to 4. Professor BYERS and Dr. TRUMBULL.

The lecture course deals with the historical development of electro chemistry, the theories of electrolysis, migration of ions, concentration cells, solution pressure, etc. The laboratory work consists of the preparation of compounds by electrolysis and electro synthesis, electro-plating, etc., and of illustrations of the subject matter of the lecture work.

PHYSIOLOGY

(Science Hall)

11. ELEMENTARY PHYSIOLOGY. Four credits. First semester. M. W. at 11, M. W. 2 to 5. Assistant Professor SMITH.

The human body, its tissues and organs, and their functions with special reference to hygiene. In the laboratory experimental work is given, together with dissection and microscopic examination of illustrative material.

Deposit, two dollars per semester.

GRADUATE SCHOOL

FACULTY

*THOMAS FRANKLIN KANE, PH. D., (Johns Hopkins University), PRESIDENT.

HENRY LANDES, A. M., (Harvard University), ACTING PRESIDENT. Dean of the College of Science, and Professor of Geology and Mineralogy.

J. ALLEN SMITH, PH. D., (University of Michigan), Professor of Political and Social Science and Dean of the Graduate School.

DAVID THOMSON, A. B., (University of Toronto), Professor of Latin and Secretary of the Graduate Faculty.

ORSON BENNETT JOHNSON, LL. B., (Union College of Law), Professor Emeritus of Zoology.

EDMOND STEPHEN MEANY, M. L., (University of Wisconsin), Professor of History.

CAROLINE HAVEN OBER, Professor of Spanish.

ALMON HOMER FULLER, M. S., C. E., (Cornell University), Professor of Civil Engineering.

JOHN THOMAS CONDON, LL. M. (Northwestern University), Professor of Law and Dean of the School of Law.

HORACE G. BYERS, PH. D., (Johns Hopkins University), Professor of Chemistry.

TREVOR KINCAID, A. M., (University of Washington), Professor of Zoology.

FREDERICK MORGAN PADELFORD, PH. D., (Yale University), Professor of English.

MILNOR ROBERTS, A. B., (Stanford University), Professor of Mining Engineering and Metallurgy and Dean of the College of Mines.

ARTHUR SEWALL HAGGETT, PH. D., (Johns Hopkins University), Professor of Greek and Dean of the College of Liberal Arts.

FREDERICK ARTHUR OSBORN, PH. D., (University of Michigan), Professor of Physics and Director of the Physics Laboratories.

WILLIAM SAVERY, PH. D., (Harvard University), Professor of Philosophy.

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*Leave of absence, January 1 to August 1. Retires August 1.

CHARLES WILLIS JOHNSON, PH. D., (University of Michigan), Professor of Pharmaceutical Chemistry and Dean of the College of Pharmacy.

PIERRE JOSEPH FREIN, PH. D., (Johns Hopkins University), Professor of French.

*THEODORE CHRISTIAN FRYE, PH. D., (University of Chicago), Professor of Botany.

ROBERT EDOUARD MORITZ, PH. D., (University of Nebraska), Professor of Mathematics and Astronomy.

CARL EDWARD MAGNUSSON, PH. D., E. E., (University of Wisconsin), Professor of Electrical Engineering.

HARVEY LANTZ, A. M., LL. B., (Kent Law School), Professor of Law.

EVERETT OWEN EASTWOOD, C. E., A. M., (University of Virginia), Professor of Mechanical Engineering.

FREDERICK WILLIAM MEISNEST, PH. D., (University of Wisconsin), Professor of German.

DAVID CONNOLLY HALL, Sc. M., M. D., (University of Chicago), Director of Physical Training.

ELMER JAMES MCCAUSTLAND, M. C. E., (Cornell University), Professor of Municipal Engineering.

ISABELLA AUSTIN, A. B., (University of Minnesota), Dean of Women.

REV. HERBERT H. GOWEN, F. R. G. S., M. R. S. A., Professorial Lecturer on Oriental History, Literature and Institutions.

OLIVER HUNTINGTON RICHARDSON, PH. D., (University of Heidelburg), Professor of European History.

GEORGE SEAVERNS COLE, LL. B., (Kent Law School), Professor of Law.

IVAN WILBUR GOODNER, LL. B., (University of Nebraska), Professor of Law.

WALTER GREENWOOD BEACH, A. M., (Harvard University), Professor of Social Science.

IRVING MACKEY GLEN, A. M., (University of Oregon), Professor of Music and Director of Fine Arts.

EDWIN AUGUSTUS START, A. M., (Harvard University), Director of the University Extension Division.

CHARLES CHURCH MORE, M. S., C. E., (Cornell University), Professor of Civil Engineering.

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*Absent on leave, first semester, 1913-14.

HENRY KREITZER BENSON, PH. D., (Columbia University), Professor of Industrial Chemistry.

JOHN WEINZIRL, PH. D., (University of Wisconsin), Professor of Bacteriology.

HUGO WINKENWERDER, M. F., (Yale University), Professor of Forestry and Dean of the College of Forestry.

VERNON LOUIS PARRINGTON, A. B., (Harvard University), Professor of English.

FREDERICK ELMER BOLTON, PH. D., (Clark University), Professor of Education and Dean of the School of Education.

EDWIN JOHN VICKNER, PH. D., (University of Minnesota), Professor of the Scandinavian Languages.

HERBERT GALEN LULL, PH. D., (University of California), Professor of Education.

OTHER INSTRUCTORS

ALLEN ROGERS BENHAM, PH. D., (Yale University), Associate Professor of English.

FRANK MARION MORRISON, PH. D., (University of Chicago), Associate Professor of Mathematics.

SAMUEL LATIMER BOOTHROYD, M. S., (Colorado Agricultural College), Associate Professor of Astronomy and Mathematics.

THOMAS KAY SIDEY, PH. D., (University of Chicago), Professor of Latin and Greek.

WILLIAM MAURICE DEHN, PH. D., (University of Illinois), Associate Professor of Physiological Chemistry and Toxicology.

EDWARD MCMAHON, A. M., (University of Wisconsin), Associate Professor of American History.

STEVENSON SMITH, PH. D., (University of Pennsylvania), Associate Professor of Orthogenics.

JACOB NEIBERT BOWMAN, PH. D., (University of Heidelberg), Associate Professor of European History.

VANDERVEER CUSTIS, PH. D., (Harvard University), Assistant Professor of Economics.

OTTO PATZER, PH. D., (University of Wisconsin), Assistant Professor of French.

EDWIN JAMES SAUNDERS, A. M., (Harvard University), Assistant Professor of Geology.

JOSEPH KINMONT HART, PH. D., (University of Chicago), Assistant Professor of Education.

*GEORGE IRVING GAVETT, B. S., (C. E.), (University of Michigan), Assistant Professor of Mathematics.

HANS JACOB HOFF, PH. D., (University of Illinois), Assistant Professor of German.

ROBERT EVSTAFIEFF ROSE, PH. D., (University of Leipzig), Assistant Professor of Chemistry.

ROBERT MAX GARRETT, PH. D., (University of Munich), Assistant Professor of English.

EDGAR ALLEN LOEW, B. S., E. E., (University of Wisconsin), Assistant Professor of Electrical Engineering.

EDWARD GODFREY COX, PH. D., (Cornell University), Assistant Professor of English.

ELI VICTOR SMITH, PH. D., (Northwestern University), Assistant Professor of Zoology.

GEORGE WALLACE UMPHREY, PH. D., (Harvard University), Assistant Professor of Spanish.

CHARLES MUNRO STRONG, A. M., (University of Missouri), Assistant Professor of Spanish.

HENRY LOUIS BRAKEL, PH. D., (Cornell University), Assistant Professor of Physics.

HARVEY BRUCE DENSMORE, A. B., (University of Oregon), Assistant Professor of Greek.

CHARLES EDWIN WEAVER, PH. D., (University of California), Assistant Professor of Geology.

ALLEN FULLER CARPENTER, A. M., (University of Nebraska), Assistant Professor of Mathematics.

GEORGE BURTON RIGG, A. M., (University of Washington), Assistant Professor of Botany.

DAVID ALLEN ANDERSON, PH. D., (University of Iowa), Assistant Professor of Education.

ERNEST GEORGE ATKIN, A. M., (Harvard University), Assistant Professor of French.

ABRAHAM BERGLUND, PH. D., (Columbia University), Assistant Professor of Economics.

GINO ARTURO RATTI, PH. D., (University de Grenoble), Acting Assistant Professor of French.

WALTER BELL WHITTLESEY, A. M., (University of Washington), Instructor in French.

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*Absent on leave, 1913-14.

THERESA SCHMID MCMAHON, PH. D., (University of Wisconsin), Instructor in Political and Social Science.

ERNEST OTTO ECKELMAN, PH. D., (University of Heidelberg), Instructor in German.

CHARLES LOUIS HELMLINGE, PH. B., (German Wallace College), Instructor in French.

JOHN WILLIAM HOTSON, A. M., (McMaster University), Instructor in Botany.

RALPH HASWELL LUTZ, PH. D., (University of Heidelberg), Instructor in History.

LEWIS IRVING NEIKIRK, PH. D., (University of Pennsylvania), Instructor in Mathematics.

HJALMAR LAURITS OSTERUD, A. M., (University of Washington), Instructor in Zoology.

ATTILIO FILIPPO SBEDICO, PH. D., (University of Pennsylvania), Instructor in French and Italian.

HARLAN LEO TRUMBULL, PH. D., (University of Chicago), Instructor in Chemistry.

HENRY SLATER WILCOX, A. M., (Harvard University), Instructor in Psychology.

SAMUEL HERBERT ANDERSON, PH. D., (University of Illinois), Instructor in Physics.

LESLIE FORREST CURTIS, B. S., (Tufts College), Instructor in Electrical Engineering.

CURT JOHN DUCASSE, PH. D., (Harvard University), Instructor in Philosophy.

ERIC TEMPLE BELL, PH. D., (Columbia University), Instructor in Mathematics.

LLOYD LEROY SMAIL, PH. D., (Columbia University), Instructor in Mathematics.

COMMITTEE ON GRADUATE COURSES: Professors OSBORN, HAGGETT, SAVERY, FREIN and MORITZ.

ORGANIZATION

The graduate School was formally organized in May, 1911. By action of the Board of Regents the graduate faculty consists of the deans of the various colleges and the heads and full professors of all departments giving graduate courses.

GRADUATE FELLOWSHIPS

Three fellowships of $416.66 each, known as the Loretta Denny fellowships, are open to graduate students in any department of the University. Applications for these fellowships must be in the hands of the Recorder of the University on or before March fifteenth.

UNIVERSITY TEACHING FELLOWSHIPS

There are also about fifteen teaching fellowships yielding $450 each. These fellows are expected to give about half time to such work as the head of the department may assign.

ADMISSION

Three classes of students are recognized in the graduate school:

1. Candidates for the master's degree.
2. Candidates for the doctor's degree.
3. Students not candidates for a degree.

A graduate of this University or of any other institution of equal rank will be given full graduate standing. In case the student is from a college whose requirements for graduation are not regarded by the dean as equivalent to those of the University of Washington, he must complete the deficiency in undergraduate work as specified by the committee on graduate courses, before being permitted to make application for an advanced degree.

Any graduate student who wishes to become a candidate for a degree, must file an application with the dean of the graduate school, on a blank provided for the purpose, within two weeks after registration. When this application has received the approval of the committee on graduate courses or of the graduate faculty, and the applicant has been notified thereof, the student will be enrolled as a candidate for a degree.

DEGREES

THE MASTER'S DEGREE

Graduate students may receive the degree of master of arts or master of science by complying with the following requirements:

1. At least one year's work must be done in residence in undivided pursuit of the studies elected; or not less than two

year's in residence, if the candidate is employed as a teacher or regularly engaged in any other occupation or profession. Attendance during four summer sessions may be accepted as the equivalent of one year in residence.

2. The candidate must elect a major subject and either one or two minors. He must earn not less than twenty-four credits, with a grade of A, B or C, at least one-half being in the major subject, and present a thesis which shall embody independent, though not necessarily original research. The total must represent the equivalent of at least thirty hours.

3. No work done in the major subject may be counted toward the master's degree, until the candidate for such degree has complied with the departmental requirement as to previous work in that subject, which in no case shall be less than twelve hours.

4. Upon completion of the work as outlined in the application, the candidate shall be examined by a committee consisting of three or more instructors representing all of the lines of study pursued by the applicant. The finding of this committee must be unanimous. The time and place of the examination, which shall be open to the faculty, shall be publicly announced at least three days in advance. After a conference of the examiners, the result of the examination shall be immediately announced to the candidate, and a formal report of the result shall be communicated to the committee on graduate courses, not later than the Wednesday preceding commencement day.

5. One copy of the thesis in typewritten or printed form (or library hand, in case the thesis is of such character that it cannot be typewritten), prepared and bound according to the conditions prescribed by the librarian, shall be deposited with the Bursar at the time of payment of the diploma fee.

THE DOCTOR'S DEGREE

Graduate students will be received as candidates for the degree of doctor of philosophy in chemistry, in English and in other departments as their readiness to undertake this work may be approved by the committee on graduate courses.

Graduate students may receive the degree of doctor of philosophy by complying with the following requirements:

1. At least three years of graduate work, the last year of which must be spent in residence at the University of Washing-

ton. If a candidate is otherwise engaged in any regular employment, a correspondingly longer time will be required.

2. Evidence of a reading knowledge of both French and German and such other languages as individual departments may require. Evidence of sufficient attainment in these languages must be presented to the dean and, upon his approval, filed with the recorder at least one academic year before the degree is granted.

3. Completion of courses of study in a major and two minor subjects, the work in the minors to constitute one-third of the total course. The major subject, in addition to the regular courses, shall include the preparation of a thesis embodying the results of a research which shall be a positive contribution to knowledge. This thesis must be approved by a committee appointed by the head of the major department of which the instructor in charge of the thesis shall be a member, and also by the committee on graduate courses.

4. Oral examination in each of the minor subjects before a committee of three, including a representative of the major department. Certificates of the satisfaction of this requirement must be given before the candidate may be admitted to his major examination.

5. An exhaustive written examination in the major subject, not less than six hours in duration, no one session of which may exceed five hours.

6. An oral examination before a committee of three or more representatives of the major department, of not less than two hours. This examination must be approved by the entire committee. All examinations are open to members of the faculty.

7. Thesis, or such parts thereof as may be approved by the committee on graduate courses, must be printed in a form approved by the librarian and supplied with title and biographical sketch and one hundred copies presented to the University library.

The completion of the requirements as specified shall be certified by the head of the major department not later than the Wednesday preceding commencement day.

The doctor's degree will not be granted to graduates of the University of Washington who have not spent two years in graduate work, or three years in undergraduate work, at some other institution.

For the present, instructors in the University of Washington shall not be received as candidates for the doctor's degree.

No Ph. D. degree will be conferred before June, 1914.

MASTER OF SCIENCE IN ENGINEERING

Courses leading to the degree of master of science in engineering are provided for students in civil engineering, electrical engineering, mechanical engineering, chemical engineering, and mining engineering.

For further information, see Bulletin of College of Engineering, or Bulletin of College of Mines.

MASTER OF SCIENCE IN FORESTRY

For the degree of master of science in forestry, the student, in addition to being a graduate of this university or other institution of equal rank, and having a satisfactory knowledge of botany, geology, physics, chemistry, mathematics, surveying and languages, shall have been credited at this university with 166 hours of which at least 52 are in technical forestry subjects, including silviculture, dendrology, wood technology, mensuration, management, lumbering, wood preservation, forest economics, and thesis.

For further information, see the bulletin of the College of Forestry.

MASTER'S DEGREES IN EDUCATION

Advanced work for teachers leading to the master's degree in education is given by the University. See bulletin of School of Education for further information.

BOTANY

(Science Hall)

PROFESSOR FRYE, ASSISTANT PROFESSOR RIGG, DR. HOTSON.

1. BOTANY.

FOR UPPERCLASSMEN AND GRADUATES

5. MORPHOLOGY OF THALLOPHYTES. Four credits. First semester. Prerequisites, botany 2 or 10, or zoology 1 and 2. T. Th. at 1, T. Th. 2 to 4. Professor FRYE.

Study of types of algae and fungi with a view to their evolution, ecology and physiology as shown by structure.

6. MORPHOLOGY OF BRYOPHYTES AND PTERIDOPHYTES. Four credits. Second semester. Prerequisites, botany 2 or 10, or zoology 1 and 2. T. Th. at 1, T. Th. 2 to 4. Professor FRYE.

Studies of types of the families with a view to relationships. Some classification.

43. PLANT PHYSIOLOGY. Four credits. First semester. Prerequisites, chemistry 1 and 2; botany 1 and 2, or 9 and 10, or 1 and 10. M. W. at 11, M. W. 2 to 5. Assistant Professor RIGG.

The physical and chemical processes in plants so far as the latter may be comprehended without organic chemistry.

44. PLANT PHYSIOLOGY. Four credits. Second semester. Prerequisites, botany 43. M. W. at 11, M. W. 2 to 5. Assistant Professor RIGG.

The laws underlying growth and movement in plants.

16. FOREST PATHOLOGY. Four credits. Second semester. Prerequisites, botany 5 or 11. For forestry students. M. W. at 10, T. Th. 9 to 12. Dr. HOTSON.

The fungous and bacterial diseases of trees.

20. PLANT HISTOLOGY. Three credits. Second semester. Prerequisite, botany 6. Time to be arranged. Professor FRYE.

Preparation of slides for the compound microscope. Study of plant tissues.

25-26. ELEMENTARY AGRICULTURE. Four credits. The year. Prerequisites, botany 1, and 2 or 10; junior standing. M. W. at 4, W. F. 1 to 4. Dr. HOTSON.

Designed as a preparation for those who expect to teach the subject in high schools.

33. RESEARCH. Credit and time to be arranged. First or second semesters. Open to qualified students, after consultation, either for thesis work or for credit only. Professor FRYE.

37. JOURNAL CLUB. No credit. First or second semester. One meeting per week at time to be arranged. Prerequisite, junior standing, two years of botany. Professor FRYE.

Review of articles in current journals. Suggested for all seniors, graduates and instructors in the department.

41. GENERAL FUNGI. Four credits. First semester. Time to be arranged. Prerequisites, botany 11 or 5 and junior standing. T. Th. at 11, T. Th. 8 to 11. Dr. HOTSON.

Morphology and classification of fungi; designed as a basis for plant pathology.

42. PLANT PATHOLOGY. Four credits. Second semester. Prerequisite, botany 41. T. Th. at 11, T. Th. 8 to 11. Dr. HOTSON.

The causes, symptoms and treatment of some of the common fungous and bacterial diseases of orchard and garden plants and their fruits.

2. BACTERIOLOGY

(Science Hall)

PROFESSOR WEINZIRL, MR. VELDEE

FOR UNDERGRADUATES AND GRADUATES

103. GENERAL BACTERIOLOGY. Four credits. First semester. Prerequisites, junior standing; botany or zoology, 1 year; chemistry, 1 year. T. Th. at 1; Lab., T. Th. 2 to 4 or M. W. 2 to 4. Professor WEINZIRL and Mr. VELDEE.

Methods of growing bacteria and studying their structure, functions and distribution.

104. SANITARY AND INDUSTRIAL BACTERIOLOGY. Four credits. Second semester. Prerequisite, bacteriology 103. T. Th. at 1, Lab., T. Th. 2 to 4 or 4 to 6. Professor WEINZIRL and Mr. VELDEE.

A brief survey of disease bacteria. Most of the time is given to sanitation and industry inspection trips.

106. HOUSEHOLD BACTERIOLOGY. Five credits. Second semester. For home economics students. M. W. F. at 1, M. W. 2 to 4. Professor WEINZIRL.

Sanitation as related to the home and its activities. Lectures only.

108. MEDICAL BACTERIOLOGY. Four credits. Second semester. Required of medical students. Prerequisite, bacteriology 103. T. Th. at 4, T. Th. 2 to 4. Professor WEINZIRL and Mr. VELDEE.

The study of pathogenic bacteria.

109. SCHOOL HYGIENE. See Education 19. Professor WEINZIRL.

111. BACTERIOLOGICAL ANALYSIS. Two credits. First semester. Prerequisite, bacteriology 103. Time to be arranged. Professor WEINZIRL.

Analysis of water, sewage, milk, meat, etc. Laboratory work only.

112. LABORATORY DIAGNOSIS. Two credits. Second semester. Prerequisite, bacteriology 104 or 108. Time to be arranged. Professor WEINZIRL.

The diagnosis of disease by laboratory methods, mainly bacteriological.

113. SANITARY PROBLEMS. Two credits. Second or both semesters. Prerequisite, bacteriology 103. Time to be arranged. Professor WEINZIRL.

The sanitary problems relating to water, sewage, and food. Lectures only.

114. DIAGNOSTIC METHODS. Two credits. Second semester. Prerequisite, to be taken with bacteriology 112. Time to be arranged. Professor WEINZIRL.

The consideration of diagnostic methods and their application. Lectures only.

FOR GRADUATES ONLY

117-118. SEMINAR IN BACTERIOLOGY. Two credits per semester. The year. For graduate students only. With research constitutes a full year's work, and is planned as the regular third year's work in bacteriology. Time to be arranged. Professor WEINZIRL.

119-120. RESEARCH IN BACTERIOLOGY. Two or four credits per semester. The year. Open to qualified students after consultation. Professor WEINZIRL.

CHEMISTRY

(Bagley Hall)

PROFESSOR BYERS, ASSOCIATE PROFESSOR BENSON, ASSOCIATE PROFESSOR DEHN, ASSISTANT PROFESSOR ROSE, DR. TRUMBULL, DEAN JOHNSON, COLLEGE OF PHARMACY

3-4. ORGANIC CHEMISTRY. Four credits. The year. M. W. F. at 8; Lab., M. W. or F. 1 to 5. Associate Professor DEHN.

Lecture course. Laboratory work on the preparation and testing of representative compounds. Bernthsen-Sudburough's text

used in connection with Sudburough-James's laboratory manual as laboratory guide.

FOR UPPERCLASSMEN AND GRADUATES

5-6. ADVANCED ORGANIC CHEMISTRY. Four credits. The year. M. W. at 8, W. 1 to 4, S. 9 to 12. Assistant Professor ROSE.

Chemistry of volatile oils, dyestuffs, alkaloids and sugars. Special laboratory work can be arranged.

7. ORGANIC ANALYSIS AND GLASS BLOWING. Two or four credits. The year. Time to be arranged. Associate Professor DEHN.

A laboratory course of either two or four hours. Individual instruction.

10. FATS AND OILS. Four credits. First semester. Time to be arranged. Professor JOHNSON.

Laboratory, three afternoons per week.

15. WATER ANALYSIS. Four credits. First semester. T. Th. at 8, T. Th. 9 to 12. Professor BENSON.

The analysis of water for both industrial and sanitary purposes.

20-21. PHYSIOLOGICAL CHEMISTRY. Four credits. The year. Time to be arranged. Associate Professor DEHN.

A course designed for medical, chemical and general science students. Chemical composition of foods, tissues, secretions and excretions, their physiological and pathological changes, with special attention to the composition and chemical analysis of blood, milk, and urine.

FOR GRADUATES

22. PHYSICAL CHEMISTRY. Four credits. First semester. Two lectures and one laboratory period per week. M. W. at 11, M. W. 1 to 4. Dr. TRUMBULL.

An elementary lecture course dealing with fundamental theories of chemistry based upon physical measurements.

23. ELECTRO CHEMISTRY. Four credits. Second semester. M. W. at 10, M. F. 1 to 4. Professor BYERS and Dr. TRUMBULL.

The lecture course deals with the historical development of electro chemistry, the theories of electrolysis, migration of ions, concentration cells, solution pressure, etc. The laboratory work consists of the preparation of compounds by electrolysis and elec-

tro synthesis, electro-plating, etc., and of illustrations of the subject matter of the lecture work.

26. INVESTIGATION. Credit to be arranged. The year.

Any student who has completed at least three years' work in chemistry may undertake some original investigation under the direction of one of the instructors. Such work will not be encouraged, however, except when the student is presenting himself for an advanced degree.

27-28. CHEMICAL THEORY. Two credits. The year. T. 7 to 9 p. m. Professor BYERS.

All graduate students registering in the department of chemistry will be expected to take a two-hour course throughout the year in the historical development of fundamental laws and theories.

29. ADVANCED ORGANIC PREPARATIONS. Four credits. Time to be arranged. The year. Associate Professor DEHN.

A course prerequisite to organic research.

EDUCATION

(Education Building)

PROFESSOR BOLTON, PROFESSOR LULL, ASSOCIATE PROFESSOR SMITH, ASSISTANT PROFESSOR HART, ASSISTANT PROFESSOR ANDERSON

B. COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES.

At least twelve hours in education and an elementary course in psychology are prerequisites to all courses in this group (B). and the following (C). Mature students with considerable teaching experience may be admitted without the specific number of hours of prerequisites by consent of the head of the department.

15. PROBLEMS IN VOCATIONAL EDUCATION. Two credits. First semester. T. Th. at 9. Assistant Professor HART.

The vocational movement, its meaning and purpose; relation to liberal education; phychological considerations; social phases; vocational guidance.

16. EDUCATIONAL PROBLEMS OF THE STATE. Two credits. Second semester. T. Th. at 9. Assistant Professor HART.

A study of the problems that confront the educational forces in the state; general and theoretical, social and practical.

17. SOCIAL ASPECTS OF EDUCATION. Two credits. First semester. M. W. F. at 8. Assistant Professor HART.

The social institutions and conditions which form the background of all the work of the school, reinforcing and limiting that work. The real task of the school.

*18. SCHOOL GROUNDS, BUILDINGS, AND EQUIPMENT. Two credits. Second semester. Assistant Professor HART.

A constructive study of the physical side of the new school plant. (Should follow the course on vocational education.)

19-20. THE ELEMENTARY SCHOOL CURRICULUM. Two credits. The year. S. 10 to 12. Assistant Professor ANDERSON.

The function, character, and organization of the elementary school curriculum. A consideration of what subject matter and experiences are of greatest worth for the individual. Adaptation of the curriculum to growth periods. The curriculum from the standpoint of the immediate interest, needs, and future efficiency of the child. Minimum essentials in and possibilities for the enrichment of the courses of study. The time especially adapted for Seattle teachers.

21-22. EXPERIMENTAL EDUCATION. Two credits. The year, or either semester. T. Th. at 10. Mr. ————.

(a) A survey of the extensive literature of recent experimental studies in education. (b) Methods of investigation and interpretation of results. (c) Problems suitable for class and individual experimentation. Data will be obtained from various public schools. Problems will deal with questions such as modes of learning various activities, economy in memorizing, habit formation, the learning of arithmetic, spelling, writing, typewriting, stenography, etc.

*23-24. EPOCHS OF EDUCATIONAL HISTORY. Two credits. The year. Assistant Professor HART.

26. HISTORY OF EDUCATION IN THE UNITED STATES. Three credits. Second semester. M. W. F. at 2. Professor LULL.

From 1647 to the present; a study of the growth of the elementary, secondary, and, to some extent, higher education. The main emphasis of the course will be laid upon the period from the beginning of the "Common School Revival," 1830, to the present time.

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*Not given in 1914-15.

27. FUNDAMENTALS OF TEACHING. Two credits. First semester. S. 9 to 11. Professor LULL.

This course is designed especially for teachers in Seattle and vicinity. A study of the fundamental principles of method as related to actual practice in the schoolroom. The problem of the course will be how to increase the teaching efficiency of each member of the class.

28. SUPERVISION AND MANAGEMENT. Three credits. Second semester. M. W. F. at 10. Professor LULL.

For those who are preparing for supervision, principalships, or teaching positions. Practical problems of school organization and administration, such as the making and administration of courses of study; functions of school boards, superintendents, and principals; supervision of class work, teachers' meetings, student organizations.

29. SCHOOL HYGIENE. Two credits. First or second semester. T. Th. at 3. Professor WEINZIRL.

Problems of school hygiene, including: heating, lighting, and ventilation; school diseases and medical inspection of schools; hygiene of various school activities.

30. THE EDUCATION OF EXCEPTIONAL CHILDREN. Three credits. Second semester. M. W. F. at 11. Associate Professor SMITH. Prerequisites, philosophy 15 and education 1, 3, and six other hours.

Methods of instruction for backward, feebleminded, and deaf children, and for those suffering from speech defects and physical defects. The course will include motor training, perception training, and introduction to reading and number work.

31-32. ADOLESCENCE AND THE HIGH SCHOOL. Two credits. The year. S. 10 to 12. Professor BOLTON.

A critical consideration of the physical, intellectual, emotional, moral, and social characteristics of adolescence and the educative activities suited to the period of secondary school education. Especially designed for Seattle teachers.

33-34. PRINCIPLES OF EDUCATION. (Advanced course). Two credits. The year. Th. 4 to 6. Professor BOLTON.

A course for mature students who have taught considerably or who have done some previous work in the subject and can therefore progress more rapidly and also do more critical work than

the beginner. Especially designed for teachers of the Seattle schools. Text: Bolton, Principles of Education.

C. COURSES FOR GRADUATES ONLY

Concerning prerequisites, see note under "B."

35. ADMINISTRATION OF EDUCATION IN THE UNITED STATES. Three credits. First semester. M. W. F. at 10. Professor LULL.

The important problems of educational administration in the United States, national, state and local; relation to the other branches of civil administration. The financing of public education. The administration of the different forms of vocational education. Each student will be assisted in giving special attention to his own problems of school administration. Special reference to the educational problems of the Northwest.

37. STATE SCHOOL SYSTEMS. Two credits. First semester. Time to be arranged. Professor LULL.

An intensive study of the organization and administration of public education in various state school systems. Special attention will be given to the county unit and county supervision.

38. CITY SCHOOL SYSTEMS. Two credits. Second semester. Time to be arranged. Professor LULL.

An intensive study of the organization and administration of education in large and in small cities.

39-40. FOREIGN EDUCATIONAL SYSTEMS. Two credits. The year. T. 4 to 6. Professor BOLTON and Assistant Professor ANDERSON.

A critical study of current educational organization and practice in foreign countries, especially in Germany, France, England, Norway, Sweden, and Canada. Texts: Bolton, *The Secondary School System of Germany*, Farrington, *Primary and Secondary Education in France*, and Anderson, *The School System of Norway*. Time arranged for Seattle teachers.

41. LABORATORY COURSE IN THE EDUCATION OF EXCEPTIONAL CHILDREN. Two credits. First semester. Time to be arranged. Associate Professor SMITH.

The training of typical cases. Two hours of laboratory work and one hour of conference each week. The students will be supervised in the instruction of children with various mental pe-

culiarities. The methods considered in Course 30 in education will be applied.

*42. MORAL EDUCATION. Two credits. Second semester. Professor BOLTON.

43-44. ADVANCED EDUCATIONAL PSYCHOLOGY. Two credits. The year. M. 3:30 to 5:30. Assistant Professor HART.

A study of special problems in the field of educational psychology; expression and impression, the social nature of perception, the nature and development of ideas, "motive" in educational practice, etc. Time arranged for Seattle teachers.

45-46. INDIVIDUAL RESEARCH AND THESIS WORK. Three credits. The year. Time to be arranged.

Intensive study and original investigation of special problems. Results are reported in the Seminar and when especially meritorious may be published. The special problems are directed by different members of the department. Consult head of the department regarding registration.

47-48. GRADUATE SEMINAR. Two credits. The year. Tu. from 7:00 to 9:00 p. m., or at time to be arranged. Professor BOLTON.

For graduate students doing intensive study and research. Critical consideration of technical educational literature and of modern educational problems. Reports on individual problems. Technique of research, interpretation of results and thesis writing.

49-50. SEMINAR IN ENGLISH EDUCATION. Two credits. The year; may be elected for either semester. Time to be arranged. Professor LULL and Associate Professor BENHAM.

A study of English education, theoretical and practial, from the Renaissance to the present. English educational classics will be examined and the administrational and institutional phases of education treated. Open to advanced students in Education, English, and European History. (See courses of the Department of English.)

ELECTRICAL ENGINEERING.

PROFESSOR MAGNUSSON, ASSISTANT PROFESSOR LOEW, MR. CURTIS

21. ALTERNATING CURRENTS. Four credits. First semester. Prerequisites, E. E. 3 and 4. M. T. Th. F. at 9. Professor MAGNUSSON.

The theory of the generation of single phase and polyphase

*Not given in 1914-15.

currents. Energy storage in the magnetic and dielectric fields. Vector diagrams and symbolic methods of analysis. Power factors and the measurement of power. The theory of the transformer, polyphase and induction and synchronous motors, rotary converters, and transmission lines.

22. ALTERNATING CURRENT LABORATORY. Four credits. First semester. Prerequisites, E. E. 3 and 4. W. Th. or F. 1 to 5. Mr. CURTIS.

Experimental work on alternating current machinery. To be taken in connection with E. E. 21.

23. ALTERNATING CURRENTS. Four credits. Second semester. Prerequisites, E. E. 21 and 22. M. T. Th. F. at 9. Professor MAGNUSSON.

Continuation of course E. E. 21. The theory of the single phase induction and commutator motors. The effect of induction and synchronous motors on transmission systems. Phase control and regulation. Synchronous generators and motors. Interlinked polyphase systems.

24. ALTERNATING CURRENT LABORATORY. Two credits. Second semester. Prerequisites, E. E. 21 and 22. M. W. 1 to 5. Mr. CURTIS.

A continuation of E. E. 22 with tests on commercial machines. To be taken in connection with course E. E. 23.

44. ELECTRIC RAILWAYS. Three credits. First semester. Prerequisites, E. E. 3, 4 or 5. M. W. F. at 11. Mr. CURTIS.

Electric equipment and rolling stock; roadbed; construction and operation of direct current, single phase and polyphase railway systems.

48. POWER TRANSMISSION. Two credits. Second semester. Prerequisites, E. E. 21 and 22. T. Th. at 10. Assistant Professor LOEW.

Design and operation of electric power transmission systems.

51, 52. TRANSIENT ELECTRIC PHENOMENA. Two credits. The year. Prerequisites E. E. 21, 22. Th. 7 to 9 p. m. Professor MAGNUSSON.

The exponential law of simple transients. Single and double energy transients. Current oscillations and traveling waves. Natural periods of transmission lines. Short circuit transients. Surges. Corona. Lightning phenomena.

2. ITALIAN

5-6. DANTE. Two credits. The year. T. Th. at 10. Dr. SBEDICO.

Selected cantos from Divina Commedia.

FOR GRADUATES

51-52. HISTORY OF THE FRENCH LITERATURE OF THE SIXTEENTH CENTURY. Two credits. The year. Prerequisite, 6. T. Th. at 9. Assistant Professor PATZER.

Lectures in French. Some texts of the sixteenth century will be assigned for outside reading, and some will be read in class. The French Renaissance will be compared with that of other countries.

53-54. MIDDLE FRENCH. Two credits. The year. T. Th. at 11. Professor FREIN.

Lectures on the history of the Fourteenth and Fifteenth centuries will be given in French. Some texts will be read in class, and others will be assigned to be read out of class and reports made to the class.

55-56. OLD FRENCH READING. Four credits. The year. M. T. Th. F. at 2. Professor FREIN.

Elements of Old French grammar, and translation from Old French into modern French of some of the texts in Bartsch, Chrestomathie de l'Ancien Francais, and a few of the old texts will be read in complete editions.

57-58. HISTORY OF OLD FRENCH LITERATURE. Two credits. The year. Open only to those who have a reading knowledge of Old French. Those who have had course 53-54 will ordinarily be prepared to follow the work. Course given in French. T. Th. at 10. Professor FREIN.

GEOLOGY

(Science Hall)

PROFESSOR LANDES, ASSISTANT PROFESSOR SAUNDERS, ASSISTANT PROFESSOR WEAVER

FOR ADVANCED UNDERGRADUATES AND GRADUATES

12. GEOLOGY AND PALEONTOLOGY OF THE TERTIARY FORMATIONS. Two credits. First semester. T. Th. at 9. Assistant Professor WEAVER.

13. OPTICAL CRYSTALLOGRAPHY. Four credits. First semester. M. W. at 8; Lab., M. W. 1 to 4. Assistant Professor WEAVER.
Two recitations and two laboratory periods per week.

14. GEOLOGY OF WASHINGTON. Two credits. First semester. T. Th. at 10. Professor LANDES.
Two lectures or recitations per week.

15. ECONOMIC GEOGRAPHY OF WASHINGTON. Two credits. Second semester. T. Th. at 10. Professor LANDES.
Two lectures or recitations per week.

17. PETROGRAPHY. Four credits. Second semester. M. W. at 11; Lab., M. W. 1 to 4. Assistant Professor WEAVER.
Two recitations and two laboratory periods per week. A study of the distinguishing characteristics of the different groups and species of rocks with practice in their determination by modern petrographical methods.

18. ECONOMIC GEOLOGY. Four credits. Second semester. M. W. F. S. at 10. Professor LANDES.
Four recitations per week.

19. PALEONTOLOGY. Four credits. First semester. M. W. F. at 11; Lab., F. 1 to 4. Assistant Professor WEAVER.
Three recitations and one laboratory period per week. Chiefly for students in geology and mining.

20-21. FIELD WORK. Hours and credits to be arranged. The year. Professor LANDES, Professor SAUNDERS and Assistant Professor WEAVER.

22-23. ADVANCED PETROGRAPHY. Hours and credits to be arranged. The year. Assistant Professor WEAVER.

24-25. ADVANCED PALEONTOLOGY. Hours and credits to be arranged. The year. Assistant Professor WEAVER.

26-27. RESEARCH WORK. Hours and credits to be arranged. The year. Professor LANDES, Assistant Professor SAUNDERS, Assistant Professor WEAVER.

GERMAN

(Office, Room 20, Law Building)

PROFESSOR MEISNEST, ASSISTANT PROFESSOR HOFF, DR. ECKELMAN

FOR UNDERGRADUATES AND GRADUATES

25. HISTORY OF GERMAN LITERATURE. Three credits. First semester. M. W. F. at 10. Dr. ECKELMAN.

A general survey for students specializing in German. Thomas's German Anthology.

26. LYRICS AND BALLADS. Three credits. Second semester. M. W. F. at 10. Dr. ECKELMAN.

Characteristic lyrics and ballads of Goethe, Schiller, Uhland, Geibel, Moerikl. Klenze's Deutsche Gedichte.

27. LESSING. Three credits. First semester. M. W. F. at 11. Professor MEISNEST.

Life, Emilia Galotti, Nathan der Weise, Hamburgische Dramaturgie or Laokoon.

28. FAUST, PARTS I AND II. Three credits. Second semester. M. W. F. at 11. Professor MEISNEST.

Interpretation, genesis, plan and purpose of the drama. Faust legend and Faust theme in literature.

29-30. TEACHERS' COURSE. Two credits. The year. T. Th. at 11. Professor MEISNEST.

First semester: elementary phonetics, practice in stage pronunciation and expressive reading.

Second semester: methods of teaching German, course of study for high schools, text-books and aids in teaching, observation.

*41-42. STORM AND STRESS PERIOD. Two to four credits. The year. Th. 4 to 6. Professor MEISNEST.

43-44. ROMANTIC SCHOOL. Two to four credits. The year. Th. 4 to 6. Professor MEISNEST.

Principal tendencies and characteristics of the early romantic movement in German literature and its relations to the Storm and Stress period. The principal writers studied are Goethe, Jean Paul, A. W. Schlegel, Friedrich Schlegel, Novalis, Wackenroder, Tieck, Brentano and Arnim.

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*Not given in 1914-15.

45-46. NINETEENTH CENTURY. Two to four credits. The year. W. 4 to 6. Dr. ECKELMAN.

Study of the drama and novel. Kleist, Grillparzer, Hebbel, Ludwig, Raabe, Keller, Storm, C. F. Meyer.

51-52. HISTORY OF THE GERMAN LANGUAGE. One credit. The year. W. at 3. Assistant Professor HOFF.

*53-54. MIDDLE HIGH GERMAN. Two credits. The year. Assistant Professor HOFF.

*55-56. OLD HIGH GERMAN. Two credits. The year. Assistant Professor HOFF.

57-58. GOTHIC. Two credits. The year. M. 3 to 5. Assistant Professor HOFF.

GREEK

(Denny Hall)

PROFESSOR HAGGETT, ASSISTANT PROFESSOR DENSMORE

5-6. DRAMATIC POETRY. Two credits. The year. T. Th. at 9. Assistant Professor DENSMORE.

Selected plays from Euripides, Sophocles, and Aristophanes.

7. LYRIC POETRY. Two credits. First semester. Prerequisite, 3-4. T. Th. at 10. Professor HAGGETT.

Selections from the elegaic, iambic, and melic poets.

8. ORATORY. Two credits. Second semester. Prerequisite, 3-4. T. Th. at 10. Professor HAGGETT.

Selections from Lysias and Demosthenes.

9. EPIC POETRY. Two credits. First semester. Prerequisite, 3-4. Professor HAGGETT.

Rapid reading of selections from Homer and Hesiod.

10. HISTORICAL PROSE. Two credits. Second semester. Prerequisite, 3-4. Professor HAGGETT.

Selections from Herodotus and Thucydides.

11-12. ADVANCED READING COURSE. Three credits. The year. M. W. F. at 8. Professor HAGGETT.

Rapid reading of the entire work (or a considerable portion) of some one author, or extensive work in some one department of Greek literature.

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*Not given in 1914-15.

HISTORY

(Denny Hall)

PROFESSOR MEANY, PROFESSOR RICHARDSON, ASSOCIATE PROFESSORS MC MAHON AND BOWMAN, DR. LUTZ

Students must have had at least one year of history to elect any course in this group. Candidates for the master's degree must have taken major work in history in the University of Washington, or its equivalent elsewhere, before any graduate credits may be counted. The final examination for the master's degree will cover medieval and modern European history (the equivalent of history 1-2 in the College of Liberal Arts); the history of the thesis field (American or European, including English history); and the history of the field of the thesis subject.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

11-12. ENGLISH CONSTITUTIONAL HISTORY. Two credits. The year. T. Th. at 8. Professor RICHARDSON.

The development of the legal and governmental institutions of the English people to the present time. Open to juniors and seniors who have taken or are taking 5, 6, and to law students with consent of the instructor.

*13. MEDIEVAL CIVILIZATION. Two credits. First semester. Prerequisite, 1-2. T. Th. at 1. Associate Professor BOWMAN.

15. THE RENAISSANCE. Three credits. The year. Prerequisite, 1-2. M. W. F. at 1. Associate Professor BOWMAN.

A study of the origin and development of the Renaissance and Reformation, and of their spread among the European nations.

16. THE REFORMATION. Three credits. Second semester. Prerequisite, 1-2. M. W. F. at 1. Associate Professor BOWMAN.

A study of the origin and development of the Reformation, and of its spread among the European peoples.

17-18. PRUSSIA AND NORTHERN EUROPE. Two credits. The year. Prerequisite, 2. T. Th. at 9. Professor RICHARDSON.

This course deals with Sweden as a Great Power, its rise, progress and decline; the rise of Russia and Prussia; the Partition of Poland; and the beginnings of the Eastern Question. Special

*Not given in 1914-15.

attention is paid to the economic, political and military development of the Prussian state from its foundation to the acquisition of world-power by Frederick the Great.

*19-20. HISTORY OF FRANCE FROM THE REFORMATION TO THE FRENCH REVOLUTION. Professor RICHARDSON.

21. THE FRENCH REVOLUTION AND NAPOLEONIC ERA. Three credits. First semester. Prerequisite, 2. M. W. F. at 9. Professor RICHARDSON.

Among the principal topics considered are the following: the material conditions out of which, in France, the Revolution emerged, and the nature of the ideals which inspired it; contemporary conditions in the European states system which facilitated the extension of the Revolution over Europe; the epoch of International Wars, with especial reference to the territorial redistribution of Europe, the beginnings of modern liberalism, and the career of Napoleon.

22. EUROPE SINCE 1814. Three credits. Second semester. Prerequisite, 2. M. W. F. at 9. Professor RICHARDSON.

Mainly political, introductory to European politics of the present time. The course deals with the fundamental principles and policies of the Era of Reaction under Metternich and the subsequent triumph of liberalism. The chief emphasis is laid upon the establishment of constitutional government and national unity in Germany, Italy and the other states of Western Europe, and upon the careers of great leaders, notably Bismarck and Cavour.

23-24. EUROPE SINCE 1870, AND CONTEMPORARY EUROPE. Two credits. The year. Prerequisite, 2. T. Th. at 10. Dr. LUTZ.

The first part of the course, based upon the study of contemporary histories, is introductory to the latter part, which is based upon the use of current periodicals, newspapers and other publications. Scientific methods of research are applied to the study of current historical events.

25. HISTORY OF THE UNITED STATES, 1783-1828. Three credits. First semester. Associate Professor MCMAHON.

*26. HISTORY OF THE UNITED STATES, 1828-1860. Three credits. Second semester. Associate Professor MCMAHON.

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*Not given in 1914-15.

27. CIVIL WAR AND RECONSTRUCTION. Three credits. First semester. M. W. F. at 8. Associate Professor MCMAHON.

A general study of the Civil War and the period of reconstruction.

28. THE HISTORY OF NATIONAL DEVELOPMENT. Three credits. Second semester. M. W. F. at 8. Associate Professor MCMAHON.

A continuation of course 27, in which the development of the American nation will be traced from the close of the reconstruction period to the present time.

29. SPAIN IN AMERICA. Three credits. First semester. M. W. F. at 10. Professor MEANY.

A study of the rise and fall of Spanish power in the new world, and an outline of the history of the Spanish-American republics.

30. DEVELOPMENT OF THE PACIFIC. Three credits. Second semester. M. W. F. at 10. Professor MEANY.

History of the countries bordering upon the Pacific Ocean, with special reference to the changes now in progress of development.

31-32. HISTORY OF AMERICAN DIPLOMACY. Two credits. The year. M. W. at 11. Professor MEANY.

A study of the treaties and foreign policy of the United States. Open to those who have taken a narrative course in American history.

33-34. NORTHWESTERN HISTORY. Two credits. The year. T. Th. at 11. Professor MEANY.

From the earliest voyages to the settlement and organization of the territories.

35. THE EVOLUTION OF CHINA—BEFORE THE MANCHU CONQUEST. Two credits. First semester. T. Th. at 9. Professor GOWEN.

36. THE EVOLUTION OF CHINA—MODERN ERA. Two credits. Second semester. T. Th. at 9. Professor GOWEN.

37. THE EVOLUTION OF JAPAN—FEUDAL ERA. One credit. First semester. T. Th. at 8. Professor GOWEN.

38. THE EVOLUTION OF JAPAN—MODERN ERA. One credit. Second semester. T. Th. at 8. Professor GOWEN.

39-40. ECONOMIC AND SOCIAL HISTORY OF THE AMERICAN COLONIES. M. W. F. at 11. Associate Professor MCMAHON.

43-44. METHODS OF TEACHING HISTORY. One credit. The year. Required of advanced students who expect to teach history. T. at 11. Associate Professor MCMAHON.

Textbooks, assigned readings, courses of study and the best method of presentation will be considered.

PRIMARILY FOR GRADUATES

*45-46. HISTORIOGRAPHY. One credit. The year. Associate Professor BOWMAN.

47-48. METHODS OF HISTORICAL RESEARCH AND CRITICISM. One credit. The year. Open to graduates and a few seniors by permission. Time to be arranged. Professor RICHARDSON.

Study and discussion of the principles of historical criticism, accompanied with practical exercises with selected documents from various fields to illustrate problems of criticism. Exercises in this course may occasionally exceed the usual length of the class-room hour.

*49-50. SEMINAR IN ENGLISH HISTORY. Two to four credits. The year. Professor RICHARDSON.

51-52. SEMINAR IN AMERICAN HISTORY. Two credits. The year. T. 4 to 6. Associate Professor MCMAHON.

This course is primarily for graduates or other advanced students who may be admitted by permission of the professor.

53-54. JOINT SEMINAR. Two credits. The year. Open to graduate students and to a limited number of seniors on recommendation of their major professors. W. 4 to 6. Professors MEANY, SMITH and CONDON.

Designed for study and reports upon the problems in the historical, political and legal developments of the state of Washington and the Pacific Northwest.

55-56. SEMINAR IN EUROPEAN HISTORY. Two credits. The year. Qualified seniors may be admitted. Th. 4 to 6. Associate Professor BOWMAN.

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*Not given in 1914-15.

57-58. THE DEVELOPMENT OF INTERNATIONAL ARBITRATION AND CONCILIATION. Two credits. The year. T. Th. at 11. Dr. LUTZ.

A course of lectures and reading which exhibits the historical development of movements for international peace and which discusses the effects of war and the possibility of guaranteeing peace between nations.

*59-60. HISTORY OF ENGLAND SINCE THE ACCESSION OF GEORGE III. Two credits. The year. Prerequisite, 2 or 5-6. Dr. LUTZ.

ITALIAN

(See French and Italian)

LATIN

(Denny Hall)

PROFESSOR THOMSON, ASSOCIATE PROFESSOR SIDEY

5. PLINY: Letters. MARTIAL: Selected Epigrams. Two credits. First semester. T. Th. at 11. Professor THOMSON.

6. TACITUS: Selected books of the annals. JUVENAL: Satires. T. Th. at 11. Professor THOMSON.

9-10. TEACHERS' COURSE. Six credits. The year. M. W. F. at 11. Associate Professor SIDEY.

Selected portions of Cæsar, Bell. Gall. V-VII and Bell. Civile; Suetonius, Julius Cæsar; Cicero, Letters; Vergil, Bucolics and Georgics; Ancient Lives of Virgil. Review of the portions of Cæsar, Cicero and Vergil usually read in High Schools. Methods of teaching Latin and discussion of the problems likely to arise in the classroom. Teaching by members of the class under the supervision of the instructor. Visits to schools where Latin is taught and reports on the teaching observed.

18. LUCRETIUS. Books I and III; Cicero, Tusculan Disputations I and IV. Two credits. First semester. T. Th. at 9. Professor THOMSON.

19. CICERO, de Officiis. SENECA, Moralia. Two credits. Second semester. T. Th. at 9. Professor THOMSON.

20. QUINTILIAN, X, XII. Two credits. First semester. T. Th. at 10. Associate Professor SIDEY.

21. TACITUS. Histories I, II. Two credits. Second semester. T. Th. at 10. Associate Professor SIDEY.

22. LATIN OF THE EMPIRE. Gudeman's Selections. Two credits. First semester. M. W. at 11. Professor THOMSON.

23. TACITUS, Dialogus; QUINTILIAN, 1. Two credits. Second semester. M. W. at 11. Professor THOMSON.

24. ROMAN ANTIQUITIES. Two credits. Second semester. T. Th. at 1. Associate Professor SIDEY.

For Latin majors.

MATHEMATICS

(Science Hall)

PROFESSOR MORITZ, ASSOCIATE PROFESSOR MORRISON, ASSISTANT PROFESSORS GAVETT AND CARPENTER, DR. SMAIL

1. MATHEMATICS

FOR UPPERCLASSMEN AND GRADUATES

7-8. ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS. Three credits. The year. Prerequisite, Math. 5 or Math. 4a. For seniors and graduates. M. W. F. at 11. Dr. NEIKIRK.

Introductory course. Solutions of the equations of the first and second order. Determination of constants of integration from initial conditions. Application to physics, chemistry and astronomy.

9-10. VECTOR ANALYSIS. Four credits. The year. T. Th. at 9.

*11-12. PROJECTIVE GEOMETRY. Two credits. The year. Prerequisite, two years of college mathematics. For juniors, seniors and graduates. Mr. CARPENTER.

*13-14. DESCRIPTIVE GEOMETRY AND CURVE TRACING. Four credits. The year. Prerequisites, Math. 5 or Math. 4a. For juniors, seniors and graduates. Mr. CARPENTER.

*15-16. NON-EUCLIDEAN GEOMETRY. Two credits. The year. Prerequisites, two years of college mathematics. For juniors seniors and graduates. Assistant Professor GAVETT.

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*Not given in 1914-15.

17-18. THEORY OF FUNCTIONS OF A REAL VARIABLE. Two credits. The year. Prerequisite, 5 or 4a. T. Th. at 10. Dr. SMAIL.

Rational and irrational numbers, the general function concept, continuity, integrability, and differentiability of functions, discontinuous functions, infinite series and products, series of functions, uniform convergence, multiple series, definite integrals, curvilinear integrals.

*30. TEACHERS' COURSE. Four credits. Second semester. Prerequisites, Math. 5. For juniors and seniors. Required of those who make mathematics their major study and who are applicants for the teacher's certificate. Mr. CARPENTER.

FOR GRADUATES

19. MODERN GEOMETRY. Three credits. First semester. Prerequisites, Math. 5 or Math. 4a. For seniors and graduates. M. W. F. at 11. Associate Professor MORRISON.

An introductory course in modern analytical geometry and higher plane curves.

20. DIFFERENTIAL GEOMETRY. Three credits. Second semester. Prerequisite, Math. 15. For seniors and graduates. M. W. F. at 11. Associate Professor MORRISON.

Applications of the calculus to the metrical properties of twisted curves and surfaces.

21. THEORY OF EQUATIONS. Three credits. First semester. Prerequisites, Math. 5 or 4a. T. Th. S. at 11. Professor MORITZ.

22. MODERN ALGEBRA. Three credits. Second semester. Prerequisite, Math 21. T. Th. S. at 11. Professor MORITZ.

*23-24. FOUNDATIONS OF MATHEMATICS. Two credits. The year. Prerequisite, Math. 6. For seniors and graduates. Dr. NEIKIRK.

*25-26. THEORY OF NUMBERS. Two credits. The year. Prerequisites, Math. 5 or Math. 4a. For juniors, seniors and graduates. Dr. BELL.

27-28. THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. Two credits. The year. Prerequisites, Math. 5 and Math. 6. For seniors and graduates. T. Th. at 11. Dr. BELL.

An introductory course; principally on the theories of Cauchy and Weierstrass; Riemann surfaces. In the second half of the

*Not given in 1914-15.

course the elements of the Weierstrass theory of elliptic functions will be developed and used to illustrate the general principles. Illustrations from geometry and physics.

31. MATHEMATICS JOURNAL AND RESEARCH CLUB. Meets on the second Tuesday of each month in Science building, room 2, at 8 p. m. The club consists of advanced students and teachers in the department of mathematics. The purpose of the club is to primarily discuss the research work carried on by members of the club, and secondarily to review important recent mathematical literature.

2. ASTRONOMY

(Observatory)

ASSOCIATE PROFESSOR BOOTHROYD

5. ADJUSTMENT OF OBSERVATIONS. Two credits. Second semester. T. Th. at 11. Open to engineers, seniors and graduates. Prerequisites, astronomy 3a-4a. M. F. at 2. Associate Professor BOOTHROYD.

The best methods for the adjustment of observations. For engineering students the applications to surveying will be especially considered.

6. ANALYTICAL MECHANICS. Three credits. First semester. Open to juniors, seniors and graduates. Prerequisites, preceded or accompanied by mathematics 5 or mathematics 4a. Physics 1-2. M. W. F. at 11. Associate Professor BOOTHROYD.

Mathematical treatment of the laws of force and motion.

7. CELESTIAL MECHANICS. Three credits. Second semester. Open to juniors, seniors, graduates. Prerequisite, astronomy. 6. Time to be arranged. Associate Professor BOOTHROYD.

Mechanics applied to the motion of the heavenly bodies.

8-9. ADVANCED ASTRONOMY. Four or six credits. Either semester. Open to seniors, graduates. Prerequisites, 16 credits in astronomy, 16 credits in mathematics. Time to be arranged. Associate Professor BOOTHROYD.

The subject matter of this course will be arranged to meet the needs of the particular students who elect it. Work will be offered along three lines: (a) theoretical astronomy, (b) practical astronomy, (c) astro-physics.

PHILOSOPHY

(Denny Hall and Science Hall)

PROFESSOR SAVERY, ASSOCIATE PROFESSOR SMITH, ASSISTANT PROFESSOR ELKIN, DR. DUCASSE, MR. WILCOX

5-6. HISTORY OF PHILOSOPHY. Four credits. The year. M. W. F. S. at 8. Dr. DUCASSE.

Ancient, Mediaeval and Modern. The views of the classical philosophers on the nature of the universe and man, the values of life, the ideal form of society, the origin and limits of knowledge, the relation of the individual to the world, etc. Portions of the most important works of the greater philosophers will be read. Some of the more recent philosophical movements, such as Pragamatism and Neo-Realism will be very briefly touched upon at the end of the course.

7-8. PRINCIPLES OF PHILOSOPHY. Three credits. The year. Prerequisite, 8 credits in philosophy. M. W. F. at 9. Professor SAVERY.

A course in systematic philosophy. (1) The meaning and tests of truth, with special reference to Pragmatism. (2) The construction of a theory of the universe, including an account of the nature of the human self, its relation to the body, the nature of matter, the problem of the freedom of the will. Study of idealism. (3) The foundation of morality, pessimism and optimism, the evolution and destiny of man.

9-10. PHILOSOPHY OF SCIENCE. Two credits. The year. Prerequisite, 1 or 5, 6. T. Th. at 9. Professor SAVERY.

An account of scientific method; and of the fundamental laws and concepts of the sciences—mathematical, physical and biological. Interpretation of the scientific view of the world and its place in the human economy. Primarily for majors in science.

11-12. HISTORY OF RELIGION. Two credits. The year. T. Th. at 10. Assistant Professor ELKIN.

The nature, origin and early development of religion, and its advanced types in Brahmanism, Buddhism, Confuscianism, Zoroastrianism and Judaism.

*13-14. PHILOSOPHY OF RELIGION. Two credits. The year. Prerequisite, one course in philosophy. Professor SAVERY.

*Not given in 1914-15.

15-16. PHILOSOPHY IN ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Two credits. The year. Prerequisite, one course previous or concurrent. Required for seniors in library training course. T. Th. at 11. Professor SAVERY.

Conceptions of the universe, evolution, the destiny of man, the individual and social ideal in Wordsworth, Shelley, Emerson, Browning, Tennyson, Fitzgerald's Omar Khayyam, James Thompson, Arnold, Swinburne, Meredith and Whitman. An account of the social ideals of Carlyle, Ruskin, Morris, Shaw, Dickinson, Wells and Chesterton.

*17-18. PHILOSOPHY IN THE MODERN DRAMA. Two credits. The year. Prerequisite, one course previous or concurrent. Required for seniors in Library Training Course.

19-20. ESTHETICS. Two credits. The year. Required for seniors in music. T. Th. at 2. Mr. WILCOX.

The origin and motives of art, and the esthetic principles of architecture, sculpture, painting, music, poetry, the drama, and the decorative arts. The nature of beauty, the sublime, the comic, the tragic. Standards of criticism. Social and democratic theories of art.

22. ADVANCED LOGIC. Two credits. Second semester. Prerequisite, 3 or 4. Time to be arranged. Dr. DUCASSE.

Primarily intended for students interested in logic for its own sake, and for those desirous of attaining to accuracy in thinking of a highly abstract nature. Discussion of the logical categories, exposition and illustration of the elements of symbolic logic, consideration of some of the chief types of order, of the logical characteristics of quantitative fields, and of the number concept.

23-24. CONTEMPORARY PHILOSOPHY. Two credits. The year. Prerequisite, 1 or 5, 6. Time to be arranged. Dr. DUCASSE.

Present tendencies in philosophy. The materialism of Haeckel; the naturalism of Spencer, Mach, and Pearson; the idealism of Bradley and Royce; the pragmatism of James; and the new realism of Bergson and the American realists.

25-26. SEMINARY—MODERN IDEALISM. Two or three credits. The year. Open to students upon approval of instructor. One evening a week. Time to be arranged. Dr. DUCASSE.

A study of the philosophical system of Royce; metaphysics,

*Not given in 1914-15.

ethics and philosophy of religion. Relation to other forms of idealism.

33. PHYSIOLOGICAL PSYCHOLOGY. Four credits. First semester. Prerequisite, 31. One lecture, one recitation, two laboratory periods. Laboratory deposit $2.00. Time to be arranged.

The human brain and spinal cord, summation of stimuli, inhibition, rate of transmission of the nerve impulse, Weber's law and space perception.

34. EXPERIMENTAL PSYCHOLOGY. Four credits. Second semester. Prerequisite, 31. One lecture, one recitation and two laboratory periods. Laboratory deposit $1.00. Time to be arranged. Mr. WILCOX.

Training in methods of experimentation. Qualitative and quantitative experiments in sensation, perception, attention, association of ideas.

35-36. PRINCIPLES OF PSYCHOLOGY. Three credits. The year. Prerequisite, 31. Time to be arranged.

A systematic study. Students are urged to precede this by physiological or experimental psychology.

37. ANIMAL BEHAVIOR. Three credits. First semester. Prerequisite, 31. M. W. F. at 10. Mr. WILCOX.

The evolution of mind in animals.

38. EDUCATIONAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 31. M. W. F. at 10. Mr. WILCOX.

The psychological basis of education. Perception, the learning process, practice, memory, habit, judgment, attention, and motor functions, with reference to age, sex, race, and individual differences.

40. ABNORMAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 31. For pre-medical students and others by permission of instructor. M. W. F. at 2. Mr. WILCOX.

Sleep, dreams, hypnotism, mediumships, possessions, hallucinations, motor automatisms, double personality and the subconscious.

45. PSYCHOLOGY OF EXCEPTIONAL CHILDREN. Three credits. First semester. Prerequisite, 31. M. W. F. at 11. Associate Professor SMITH.

The nature and cause of mental defects and peculiarities of children, with special reference to methods of diagnosis and to

physical pathology. Prerequisite to the course in the Education of Exceptional Children and to Philosophy 46.

46. METHODS OF MENTAL AND PHYSICAL TESTS AND METHODS OF MEASUREMENT. Two credits. Second semester. Prerequisite, 45. Laboratory deposit $1.00. Time to be arranged. Associate Professor SMITH.

Laboratory course with conferences. The student will be given practical training in Clinical Psychology and in Experimental Child Psychology.

49-50. RESEARCH IN PSYCHOLOGY. Three credits. First and second semester. Prerequisite, 33 or 34. Time to be arranged. Associate Professor SMITH.

Opportunity for original investigation.

PHYSICS

(Basement, Denny Hall)

PROFESSOR OSBORN, ASSISTANT PROFESSOR BRAKEL, AND DR. ANDERSON

6. VIBRATORY PHENOMENA AND SOUND. Four credits. First semester. Prerequisites, physics 1, 2, and calculus. Time to be arranged. Professor OSBORN.

The course takes up the development and discussion of the mathematical expressions for wave motions, and various types of vibrations.

7. LIGHT. Four credits. First semester. Prerequisites, physics 1, 2; math. 4 hours. Time to be arranged. Professor OSBORN.

This course aims to discuss the more important optical researches and their mathematical theory in elementary form. Their applications to practical problems will be given attention.

8. ELECTRICITY AND MAGNETISM. Four credits. First semester. Prerequisites, physics 1, 2; math. 4 hours. Three class periods and one laboratory period. M. W. F. at 1, M. 2 to 5. Professor BRAKEL.

This course is planned with a view to familiarize the student with the more important experimental and theoretical aspects of the subject.

9. DIRECT AND ALTERNATING CURRENTS. Four credits. Second semester. Prerequisites, physics 8 or 5a and mathematics, 8

hours. Three class periods and one laboratory period. M. W. F. at 1, M. 2 to 5. Professor BRAKEL.

A study of the fundamental principles of direct and alternating currents and the development of methods for the solution of practical problems.

12. HISTORY OF PHYSICS. One credit. The year. Prerequisite, 16 hours of physics. Time to be arranged. Professor OSBORN.

16. DYNAMICS. Two credits. The year. Two class periods. Prerequisites, physics 10, and differential equations. Time to be arranged. Dr. ANDERSON.

A rigorous mathematical treatment of fundamental principles.

17. THEORETICAL ELECTRICITY AND MAGNETISM. Two credits. The year. Prerequisites, 16 hours of physics, 16 hours of math. Time to be arranged. Professor BRAKEL.

A rigorous mathematical treatment of the fundamentals.

18. ADVANCED OPTICS. Two credits. Second semester. Time to be arranged. Professor OSBORN.

Special problems.

19. THERMODYNAMICS AND KINETIC THEORY OF GASES. Two credits. The year. Prerequisites, physics 10, and differential equations. Time to be arranged. Dr. ANDERSON.

Two class periods.

20. HIGH TEMPERATURE THERMOMETRY. One credit. Second semester. Prerequisites, physics 5, 16 hours math. Time to be arranged. Dr. ANDERSON.

One laboratory period.

21. ELECTRO-CHEMISTRY AND THEORIES OF E. M. F. Three credits. Second semester. Time to be arranged. Professor BRAKEL.

22. ELECTRON THEORY. Two credits. The year. Prerequisites, 16 hours physics, 16 hours math. or special arrangement. Time to be arranged. Dr. ANDERSON.

Discussion of recent researches in conduction of electricity through gases, photo-electric effect and radioactivity with bearing on the electron theory. Two class periods.

24. COLLOQUIM.

Laboratory deposits are $2.50 per semester in the following courses: 6, 7, 8, 9, 18, 20, 21.

POLITICAL AND SOCIAL SCIENCE

(Office, Room 6, Denny Hall)

PROFESSOR SMITH, PROFESSOR BEACH, ASSISTANT PROFESSOR CUSTIS, DR. MC MAHON

OPEN TO JUNIORS, SENIORS AND GRADUATES

21-22. POLITICAL THEORIES. Two credits. The year. Prerequisite, six credits in government. M. 4 to 6. Professor SMITH.

A study of the political ideas that have influenced constitutional development and legislation in England and the United States.

23. THE GOVERNMENT OF ENGLAND. Two credits. First semester. Prerequisite, six credits in government. T. Th. at 11. Professor SMITH.

29. SOCIAL AMELIORATION. Three credits. First semester. Prerequisites, 3 and 4. M. W. F. at 9. Professor BEACH.

A study of the attempt of society under the present industrial system, to effect improvement in the life of the less fortunate classes.

30. SOCIAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 6 hours in the department. M. W. F. at 9. Professor BEACH.

The growth and nature of custom and convention, and the formation of public opinion. It is desirable that the student should have had philosophy 15.

33-34. JOINT SEMINAR. Two credits. The year. W. 4 to 6. Professor SMITH, Professor CONDON and Professor MEANY.

Designed for study and reports upon the problems in the historical, political and legal development of the state of Washington and the Pacific Northwest.

35-36. PRINCIPLES OF ECONOMICS. Three credits. The year. Prerequisite, 6 hours in economics. M. F. at 4. Assistant Professor CUSTIS.

A study of the production, distribution, exchange, and consumption of wealth with special reference to present day problems.

37. LABOR PROBLEMS. Three credits. First semester. Prerequisite, 1-2 or 1a. M. W. F. at 10. Dr. MCMAHON.

This course covers the topics of strikes, trade unions, employers' associations, arbitration, immigration, child labor.

38. LABOR LEGISLATION. Three credits. Second semester. Prerequisite, 37. M. W. F. at 10. Dr. MCMAHON.

American and foreign. A study of wages, hours, accidents, industrial hygiene.

OPEN TO GRADUATES ONLY

45-46. SEMINAR IN POLITICAL AND SOCIAL SCIENCE. Two credits. The year. Time to be arranged.

Primarily for graduate students majoring in the department.

SCANDINAVIAN

(Room 26, Law Building)

PROFESSOR VICKNER

FOR UNDERGRADUATES AND GRADUATES

9-10. OLD ICELANDIC. Two credits. The year. Time to be arranged.

Grammar, prose selections, poems from the Edda, lectures on Scandinavian mythology and antiquities, Scandinavian philology.

17-18. OLD SWEDISH. Two credits. The year. Time to be arranged.

This course includes a study of the origin and development of the Swedish language.

FOR GRADUATES

19-20. SCANDINAVIAN LITERATURE IN THE NINETEENTH CENTURY. Two credits. The year. Time to be arranged.

Other graduate work with the consent of the head of the department.

SPANISH

(Denny Hall)

PROFESSOR OBER, ASSISTANT PROFESSOR UMPHREY, ASSISTANT PROFESSOR STRONG

FOR UNDERGRADUATES AND GRADUATES

11. TEACHERS' COURSE. Two credits. First semester. T. Th. at 9. Professor OBER.

13-14. CERVANTES. Two credits. The year. Prerequisite, 5-6. T. Th. at 10. Assistant Professor UMPHREY.

15-16. LOPE DE VEGA AND CALDERON. Three credits. The year. Prerequisite, 5-6. M. W. F. at 11. Professor OBER.

17-18. THE NOVEL. Three credits. The year. Prerequisite, 5-6. M. W. F. at 11. Assistant Professor STRONG.

*19-20. THE DRAMA. Three credits. The year. Prerequisite, 5-6. Assistant Professor UMPHREY.

21. LYRIC POETRY. Two credits. First semester. Prerequisite, 5-6. T. Th. at 1. Assistant Professor UMPHREY.

22. THE SPANISH POPULAR BALLAD. Two credits. Second semester. Prerequisite, 5-6. T. Th. at 1. Assistant Professor UMPHREY.

FOR GRADUATES

23-24. OLD SPANISH. Two credits. The year. T. Th. at 2. Assistant Professor UMPHREY.

Philology. History of Spanish literature to the 16th century. Reading of the Poema del Cid and selections from other early Spanish writings. Reports on special topics.

ZOOLOGY

(Science Hall)

PROFESSOR KINCAID, ASSISTANT PROFESSOR E. VICTOR SMITH, MR. OSTERUD

3-4. VERTEBRATE ANATOMY. Four credits. The year. T. Th. at 11, T. Th. 2 to 5. Assistant Professor SMITH.

5. NORMAL HISTOLOGY. Four credits. First semester. M. W. at 9, T. Th. 1 to 4. Mr. OSTERUD.

6. EMBRYOLOGY. Four credits. Second semester. M. W. at 9, T. Th. 2 to 5. Mr. OSTERUD.

7. COMPARATIVE HISTOLOGY. Four credits. First semester. M. W. at 10. Mr. OSTERUD.

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*Not given in 1914-15.

8. NEUROLOGY. Four credits. First semester. M. W. at 8, T. Th. 9 to 11. Assistant Professor SMITH.

Comparative structure and genesis of sense organs and central nervous systems. To be given in alternate years with 8a.

17-18. GENERAL ENTOMOLOGY. Four credits. The year. Time to be arranged. Professor KINCAID.

Introduction to study of insects, their structure, classification, ecology and economic relations.

19-20. MUSEUM AND FIELD WORK. Four credits. The year. Time to be arranged. Professor KINCAID.

Systematic investigation of the local fauna including studies based upon material in the state museum.

21-22. RESEARCH. The year. Time to be arranged.

Students capable of carrying on independent research will be allowed to do so under the direction of the instructors in charge.

UNIVERSITY EXTENSION DIVISION

OFFICERS OF ADMINISTRATION

*THOMAS FRANKLIN KANE, PH. D., President of the University.

HENRY LANDES, A. M., Acting President.

EDWIN A. START, A. M., Director of the University Extension Division.

HERMAN A. BRAUER, PH. D., in charge Bureau of Municipal and Legislative Reference.

LEO JONES, A. B., in charge Bureau of Debate and Discussion.

OFFICE STAFF

AGNES MOBECK, A. B., Assistant to the Director.

LYDIA M. MCCUTCHEON, A. B., Assistant, Bureau of Debate and Discussion.

ETHEL E. WEISENSEE, Assistant, Bureau of Municipal and Legislative Reference.

VIOLET WILHELMINA DUNGAN, A. B., Assistant to the Director.

The University Extension Division was organized in May, 1912, as an integral part of the University of Washington, to extend the usefulness of the University, both as a teaching institution for those who cannot avail themselves of the ordinary opportunities of resident study, and as a source of research and information for the state, its communities, and its people. Its activities are organized in

I. The Department of Instruction.

II. The Bureaus of
   (*a*) Debate and Discussion.
   (*b*) Municipal and Legislative Reference.
   (*c*) General Information.
   (*d*) Lectures.
   (*e*) Civil Welfare.

III. The Department of Publication.

*Leave of absence, January 1 to August 1. Retires August 1, 1914.

I. DEPARTMENT OF INSTRUCTION

FACULTY

EDWIN A. STARR, A. M., Director, and Chairman of the University Extension Faculty.

The Extension Faculty is composed of the heads of all departments in which extension courses are given and all instructors giving such courses and of the following:

JOHN HENRY HOBART LYON, A. M., (Columbia), Litt. D., (Trinity), Professor of English in the Extension Division.

CHARLES A. GUÉRARD, B. L., (University of Paris), Extension Instructor in French.

ALLETTA M. GILLETTE, A. M., (University of Washington), Instructor in English in the Extension Division.

CLARA JEANETTE TERRY, B. S., (Wisconsin), Instructor in Home Economics in the Extension Division.

HOMER A. BLAIR, Extension Instructor in Photography.

EXTENSION STUDY

Extension study is carried on by means of:

(1) Correspondence courses, through which individual students may be reached in any part of the state.

(2) Lecture courses with class work at different centers out in the state where classes may be organized, the extent of this depending upon the availability of instructors for field work.

(3) Evening and Saturday classes at the University, a means of study which will be of service to those who live within the territory immediately surrounding the University.

At present much of this work must be done by members of the Faculty who are already on regular university schedule, whose first duty is to resident students, and there are necessary limits set upon the engagements that can be made. A beginning has been made in creating a staff of extension teachers and as their number increases the scope of the extension teaching will be enlarged. Correspondence courses will ultimately cover all the subjects of the curriculum that can be taught by correspondence, though only a limited number can be offered at the present time.

Extension study is not to be regarded as a quick and easy means of obtaining a degree. Its last and least important use is

to obtain formal university credit. Primarily the service of the Extension Division in its courses of instruction is for the benefit of those who are unable to come to the University but who need and desire some of the advantages which university teaching offers. There are offered in the Department of Instruction:

1. Regular university studies which may, under certain conditions, be offered for credit toward a degree.

2. Advanced courses to assist graduates and others in professional or business life to keep in touch with the progress of knowledge.

3. Preparatory studies for those who may not be able to attend the secondary schools.

4. Vocational courses to supply knowledge or training which will directly affect the student's efficiency in his occupation.

CORRESPONDENCE STUDY

The University Extension Division publishes circulars describing in detail the courses offered by the Department of Instruction and the method of entering upon and carrying them on. Any student contemplating taking extension work should send to the Division for the circulars in which he is interested.

The instruction in these courses is prepared and given by members of the University Faculty, and each course represents a definite amount of work corresponding to an equivalence of work done in residence at the University, or in the standardized schools of our educational system.

To make the work thorough and permanent, the various courses will be arranged, whenever practicable, in co-ordination with the regular residence work, the short courses, and the Summer Session.

Correspondence courses may be begun at any time during the year.

Requirements for Admission—No preliminary examination is required for admission to correspondence courses, but the student will be required to give at the time of registration evidence that he is capable of pursuing the desired studies with advantage to himself. Those taking correspondence courses with a view to University credit must comply with the requirements that are imposed upon the resident students for a degree.

Expenses.—The giving of extension courses is special and personal service and fees are charged for all courses on account of the extra expense involved in instruction carried on away from the University. The basis of this fee is $16 for a course of thirty-two assignments, or a proportionate charge for shorter courses. This charge will cover the expense of the instruction and postage one way. Text books, apparatus, and supplies of any kind that will be required for any course in addition to the instructive text furnished by the Division must be purchased by the student. When these supplies cannot be obtained of local dealers they may be ordered through the University Extension Division, which will obtain them through the co-operative bookstore maintained at the University by the Associated Students of the University of Washington.

University Credit.—Correspondence students who have had the required preparation for admission to the University and whose program has been approved, will, upon satisfactory completion of a course of correspondence study, be awarded a certificate of credit in the University, but the maximum University credit for work done by correspondence may not exceed one-half of the units required of resident students for graduation. Records of credit for correspondence study are filed until the student has satisfactorily completed one year in residence, when, if the requirements have been satisfied, the credits may be applied toward a degree.

The requirement of residence may often be satisfied, in whole or in part, by attendance at the Summer Session of the University. Four summer sessions are accepted for a year of residence.

CLASSES

A few courses, necessarily limited as to number and locality, will be given in accessible centres and on evenings and late afternoons at the University as lecture courses, accompanied with the usual class exercises. Such courses have already been given at Tacoma, Olympia, Aberdeen, as well as in Seattle, and may be arranged for other near-by cities. The Division is especially prepared at present to offer such courses in English, French, and Home Economics.

Short courses of lectures may be arranged to run parallel with correspondence courses. The lectures may be open to others

besides those carrying on the correspondence course, and two objects thus served.

Fees for courses given to classes are adjusted according to the number of the class and the distance from Seattle.

COURSES OF INSTRUCTION FOR 1914-15

The list of extension courses at present offered is subject to change at any time, and additions are frequently made; therefore, if courses are desired in departments not mentioned in this list, inquiry should be made. Full descriptions of the courses will be found in the circulars of information issued by the Division from time to time.

ASTRONOMY. Two credit courses of 16 assignments each in General Astronomy are given in this department.

BOTANY. Eight courses in botany and horticulture are offered in this department. All of these are credit courses.

CHEMISTRY. Two evening courses in general chemistry will be given at the University by the Department of Chemistry in 1914-15.

EDUCATION. Three lecture courses and four correspondence courses, all credit courses, are offered in the Department of Education.

ENGINEERING. Three courses in Civil Engineering, and three is Mechanical Engineering are offered in the College of Engineering. Some of these may be credit courses.

ENGLISH. Five courses of high school grade and thirteen of college grade are offered in this department. Some of these are correspondence and some are lecture courses. All may be taken for university credit.

FORESTRY. Five courses in Forestry are offered. They may be taken for credit.

FRENCH. Ten courses in French are offered. All of these may be taken for credit.

GEOLOGY. Five correspondence courses in Geology, all of which may be taken for credit, are offered. A traveling course may be given each summer.

GERMAN. Eight courses in German are offered, all of which may be taken for credit.

GREEK. The Greek Department offers courses covering the three years' work of the high school, to meet the needs of those who may not be otherwise able to prepare for college. Courses of college grade and graduate courses leading to the degree of A. M. will also be offered when called for.

HISTORY. A course in History and one in Civil Government of high school grade and one course in American History are offered by this department. The latter course may be taken for university credit.

HOME ECONOMICS. Four correspondence courses and class work in several forms are offered in this department. Some of these may be taken for university credit.

JOURNALISM. Four correspondence courses are offered in the Department of Journalism.

LATIN. The Latin Department offers courses covering the four years' work of the high school, to meet the needs of those who may not be able otherwise to prepare for college. Courses of college grade will be opened if there is a call for them, and this also holds true of graduate courses leading to the degree of A. M.

LIBRARY ECONOMY. No formal correspondence course in Library Economy can be offered at present, but all assistance that may be possible will be given in the organization of libraries and in solving the problems of librarians.

MATHEMATICS. Four courses in Mathematics are offered, all of them open for university credit.

MECHANICAL DRAWING. Four courses in Mechanical Drawing are offered. These may be taken for credit.

METALLURGY AND MINING. Special work is offered in the School of Mines for those who are not able to attend the regular courses of the school. Systematic courses along these lines cannot at present be formulated, as the work will have to be directed to meeting individual needs as far as possible. Inquiry should, therefore, be made by anyone interested, accompanied with a full statement of his personal problems and requirements.

PHILOSOPHY. Two courses in Philosophy were open to extension students in classes held at the University.

PHOTOGRAPHY. A course in practical photography is offered by correspondence and in class at the University. This may be taken for credit.

PRINTING. A practical correspondence course in cost accounting and estimating for printers is offered. This is not a credit course.

PHYSICS. Courses in Applied Optics will be given in the department of physics when called for.

SPANISH. Five courses in Spanish, all of which may be taken for university credit, are offered.

II. COMMUNITY SERVICE

BUREAU OF DEBATE AND DISCUSSION

LEO JONES IN CHARGE

The purpose of this bureau is to foster and assist the practice of debating and open discussion of public questions. There is no more wholesome way of developing habits of right thinking and open mindedness than through full and fair discussion, in which both sides of important questions may be adequately presented. It is, indeed, a most valuable means of general education. Such debating has been organized and carried on in the high schools of Washington under the auspices of the state department of education and has been stimulated by the annual prizes for competition of accredited high schools of the state given by Senator Wesley L. Jones.

This bureau hopes to further promote and extend this practice, not only in the high schools, but in civic, women's, and farmers' clubs, and in any other organizations interested in such work, by advice, guidance and assistance in obtaining references and materials.

The work of this bureau is closely allied to that of municipal and legislative reference, but it covers the field of information upon public questions in a somewhat different manner and for a different but related purpose.

PUBLICATIONS

The bureau has published practical manuals of the principles of debate, organization and procedure which have been widely dis-

tributed to schools throughout the state. There are also published from time to time bulletins outlining in the form of briefs the arguments for and against propositions of public interest. The range of subjects is wide and growing wider; the need of thorough and intelligent discussion of them in a country like ours, where the people are taking the control of affairs more and more into their own hands, is obvious. These bulletins contain adequate working reference lists of published material which is likely to be available or can be furnished by the Bureau. Five bulletins have already been published by the Bureau. In addition to the printed bulletins, the bureau has furnished upon request typewritten outlines similar to the bulletins relating to several subjects which have been debated in certain localities.

PACKAGE LIBRARIES

Much of the most serviceable material upon these public questions is contained in magazines, newspapers, and government documents, which are not always and everywhere accessible. With the co-operation and assistance of the University Library, the bureau will collect and classify much of this material, preparing it in convenient package libraries, which may be borrowed without charge for a period not to exceed fourteen days, which time may in some cases be extended upon request. Particular paragraphs or chapters of books will in some cases be copied and the copies included in the package libraries.

HOW THIS SERVICE IS OBTAINED

The services of this bureau are rendered without charge to all citizens of the state. For any information in regard to this work not here given and for publications of the bureau, application should be made to the Director, University Extension Division, University of Washington, Seattle.

MUNICIPAL AND LEGISLATIVE REFERENCE BUREAU

HERMAN A. BRAUER IN CHARGE

This bureau was organized in the University Extension Division in November, 1912, for the purpose of collecting, classifying, indexing, and making available for the work of the University, for state legislators, state and municipal officers, and for others as far as practicable, accurate data on questions of government, administration and comparative legislation.

The establishment of this bureau by the University is in line with the best precedents of some of our foremost universities, states and municipalities. The public official is at a disadvantage owing to lack of time for adequate investigation of the questions with which he has to deal. It is the duty of the people whom he serves to provide him with expert aid for the study of legislative and administrative problems. This cannot be done better than through the University with its already large corps of experts and its established and steadily growing libraries.

OFFICE. The headquarters are at the University where the chief of the bureau may be consulted. The two libraries of the University—general and law—are here available and the bureau is likewise accumulating a large collection of material of immediate value—laws, ordinances, charters, reports, etc.—all of which is classified and indexed for quick reference.

THE LEGISLATURE. By resolve of the legislature of 1913 the chief of the bureau was invited to Olympia and given an office in the Attorney-General's department during the session of the legislature. He acted as advisor and investigator for committees and members of the legislature, utilizing for reference purposes the state general and law libraries.

MUNICIPAL GOVERNMENT. The bureau aims to be in close touch with the municipalities of the state and to be prepared to aid their officers in dealing with the problems of municipal government. These problems are various and are often closely involved with state legislation. There are questions of health and sanitation, of traffic and transportation, of street paving, street cleaning, water supply, garbage and sewage disposal, milk and food inspection, public works, public utilities, and public service rates; questions of municipal employment, city planning, parks and playgrounds, civic centers, art commissions, schools, charities and corrections, accounting methods, commission government and the hundred and one other subjects of municipal interest which now exist or from time to time may arise.

It will be seen that the Bureau aims to be a clearing house for municipal and legislative experiments and experience all over the world, so that our public men may be placed in a position to profit both by the wisdom and by the mistakes of states and cities in this and other countries.

The work of this bureau is a natural development of the public service function of the state university. As such public service, it is rendered without fee or charge at any time, except travelling expenses when it is necessary for a representative of the bureau to visit any locality.

It is non-partisan, non-political, and absolutely confidential. Its function is not to convert or convince, nor even to recommend or to offer advice, but to give information in a purely non-partisan spirit, so that facts may speak for themselves. Its services are equally open to those on all sides of any question, its sole object being to provide them with the necessary data for intelligent action.

A circular of information setting forth more in detail the plans and work of the bureau may be had upon application to the Extension Division, Municipal and Legislative Reference Bureau.

BUREAU OF GENERAL INFORMATION

The University, through several of its departments, is constantly rendering valuable expert public service. Some of this work has its own established organization. It is intended to make this bureau ultimately a general reference clearing house of general knowledge similar to that provided by the preceding bureau in the special field of government.

In its departments of instruction and of research, in its library, its museum, and its technical schools, all manned by experts, the University has a reservoir of knowledge which it is intended to make of service to the state wherever other agencies are not more available.

The University will in no way, through this bureau, enter the field of professional consulting experts. Indeed, its function will probably often be to recommend the employment of such experts. Beyond this, as the servant of the state, it may properly render gratuitous public service and furnish advice to individuals whose means and interests do not call for paid experts.

Application for its services should be accompanied with a full and detailed statement of the conditions and circumstances leading to the application or inquiry. It is not intended to open a question box for trivial inquiries, but to assist in the solution of the real problems of life with which citizens of the state may have to deal in their personal or private capacity. Problems affecting communities will be considered in preference to those

relating to individuals, when it is not possible to deal with all inquiries.

Application for this service should be made to the Director of the University Extension Division, University of Washington, Seattle.

BUREAU OF LECTURES

The University Extension Division offers a list of lectures, single or in courses, some of them popular in character, others designed primarily for study classes. The lectures listed by this bureau are, however, distinct from the lecture classes mentioned under the Department of Instruction. As most of the lecturers are members of the University Faculty, the securing of dates for lectures will have to be limited by the prior demands of their university engagements. When arrangements are made sufficiently far in advance, it may be possible to group appointments to the advantage of the lecturer and the local organizations.

The ordinary fee for Extension Lectures is ten dollars ($10.00) and expenses. This is intended to provide, in addition to his traveling expenses, only a moderate personal fee for the lecturer. The service of the Extension Division is rendered without charge. For illustrated lectures there will sometimes be additional expense, but this is slight, as the Bureau of Lectures provides its own apparatus, reducing the cost of illustration to a minimum.

The policy of this bureau is to provide the best lectures possible for the greatest possible number of auditors at the lowest possible cost. Arrangements can best be through some local organization which can secure the audience and the necessary local work.

The bureau will also provide commencement and teachers' institute speakers when desired.

Those interested in obtaining lectures should apply to the bureau for its list of lectures and any information in regard to arrangements will be cheerfully furnished and all possible assistance given.

BUREAU OF CIVIC WELFARE

It is proposed, as opportunity and desire for such service may arise to promote the organization and helpful activity of social centres, to encourage the wise use of school and other public buildings, the institution of lecture courses and other educational work, and to assist in general in the advancement of communities,

large and small, and the quickening of their intellectual life. The Director will be pleased to correspond or confer with persons interested in such work with a view to determining how and to what extent the University may serve in this direction the welfare of the state.

A preliminary bulletin on "The Social and Civic Centre" (University Extension Series No. 2), a summary outline of the subject with a bibliography, has been published and may be had upon application.

LOAN COLLECTIONS

It is proposed to prepare collections which may be obtained for specified periods for exhibition in libraries and schools, or to use for educational purposes. These will comprise collections of

(*a*) Photographs, of educational or artistic value;

(*b*) Lantern slides;

(*c*) Scientific collections, prepared by the University Museum, or by the departments of the University, those which may be expected to be ready in the near future being geological and educational. The Museum is already the repository of a large amount of valuable scientific material, some of which it is hoped to make more accessible to the people of the state.

III. PUBLICATION

This is an important department of Extension work. The Division publishes the UNIVERSITY EXTENSION JOURNAL (quarterly), and numerous bulletins and circulars of information.

UNIVERSITY EXTENSION JOURNAL

This periodical publication, the first number of which was issued in January, 1914, is a quarterly journal of extension work and university interests. It is not only a medium of communication with those interested in extension but also for publication of the results of university studies and other material of educational value, which it is desirable to make accessible to the people of the state. To accomplish this the JOURNAL will be sent regularly to all libraries, high schools, and organizations of the state maintaining libraries and reading rooms, the intention being to place it wherever it will be preserved for public use and

permanent reference. Anyone desiring to receive a personal copy may obtain it at the price of ten cents a copy. Subscriptions should be sent to the DEPARTMENT OF PUBLICATION, EXTENSION DIVISION, University of Washington.

BULLETINS

Preliminary Announcement. Univ. Ext. Series No. 1. An outline of the work and purposes of the Division. Pp. 46. (Out of print.)

The Social and Civic Center. Univ. Ext. Series No. 2. Bureau of Civic Development No. 1. Pp. 12.

State Roads and Permanent Highways. An outline for debate. Univ. Ext. Series No. 3. Bureau of Debate and Discussion No. 1 Pp. 16.

The Recall of Judges. An outline for debate. Univ. Ext. Series No. 4. Bureau of Debate and Discussion No. 2. Pp. 16.

Department of Instruction. Revised statement. Univ. Ext. Series No. 5. Pp. 36.

The Single Tax. An outline for debate. Univ. Ext. Series No. 6. Bureau of Debate and Discussion No. 3. Pp. 16.

The Making of a Newspaper. Univ. Ext. Series No. 7. Pp. 120. Price 25 cents.

A Manual for Debaters, by Leo Jones. Univ. Ext. Series No. 8. Bureau of Debate and Discussion No. 4. Pp. 81. Price 15 cents.

Immigration. An outline for debate. Univ. Ext. Series No. 9. Bureau of Debate and Discussion No. 5. Pp. 20.

The Better Newspaper. Univ. Ext. Series No. 10. Pp. 181. Price 30 cents.

CIRCULARS OF INFORMATION

2. General Circular of Information relating to the work of the Extension Division.
3. Bureau of Municipal and Legislative Research.
5. Extension Work in Home Economics.
6. Bureau of Lectures.
7. Extension Work in Forestry.
8. Extension Work in English.
9. Extension Work in Journalism and Printing.
10. Bureau of Debate and Discussion.

Any of these publications, not out of print, may be obtained by anyone in the State of Washington, without charge, except where a price is indicated, on request to the DEPARTMENT OF PUBLICATION, EXTENSION DIVISION, University of Washington, Seattle, Washington. A small charge is made for copies furnished outside the state.

SUMMER SESSION

The eleventh annual summer session will be held from June 22nd to July 31st, 1914. The date of opening has been placed late enough for teachers coming from long distances or from schools which close late to reach the University in time for the opening.

ADMISSION

Formal entrance examinations are not required. Applicants, however, must give evidence of sufficient maturity and preparation to profit by the work offered.

CREDITS

A maximum of six semester hours of credit may be obtained during the session. Students registering after July 1st will not be permitted except under unusual circumstances to secure the maximum number of hours. Deviations can be secured only by special permission of the faculty.

TEXT BOOKS

Text books may be purchased at reduced rates at the University Book Store. The book store is located on the campus near Denny Hall.

FOR WHOM INTENDED

The summer session is designed to meet the needs of the following classes of persons:

1. College graduates who wish to specialize or to work for advanced degrees.
2. Superintendents and principals who wish to acquaint themselves with recent progress in education or to study special problems.
3. High school teachers who wish to advance in their special lines of work.
4. Elementary and grammar school teachers who wish to work towards a collegiate degree.
5. Undergraduates who for some good reason find it necessary to shorten the period of their college course.

6. Candidates for certificates who need special courses in education and psychology or other subjects.

7. Persons who are preparing to become specialists in college and normal school positions.

8. Persons who desire practical field-work in botany, geology, and zoology.

9. Persons who wish special instruction in music, drawing, manual training or physical training.

FACILITIES

The Summer Session is especially designed to be of assistance to teachers who cannot be in attendance during the regular sessions. The University places at the service of teachers practically all of the facilities of the College of Liberal Arts and the College of Science, the School of Education, and the Graduate School. In addition, there is work offered in manual training, music, drawing, and physical training. The laboratories, libraries, and museum are open and the various departments offer both undergraduate and graduate work equal in quality to that offered during the rest of the year. In a very large number of cases heads of departments are in charge of the work. In addition to regular members of the faculty, several prominent lecturers from outside the University will give courses.

REGISTRATION

Saturday, June 20th, and Monday, June 22nd, will be regular registration days. As many as possible should plan to register on Saturday. Class work will begin on Tuesday, June 23rd, at 8 o'clock.

FEES

The regular registration fee of ten dollars ($10) is required of all students, and admits to all the privileges of the Summer Session, except certain laboratory courses and to special music courses requiring individual instruction. See the statements of these courses for the special fees. No reduction of fees will be made because of late registration or early withdrawal. Open lectures are free to all students regularly registered in the Summer Session.

MASTER'S DEGREE THROUGH SUMMER SESSIONS

At each succeeding Summer Session a larger number of graduate students are in attendance. In 1913 nearly one third of the whole number of attendants were graduate students. Many were planning definitely to apply their work toward higher degrees. The University will accept four Summer Sessions of work as a fulfillment of the year of required residence, provided the student does work between the sessions under regulations prescribed by the graduate faculty and the departments concerned. With the new opportunities for extension work many will doubtless be enabled to secure master's degrees in the above manner.

CORRESPONDENCE COURSES

The University has established correspondence courses in many departments. These will be of special advantage to students who have been in attendance at Summer Sessions and who wish to go forward to degrees. The correspondence work can be very advantageously planned as a continuation of the regular Summer Session. For detailed information concerning correspondence courses write Director Edwin A. Start.

SCHOOL OF EDUCATION

The Summer Session and the School of Education will stand in very close relations to each other. Doubtless a large number who plan to secure a degree or a Normal Diploma through the School of Education will accomplish much of the work in summer sessions. The work of the Summer Session being especially arranged for teachers will make it possible to accomplish this.

For bulletin of the Summer Session address Recorder E. N. Stone. For other information address Frederick E. Bolton, Director of the Summer Session.

PUGET SOUND MARINE STATION

FRIDAY HARBOR, WASHINGTON

June 22—July 31, 1914

DIRECTOR

T. C. FRYE, University of Washington.

COUNCIL

W. J. BAUMGARTNER, University of Kansas.

HOWARD S. BRODIE, Whitman College.

WILLIAM MOODIE, Bellingham State Normal.

TREVOR KINCAID, University of Washington.

ALBERT R. SWEETSER, University of Oregon.

This institution is the outgrowth of work in marine exploration carried on for many years by the University of Washington and other institutions. In 1904 a marine station was definitely established in rented quarters at Friday Harbor in the San Juan Archipelago, and sessions have been regularly held since that date. A number of universities and colleges are cooperating with the University of Washington in its organization.

The chief purposes of the Marine Station are these: (a) To enable biologists to pursue their researches on marine life in one of the richest fields for biology on the coast of the United States. (b) To enable teachers and students to study animals and plants in their natural habitats. (c) To serve the state and the Northwest through the study of its commercial forms of marine animals and plants. (d) To serve as a meeting place for biologists, to afford mutual inspiration and exchange of ideas, thus bettering the teaching of biology.

The location of the Station in the midst of the picturesque islands of the San Juan Archipelago, which lies in the northern section of Puget Sound, surrounded by waters unrivaled for their wealth of ocean life, makes the site an ideal one for the study of marine organisms; while the land flora and fauna of the islands are also of great interest, and present favorable opportunities for the study of many striking species of birds, plants and insects.

In the spring of 1910 a commodious building was constructed upon a site donated by Mr. Andrew Newhall of Friday Harbor. This structure contains upon its main floor a general laboratory for class work, the office of the director, a store room for two large salt water aquaria. The second floor is occupied by a lecture room and by nine rooms for the convenience of persons engaged in research work. The third story is utilized as a store room and drying loft. The laboratory is abundantly supplied with running fresh and salt water and is lighted by electricity.

The equipment of the Station includes microscopes and general laboratory glassware, also a small but well selected library of books and pamphlets bearing upon the biology of the Pacific Northwest. A steamer is employed to transport parties to points of vantage among the islands, as well as to manipulate the dredge used in exploring the deep waters of the channels and bays in search of bottom forms. Plankton nets are also available, as well as material for quantitative work along this line.

A maximum of six credits may be earned at the Station during a session, and these will be accepted at par by any of the affiliated institutions.

The cost of living is minimized as far as possible for those taking courses at the Station. Tent houses are provided as sleeping quarters at $6 for the six weeks, whether occupied by one or more persons. The tents are 10-12 feet. Table board is furnished at $4 per week. This is gauged in such a manner that over a period of years the Station neither gains nor loses.

The expenses attached to a stay of six weeks at the Station, including the contingent fee of ten dollars, board, lodging and incidentals, need not exceed fifty dollars.

For more detailed information apply to the director, Dr. T. C. Frye, University of Washington, Seattle, Wash.

DEGREES

CONFERRED 1913

DEGREES CONFERRED JUNE 18, 1913.

(For degrees conferred at the end of the Summer Session, see page 416.)

BACHELOR DEGREES

COLLEGE OF ARTS AND SCIENCES

BACHELOR OF ARTS

Ake, Mary Frances
Albitz, Alice Blanche
Anderson, Ada Charlotta
Auzias de Turenne, Aimar
Bailey, Frank Holmes
Balkema, Richard Roy
Ballard, Bethel Pearl
Banks, Bertha Maude
Beeler, Hazel Margaret
Bickford, Ethel Mary
Blough, Alice
Bonsall, Vera Valentine
Botten, Margaret Christine
Bouillon, Victor Joseph
Budden, Agnes May
Buzzelle, Mary Charlotte
Campbell, Arthur Clinton
Carey, Harold Davies
Casey, Ralph Droz
Chabot, Edward Francis
Clifford, Earl Vincent
Cline, Esther
Corlett, Ruth Ernestine
Coryell, George, Jr.
Cox, Lolo Lyda
Culbertson, Maria Josephine
Currey, Mauryce Louise
Dallam, Kate Bessie
de La Barthe, Suzanna Marie
de Pledge, Ruth Grey
de Tourville, Audrey
Diamond, Rose Elizabeth
Dill, Mattie Beryl
Drake, Ethel Maude
Eldred, Andrew Jackson
Elliott, Jean Sutherland
Ellis, Russell De Puy
Fleming, Florence Elizabeth
Getz, Carl Henry
Gibson, Grant McDonald
Goodnow, Marion
Gray, Charles Harold
Griffith, Ruth Helen
Groves, Mary Luella
Guilliksen, Edna Louise
Harkins, Marjorie
Hensel, Emilie Theresa
Higgins, Nellie Linda
Hill, Grace Alma
Hipkoe, George August
Horsley, William Henry
Hoxsie, Olive Grace
Huntington, Imo Josephine
Irvine, Ethel Mary
Jaadan, Nels
Jerdee, Inger Carolina
(as of the class of 1912)
Johnson, Agnes Victoria
Johnson, Sydney Evans
Karrer, Clara Bernice

Kenward, Hazel De Etta
Kiddle, Netta Marie
Kilkoren, Mrs. O. Beatrice
Kinne, Verle Esther
Knapp, Ellen Maude
Learned, Aleen Hazel
Lindborg, Arthur Emanuel
(as of the class of 1912)
Lund, Mabel Amanda
McClure, Mary Elizabeth
McKinley, Charles
McLean, Bernice
McQuigg, Harry Martin
Mahler, Eva Elliott
Major, Archie Moyer
Marsh, Olivemay
Mason, Elizabeth
Meissner, Laurentine Bertha
Miles, Florence
Millay, Francis Ernest
Misrow, Jogesh Chandler
Mitchell, Edith Beatrice
Mohn, Esther
Moore, Elsie Virginia
Nakao, Yoshito
Ohlson, Ben Bishop
Parish, William Francis
Peters, Harold Edwin
Peterson, Elinor Beatrice
Pinkerton, Helen
Proulx, Camillia Eglantine
Randell, Laura
Reekie, Martha Elizabeth
Reeves, Zelma
Riordan, Jeremiah Daniel
Robertson, Katherine Constance
Sallberg, Millicent
Scarff, Lestina Meda
Shelton, Annah Louise
Sleicher, Rebecca Ruth
Smith, Lillian Louise
Sorenson, Beatrice
Soule, John Arthur
Stacy, Eloise
Statler, Gladys Gertrude
Staup, Minnie Grant
Strase, Anna Elizabeth
Sully, Bernice Agnes
Tanner, Beth Edrie
Thompson, Lucille Willcocks
Thompson, Nellie Constance
Thorpe, Blanche Marie
Tibbits, Edna Marthalna
Tolhurst, Bessie
Trenholme, Lottie Anna
Wallace, Adeline Mary
Wand, Thomas Harris
Welch, Edith Lindley
Wente, Olive Mildred
Wharton, Verna Marie
Wiburg, Martha R.
Willson, Lovina Eliza
Windust, Marie
Wittman, Ida Rachel
(as of the class of 1912)
Wright, Frank Thomas
Wright, June Mildred
Yamane, Masuo
Young, Gertrude Mary

BACHELOR OF SCIENCE

Berge, James Hallard
Elliott, Annabelle
(Home Economics)
Houlahan, Annie Eileen
(Home Economics)
Jacobus, Margaret Edith
(Home Economics)
Radford, Marion Alma
(Home Economics)
Sturgis, Cyrus Cressy
Taylor, Elizabeth Marguerite
(Home Economics)
West, Irene
(Home Economics)

NORMAL DIPLOMAS

UNIVERSITY LIFE DIPLOMA

Barash, Iona
Bond, Rowena
Brill, Geneva Virginia
Bulkeley, Josephine Mary
Cogswell, Vera Anna
Cox, Julia Virginia
Etsell, Ada Sage
Fenton, Edith Ione
Ficks, Edna
Fünfsinn, Rosa
Hibben, Harriet
Hunter, Addie May
Jones, Ethel
Kindig, Grace
Paulson, Freda Ruth
Saeman, Marie Caroline
Stanford, Edna Belle
Statler, Pluma

UNIVERSITY NORMAL DIPLOMA

Albitz, Alice Blanche
Anderson, Ada Charlotta
Balkema, Richard Roy
Banks, Bertha Maude
Beeler, Hazel Margaret
Bonsall, Vera Valentine
Budden, Agnes May
Buzzelle, Mary Charlotte
Cox, Lola Lyda
Currey, Mauryce Louise
de Pledge, Ruth Grey
Diamond, Rose Elizabeth
Dill, Mattie Beryl
Drake, Ethel Maude
Elliott, Annabelle
Fleming, Florence Elizabeth
Goodnow, Marion
Griffith, Ruth Helen
Gulliksen, Edna Louise
Hensel, Emilie Theresea
Houlahan, Anne Eileen
Hoxsie, Olive Grace
Huntington, Imo Josephine
Irvine, Ethel Mary
Learned, Hazel De Etta
Lindberg, Arthur Emanuel
Lund, Mabel Amanda
Marsh, Olivemay
McClure, Mary Elizabeth
Miles, Florence
Mills, Minnie B.
Mitchell, Edith Beatrice
Mohn, Esther
Moore, Elsie Virginia
Peters, Harold Edwin
Parish, William Francis
Proulx, Camilla Eglantine
Radford, Marion
Robertson, Katherine Constance
Sallberg, Millicent
Scarff, Lestina Meda
Schmidt, Marie
Shelton, Annah Louise
Stacy, Eloise
Statler, Gladys Gertrude
Strase, Anna Elizabeth
Stuen, Ole Johnson
Sully, Bernice
Tanner, Beth Edrie
Thorpe, Blanche Marie
Tibbits, Edna Marthalna
Wallace, Adeline Mary
Welch, Edith Lindley
Wharton, Verna Marie
Willson, Lovina Eliza
Young, Gertrude Mary

COLLEGE OF ENGINEERING

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Eshelman, Wallace Clair
Lewis, Isaac Ives

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Chapman, Asa B.
Chouinard, William James
Collier, Ira Leonard
Hedlund, David Arthur
Range, Walker
Roberts, Caesar Rodney
Sylliaasen, Melvin Olive
Upton, William Burr

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Jones, Martin Luther
Perry, Edgar Roland
Peters, Francis William
Post, Frank Burdette
Shave, Samuel Richard
Tripple, George

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Eernisse, James Guy
Flodin, John
Hutton, William Leithoff
Koren, Walter Arnold
Whiting, Dewitt Lyn

BACHELOR OF SCIENCE

Goldsmith, Edward Denham
Williams, Lawrence Johnson

COLLEGE OF MINES

BACHELOR OF SCIENCE IN GEOLOGY AND MINING

De Chesne, Victor Charles
Searing, Oliver Palmer
Sherman, Albert Richard

BACHELOR OF SCIENCE IN MINING ENGINEERING

McDonald, James Michael

COLLEGE OF FORESTRY

BACHELOR OF SCIENCE IN FORESTRY

Anderson, Clarence
Caywood, Noal F.
Graham, Paul Clinton
Hutton, George Wilson
Langdell, Louis Charles
Martin, George Hamilton Jr.
Morgan, Joseph George Gregory
Murnen, Edgar John
Schoeller, Jacob Diehl
Wright, Newell Livingston

COLLEGE OF PHARMACY

BACHELOR OF SCIENCE

Gilbertson, Louis Steven
Veldee, Milton Victor
Siegel, Harry Jacob

PHARMACEUTICAL CHEMIST

Carlson, Elena
Christoe, David Henry
Culver, Sheldon E.
Divine, Earl Leroy
Gannon, Bertha
Goodrich, Forest Jackson
Henderson, Henry Edward
Lieser, Ralph Lester
Ludwig, William Henry
Mansfield, William Walter
Miller, Elmer Carl
Roach, Edna Winnifred
Siegel, Harry Jacob
Skarston, Sigmund
Umbarger, Ellsworth Carl
Vitous, Lumir George
Vitous, Walter Jaroslav
Yount, Glenn

CERTIFICATES IN PHARMACY

Brophy, James Bernard
Jewell, Lee Andrew
Stevenson, Blanche
Swart, Dennis Siegel
Walker, Robert Monroe
Wegert, Albro Walter

SCHOOL OF LAW

BACHELOR OF LAWS

Barto, Joseph Abel
Burkheimer, Clark Martin
Campbell, Arthur Clinton
Cunningham, Glenn Eugene
Dowd, Van Michael
Dunbar, John Howard
Everly, Myra Lois
Frater, John Archibald
Gates, James Roberts
Hamilton, Fred Barcley Ellis
Harris, William Herbert
Johnson, James Edward
Kerr, William Zinn
McCallum, James David
Montgomery, Victor Adna
Murray, Ernest Kenneth
Newton, Clifford Watson
Ohnick, Benjamin Shannon
Price, Arthur Ernest
Price, John Chauncey
Roudebush, Rex Scott
Swale, Thomas Nelings
Severyns, Andrew
Simpson, Arthur Neal
Thompson, Ralph William

CERTIFICATE IN LIBRARY ECONOMY

Ballard, Jessie Alma
Dallam, Kate Bessie
Johnson, Agnes Victoria
Kirkwood, Elizabeth Tinanus
McCutcheon, Lydia May
Meissner, Laurentine Bertha
Pinkerton, Helen
Sleicher, Rebecca Ruth
Smith, Lillian Louise
Steinberger, Lillian Blanche

GRADUATE DEGREES

GRADUATE SCHOOL

MASTER OF ARTS

Grace Martha Boyd (Mathematics)
A. B., Hastings College
(as of the class of 1912)

Lucia Eola Edson (Zoology)
A. B., Mt. Holyoke College

Mrs. Clara Baker Flett (Political Science)
A. B., University of Wisconsin

Marjorie Harris (French)
A. B., University of Washington

Harry H. Hill (Chemistry)
A. B., University of Wyoming

Paul Jehu Kruse (Education)
A. B., University of Iowa

Seth Chapin Langdon (Chemistry)
B. S., Northwestern University

Mildred West Loring (Philosophy)
A. B., University of Washington

Frank Joseph Laube (Political Science)
B. L., University of Wisconsin

Fred Lea Stetson (Education)
A. B., University of Washington

Olive Mildred Wente (French)
A. B., University of Washington

Lovisa Catharine Wagoner (English)
A. B., University of Washington

Sanford Myron Zellar (Botany)
B. S., Greenville College

MASTER OF SCIENCE

Monroe Tetsugi Awoki (Geology)
B. S. in Mining, University of Washington

DEGREES CONFERRED

July 31, 1913

BACHELOR DEGREES

COLLEGE OF ARTS AND SCIENCES

BACHELOR OF ARTS

Burns, Anna Ellen
Davidson, Sadie Daisy
Fretwell, Martha Folsie
Hansen, Mathea
Hill, Elizabeth
Kohler, Liela Mae
Larsen, Loui Karl
Lawatschek, Elly Wilhelmine
Pauley, Linna Lucile
Reding, Eugenia
Saunderson, Ruth
Tamura, Teijiro
Young, Grace Mae

COLLEGE OF ENGINEERING

BACHELOR OF SCIENCE

Corbitt, Hugh Blake

SCHOOL OF LAW

BACHELOR OF LAWS

Fitzgerald, Charles Reynolds

GRADUATE DEGREES

GRADUATE SCHOOL

MASTER OF ARTS

Lulu Albia Brown (English)
A. B., University of Washington

Alice Pace Henson (English)
A. B., University of Washington

Sebastian Karrer (Physics)
A. B., University of Washington

Alfred Clay Millican (Political Science)
A. B., University of Washington

Marie Caroline Schmidt (English)
A. B., University of Washington

Ole Johnson Stuen (German)
A. B., University of Washington

NORMAL DIPLOMAS

UNIVERSITY LIFE DIPLOMA

Chase, Marguerite
Johnstone, Annabel Milligan
Latham, Ethel
Mathieu, Elisabeth Josephine

UNIVERSITY NORMAL DIPLOMA

de Tourville, Audrey
Hansen, Mathea
Kilkoren, Mrs. Opal Beatrice
Lawatschek, Elly Wilhelmine
Reding, Eugenia
Saunderson, Ruth
Taylor, Marguerite Elizabeth
West, Irene

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SCHOLARSHIPS AND PRIZES AWARDED

June 18, 1913.

The John Walter Ackerson Prize for Women of $100.00
Mary Iola Bash

The Woman's League Scholarship of $100.00
Florence Semmen

The Judge Alfred Battle Debating Prize of $75.00
Vincent Roberts Arthur Younger

The E. F. Blaine Oratorical Prize of $100.00
Harold Burdick Fred Bennett

The Vivian W. Carkeek Law Essay Prize of $25.00
Joseph Abel Barto

A Scholarship in Chemistry (Anonymous) of $150.00
Lyle A. Greenwood

The L. J. Corkery Oratorical Prize of $15.00
Frederick A. Woelflen

The Jacob Furth Electrical Engineering Prize of $100.00
Edgar Roland Perry

The Kerl Industrial Chemistry Essay Prize of $100.00
Hugh B. Corbitt Bailey Tremper

The Andrew Chilberg Swedish Scholarship Prize of $25.00
Edith Lungreen Andrea Nord

The Norwegian National League Scholarship Prize of $25.00
Ole Johnson Stuen Eva Nelson

The Washington Bankers' Association Prize of $25.00
First Prize of $15.00, Clarence Malmo
Second Prize of $10.00, Noel Sargent

The N. Paolella Gold Medal
Liela M. Kohler

REGISTER OF STUDENTS

GRADUATE SCHOOL

Name of Student. *Home Address.*

Agnew, Hugh E. ..... Seattle
A. B., University of Michigan, 1902 M. A., Political Science

Albert, Adolph Henry ..... Chewelah
Ph. B., Lawrence University, 1904.

Allen, Eva Delia ..... Seattle
A. B., University of Washington, 1909.

Ashley, Mabel ..... Seattle
A. B., University of Kansas, 1905.

Ashton, Fred William ..... Seattle
A. B., University of Washington, 1912. M. S., Chemistry.

Athen, Virginia Forrest ..... Seattle
B. S., Fremont College, 1904.

Bardell, Ethel M. ..... Seattle
A. B., University of Washington, 1912. M. S., Botany.

Barish, Saul W. ..... Seattle
B. S. in Education, Teachers' College, Columbia University, 1913.
M. A., German.

Batcheller, Willis Tryon ..... Seattle
B. S. in Elec. Engineering, University of Washington, 1911.
M. S. in Elec. Engineering.

Beery, Earl Jacob ..... Seattle
B. S. in Elec. Engineering, University of Washington, 1910.
M. S. in Elec. Engineering.

Behling, Glenola Emily ..... Buffalo, N. Y.
A. B., Chicago University, 1913. M. S., Chemistry.

Billington, Mrs. Pearl Irene ..... Seattle
A. B., Colorado College, 1903. M. A., Latin.

Bliss, Addie Jeanette ..... Seattle
A. B., University of Washington, 1906. M. A., Latin.

Bloomquist, Ernest C. ..... Tacoma
A. B., Gustavus Adolpus College, 1901. M. A., Scandinavian.

Blough, Allie ..... Seattle
A. B., University of Washington, 1913.

Botten, Mrs. Margaret Christine ..... Seattle
A. B., University of Washington, 1913.

Boyd, Grace Martha ..... Hastings, Neb.
A. B., Hastings College, 1902.
M. A., University of Washington, 1912.

Brayton, Fannie Elizabeth ..... Seattle
A. B., University of Wisconsin, 1903. M. A., Latin.

Brown, Minnie Keen ..... Clairmont, Cal.
A. B., Beloit College, 1904.

Bryan, Agnes S. ..... Rochester, Minn.
B. A. in Education, University of Minnesota, 1910. M. A., Education.

Carson, Helen Katherine ..... Kennewick
A. B., University of Iowa, 1912.

Casey, Ralph D. ..... Seattle
A. B., University of Washington, 1913. M. A., Political Science.

Clough, Ray William ..... Seattle
A. B., Tufts College, 1908.
A. M., Tufts College, 1909.

Collier, Edith Lorne ..... Seattle
A. B., University of Washington, 1909 M. A., English.

Colwill, Edward Russell ..... Exeter, Ontario
A. B., Victoria College, University of Toronto, 1911. M. A., Philosophy.

Cook, Raymond Edward ..... Bremerton
A. B., University of Puget Sound, 1907. M. A., Education.

Cook, William Bell ..... Seattle
A. B., University of Washington, 1910. M. S., Zoology.

Corbet, Margaret ..... Seattle
A. B., University of Washington, 1910. M. A., English.

Craig, Gladys Louise ..... Knob Noster, Mo.
A. B., University of Missouri, 1910. M. A., Education.

Cummins, Robert A. ..... Tacoma
B. S., Illinois Wesleyan University, 1909.
M. A., University of Illionis, 1910.

Curtis, Leslie F. ..... Assinippi, Mass
B. S., Tufts College, 1910. M. S. in Elec. Engineering.

Darrin, Marc ..... Bellingham
B. S. in Chem. Engineering, University of Washington, 1912.
M. S. in Chem. Engineering, University of Washington, 1913.

Davis, Esther ..... Seattle
A. B., University of Minnesota, 1913.

Denny, F. William ..... Seattle
A. B., University of Washington, 1909. M. S., Education.

Doremus, Mary C. ..... Kingston, N. Y.
State Normal School, New Paltz, N. Y. M. S., Education.
State Normal College, Albany, N. Y.

Douglas, Maud A. ..... Seattle
A. B., University of Washington, 1907. M. A., Education.

Dunbar, Walter C. ..... Grandview
B. S. in Mining Engineering, University of Washington, 1911. M. S. in Mining Engineering.

Engelhorn, Essie Anne ..... Spokane
B. S., University of Washington, 1911.

Evans, Frank O. ..... Bremerton
Whitman College, 1906.

Fenton, Enid Elizabeth ..... Seattle
A. B., University of Washington, 1911. M. A., Spanish.

Ferriss, Emory Nelson ..... Seattle
A. B., Leander Clark College.
A. M., University of Iowa.
Ph. D., University of Iowa.

Fischer, Adelaide Dorothy ..... Seattle
A. B., University of Washington, 1909. M. A., English.

Fitch, Harry Holland ..... Sac City, Iowa
A. B., University of Iowa, 1902.
M. A., University of Iowa, 1906.

Fleming, Samuel Edgar ..... Seattle
A. B., Wabash College, 1907.

Garvey, Clarence Ross ..... Seattle
B. S., Michigan Agricultural College, 1912. M. S., Forestry.

Getz, Carl Henry ..... Tacoma
A. B., University of Washington, 1913.
M. A., Political Science.

Gilbreath, James A. ..... Seattle
M. A., Whitman College, 1907.

Gleason, Mabel E. ..... Seattle
A. B., University of Washington, 1909. M. A., Education.

Goddard, Florence M. ..... Seattle
Ph. B., University of Chicago, 1912. M. A., Education.

Goldsmith, Edward Denham ..... Tacoma
B. S., University of Washington, 1913.

Golisch, Edward H. ..... Seattle
Ph. B., Simpson College, 1907. M. A., Education.

Greenslade, Grover Rawle ..... Walla Walla
B. S., Whitman College, 1912. M. S., Physics.

Gregg, Kate Leila ..... Clarkston
A. B., University of Washington, 1908. M. A., English.

Grindrod, Ione ..... Seattle
A. B., University of Washington, 1911. M. A., English.

Hannan, Ethel Elizabeth ..... Seattle
A. B., University of Washington, 1911.

Hartman, Frank Alexander ..... Seattle
M. A., University of Kansas, 1909. Ph. D., Chemistry.

Helmlinge, Charles Louis ..... Seattle
Ph. B., German Wallace College, 1911. M. A., French.

Herring, John P. ..... Seattle
A. B., Brown University, 1904. M. A., Political Science.

Higgins, Nellie Linda ..... Vancouver
A. B., University of Washington, 1913. M. A., Political Science.

Hindman, Frances Edith ..... Baker, Ore.
B. S. in Pharmacy, University of Washington, 1912.
M. S., Pharmacy.

Hipkoe, George August ..... Seattle
A. B., University of Washington, 1913. M. A., English.

Hoffenreich, Herman ..... Budapesth, Hungary
Magister Pharm., University of Buda-Pesth, 1903.

Horton, Caroline E. ..... Seattle
A. B., University of Washington, 1899.
M. A., University of Washington, 1901.

Houghten, Ferry C. ..... Troy, Mich.
A. B., Olivet College, 1913. M. S., Physics.

Ide, Archie Lewis ..... Clarkston
A. B., Hamlin University, 1904. M. A. Philosophy.

Jackson, George B. ..... Tacoma
A. B., Yale University, 1902. M. A. German.

Johnson, David H. ..... Tacoma
B. S., Whitworth College, 1913. M. S., Chemistry.

Johnson, Sydney Evans ..... Wanicut
A. B., University of Washington, 1913. M. S., Zoology.

Jones, Evelyn ..... Seattle
A. B., Northwestern University, 1908. M. S., Education.

Jones, Laura M. ..... Prosser
A. B., University of Iowa, 1909. M. S., Home Economics.

Jones, Leo ..... Seattle
A. B., University of Washington, 1912. M. A., Political Science.

Jones, Pamelia Pearl ..... Seattle
A. B., University of Iowa, 1906.
M. A., University of Iowa, 1908.

Karlstram, Otto Reinhold ..... Seattle
A. B., Augustana College, 1909. M. A., Scandinavian.

Kibbe, Alice Lovina ..... Elma
A. B., University of Washington, 1910. M. S., Botany.

Kilkoren, Mrs. Opal Beatrice ..... Seattle
A. B., University of Washington, 1913. M. A., English.

King, Grace Elizabeth ..... Seattle
A. B., University of Washington, 1910. M. A., English.

Korstad, Mrs. Mary Green Fiske ..... Seattle
A. B., University of Washington, 1911 M. S., Zoology.

Kruse, Mrs. Alice M. ..... Seattle
A. B., University of Iowa, 1909.

Kruse, Paul J. ..... Seattle
M. A., University of Washington, 1913.

Lane, Bertha Freyd ..... Seattle
A. B., University of Washington, 1905.

Langdon, Seth Chapin ..... Bosler, Wyo.
M. A., University of Washington, 1913. Ph. D., Chemistry.

Lawler, Mrs. Lillian-Donovan ..... Seattle
A. B., University of Washington, 1907.

Linton, Arthur Wilson ..... Seattle
B. S., University of Michigan, 1909. M. S., Chemistry.

Lott, Elmo Hamilton ..... Seattle
B. S., Cornell College, 1912. M. S., Forestry.

McCormack, May Elizabeth ..... Tacoma
A. B., Stanford University, 1914.

MacKinnon, Marion Grace ..... Seattle
A. B., McGill University, 1910. M. S., Home Economics.

Macintire, Mrs. Elizabeth Jelliffe ..... Seattle
A. B., Mount Holyoke College, 1902

Macleay, Elizabeth ..... Olympia
A. B., University of Washington, 1909. M. A., English.

Magnusson, Mrs. Elva Cooper ..... Seattle
A. B., University of Wisconsin, 1904.
M. A., University of Wisconsin, 1906.

Mahler, Mrs. Eva Elliott.....Seattle
A. B., University of Washington, 1913. M. A., English.

Markley, Clinton L.....Seattle
A. B., Miami University, 1909. M. A., Education.

Maxfield, Charles Lester.....Seattle
A. B., Kalamazoo College, 1901. M. A., Education.

Millay, Francis E. .....Chewelah
A. B., University of Washington, 1913. M. A., Education.

Miller, Blanche Funk.....Seattle
A. B., Wittenberg College, 1894.
LL. B., University of Washington, 1909.
M. A., Political Science.

Misrow, Jogesh Chander.....Calcutta, India
A. B., University of Washington, 1913. M. A. Political Science.

Mullemeister, Hermance .....Seattle
Ph. D., University of Utrecht, 1913.

Natsume, Gijun .....Japan
Ph. B., University of Waseda.

Neikirk, Jessie Georgia .....Seattle
Ph. B., University of Colorado, 1897. M. S., Botany.

Nelson, Norman C. .....Seattle
B. S., University of California, 1905.

Newhall, Charles Abbott .....Seattle
B. S., University of California, 1905.

Ogilvie, Lottie M. .....Seattle
A. B., University of Wisconsin, 1905. M. A., German.

Ohlson, David .....Seattle
A. B., University of Washington, 1913. M. S., Physics.

Parish, William Francis .....Seattle
A. B., University of Washington, 1913. M. A., English.

Pearce, Stella E. .....Cripple Creek, Col.
A. B., University of Washington, 1912.

Pease, Eugene Irving .....Seattle
B. S. in Elec. Engineering, University of Washington, 1912.

Pease, Vinnie A. .....Tacoma
B. S., University of Puget Sound, 1907. M. S., Botany.

Perin, Melva .....Tacoma
A. B., St. Lawrence University, 1903. M. A., English.

Post, Frank Burdette .....Seattle
B. S. in Elec. Engineering, University of Washington, 1913.

Reed, Albert Cleveland .....Seattle
A. B., Williams College, 1912. M. S., Chemistry.

Reekie, Martha Elizabeth.....Seattle
A. B., University of Washington, 1913.

Rennie, Wesley Frederic .....Vancouver, B. C.
Hillsdale College, 1913.

Rivers, Lilian Frances .....Seattle
A. B., Stanford University, 1912. M. A., Education.

Schumaher, Herman J. .....Humphrey, Neb.
A. B., University of Colorado, 1912 M. A., Political Science.

Shelton, Annah Louise.....Seattle
A. B., University of Washington, 1913. M. A., French.

Shoichi, Oshima .....Tomiya, Japan
A. B., Waseda, 1906. M. A., Political Science.

Siegel, Harry J. .....Seattle
B. S. in Pharmacy, University of Washington, 1913
M. A., Pharmacy.

Smith, Mrs. Christina Denny .....Seattle
A. B., University of Illinois, 1905. M. A., History.

Smith, Glen Harry .....Seattle
A. B., University of Washington, 1909.
B. S. in Elec. Engineering, University of Washington, 1910.

Smith, H. Hale .....Seattle
A. B., University of Iowa, 1909. M. A., Education.

Smith, Harold Vincent .....Seattle
A. B., Yale University, 1912. M. S., Geology.

Stephenson, Tom J. .....Holton, Kas.
B. S., University of Kansas, 1911. M. S., Forestry.

Stevenson, Janet Elizabeth .....Seattle
A. B., University of Washington, 1912. M. A., Education.

Stilwell, Edward Matthewson .....Seattle
A. B., University of Washington, 1910. M. A., Education.

Stotler, Frank M. .....Seattle
B. S., Drury College, 1897. M. S., Education.

Stoy, Annie Elizabeth .....Everett
M. A., Clark University, 1912.

Strandberg, Edwin Leonard .....Seattle
B. S. in Civil Engineering, University of Washington, 1912.

Streator, Gertrude Inez .....Seattle
A. B., University of Washington, 1909.
A. M., University of Washington, 1912.

Stuen, Ole Johnsen .....Parkland
A. B., University of Washington, 1912.
A. M., University of Washington, 1913.

Sutherland, Esther H. .....Seattle
A. B., University of Washington, 1911.

Sutton, Sarah Patience .....Seattle
A. B., University of Washington, 1911. M. A., German.

Swenson, Frank D. .....Seattle
A. B., Bethany College, Kansas, 1910.

Swift, Mrs. Hilda .....Seattle
A. B., Smith College, 1907.

Tamura, Teijiro .....Shiga, Japan
A. B., University of Washington, 1913. M. A. Political Science.

Taylor, Ida May .....Exeter, Neb.
A. B., University of Nebraska, 1901. M. A., Education.

Thatcher, Mrs. Lela Martin .....Seattle
A. B., University of Washington, 1908.

Thompson, Claude Sims .....Seattle
B. S. in Mining Engineering, University of Washington, 1910.

Thurmond, Viola .....Seattle
A. B., University of Washington, 1912. M. A., Education.

Thwing, Clarence ..... Seattle
B. S., New York University, 1884.
M. S., New York University.
M. D., New York University. M. A., Philosophy.

Twinam, Louise E. ..... Ione
A. B., Parsons College, 1904. M. A., Education.

Uhl, Benno John ..... Seattle
A. B., Thiel College, 1900.

Veldee, Milton Victor ..... Bremerton
B. S. in Pharmacy, University of Washington. M. S., Pharmacy.

Vickner, Bertha A. ..... Seattle
Gustavus Adolphus College, 1910.

Wagoner, Lovisa Catherine ..... Seattle
A. B., University of Washington, 1910.
M. A., University of Washington, 1913.

Walker, Mrs. Anna Sloan ..... Seattle
James Millikan University.

Wallace, Adeline Mary ..... Bellingham
A. B., University of Washington, 1913. M. A., Political Science.

Wallace, Isabel Weir ..... Seattle
A. B., Whitman College, 1896. M. A., English.

Waltemeyer, Marie Claridge ..... Boulder, Col.
A. B., University of Colorado, 1908. M. A., English.

Walter, Carl Henry ..... Seattle
B. S., Carthage College, 1909. M. S., Chemistry.

Warren, Anna Pixlee ..... Seattle
A. B., University of Washington, 1912. M. S., Chemistry.

Weesner, Oliver ..... Seattle
B. S., Earlham College, 1909. M. S., Mathematics.

Westerberg, Iwar Sigurd ..... Seattle
A. B., Clark University, 1897.
A. M., Harvard University, 1908.

Wilcox, Hortense ..... Seattle
A. B., Wells College, 1912. M. A., Education.

Williams, Thomas Alexander Ferguson ..... Clinton, Tenn.
A. B., Marysville College, 1910. M. S., Mathematics.

Williams, Lawrence Johnson ..... Seattle
B. S., University of Washington, 1913. M. S., Civil Engineering.

Winn, Bertha ..... Seattle
B. S., Columbia University, 1913.

Zeller, Myron Sanford ..... Seattle
B. S., Greenville College, 1909.
M. A., University of Washington, 1913.

COLLEGE OF LIBERAL ARTS

ABBREVIATIONS

CLASSES

Sr. Senior
Jr. Junior
So. Sophomore
Fr. Freshman

Name of Student and Rank.	*Home Address.*
Abe, Kingo; Fr	Japan
Abel, Donald George; Fr	Hoquiam
Adams, Edwin Earle; So	Seattle
Adams, Beatrice Violette; Fr	Seattle
Alben, Ellen G.; So	Vancouver
Alben, Nellie Edna; So	Vancouver
Alderson, Constance Geraldine; Fr	Portland, Ore.
Allan, Beryl Blanche; Fr	Seattle
Allason, Daisy C.; Jr	Orting
Allen, Harold Beckwith; Fr	Seattle
Aller, Curtis C; So	Wapato
Alverson, Vida; So	Marblemount
Anasawa Seiichi; Fr	Japan
Anderson, Alice O.; Sr	Bellingham
Anderson, Arlie M.; Fr	Bellingham
Anderson, Clarence Ray; So	Spokane
Anderson, Enoch W.; So	Bellingham
Anderson, Grace; Jr	Seattle
Anderson, Helen Merriam; So	Seattle
Anderson, Herman Carl; Sr	Mt. Vernon
Anderson, Lydia Cecilia; So	Yesler
Anderson, Otto Duncan; Fr	Edmonds
Anderson, Stanley Bernard; Fr	Seattle
Anderson, Victoria; Sr	Renville, Minn.
Andrews, Esther H.; Fr	Tacoma
Andrews, Etta; So	Newberg, Ore.
Angst, Laura; So	Chehalis
Armstrong, Irene M.; So	Tacoma
Aspinwall, Mabel Gates; Sr	Berkeley, Cal.
Axtell, Ruth Cleveland; Sr	Bellingham
Badgley, John Oscar; Fr	Yorkton, Manitoba
Bain, Helen Russell; Jr	Seattle
Bair, Lilian S.; Fr	Steilacoom
Baker, Anna Leland; So	Seattle
Baker, Mildred E.; Fr	Tacoma
Baker, Ray L.; So	Hoquiam
Baldwin, Mary Elizabeth; So	Elephant Butte, N. M.
Ball, Florence; Jr	Seattle
Banta, Glenn I.; So	Selah
Barnes, Mildred; Fr	Seattle

Barnum, Gertrude; Fr.....Seattle
Barr, Helen Mary; Fr.....Seattle
Barstad, Anna Verna; Jr.....Spokane
Barter, Etta; Jr.....Seattle
Bartholomew, Glenn Marie; Fr.....Everett
Barto, Thomas C.; Sr.....Seattle
Bash, Mary Iola; Sr.....Seattle
Baskowske, Mary; Jr.....Anaconda, Mont.
Bass, Florence G.; Fr.....Red Oak, Iowa
Batcheller, Elva L.; Jr.....Seattle
Baxter, Catherine C.; Fr.....Seattle
Bechen, Carrie I.; Sr.....Hillsboro, Ore.
Beckham, Leona Mary; Jr.....Seattle
Beckwith, Reuben P.; Fr.....Pendleton, Ore.
Beede, Margaret A.; So.....Rolla, N. D.
Begg, Ruth; Jr.....Seattle
Bell, Beauna B.; Fr.....Tacoma
Belmont, Bessie Lucille; Fr.....Seattle
Bemis, Mrs. Katherine P.; Jr.....Seattle
Benadom, Clyde J.; So.....Seattle
Benjamin, Ralph J.; Sr.....Seattle
Benz, Fritz R.; So.....Toppenish
Bergoust, Helen Margaret; Fr.....Tacoma
Best, Elva; Fr.....Newberg, Ore.
Binnings, Mildred; Fr.....Tacoma
Boddy, Eva May; Jr.....Seattle
Bolinger, Blanche E.; Fr.....Methow
Bolster, Helen; Fr.....Seattle
Bonney, Catherine A.; Jr.....Seattle
Bonsall, Opal I.; Sr.....Spokane
Bories, Henry V.; Fr.....Seattle
Bouck, Ada E.; So.....Sedro Woolley
Bovee, Homer T.; So.....Seattle
Bower, Altus Edwin; Fr.....Spokane
Bowers, George W.; Fr.....Walla Walla
Bown, R. Frederick; So.....Kent
Brace, Harry D.; Fr.....Seattle
Brace, Mary W.; Fr.....Seattle
Brackett, Edith L.; Fr.....Edmonds
Bradley, Helen Lael; Fr.....Winslow
Bradner, Esther; Fr.....Seattle
Brainerd, Donna F.; Jr.....Seattle
Breazeale, I. Edna Marie; Fr.....Bay View
Brevick, Conrad P.; Fr.....Seattle
Bronson, Deming; Jr.....Seattle
Bronson, Doris; Jr.....Seattle
Bronson, Hallie C.; Fr.....Seattle
Brown, Bessie E.; Jr.....Tacoma
Brown, W. Clyde; Fr.....Seattle
Brown, Ethel M.; Sr.....Seattle

Brown, Laura E.; Sr.....Los Angeles, Cal.
Brown, Leland P.; So.....Auburn
Brown, Marian D.; So.....Seattle
Brown, Warren; Fr.....Ellensburg
Browne, Beryl J.; Jr.....Edmonds
Bruce, Harriet L.; Sr.....Seattle
Bryan, Helen A.; Jr.....Seattle
Bryant, Clarence W.; So.....Seattle
Bryant, Willis R.; Jr.....Seattle
Bunnell, Esther; Sr.....Seattle
Burdick, Harold P.; So.....Tacoma
Buren, Anna Louise; Fr.....Tacoma
Burkhardt, Margaret E.; Fr.....Seattle
Burkheimer, Florence; So.....Seattle
Burnett, Meyer; Sr.....Seattle
Burns, Josepha B.; Sr.....Seattle
Bush, Agnes S.; Fr.....Seattle
Bushell, Dorothy; Fr.....Seattle
Byham, Gladys M.; Fr.....Vancouver
Byles, Helen; Fr.....Seattle
Byrd, Carroll F.; So.....Spokane
Calder, Marion D.; Fr.....Montesano
Calderhead, Adelaide B.; Fr.....Walla Walla
Caldwell, Royal W.; Fr.....Seattle
Calhoun, Gladys L.; Fr.....Kent
Calhoun, Helen; Fr.....Seattle
Calhoun, Viretta D.; Fr.....Seattle
Callison, Lucretia; Fr.....Chehalis
Callow, Russell S.; So.....Shelton
Cameron, Alfred D.; Fr.....Seattle
Cameron, Annie B.; Sr.....Hillsdale, Ore.
Campbell, Agnes S.; Fr.....Seattle
Campbell, Blanche; So.....Seattle
Campbell, Earl; Fr.....Asotin
Campbell, Pansy E.; So.....Seattle
Capps, Marjorie; Fr.....Seattle
Cardle, Maynard M.; Jr.....Everett
Carley, Almon W.; Fr.....Boise, Idaho
Carlin, Agnes Adele; Fr.....Colville
Carse, Elta; Jr.....Samish
Casady, Claude E.; Fr.....Seattle
Cason, Vera A.; Fr.....Portland, Ore.
Catton, Lois J.; Fr.....Seattle
Chandler, Elsie; Fr.....Seattle
Chandler, Gertrude V.; Jr.....Richmond, Ore.
Child, Pauline P.; Jr.....Sprague
Chisholm, T. Blanche; Sr.....Seattle
Chittenden, Eleanor; So.....Seattle
Christensen, Hans; So.....Olympia
Clague, Ewan; Fr.....Dayton

Clare, Ethel R.; Jr.....Selleck
Clarke, Florence R.; Fr.....Olympia
Clausen, Anna; So.....Seattle
Clay Sallie A.; Fr.....Seattle
Clement, Vera; Fr.....Seattle
Clinton, Myron B.; So.....Spokane
Clyde, Paul D.; Fr.....Seattle
Cochron, Lloyd T.; So.....Seattle
Coe, Chas. Rollit; Jr.....Seattle
Coe, Winifred E.; So.....Seattle
Coffman, Willow; Fr.....Seattle
Coggins, Clyde A.; Fr.....Snohomish
Cohrs, Theodore; Jr.....Seattle
Cole, Eva M.; So.....Seattle
Coleman, Rachel Esther; So.....Tacoma
Collins, James J. M.; Fr.....Seattle
Collins, Lillian E.; Sr.....Seattle
Collins, Marie A.; Fr.....Seattle
Collins, Opal H.; So.....Great Falls, Mont.
Condlon, Edward J.; Fr.....Seattle
Condron, Lulu A.; Fr.....Los Angeles, Cal.
Conmey, Anna L.; So.....Sedro Woolley
Conner, Lewis C.; So.....Everett
Conner, Ray; Jr.....Everett
Connor, Kathleen; Fr.....New Westminster, B. C.
Connor, Marcia Maud; Jr.....New Westminster, B. C.
Connors, Edna Eliza; Fr.....Seattle
Cook, Inez C.; Sr.....Bellingham
Cook, Jessie G.; Jr.....Vancouver, B. C.
Cook, Proctor F.; Fr.....Tacoma
Cooper, Francis D.; Fr.....Seattle
Corwin, Hazel I.; Jr.....Seattle
Costello, Lawrence J.; Fr.....O'Brien
Costello, Mary C.; Jr.....Spokane
Costner, Wyllie R.; Fr.....Seattle
Cotter, Edward J.; So.....Seattle
Covey, Walter H.; Fr.....Seattle
Covington, Dorothy E.; Fr.....Seattle
Cox, Mrs. Edward V.; Jr.....Seattle
Craig, Francis Anne; So.....Knob Noster, Mo.
Crane, Glenn Edwards; Fr.....Calispell, Mont.
Craver, Sallie M.; Fr.....Seattle
Crawford, Edward I.; Jr.....Seattle
Crawford, Eleanor W.; Fr.....Seattle
Crawford, Zillah C.; Jr.....Vancouver
Cremer, Henry; Jr.....Seattle
Crepeau, Abbie A.; Fr.....Winslow
Culver, Evelyn L.; Fr.....Friday Harbor
Cushman, Thomas J.; So.....Seattle
Cutter, Evelyn T.; Jr.....Seattle

Dahl, Bernice I.; Jr.....Seattle
Dahlgreen, Orvid H. L.; Fr.....Tacoma
Dailey, Leanah; Fr.....Anacortes
Dancer, David A.; Fr.....Lamoni, Iowa
Darrin, Dorothy de'Lepine; So.....Bellingham
Daulton, Elizabeth K.; Fr.....Winslow
Davenport, Noah C.; Sr.....Bellingham
David, Pearl LaRue; Fr.....Seattle
Davidson, John F.; Fr.....Seattle
Davidson, Katherine; So.....Hoonah, Alaska
Davis, Eugene C.; Fr.....Port Angeles
Davis, Gertrude; Fr.....Chinook
Davis, Glenn; Fr.....Mt. Vernon
Davis, Leslie; So.....Seattle
Davis, Lester A.; Fr.....Seattle
Davis, Martha Jane; Fr.....Seattle
Davis, Ruth G.; So.....Tacoma
Dawson, Ruth L.; Jr.....Seattle
Day, Robbin P.; Fr.....Seattle
Day, Walter J.; Fr.....Seattle
Dean, Clara T.; Fr.....Seattle
Dean, Mildred; Fr.....Walla Walla
Dean, Ralph C.; So.....Seattle
DeBard, Grace; Fr.....Seattle
de la Pole, Dorothy; Fr.....Seattle
Denny, Madge D.; Fr.....Seattle
Derr, Lola C.; Fr.....Spokane
Devine, Grace M.; So.....Seattle
Devine, Richard D.; Fr.....Pendleton, Ore.
deWitt, Julia B.; Fr.....Spokane
Dickson, Ada Eunice; Fr.....Elma
Dickson, Cecil L.; Fr.....Tacoma
Dickson, L. Florence; Fr.....Spokane
Dill, Dan George; So.....Mt. Vernon
Dobbs, Beryl; Fr.....Seattle
Dodd, Joseph; Fr.....Seattle
Donaldson, Harry C.; Fr.....Great Falls, Mont.
Donaldson, Jeannette S.; Sr.....Spokane
Donaldson, Rox H.; Fr.....Lind
Doran, Eunice W.; So.....Mt. Vernon
Dorgan, Mary E.; So.....Seattle
Dorgan, Mildred E.; Fr.....Edmonds
Dorman, Harry S.; Fr.....Everett
Doud, Helen M.; Fr.....Tacoma
Dougherty, Dola M.; Jr.....Seattle
Dougen, Clinton R.; So.....Seattle
Douglas, George Stuart; Fr.....Seattle
Douglas, Muriel A.; Fr.....Seattle
Dow, Neal; Fr.....Seattle
Dowell, Alice M.; Fr.....Seattle

Downie, Willis I.; So.....Seattle
Doxy, William I.; Jr.....North Yakima
Draper, Edgar M.; So.....Ontario, Ore.
Drum, Dorothy; Sr.....Walla Walla
Drummond, Allan A.; Fr.....Tacoma
Duffy, Alexander; Fr.....Seattle
Duffy, Maurice M.; Fr.....Seattle
Dumett, Ray; Fr.....Seattle
Dunlap, Sadie L.; Jr.....Pe Ell
Durham, F. Wayne; Fr.....Spokane
Dyer, Alvin E.; Fr.....Spokane
Dykeman, Roe; Fr.....Seattle
Dysart, Lloyd B.; Jr.....Centralia
Eager, Henry I.; Fr.....Hopkinsville, Ky.
Eaton, Phil K.; Fr.....Seattle
Eberle, Sidney S.; Jr.....Vancouver
Ebright, C. M.; So.....Seattle
Eckhart, Freda Louisa; Fr.....Enumclaw
Eddy, Beulah L.; Sr.....Sumner
Eddy, Carrie M.; So.....Seattle
Edmonds, Rupert O.; So.....Mt. Vernon
Edris, William; Fr.....Spokane
Edwards, George K.; Fr.....Seattle
Eidemiller, George B.; Fr.....Tacoma
Elliott, Eleanor R.; Fr.....Spokane
Ellis, Jennie Ruth; So.....Seattle
Emanuel, Sol; Fr.....Seattle
Embree, Felix V.; Fr.....Dayton
Emerson, Frances M.; So.....Corbin, Mont.
Emery, Ethel A.; Jr.....Seattle
Englehart, Oramil P.; Fr.....North Yakima
Epler, Wm. Leslie; So.....Twin Falls, Idaho
Erie, Catherine L.; Fr.....Denton, Mont.
Ericksen, Geneva A.; Fr.....Seattle
Erspamer, Frank; So.....Tacoma
Essberg, David; So.....Gothenburg, Sweden
Esterly, Katherine A.; Jr.....Seattle
Evans, Frank S.; Jr.....Seattle
Everest, Harold; Fr.....Kirkland
Everett, Lillian A.; So.....Seattle
Everton, Clara M.; Fr.....Edmonds
Fairchild, Muir S.; Fr.....Seattle
Farrar, Mayme; Sr.....Seattle
Faubert, Corinne J.; Fr.....Seattle
Finck, Herbert W.; Fr.....Seattle
Firth, Mildred; Sr.....Seattle
Fisher, Charlotte Lucile; Jr.....Spokane
Fisken, Mary Carolyn; Jr.....Spokane
Fleming, Eloine; Fr.....Seattle
Fleming, Eloise; Fr.....Seattle

Fleming, Esther F.; Sr.....Seattle
Flint, Lois E.; Fr.....Port Townsend
Flood, George E.; So.....Chehalis
Fonda, Ada E.; Fr.....Seattle
Fosdick, Ruth; Fr.....Goldendale
Fowler, Louise H.; Jr.....Seattle
Fox, Roy C.; So.....Davenport
France, Georgia M.; So.....Hoquiam
Francis, Violet E.; Fr.....Seattle
Fraser, Mabel; So.....Port Blakeley
French, Irma; Fr.....Seattle
Frenger, Eugene A.; Fr.....Clarksville, Ohio
Freyd, Bernard; So.....Seattle
Friant, Josephine N.; Sr.....Seattle
Fujitomi, Egi; Jr.....Japan
Fulton, Orra S.; Jr.....Quilcene
Gabbert, Gertrude M.; Jr.....Seattle
Gabel, Marie; Sr.....Seattle
Gailey, Helen; Jr.....Seattle
Garland, Martha M.; So.....Seattle
Garvey, Erma C.; Sr.....Seattle
Gast, Francis M.; Jr.....Tacoma
Gaul, Helen R.; Fr.....Seattle
Gay, Donald W.; Fr.....Seattle
Gay, Ruth E.; Sr.....Seattle
Gellatly, Lester; Fr.....Wenatchee
George, Blance V.; Sr.....Sunnyside
Gerhardt, Celia; So.....Seattle
Gershen, Esther; Fr.....Seattle
Gibb. Frank P.; Fr.....Seattle
Gibson, Helen J.; Fr.....Seattle
Gies, Ethel H.; Fr.....Seattle
Gilbert, Curtiss R.; Fr.....North Yakima
Gilbert, John H.; Fr.....Seattle
Girdner, Dave; Fr.....Seattle
Goble, Lucy E.; So.....Sunnyside
Goodall, Kenneth C.; Fr.....Portland, Ore.
Goodell, Percy E.; So.....Chehalis
Goodman, Keith D.; Fr.....Tacoma
Goodman, Leo; So.....Chehalis
Gorham, Mrs. Fordyce C.; So.....Seattle
Gorrill, Athol B.; Fr.....Spokane
Gottfeld, Alice; Jr.....Olympia
Gottlieb, Ruth A.; Sr.....Seattle
Gourman, David Z.; Sr.....Seattle
Gourman, Mottle; Fr.....Seattle
Graham, George H.; Fr.....Seattle
Grambs, James K.; Fr.....Seattle
Grant, Henry M.; Jr.....Orillia
Grant, Thomas S.; Fr.....Seattle

Green, Dorothy Gwendolyn; Fr.....Seattle
Greene, John C.; So.....Coverland
Greffoz, Hortense P.; Sr.....Portland, Ore.
Gresham, Marie C.; Fr.....Seattle
Grier, Gladys C.; Sr.....Spokane
Griffin, Hazel B.; Sr.....Seattle
Griffin, Margaret E.; So.....Astoria, Ore.
Griffiths, Burke M.; So.....Seattle
Grimes, Harper D.; Fr.....North Yakima
Grimstead, George; Jr.....Kristiana, Norway
Grosse, Frederick B.; So.....Calgary, Alberta
Grout, Dorothy K.; Fr.....Seattle
Grout, Genevieve; Fr.....Seattle
Guild, Grace; Sr.....Seattle
Gulstine, Edna M.; Sr.....Zillah
Gwilym, Gertrude; Sr.....Seattle
Hadley, Margaret J.; Fr.....Seattle
Haines, James C.; Jr.....Kalispell, Mont.
Halferdahl, Alice; Sr.....Seattle
Hall, Charlotte M.; Fr.....Vancouver
Hall, Ethel E.; Sr.....Seattle
Hall, Eva R.; Jr.....Seattle
Hall, George T.; So.....Seattle
Hall, Leole Merle; So.....Seattle
Hall, M. E. Louise; Fr.....Seattle
Hall, Merle G.; Fr.....Renton
Hall, Ralph H.; So.....Seattle
Hall, Sigrid M.; Fr.....Seattle
Haller, Bernardene; Fr.....Seattle
Hamilton, Alleen A.; Fr.....Seattle
Hamilton, Gladys G.; Sr.....Seattle
Hamilton, Juanita; Jr.....Seattle
Hanley, Charlotte J.; Sr.....Tacoma
Hansen, Carl A.; Fr.....Dresser Junction, Wis.
Hansen, Harry; So.....Tacoma
Happy, John H.; Fr.....Spokane
Harkness, Hazel A.; Jr.....Seattle
Harold, Homer C.; Fr.....Seattle
Harris, Laura L.; Jr.....Seattle
Harris, Olive M.; Fr.....Seattle
Harrison, Frank; Jr.....Sunnyside
Harsh, Ruby M.; Fr.....Mt .Vernon
Hayes, Fred E.; Fr.....Grandview
Hayes, Helen; Fr.....Seattle
Hayes, James C.; Fr.....Seattle
Haynes, Rhea R.; So.....Mukilteo
Hedberg, Victor J.; Fr.....Tacoma
Hedges, Birdie L.; So.....Seattle
Heermans, Jerome T.; So.....Olympia
Heermans, Joseph F.; So.....Olympia

Henderson, Harold H.; So.....Seattle
Henderson, Lloyd P.; So.....Seattle
Hendricks, Carl H.; So.....Fossil, Ore.
Hendricks, Mrs. Ford; Jr.....Seattle
Henry, Charles V.; So.....Seattle
Herrick, C. Barrett; Fr.....Seattle
Herzog, Sol A.; Fr.....Portland, Ore.
Heyes, Lucy J.; Sr.....Seattle
Higgins. Irene F.; Sr.....Tacoma
Hile, Edith E.; Sr.....Seattle
Hill, Hester D.; Fr.....Seattle
Hill, Matthew W.; So.....Lester
Hilstrom, Mabel G.; Fr.....Vancouver
Hilstrom, Theresa A.; Jr.....Vancouver
Hirschheimer, Helen Z.; Fr.....Seattle
Hishikawa, Seiichi; Sr.....Oska, Japan
Hitt, O. Gladys; Fr.....Weiser, Idaho
Hoadley, Nellie L.; Fr.....Kennewick
Hoard, Mary G.; Sr.....Seattle
Hobart, Madeline E.; Fr.....Seattle
Hobi, Agnes L.; Jr.....Aberdeen
Hodge, Paul H.; Fr.....Seattle
Hofmeister, Lillie M.; So.....Seattle
Hogan, Maria R.; Fr.....Aberdeen
Hogg, Sophie M.; Fr.....Tacoma
Hoier, Mabel; Fr.....Blaine
Hoit, Doris L.; Fr.....Adelaide
Holcomb; Marie B.; Fr.....Seattle
Holland, Kathleen; So.....Davenport
Holman, Zelma L.; Fr.....Tacoma
Holmberg, Carl A.; So.....Marysville
Holmes, Ione M.; Jr.....Seattle
Hooper, Mary V.; So.....Seattle
Horton, Persis M.; Jr.....Seattle
Horton, Russell B.; So.....Seattle
Hoss, Charles A.; Fr.....Centralia
Hotelling, A. Harold; Fr.....Seattle
Howell, Helen C.; Fr.....Pomeroy
Hughes, Harold C.; Fr.....Seattle
Hunt, M. Jean; Jr.....Seattle
Hunter, Gordon C.; Fr.....Edmonds
Hurd, Annie May; Jr.....Seattle
Hurd, Laura A.; Sr.....Mt. Vernon
Hurja, Emil E.; Fr.....Fairbanks, Alaska
Huston, Helen H.; Fr.....Seattle
Ide, Mrs. Gladys G.; Jr.....Clarkston
Ikeda, Choichi; Sr.....Japan
Imel, Dea L.; Fr.....Astoria, Ore.
Ingersoll, Elizabeth R.; Fr.....Seattle
Ingersoll, Louise; Sr.....Seattle

Ingram, Leroy R.; So.....Seattle
Inman, Alta R.; Fr.....Portland, Ore.
Irving, Winifred F.; Fr.....Everett
Irwin, Florence D.; Fr.....Montesano
Irwin, Louise; Fr.....Montesano
Ivey, Ethel P.; Fr.....Seattle
Jackson, Margaret C.; Fr.....Portland, Ore.
Jackson, Reynold D.; Fr.....Montesano
Jacobs, Claude V.; Sr.....Puyallup
Jamieson, Lydia M.; Fr.....Tacoma
Janeck, Frances; Fr.....North Yakima
Johanson, Edna T.; Sr.....Tacoma
Johnson, Abbie F.; Sr.....Centralia
Johnson, Bessie; Fr.....Seattle
Johnson, Eric A.; Fr.....Spokane
Johnson, Geneva A.; Sr.....Centralia
Johnson, Martha R.; Fr.....Seattle
Johnson, Winifred J.; Sr.....Seattle
Johnston, Jeanette A.; Fr.....Spokane
Johnston, Rolland B.; Sr.....Seattle
Jolliffe, Ellen M.; Fr.....Seattle
Jolliffe, Russell D.; Fr.....Seattle
Jones, Hazel Emma; So.....Seattle
Jones, Irene V.; Fr.....Renton
Jones, Minabell; So.....Pendleton, Ore.
Jones, Roy F.; Fr.....Sumas
Jones, Stacy V.; So.....Tacoma
Jones, Zola M.; Sr.....Bremerton
Joyner, Isabelle M.; Fr.....Seattle
Kaiser, George Earl; Fr.....Spokane
Kastner, George C.; Fr.....Seattle
Kastner, Louis R.; Fr.....Seattle
Kaufman, Edith R.; Fr.....Bellingham
Kaufman, Edward J.; Fr.....Ritzville
Kawai, Soichi; Sr.....Yanai, Japan
Kawakita, Isosuke G.; Fr.....Seattle
Keenan, Helen R.; Fr.....Seattle
Kellogg, Lottie E.; So.....Tacoma
Kelly, Samuel P.; Fr.....Bellingham
Kiehl, Laura A.; So.....Seattle
Kincaid, Airdrie L.; Fr.....Seattle
King, Marianne; Fr.....Seattle
Kirtland, Mary F.; Fr.....Pinckney, Mich.
Kittilsby, Alma O.; Sr.....Seattle
Kittrell, Beatrice; So.....Seattle
Klaeboe, John; Fr.....Seattle
Klaeboe, Olga; Jr.....Seattle
Klobucher, Victor W.; Fr.....Opportunity
Knapp, Dora E.; Jr.....Everett
Knapp, Ralph R.; Sr.....Seattle

Knight, James Ernest; Jr.....Port San Louis, Cal.
Knox, Wanda C.; Jr.....Centralia
Koboyashi, Nuinosuke; So.....Seattle
Koenig, James V.; So.....Seattle
Kolmitz, Charlotte; Fr.....Seattle
Kolstad, Arthur; Fr.....Marshfield, Ore.
Kozlowski, Frances J.; So.....Seattle
Kraus, Ethel M.; So.....Seattle
Kraus, Minnie L.; So.....Seattle
Krogstad, Karl; Fr.....Spokane
Kumm, Ward C.; So.....Seattle
Kunath, Clara I.; So.....Skykomish
Lachman, Max; So.....Seattle
Laird, Kelly; Fr.....Seattle
Laird, Zora; Sr.....Seattle
Lambert, Sidney S.; Fr.....Sumas
Lamberty, Anna Margaret; Sr.....Seattle
Lambuth, Jane I.; Fr.....Seattle
Langdon, Clarence R.; Fr.....Seattle
Langenbach, John J.; Fr.....Malone
Langford, Nola S.; Fr.....Tacoma
Larimer, Lena M.; Jr.....Riverton, Iowa
Larrison, Winifred F.; Jr.....Seattle
Larson, Mabel L.; Fr.....Aberdeen
Lathe, Helen R.; So.....Seattle
Lauthers, Gladys; Fr.....Portland, Ore.
LaViolette, Ethel Josephine; So.....Seattle
Lawrence, Cassie R.; So.....Chehalis
Leavitt, Harry B.; Fr.....Seattle
Leonard, Elma K.; So.....Tacoma
Levine, Ruth; Jr.....Republic, Mich.
Lewis, Jessie M.; Jr.....Wenatchee
Lieberg, Vivian H.; Fr.....Seattle
Lind, Fred A.; So.....Seattle
Lind, Ralph R.; So.....Seattle
Linder, Muriel; Fr.....Seattle
Linne, Harvey E.; Fr.....Seattle
Listman, Grace T.; Fr.....North Yakima
Littell, Helen H.; Jr.....Seattle
Lively, John William; Jr.....Seattle
Logg, David G.; Fr.....Rolling Bay
London, Maryhelen; Fr.....Seattle
Lovejoy, Herbert C.; Jr.....Seattle
Lovejoy, Lorna J.; Sr.....Seattle
Ludgate, Katie E.; Fr.....Seattle
Lund, Katherine L.; Fr.....Seattle
Luther, Arthur; Fr.....Seattle
McAllaster, Marion; Fr.....Seattle
McBride, Lois; So.....Seattle
McCabe, Lucile M.; Fr.....Seattle

McCall, Donna L.; So.....Big Timber, Mont.
MacCallum, G. Howard; Fr.....Seattle
McCann, Richard J.; Sr.....Seattle
McCarthy, Gladys E.; So.....Townsend, Mont.
McCaw, Winona C.; Fr.....North Yakima
McClellan, Helena R.; So.....Seattle
McClelland, Clara E.; Fr.....Seattle
McClelland, George Zell; Jr.....Seattle
McClelland, Paul H.; Sr.....Seattle
McColl, Nellie; Fr.....Spokane
McCoy, Arthur W.; Fr.....Puyallup
McCulloch, Margaret; Jr.....Seattle
McDermott, Paul E.; Fr.....Seattle
McDonald, Agnes; Fr.....Seattle
McDonald, Claire; Fr.....Seattle
McDowell, Sadie B.; Sr.....Bellevue
McEntree, Mary E.; So.....Spokane
McEvoy, James P.; Jr.....Skykomish
McFaul, Helen; Fr.....Portland, Ore.
McFee, Jean; Fr.....Seattle
McGee, Eva A.; Sr.....Seattle
McGlauflin, Kathryn; Fr.....Hoquiam
McGlauflin, March; Sr.....Hoquiam
McGranahan, Chester C.; Jr.....Ellensburg
McGuire, F. Edith; Fr.....Seattle
McHugh, Edward; So.....Seattle
McIntyre, Enola; So.....Tacoma
McKay, Iva V.; So.....Seattle
MacKechnie, Margaret L.; Jr.....Port Angeles
McKee, Mary E.; So.....Everett
McKittrick, Homer E.; Fr.....Seattle
McLaughlin, Earl E.; Fr.....Seattle
McLean, Dollie; Sr.....Seattle
McLean, Margaret V.; Fr.....Seattle
McLean, Victoria; Jr.....Seattle
MacLeod, Norman; Fr.....Seattle
McMillen, Mabel A.; Jr.....Howard City, Mich.
McMurtrey, Nellie B.; Fr.....Seattle
McNamara, Eugene J.; Sr.....Edmonds
McPhee, Aletha Sophie; So.....Seattle
MacPherson, Lexie; Fr.....Seattle
MacPherson, William; Sr.....Cashmere
McQuarrie, Flora L.; Fr.....Seattle
McRae, J. Everett; So.....Everett
Macdonald, Helen M.; Fr.....Seattle
Macdonald, William J. A.; So.....Chatfield, Minn.
Mackey, Cora L.; Fr.....Everett
Maggillicuddy, Martha; Jr.....Seattle
Mahmoud, Saiyed M.; Fr.....Chandwarra, India
Malloy, Frank B.; So.....Waterville

Malloy, Ralph W.; Fr.....Fairview
Malmo, Clarence O.; So.....Seattle
Mantz, Helen O.; Jr.....Seattle
Maris, Harland; Fr.....Seattle
Markey, Frances; Sr.....Seattle
Markey, Joseph; Fr.....Seattle
Marston, Laura E.; So.....Arlington
Martin, Marjory K.; Fr.....Ritzville
Mason, Jessie V.; Fr.....Seattle
Mathews, Gertrude A.; Fr.....Seattle
Matthews, M. Lucile; Jr.....Seattle
Matzger, Manford; So.....Seattle
Maughlin, Frances J; So.....Snohomish
Maxey, Henry Elmer; Fr.....Ellensburg
Meany, Margaret; Jr.....Seattle
Meerscheidt, Erna; So.....Seattle
Mefferd, Florence M; Fr.....Seattle
Melbert, Setha E; Fr.....Seattle
Mercer, Beatrice; So.....Seattle
Mershon, Isaac S; Fr.....Melrose, Mont.
Michael, Frank; Fr.....Chehalis
Michelson, Aimee; Fr.....Seattle
Mieir, T. Clark; Fr.....Seattle
Miller, Alice; So.....Seattle
Miller, Cedric; Fr.....Vancouver
Miller, Leah; Sr.....Seattle
Miller, Ruth A.; Jr.....Seattle
Miller, Stuart F.; Fr.....Seattle
Minahan, Cletus L.; So.....Seattle
Mingins, Royall W.; So.....Seattle
Minnis, Marjorie E.; So.....Seattle
Mischke, Laura; Fr.....North Yakima
Miura, Mataji; Fr.....Seattle
Miyasaki, Taichiro; Fr.....Seattle
Mogan, Camilla J.; Fr.....Seattle
Moody, Frank; So.....Portland, Ore.
Moody, Miriam; So.....Seattle
Moore, Harold; So.....Seattle
Moore, Helen S; Jr.....Seattle
Moore, Helene; So.....Seattle
More, Carleton; Fr.....Rosedale
Morehead, Elizabeth; Jr.....Nahcotta
Morgan, M. Evan; Jr.....Seattle
Morimura, Henry; Fr.....Seattle
Morisette, Harry E.; So.....Tacoma
Morita, Hanyemon; Fr.....Seattle
Morris, E. Ralph; Fr.....Seattle
Morris, Zoe Gladys; Fr.....Seattle
Morrison, Bessie M.; Jr.....Seattle
Morrison, Jeannette A.; Fr.....Spokane

Mossford, Frances M.; Fr.....Seattle
Motie, Marguerite E.; Fr.....Spokane
Mourant, Ethel M.; Sr.....Hoquiam
Moyer, Lillian A.; Sr.....Seattle
Moyer, Winfield S.; Fr.....Seattle
Murchison, Mary Kathleen; Jr.....Seattle
Murphy, Bertha R.; Fr.....Burns, Ore.
Murphy, Ernest C.; Fr.....Seattle
Myer, Bernice; So.....Seattle
Myers, Margaret; Sr.....Seattle
Neergaard, John H.; Fr.....Oakesdale
Neill, Paul; Fr.....Spokane
Nell, Mabel I.; Sr.....Anaconda, Mont.
Nelson, Clara E.; So.....Indianapolis, Ind.
Nelson, Elizabeth K.; Sr.....Seattle
Nelson, Eva; Sr.....Seattle
Nelson, Herbert; Fr.....Mt. Vernon
Nelson, Genevieve I.; Fr.....Nez Perce, Idaho
Neumen, Frances H.; Sr.....Seattle
Newell, Albert C.; So.....Kirkland
Newell, Polly Clover; So.....Seattle
Newton, Arthur M.; Fr.....Everett
Newton, Charles A.; So.....Oakville
Nickerson, John H.; So.....Seattle
Noderer, Ruth L.; So.....Seattle
Nord, Andrea; Sr.....Arlington
Nordberg, Erika; Sr.....Everett
Norton, William X.; Fr.....Renton
Norwine, William H.; Fr.....Seattle
Nunn, Frances A.; So.....Seattle
O'Connell, Agnes E.; So.....Tacoma
O'Connor, Bernard; Jr.....Philadelphia, Pa.
O'Connor, Matthew; Fr.....Seattle
O'Leary, Mary C; Fr.....Seattle
Oleson, Carrie E.; So.....Seattle
Olmsted, Amy C.; So.....Enterprise, Ore.
Olsen, Fletcher L.; Fr.....Seattle
Olson, J. Almeda; Jr.....Seattle
Olson, Inga P.; Fr.....Seattle
Olswang, Cecelia; Fr.....Seattle
O'Neill, James Philip; So.....Seattle
Ooghe, Arthur E.; So.....Seattle
Orner, Pearl L.; Sr.....Seattle
Ostlund, Charles William; So.....Clyde, Kansas
Otsuki, George J.; Fr.....Tokio, Japan
Otto, L. Marguerite; Fr.....Snohomish
Ovens, Alex C.; So.....Seattle
Palmerton, Hallie L.; Jr.....Seattle
Parker, Leila; Sr.....Seattle
Parks, Grace A.; Fr.....Seattle

Parlin, Hazel Emma; Jr.....Concrete
Parsons, Floy C.; Fr.....Stanwood
Patterson, Henry D.; So.....Seattle
Patterson, Hiram S.; Fr.....Seattle
Paulsen, Alice D.; Fr.....Seattle
Paulsen, David F.; So.....Seattle
Peck, Clarence R.; So.....Seattle
Pederson, Frederick L.; So.....Seward, Alaska
Pelz, Victor H.; So.....Seattle
Pendergast, Wirt W.; Fr.....Conconully
Pennell, Louise F.; Jr.....Seattle
Perine, Esther S.; So.....Seattle
Perry, Edward P.; Fr.....Outlook
Perry, Howard J.; So.....Auburn
Peterson, Margaret R.; Fr.....Seattle
Peterson, Reuben J.; Jr.....Seattle
Peterson, Rolland; Fr.....Seattle
Pettibone, Louise Anita; Jr.....Seattle
Pettit, Minnie; So.....Hoquiam
Pettit, Roy G.; Fr.....Grandview
Phillips, Herbert; Fr.....Hood River, Ore.
Pidduck, Fannie L.; Fr.....Seattle
Pidduck, Rena May; Fr.....Seattle
Pike, Amy K.; Fr.....Seattle
Piles, Agnes G.; Fr.....Seattle
Pingry, M. Madeline; Jr.....Sedro Woolley
Pinneo, Beulah F.; Fr.....Seattle
Platt, Imogene B.; Sr.....Seattle
Platt, Luella B.; Fr.....Seattle
Poole, Jessie Lee; So.....North Yakima
Porter, Jean; Jr.....Seattle
Porter, Margaret A.; Sr.....Columbus, Mont.
Post, Harry G.; So.....Seattle
Potter, Mabel I.; So.....Blaine
Powell, Charles J.; Jr.....Seattle
Powell, Lora M.; Fr.....Hoquiam
Powers, James M.; Sr.....Seattle
Pratt, Frank L.; Sr.....Port Angeles
Pratt, Randall; So.....Wenatchee
Preston, Frank M.; Fr.....Seattle
Price, William K.; Sr.....Seattle
Prior, Pothena Rose; Fr.....Seattle
Proulx, Ermina O.; Sr.....Seattle
Pryde, Joel J.; Jr.....Aberdeen
Pusey, Edna M.; Jr.....Seattle
Pyle, Lucy L.; So.....Seattle
Quast, Ruth Iola; Fr.....Seattle
Quirt, Howard A.; Fr.....Blaine
Ramage, Muriel; Jr.....Spokane
Randall, Bernice H.; Sr.....Marysville

Randolph, Hazel F.; Sr.....Seattle
Rankin, Maud A.; So.....Kelso
Rawson, Ralph; So.....Seattle
Raymond, Charles E.; Fr.....Portland, Ore.
Read, Helen Louise, Fr.....Seattle
Reavis, Nan Preston; So.....Seattle
Reid, Deskin; Fr.....Seattle
Reynolds, Josephine Cecil, So.....Waitsburg
Richards, Helen H.; Fr.....Tacoma
Richards, John S.; So.....North Yakima
Richardson, Elizabeth; So.....Spokane
Richardson, June L.; So.....Seattle
Rickles, P. Allen; So.....Seattle
Ringer, Frances C.; Sr.....Seattle
Ritchie, Angeline M.; Fr.....Port Angeles
Robbins, John T.; Fr.....Oak Park, Ill.
Robertson, Jane Muriel; So.....Bellingham
Rochester, Lettie Lee; So.....Seattle
Rochford, Hope E.; Fr.....Seattle
Rodgers, Irene C.; Fr.....Bothell
Roe, Nellie Virginia; Sr.....Monroe
Rogers, Charles L.; Fr.....Colville
Rosaaen, Evelyn H.; Sr.....Seattle
Rose, Clyde B.; Fr.....Seattle
Rose, Merle; Fr.....North Yakima
Rosenberg, Edith; So.....Seattle
Ross, Edith M.; So.....Friday Harbor
Ross, Ella M.; Fr.....Chewelah
Ross, Marian E.; Fr.....Hoquiam
Rude, Myrtle A.; Fr.....Seattle
Rupert, Rhea; Jr.....Aberdeen
Russell, Beulah H.; Fr.....Seattle
Ruttle, Corinne R.; Fr.....Seattle
Sakamoto, Kei; Fr.....Seattle
Sample, Earle; Fr.....Roslyn
Sanders, Rowland T.; Fr.....Seattle
Sanderson, Ruth; Fr.....Seattle
Sargent, Noel; Jr.....Seattle
Sato, Hiroshi; Fr.....Japan
Satterthwaite, Hugh S.; So.....Iron Mountain, Mont.
Saunders, Lucille; So.....Seattle
Saunders, Robert; Fr.....Seattle
Savage, Anthony; Jr.....Roslyn
Savage, Lloyd R; So.....Seattle
Schollmeyer, Herman; Fr.....Nehalem, Ore.
Schulz, Bruno M. Jr.; Fr.....Seattle
Schumacher, Harold C.; Fr.....Marysville
Schumacher, Margaret C.; Fr.....Bellingham
Schumacher, Wilhelmina; Jr.....Santa Ana, Cal.
Schwaegler, Viola M.; Fr.....Selah

Schwellenbach, Lewis B.; Fr.....Spokane
Scott, Burton F.; Fr.....Oakley, Kas.
Scott, Earle W.; So.....Seattle
Scott, Oma B.; Sr.....Seattle
Scott, Winfield; So.....Camas
Seagrave, Louis H.; Fr.....Spokane
Seal, Irene; So.....Colville
Seibert, Marjorie D.; So.....Seattle
Selig, Isabel; So.....Seattle
Semmen, Eunice M.; Fr.....Aberdeen
Semmen, Florence I.; Sr.....Aberdeen
Severns, Edward E.; So.....Chehalis
Sexton, Lawrence E.; Jr.....Everett
Shackleford, Charlotte; Sr.....Tacoma
Shafer, Walter C.; Fr.....Tacoma
Shaff, Louise; So.....Lewiston, Idaho
Sharpe, Ruth C.; Fr.....Seattle
Sheehan, M. Madeline; So.....Walla Walla
Shelton, Edward M. Jr.; Fr.....Seattle
Shelton, Sarah L.; Fr.....Seattle
Shiel, Walter P.; So.....Spokane
Shivvers, Clarence H.; So.....Tacoma
Shoemaker, H. Curtis; Fr.....Spokane
Siemens, Margaret; Sr.....Seattle
Siler, Minnie; Fr.....Everett
Silver, Max A.; Fr.....Seattle
Silverstone, Libbie; So.....Seattle
Simon, Arthur E.; Fr.....Spokane
Sims, Agnes H.; Fr.....Walla Walla
Simson, Lillian L.; So.....Nome, Alaska
Sisler, Gertrude; Fr.....Seattle
Slater, Glen J.; So.....Ferndale
Sloan, Freda A.; Fr.....Seattle
Smith, Alice W.; So.....Seattle
Smith, Bess I.; Sr.....Seattle
Smith, Charles M.; Fr.....Provo, Utah
Smith, Gwendoline; So.....Portland, Ore.
Smith, Harriet; So.....Tacoma
Smith, Helen A.; Fr.....Seattle
Smith, Leah I.; Sr.....Seattle
Smith, Mark E.; Fr.....Everett
Smithson, Martha; So.....Vancouver, B. C.
Snowden, James M.; Fr.....Ellensburg
SoRelle, Vivian; Jr.....Bellingham
Southard, Marion; So.....Seattle
Spannagel, Edna; Jr.....Spokane
Sparks, Percy S.; So.....Montesano
Spence, Mrs. C. W.; Fr.....Seattle
Spencer, Eunice A.; So.....Seattle
Squire, Clark A.; So.....Seattle

Staatz, Stanley; Fr.....Tacoma
Starr, Evangeline; Fr.....Seattle
Startup, Elmer G.; Fr.....Startup
Stebbins, Paul R.; Fr.....Seattle
Steel, Grace M.; Fr.....Enterprise, Ore.
Steelman, Albert J.; Fr.....Seattle
Steendahl, Anna S.; Fr.....Seattle
Stegner, Guy T.; So.....Irvin
Steinke, Christoph; Fr.....Seattle
Stephens, Eleanor S.; Sr.....Spokane
Stetson, Harold D.; Fr.....Seattle
Stevenson, Rebecca; Fr.....Seattle
Stewart, Charles W.; Fr.....Buckley
Stewart, Clare; Fr.....Seattle
Stewart, Wade A.; So.....Seattle
Stier, Dimple F.; Fr.....Whitewater, Wis.
Stilson, Lenore A.; Fr.....Spokane
St. John, Lewis H.; Sr.....Snohomish
Stoll, Lucia E.; Fr.....Seattle
Stone, Ella G.; So.....Seattle
Stone, Frances A.; So.....Vancouver
Stoner, Lillian U.; Jr.....Osceola, Neb.
Strange, Fern; Fr.....Seattle
Street, Frank W.; Fr.....Seattle
Street, Gladys; Fr.....Seattle
Streeter, Mildred; Fr.....Seattle
Strong, Clara; Sr.....Seattle
Struble, Mildred C.; So.....Spokane
Stryker, Jetret; Fr.....Bellevue
Sullivan, Kathleen; Jr.....Butte, Mont.
Sully, C. Fredericka; Fr.....Seattle
Summersett, Agnes; Fr.....Chehalis
Sundholm, Frederick O.; Fr.....Everson
Sutherland, D'Loss; So.....Tacoma
Sutherland, Luther W.; So.....Davis City, Iowa
Sutherland, Margaret W.; Fr.....Seattle
Sutter, Pearl E.; So.....Seattle
Sutton, Wayne C.; Jr.....Seattle
Swale, Jack B.; Fr.....Everett
Swan, Eleanor J.; Sr.....Seattle
Swanson, LeRoy D.; Fr.....Spokane
Swearinger, Mary J.; Fr.....Tacoma
Sweet, Elsie S.; Sr.....Bellingham
Takegawa, Johane T.; Fr.....Seattle
Talbot, Caroline B.; Jr.....Seattle
Talbot, John A. Jr.; Fr.....Seattle
Tanaka, Shinichi; Fr.....Seattle
Taylor, Cyril; Fr.....Seattle
Taylor, Wm. D. Jr.; Fr.....Seattle
Telford, Elsie C.; Fr.....Oregon City, Ore.

Tewinkel, Ruth M.; Fr.....Spokane
Thaanum, Margaret G.; Sr.....Seattle
Thomas, Gezina; So.....Seattle
Thomas, Irving W.; Fr.....Seattle
Thomle, Gudveig M.; So.....Stanwood
Thomle, Kristine, Jr.....Stanwood
Thompson, Agnes S.; Jr.....Seattle
Thompson, Ruth; So.....Seattle
Thompson, Wm. Guy; So.....Seattle
Tibbits, Helen D.; Fr.....Wenatchee
Tift, Lillian B.; Fr.....Seattle
Tollefson, Christine E.; Fr.....Tacoma
Tolman, Leland I.; Jr.....Spokane
Torrance, Kirby; Fr.....Spokane
Tower, Pearl A.; So.....Seattle
Towns, Lola D.; Fr.....Seattle
Trahey, Hazel; Fr.....Seattle
Trenholm, Howard A.; So.....Seattle
Tretheway, Bessie L.; Jr.....Butte, Mont.
Tronsrud, Anna C.; Jr.....Kirkland
Troutman, Blanche V.; Fr.....Seattle
Truesdell, John C.; Fr.....Seattle
Turnbull, George S.; Jr.....Seattle
Turner, Ruth; So.....Seattle
Turpin, Harold L.; So.....Seattle
Tvete, Raymond W.; Fr.....Seattle
Tyler, Angela R.; Fr.....Seattle
Umesaki, Naonob; So.....Japan
Upper, Ewart S.; So.....Orillia
Van de Bogart, Paul M.; Fr.....Hillyard
VanDevanter, Louise M.; Jr.....Seattle
Van Horn, Gladys; Fr.....Seattle
Van Kirk, Viola M.; Fr.....Corona, Cal.
Vawter, Minnie; Fr.....Tacoma
Vermillion, Gladys M.; So.....Portland, Ore.
Virtue, Chauncey H.; Fr.....Seattle
Votaw, Aimee V.; Fr.....Tekoa
Wada, Toshimasa; Fr.....Japan
Wakefield, Georgia; Fr.....Seattle
Waldrip, Sarah P.; Sr.....New Kamilche
Walker, Claude G.; Fr.....Fairbanks, Alaska
Wallace, Howard S.; Sr.....Ellensburg
Wallace, Mary A.; Jr.....Seattle
Walters, Hazel B.; Sr.....Manchester
Ward, Frank D.; Fr.....Seattle
Ward, Mary A.; Fr.....Seattle
Ward, Pearl E.; Fr.....Seattle
Wardrope, Ralph; Jr.....Leeds, N. D.
Warren, Edith I.; Fr.....Seattle
Warren, Frank; Fr.....Seattle

Warren, Helena Clark; Fr.....Spencer, Mass.
Watson, Elmer Gordon; Fr.....Spokane
Watters, Aimee A.; So.....Spokane
Waugh, James Ruggles; Sr.....Seattle
Wayland, Margaret; Fr.....Seattle
Weatherwax, Martha B.; Fr.....Blaine
Weaver, Lucile Verna; Fr.....Portland, Ore.
Weisfield, Leo; Sr.....Seattle
Weiss, Philip J.; Fr.....Seattle
Weixel, Bessie B.; Fr.....Seattle
Welch, Julia; Jr.....Seattle
Wells, Norma M.; Sr.....Seattle
Welton, Martha R.; Jr.....Seattle
Werby, Mamie M.; Fr.....Seattle
West, Frederick Foster; Fr.....Tacoma
Weston, Alvah T.; So.....Portland, Ore.
Wheeler, Gladys F.; Jr.....Seattle
Wheeler, Henry O.; Fr.....Tacoma
White, Frank E.; Fr.....Seattle
White, Lena H.; Jr.....Whitehorse, Canada
White, Marjorie; Fr.....Seattle
White, May; Jr.....Seattle
White, Virginia A.; Fr.....Seattle
Whitlock, Marion A.; So.....Tacoma
Whitwell, Gladys E.; Fr.....Salmon, Idaho
Wiester, Grace M.; Jr.....Wenatchee
Wilbur, Alvira W.; Jr.....Seattle
Wiley, Richard E.; So.....Hillsboro, Ore.
Wilkey, Florence J.; Fr.....Tacoma
Wilkie, Florence M.; So.....Seattle
Williams, Charlotte M.; So.....Seattle
Williams, Louise; Jr.....Seattle
Williams, W. Carleton; Fr.....Seattle
Willis, Bryant A.; Fr.....Seattle
Wilsey, W. Ralph; Jr.....Seattle
Wilson, Isobel M.; Jr.....Seattle
Wilson, John N.; So.....Seattle
Wilson, Mabel P.; So.....Spokane
Wilson, Marie H.; Sr.....Seattle
Wilson, Ross S.; Fr.....Bellingham
Wilson, T. Burl; So.....Seattle
Wilton, G. Lawrence; Fr.....Seattle
Wittenberg, Ralph S.; Fr.....Portland, Ore.
Woelflen, Frederick A.; Jr.....Lewiston, Idaho
Wolcott, Blanche; Fr.....North Yakima
Wood, Ruth A.; So.....Snohomish
Wood, Wilma B.; So.....Seattle
Woods, Arra J.; Jr.....Seattle
Woodward, Frances M.; Jr.....Seattle
Worthington, Grace; Jr.....Quilcene

Worthington, Mariette; So.....Quilcene
Wright, Charlotte H.; Fr.....Ellensburg
Wright, Farnsworth; Sr.....Seattle
Wright, Mary Agnes; Fr.....Seattle
Wright, Robert C.; Jr.....Seattle
Wyman, Mary; Fr.....Colfax
Yerger, Bessie P.; Fr.....Seattle
Young, George Wesley; Fr.....Winslow
Young, Jennie R.; Fr.....Seattle
Younger, J. Arthur; Jr.....Kirkland
Zeck, Lando W.; Fr.....Auburn
Zelasko, Josef; Fr.....Aberdeen
Zinkie, Marjorie J.; Sr.....Seattle

UNCLASSIFIED STUDENTS

Name of Student	*Home Address*
Alexander, Marion	Seattle
Armstrong, Dexter A.	Tacoma
Bailey, George C.	Seattle
Bean, F. Lorraine	Seattle
Birkelbach, Wm. G.	Minden, Neb.
Brakel, Marguerite B.	Portland, Ore.
Brown, Hazel	Seattle
Coffman, John B.	Chehalis
Conaway, M. Gail	Seattle
Conner, Ruth	Seattle
Dick, G. Wayne	Seattle
Doragh, Elsie	Olympia
Draper, Edith M.	Seattle
English, Redmond F.	Arcadia, Wis.
Fix, Harold	Spokane
Foltz, Laura A.	Tacoma
Frye, A. Fidelia	Seattle
Fuller, Helen H.	Seattle
Gosling, Della	Seattle
Hamano, Suetaro	Japan
Hull, H. May	Seattle
Hull, Jessie H.	Seattle
Hurwitz, Anne P.	Seattle
Hyatt, Lethel B.	Everett
Janeck, Victor W.	North Yakima
Jensen, George A.	Seattle
Johnson, Carrie N.	Seattle
Kearny, Charles R., Jr.	Seattle
Landsburg, Frank E.	Treadwell, Alaska
Gotfrid, Lindan	Seattle
McAuslan, DeEtte	Seattle
McAuslan, Marie	Seattle

McDonald, Harold J. ..... Seattle
McFee, John ..... Seattle
Mallette, Lester ..... Spokane
Maples, Robert ..... Seattle
Meenach, Gladys M. ..... Seattle
Miller, G. Thelma ..... Seattle
Moffett, Bert H. ..... Hutchinson, Minn.
Neely, C. Bertis ..... Spokane
Newland, Temple ..... Chehalis
Pedersen, Ralph M. ..... Seward, Alaska
Ramsdell, Marie S. ..... Seattle
Reyburn, Edwin ..... Seattle
Rice, M. May ..... Seattle
Riddle, William S. ..... Seattle
Sandstedt, Mrs. Etta M. ..... Seattle
Searle, W. Everett ..... Sunnyside
Sherman, Thomas W. ..... Seattle
Smallwood, Gladys N. ..... Seattle
Southwood, Marion E. ..... Spokane
Spirk, Alice L. ..... Seattle
Squier, Emma-Lindsay ..... Port Orchard
Steiner, Rita L. ..... Salem, Oregon
Swanson, Edward ..... Sprague
Thomas, Mary Virginia ..... North Yakima
Tuesley, Walter H. ..... North Yakima
Turrell, Beatrice M. ..... Seattle
Walby, Janet L. ..... Seattle
Weissmiller, Cornelia M. ..... Seattle
Wilson, William R. ..... Seattle
Wright, Horace W. X. ..... Tacoma

SPECIAL STUDENTS

Name of Student	*Home Address*
Allen, Mildred A.	Seattle
Allen, Minnie B.	Seattle
Allison, J. C.	Ritzville
Bachmann, Rose Mary	Seattle
Barrows, Jeanette V.	Chinook
Berg, Ida B.	Missoula, Mont.
Berrian, Mrs. Margaret	Seattle
Betts, Charles A.	Seattle
Bigelow, Harry C.	Seattle
Bradley, George E., Jr.	Seattle
Brilliant, Albert	Seattle
Broulette, B. Marie	Seattle
Bryan, Clara M.	Montesano
Burroughs, Hazel	Seattle
Butler, Mrs. Marjorie	Seattle

Butterfield, Harry W. ..... Hood River, Ore.
Buzby, M. Conradine ..... Seattle
Byerly, Marian ..... Seattle
Cavanaugh, James Alfred ..... Victoria, B. C.
Chase, Mrs. Mary F. ..... Seattle
Claghorn, Agnes L. ..... Seattle
Coats, Cecil L. ..... Seattle
Collins, Helen T. ..... Seattle
Cook, Helen M. ..... Seattle
Cooper, Mary Blanche ..... Seattle
Dean, Edna ..... Seattle
Dice, Lucy ..... Seattle
Dickey, Dorothy L. ..... Seattle
Dowle, Mrs. Alice C. ..... Seattle
Downie, Mrs. Lou Chase ..... Seattle
Dunmore, Blanche ..... Seattle
Elliott, M. Olive ..... Marion, Kas.
Fallis, Pearl ..... Seattle
Fancher, John T. ..... Spokane
Frazier, Laura L. W. ..... Seattle
Ghedini, Napoleon ..... Seattle
Gibson, Mildred ..... Seattle
Goodwin, Dorothea ..... Seattle
Gordon, Ethel ..... Seattle
Greene, Mrs. S. Estella ..... Cloverland
Grover, Freda Shirley ..... Seattle
Herring, Mary B. ..... Seattle
Hewson, Marguerite E. ..... Granger
Hoard, Mrs. Bertha A. ..... Seattle
Holmes, Marjorie ..... Seattle
Hoover, Ralph L. ..... Hoquiam
Howell, Eliza B. ..... Spokane
Jackson, Clarisse ..... Tacoma
Johanson, Bror Ulrik ..... Seattle
Johnston, Theo K. ..... Seattle
Jones, Nancy Emerson ..... Seattle
Karr, Surendra Nath ..... Calcutta, India
Keyes, Mrs. Mary Houghton ..... Seattle
Krenz, Pauline A. ..... Seattle
Lowman, J. Guy ..... Seattle
McClung, Ray ..... Pomeroy
McConnel, Mary E. ..... Seattle
McCullough, Alice E. ..... Seattle
MacDonald, Roswell J. ..... Seattle
McKee, G. Meade ..... Shepherd, Mich.
Miller, Hortense ..... Wenatchee
Miller, Sidney R. ..... Seattle
Morris, W. Harry ..... Seattle
Morrow, Will J. ..... Seattle
Neibling, M. Helen ..... Seattle

Norton, Parker L. ..... Kingfield, Me.
Oakley, Enola I. ..... Seattle
Orr, Mrs. Marie D. ..... Seattle
Osborn, Ed L. ..... Seattle
Osbrink, Leroy A. ..... Custer
Paley, Eugenie ..... Seattle
Pascoe, Myra Aurelia ..... Warehouse Point, Conn.
Paulsen, Mark G. ..... Seattle
Pollock, William Gilchrist ..... Summerland, B. C.
Pratt, Gertrude ..... Seattle
Pritchard, Frank A. ..... Seattle
Rank, Lorraine M. ..... Spokane
Read, Mrs. Isa ..... Seattle
Reavis, S. Freeman ..... Seattle
Reynolds, Olga G. ..... Langley
Schaefer, R. Madeline ..... Glidden, Wis.
Seaver, Edith F. ..... Seattle
Smith, Betty D. ..... Shreveport, La.
Spencer, Evelyn ..... Everett
Stowell, Mrs. Mary W. ..... Cashmere
Streeter, Ethel B. ..... Seattle
Tanner, Frances J. ..... Seattle
Thomsen, Therese ..... Seattle
Tilden, Mrs. George H. ..... Seattle
Train, Edward N. ..... Seattle
Tripp, Etta G. ..... Seattle
Trombly, Lemuel A. ..... Worcester, Mass.
Wanstall, Geoffrey H. ..... Seattle
Wein, Clara G. ..... Seattle
Wharton, Agnes H. ..... Seattle
Wilson, Florence M. ..... Seattle
Wood, Joseph S. ..... Seattle
Woodaman, Van M. ..... Seattle

COLLEGE OF SCIENCE

ABBREVIATIONS

CLASSES

Sr.	Senior	So.	Sophomore
Jr.	Junior	Fr.	Freshman

Name of Student and Rank	*Home Address*
Ainslie, Elsie; Fr.	Seattle
Ake, C. Lail; Fr.	Mountain Home, Idaho
Allen, Mabelle, So.	Pendleton, Oregon
Amidon, Mabell J.; Sr.	Seattle
Anderson, Frances E.; Fr.	Edmonds
Anderson, J. Sigurt; Jr.	Parma, Idaho
Anthony, Julia Emma; Jr.	Seattle
Arthun, Mabel V.; Jr.	Seattle
Ayres, Harry W.; So.	Tacoma
Babcock, Grace E.; Jr.	Port Angeles
Bachmann, Amelia H.; Fr.	Seattle
Bagley, Walter E.; Jr.	Seattle
Bailey, Caroline E.; Fr.	Seattle
Ballaine, Sophronia; Fr.	Seattle
Barash, Leah; Jr.	Seattle
Bardin, Galva J.; Fr.	Seattle
Barter, Ella; Fr.	Seattle
Baughman, Pearl; Fr.	Seattle
Bedell, Mary E.; Sr.	Seattle
Behling, Vera F.; Fr.	Buffalo, N. Y.
Berglund, Fannie; Jr.	Astoria, Ore.
Berlin, Lawrence Dow; Fr.	Kent
Billups, John A.; Fr.	Vashon
Bjorklund, Irene E.; So.	Seattle
Bolli, John; So.	Lindsborg, Kas.
Boltz, Oswald H.; Fr.	Seattle
Boucher, Jessie L.; Jr.	Kent
Bowers, Marion R.; Fr.	Spokane
Bowie, Frances; Fr.	Roslyn
Boyd, Louise B.; Sr.	Portland, Ore.
Brackett, Bertha; Fr.	Seattle
Breck, Margaret; So.	Seattle
Bressler, Donald L.; Fr.	Genesee, Idaho
Bronson, Ira L. Jr.; So.	Seattle
Brown, Leon V.; Fr.	Wenatchee
Brown, Marjorie F.; Fr.	Seattle
Bryan, Goldie A.; Fr.	Seattle
Bucher, Neva M.; So.	Spokane
Bunce, Wilda J.; So.	Oberlin, Ohio
Cady, Osman H.; Jr.	Seattle

Caffrey, Genevieve E.; So.....Seattle
Campbell, Blanche; So.....Seattle
Campbell, Donald M.; Fr.....Seattle
Carpenter, Beatrice Hale; So.....Seattle
Carpenter, Hazel B.; Jr.....Seattle
Carroll, Emmett R. Jr.; So.....Seattle
Case, Edith H.; So.....Seattle
Chambers, Vera; Fr.....Yelm
Chapman, Grace Lillian; Fr.....Seattle
Clancy, Frank; Fr.....Seattle
Clift, Ruby M.; Sr.....Selah
Coleman, Alice I.; Fr.....Algona
Collings, Clyde W.; Fr.....Vancouver
Colvin, Grace; So.....Tacoma
Combs, Ethel M.; So.....Seattle
Conmey, Kathryn; So.....Sedro Woolley
Cornelius, Philip A.; Sr.....Mt. Vernon
Coughlin, Walter G.; Jr.....Seattle
Crawford, Donald R.; Fr.....Seattle
Crawford, Grace R.; Fr.....Seattle
Crippen, Inez; So.....Spokane
Crippen, Maida M.; Fr.....Spokane
Croson, Roy; So.....York, Nebr.
Dabney, Helen; Jr.....Seattle
Dana, Winfred P.; Fr.....Tacoma
Davison, Dorothy; So.....Seattle
Day, Florence A.; Sr.....Seattle
DeMerchant, Leo; Fr.....Oroville
Denney, Elwood V.; Fr.....Seattle
Desmond, Margaret R.; Fr.....Tacoma
Donovan, Harrison; Fr.....Seattle
Downs, Agnes L.; Fr.....Mt. Vernon
Drummond, Jessie; Sr.....Tacoma
Durham, Hazel A.; Fr.....Kennewick
Eaton, Mary M.; So.....Endicott
Edgerton, Verna M.; Fr.....Puyallup
Eggleston, Gertrude B.; So.....Seattle
Elliott, Bertram R.; Fr.....Vernon, B. C.
Entz, Ruth; So.....Seattle
Erickson, Lorraine M.; Fr.....Seattle
Falknor, Judson; Fr.....Seattle
Fay, Helen F.; Fr.....Seattle
Fay, Temple S.; Fr.....Seattle
Felder, Herman A.; Sr.....Toppenish
Fettke, Margaret E.; Sr.....Tacoma
Fitts, Isabel; So.....Seattle
Flanley, Evelyn L.; Fr.....Seattle
Foltz, Florence A.; Fr.....Tacoma
Foreman, Leotta M.; Fr.....Tacoma
Fredson, Dora E.; Jr.....Shelton

Freeman, Robert; Fr.....Spokane
Freeser, Laura L.; Sr.....Twodot, Mont.
French, Leslie E.; Fr.....Elma
Frew, Rosamond; Fr.....Seattle
Furst, D. Mabel; Fr.....Spokane
Gardner, Chester B.; So.....Seattle
Gay, Gladys; Fr.....Seattle
Gearhart, Esther; Fr.....Astoria, Ore.
Gille, Madell; Jr.....Seattle
Gladden, Orvis C.; Fr.....Seattle
Gleason, Ruth; So.....Seattle
Glenn, M. Ethel; Fr.....Tacoma
Glockler, George; Jr.....Seattle
Goodro, Katherine J.; Jr.....Olympia
Gorrell, G. Wilna; Fr.....Dayton
Gosnell, J. Henry; Fr.....Seattle
Gray, Isabel; So.....Spokane
Greene, Gaylord W.; Jr.....Seattle
Greenwood, Lyle A.; Jr.....Bellingham
Griffiths, Marion A.; Fr.....Seattle
Groves, Leslie R. Jr.; Fr.....Fort Lawton
Guitteau, Robert; So.....Seattle
Hall, W. Athol; Jr.....Sprague
Hamilton, Margaret Deane; Fr.....Seattle
Hanawalt, O. Harold; So.....Tacoma
Hanson, Helen R.; Fr.....Seattle
Harmon, Don C.; Fr.....Mt. Vernon
Harper, Joseph C.; Fr.....Seattle
Harris, Arthur K.; Fr.....Colfax
Harrison, A. Myrtle; Jr.....Astoria, Ore.
Havens, Mareta; Sr.....Seattle
Headrick, Grace M.; Sr.....Bellingham
Hemphill, Harold; Fr.....Seattle
Henderson, Phil A.; So.....Portland, Ore.
Henry, Ruth V.; Fr.....Seattle
Hess, Dorothy A.; So.....Seattle
Hess, Gladys F.; Jr.....Seattle
Hilliker, Grace E.; Fr.....Mt. Vernon
Home, Jessie M.; Fr.....Ellensburg
Hopkins, Sheridan; Fr.....Seattle
Howard, Alma B.; Jr.....Seattle
Huntington, Roma; Jr.....Seattle
Hutchinson, Pearl I.; Jr.....Seattle
Irvine, Marguerite I.; Jr.....Seattle
Jacobson, Julia A.; So.....Seattle
Jacobson, Rose; Jr. .....Seattle
James, Marie C.; Fr.....Spokane
Jamieson, Ida M.; So.....Spokane
Jerbert, Arthur R.; So.....Seattle
Johnson, C. J. Algot; Fr.....Seattle

Johnson, Gladys A.; Fr.....Waterman
Johnson, Grace Alice, Fr.....Seattle
Johnson, Hilda; Fr.....Nome, Alaska
Johnson, Oscar F.; Jr.....Mt. Vernon
Johnson, Ruth F.; Jr.....North Yakima
Johnstone, Margery R.; Jr.....Seattle
Jones, Frank M.; Sr.....Ritzville
Jones, Margaret C.; Fr.....Mt. Vernon
Jones, Max E.; Fr.....Seattle
Karrer, Joanne L.; Jr.....Roslyn
Kaufman, Katharine G.; Fr.....Bellingham
Kear, Fay M.; Jr.....Unity, Ore.
Keene, Gertrude B.; Sr.....Seattle
Kellner, Frank E.; Fr.....Hamilton
Kenison, Ralph B.; Fr.....Twisp
Kenney, Marjory D.; Fr.....Ellensburg
Kerr, Lelah B.; Sr.....Seattle
Kinley, Elsie E.; Fr.....Bandon, Ore.
Kirschner, Karl K.; So.....Seattle
Knausenberger, Clara L.; Fr.....Seattle
Knausenberger, Hilda; Fr.....Seattle
Kralowec, Harriette B.; Fr.....Auburn
Kraus, Ada; So.....Seattle
Kuehner, Louise M.; So.....South Bend
LaBossier, Inez J.; Fr.....Kent
Lawson, Walter E.; Fr.....Spokane
Learned, Iona; Fr.....Port Townsend
Lee, Vaughn; So.....Spokane
Legg, Helen Taft; Fr.....Quilcene
Lew, G. Don; Jr.....Seattle
Libby, Jessie Helen; Fr.....Seattle
Lincoln, Mattie J.; Jr.....Seattle
Livingston, Carl D.; Sr.....Seattle
Lloyd, Irving E.; Fr.....Tumwater
Long, Ruby O.; Sr.....Cashmere
Lungreen, Edith C.; So.....Seattle
Lyon, D. Dee; Sr.....Weiser, Idaho
McBeath, Byrdie A.; Jr.....Everett
McClarren, Mabel L.; Sr.....Seattle
McConihe, Paul M.; Fr.....Tacoma
McCormick, Irma Alinta; Fr.....Seattle
McCready, Norman Merkley; So.....Snohomish
McManus, Lee R.; Jr.....Cashmere
McQuarrie, Jessie Waddell; Fr.....Seattle
Macaulay, Margaret; Sr.....Deming
Majors, Irene; Fr.....Seattle
Marcuson, Paul I.; Fr.....Seattle
Martin, Ruth; Fr.....Seattle
Martz, Grace Evelyn; Fr.....Seattle
Mayer, Siegfried; Fr.....Seattle

Merling, Ruth E.; So.....Seattle
Milburn, Roszelle; Jr.....Seattle
Miller, Helen A.; Fr.....Tacoma
Miller, Martha J.; Jr.....Seattle
Minnis, Wesley; So.....Seattle
Misner, Doris; Fr.....Tacoma
Mitchell, Esther B.; So.....Seattle
Mitchell, Ida; Fr.....Ruthton, Minn.
Mitchell, Richard S.; Fr.....Olympia
Moomaw, Helen Frances; Fr.....Seattle
Morgan, Charles Wesley; So.....Uniontown
Morgan, Mona M.; So.....Marysville
Morse, Elsie J.; So.....Seattle
Morton, Lucie W.; Fr.....Seattle
Mower, Lulu I.; Sr.....Blaine
Noble, Claude S.; So.....Seattle
Noble, Elmer J.; Fr.....Centralia
Nolan, Walter Joseph; Fr.....Seattle
Norman, Harry Emmanuel; Fr.....Chico
Oldfield, Helen; Sr.....Tacoma
Olson, Cecelia O.; Fr.....Port Townsend
Olson, Oscar E.; So.....Lindsborg, Kas.
O'Neill, Hertha J.; So.....Castle Rock
Ormsby, George, So.....Sheffield, Iowa
Ott, Esther M.; Fr.....Preston, Minn.
Paige, Caroline T.; Jr.....Portland, Ore.
Paige, Susie B.; So.....Portland, Ore.
Palmer, Esther R.; Jr.....Seattle
Parker, Catherine A.; So.....Seattle
Parker, Frances Estella; Fr.....Seattle
Parker, Roscoe S.; Sr.....Seattle
Parks, George Sutton; Jr.....Seattle
Parr, Marie F.; So.....Seattle
Parrott, J. Clifford; Fr.....Twin Falls, Idaho
Patten, Anna; Fr.....Seattle
Patton, Ysabel; Fr.....Hoquiam
Peck, Millicent I.; Fr.....Seattle
Pennell, Elisabetta C.; So.....Seattle
Peterson, Florence M.; Fr.....Seattle
Peterson, Geneva V.; So.....Seattle
Platner, E. Idessa; Jr.....Seattle
Platner, Goldie; Jr.....Seattle
Poe, Earl B.; Fr.....Spokane
Pollard, B. Christine; Fr.....Highmore, S. D.
Powell, Sargent G.; So.....Seattle
Pratt, A. Mae; Fr.....Ferndale
Price, Frances M.; So.....Sifton
Pritchard, J. G.; Fr.....Tekoa
Pritchard, Millie M.; Fr.....Seattle
Proctor, Grace R.; Fr.....Seattle

Props, Nellie H.; So.....Fall City
Prothero, Kate; So.....Seattle
Race, William Puget; Fr.....Coupeville
Ramaker, Hazel Dean; Fr.....Seattle
Ratcliffe, Ruth E.; Jr.....Cheney
Raynor, George E.; Fr.....Seattle
Read, James W.; Fr.....Vancouver, B. C.
Reed, Ernest; So.....Seattle
Reed, Paul M.; Jr.....Seattle
Reed, Rachel M.; Fr.....Estacada, Ore.
Rehmke, Antoinette Maria; Fr.....Port Orchard
Reid, Elizabeth; Jr.....Estacada, Ore.
Rembe, Armin C. R.; Fr.....Lincoln, Ill.
Rich, Wilson A.; So.....Seattle
Richardson, Ralph E.; Fr.....Lind
Rickard, Beulah E.; So.....Cleveland, Ohio
Rickert, Ethel; Fr.....Seattle
Roberts, Ruth M.; Fr.....Seattle
Robins, Morris A.; Fr.....Seattle
Robinson, Maude I.; So.....Seattle
Rodman, Harold; Fr.....Wapato
Rohwer, Chris J.; So.....Spangle
Rose, Gertrude; So.....Seattle
Rosenstein, Julia; So.....Genesee, Idaho
Rough, Charles A.; So.....Seattle
Rounds, Ethelyn Byrne; Fr.....Seattle
Rowe, Frances E.; Fr.....Oakesdale
Ryan, Anna Louise; Fr.....Auburn
Ryan, Joseph Gerald; So.....Seattle
Saboe, Grace M.; So.....Seattle
Sanders, Alvis M.; Fr.....Spokane
Sauter, Jean; Fr.....Seattle
Schar, Robert S.; Sr.....East Liverpool, Ohio
Schutt, E. Leslie; Fr.....Albuquerque, New Mexico
Schwartz, George L.; Jr.....Seattle
Seydel, Grace V.; Sr.....Seattle
Shaffer, Florence; Fr.....Seattle
Shannon, Clarence W.; So.....Seattle
Shelton, Lucy M.; Fr.....Seattle
Sherwood, Glenara; Fr.....Bellingham
Shipley, Ethelyn; Jr.....Seattle
Simmons, Mary; Sr.....Allegan, Mich.
Sims, M. Geneva; Fr.....Walla Walla
Slack, Jean G.; Fr.....Waterville
Slemmons, Wilbert S.; Fr.....Ellensburg
Smith, Frances K.; Fr.....Pendleton, Ore.
Smith, Lucile; Fr.....Huntsville
Soule, Kenneth; So.....Seattle
Sowerby, Mina; Sr.....Juneau, Alaska
Sowers, Joe M.; So.....Sunnyside
Spear, Blanche S.; Fr.....Fort Benton, Mont.

Spelger, F. Marian; So.....Seattle
Spencer, Alura; So.....Seattle
Spicer, Cecil V.; Jr.....Camas
Stauffer, J. Cassius; Jr.....Spokane
Stewart, May A.; So.....Tacoma
Stieglitz, Vard; Fr.....Aberdeen
Stilson, Edgar L.; Fr.....Spokane
Summers, Leola; Fr.....Seattle
Swan, James H.; So.....Canton, China
Swartz, Zella J.; Fr.....Kent
Swartz, Florence; Fr.....Seattle
Swope, Alice L.; Fr.....Seattle
Swope, Helen; So.....Seattle
Taylor, Marguerite G.; Fr.....Seattle
Taylor, O. Marion; Sr.....Tacoma
Taylor, Martha S.; Jr.....Seattle
Thomas, Kramer; Fr.....Seattle
Thomas, Lucile; Fr.....Seattle
Thompson, Leonard R.; So.....Everett
Thompson, Luciole M.; Jr.....Seattle
Thomson, Jeannie L.; Fr.....Santa Cruz, Cal.
Titcomb, Adeline G.; Fr.....Bellingham
Todd, Mary C.; So.....Seattle
Tomlinson, Margaret; Sr.....Seattle
Turesson, Gote W.; Sr.....Malmo, Sweden
Turner, Jessie F.; Fr.....Seattle
Vader, Zilmah F.; Fr.....Coupeville
VanSaut, Helen M.; Fr.....Coupeville
Vinsonhaler, Elizabeth; Fr.....Seattle
Von Lossow, Pauline; Fr.....Auburn
Wade, Dorothy; So.....Seattle
Wagner, Katherine B.; Jr.....Seattle
Waite, Netta M.; Sr.....Seattle
Waite, Nettie L.; Fr.....Seattle
Waite, Vera B.; Fr.....Seattle
Walter, Ernest R.; So.....Denver, Col.
Ward, May D.; So.....Seattle
Waynick, Dean D.; Sr.....Spokane
Weage, Densmore C.; Fr.....Seattle
Weaver, Ralph B.; Jr.....Tacoma
White, Willard D.; Jr.....Seattle
Whitney, Frank F.; Fr.....North Yakima
Williams, Annie J.; So.....Butte, Mont.
Wilson, Emma F.; Sr.....Seattle
Wilson, George W.; Fr.....Seattle
Wilson, Margaret Anne; So.....Aberdeen
Wilson, Marjorie F.; Fr.....Tacoma
Wilson, Stanley R.; Jr.....Ellensburg
Wirt, Harry; Fr.....North Yakima
Wold, H. Pareli A.; So.....Trondhjem, Norway

Wold, Mabel I.; So.....Camrose, Alta.
Woodruff, Ruby H.; Fr.....Bellevue
Wright, H. Garner; Sr.....Seattle
Wright, Gladys L.; Fr.....North Yakima
Wright, Lulu J. L.; So.....Missoula, Mont.
Yahya, Mohammed A.; So.....Seattle
Yocom, Elizabeth; Jr.....Tacoma
York, Arthur F.; Fr.....Tacoma

UNCLASSIFIED STUDENTS

Name of Student	*Home Address*
Bell, Jessie L.	Seattle
Burley, Leon V	Seattle
Cornell, Gladys	Tacoma
Hackett, Edna C	Seattle
Handsaker, Ama H	Tacoma
McPherson, Andrew F	Bellingham
Meyer, Mabel J	Tacoma
Pendleton, Katherine	Everett
Smith, Donnell J	Mukilteo
Stauffer, Anne E	Spokane
St. John, E. Ivalon	Richmond
Thompson, Marguerite E	Seattle
Walker, Charles H	Seattle
Warwick, Charles S	Edwall
Will, Bess R	Seattle
Wilson, Margaret T	Seattle
Woodard, Ruth A	Cottage Grove, Ore.
Wright, Harriet A	Bellingham

SPECIAL STUDENTS

Name of Student	*Home Address*
Adams, Rosamond	Yakima
Cameron, Lillian May	Seattle
Carson, Leslie D	Seattle
Clark, Barbara	Seattle
DeBolt, Mrs. Nellie R	Seattle
Elliott, Madge	Seattle
Elliott, Mary E	Walla Walla
Flodin, Mrs. John	Seattle
Gorham, Kathleen	Seattle
Guerrier, Charles W	Centralia
Harris, Nioma	Wenatchee
Hartge, Mrs. Lena A	Seattle
Hogan, Margaret L	Aberdeen
Keppel, Mrs. Susan M	Seattle
Knowlton, Viola	Farmington, Utah
Kuyper, James C	Sioux Center, Iowa

Lord, Leah ..... Park River, N. D.
Norris, Howard L. ..... Seattle
Singh, Pooran ..... India
Smalley, Robert B. ..... Seattle
Thompson, Gertrude E. ..... Seattle
Thursby, Isabelle S. ..... Orange City, Florida
Tiffin, Lucius D. ..... Seattle
Trow, W. Duane ..... Seattle
Welch, George B. ..... Seattle
Wentworth, Mrs. Lois J. ..... Seattle
Wintermute, H. S. ..... Seattle

SCHOOL OF EDUCATION

ABBREVIATIONS

CLASSES

Sr. Senior Jr. Junior

Name of Student and Rank	*Home Address*
Cobb, Tina Marie; Jr	Seattle
Dirimple, Belle; Jr	Marysville
Gibson, Clayton E.; Jr	Seattle
Greene, Clyde J.; Jr	Grouse, Ore.
Hanville, Merrill Francis; Sr	Seattle
Knapton, Cora L.; Jr	Seattle
Knapton, Mary Alice; Sr	Seattle
Lustie, William August; Jr	Seattle
Studebaker, Herbert E.; Sr	Castlerock
Trempe, Louis A.; Jr	Nagrom
Walsted, Mary B.; Jr	Seattle
White, Addie; Jr	Zadock, Mo.

UNCLASSIFIED STUDENTS

Name of Student	*Home Address*
Johnson, Emma Josephine	Seattle

SPECIAL STUDENTS

Name of Student	*Home Address*
Burton, Jennie L.	Seattle
Gilmore, M. Irene	Seattle
Hall, Bertha M.	Snohomish
Huggett, Ruth	Seattle
Langtry, Florence Nellie	Seattle
McCollins, Clara	Dubuque, Iowa
Myers, W. Edward	Seattle
Norton, O. D.	Seattle
Oakley, Mary	Seattle
Pope, Jeanette	Seattle
Sanborn, Henry A.	Seattle
Simmons, Anna	Seattle
Simmons, Elma	Seattle

COLLEGE OF ENGINEERING

ABBREVIATIONS

CLASSES

Sr. Senior — So. Sophomore
Jr. Junior — Fr. Freshman

COURSES

C. E. Civil Engineering — M. E. Mechanical Engineering
E. E. Electrical Engineering — Ch. E. Chemical Engineering

Name of Student, Rank and Department — *Home Address*

Aalto, I. Angerst; Fr., M. E. — Douglas, Alaska
Adams, John M.; Fr., C. E. — Bellingham
Aldrich, Fred Clark; So., E. E. — Port Townsend
Allen, Frank Elwell; Fr., C. E. — Bellingham
Allison, H. Harold; Fr., E. E. — Seattle
Ammon, Lawrence C.; Fr., E. E. — Edmonds
Anderson, Arthur William; Fr., C. E. — Colton, Ore.
Anderson, Edwin C.; Sr., C. E. — Seattle
Anderson, Hans Christian; Fr., M. E. — Parma, Idaho
Anderson, Juanita; Jr., C. E. — Kirkland
Anderson, Philo H.; Fr., C. E. — Menaw, Idaho
Anderson, Woodworth; So., M. E. — Seattle
Andrews, W. Earl; Fr., M. E. — Newberg, Ore.
Andrus, Claude A.; Fr., E. E. — Seattle
Angove, Clarence; So., E. E. — Seattle
Aono, Frank P.; Fr., E. E. — Japan
Archibald, Norman Silas; So., C. E. — Seattle
Ashim, Leland E.; So., Ch. E. — Seattle
Baer, Harold E.; Jr., E. E. — Seattle
Baird, Earl Llewellyn; Fr., M. E. — Seattle
Bale, Robert E.; Fr., C. E. — South Bend
Bannon, J. Louis; Fr., C. E. — Ft. Madison, Iowa
Barbee, William L.; Fr., C. E. — Seattle
Bardin, Harry Melvin; Jr., E. E. — Seattle
Barker, Perry Earl; Fr., E. E. — Entiat
Barker, Stanley F.; Fr., E. E. — Seattle
Barlow, Russell C.; Jr., C. E. — Tacoma
Bash, F. Edwin; Jr., Ch. E. — Seattle
Batchelder, Harold S.; Jr., Ch. E. — Spokane
Beam, Carl E.; Sr. C. E. — North Yakima
Bean, Ellis H.; So., C. E. — Seattle
Beem, Aubrey B.; Fr., E. E. — Seattle
Beisel, Rex B.; So., M. E. — Cumberland
Bessesen, Ben B.; Jr., E. E. — Portland, Ore.
Bigelow, Paul T.; Sr., E. E. — Edmonds
Bird, Lester F.; Fr., E. E. — Seattle
Bissell, Addison G.; Jr., Ch. E. — Seattle
Blair, Harold W.; So., M. E. — North Yakima

Blair, Homer O.; Sr., E. E.....Tacoma
Bond, Clarke; So., E. E.....Seattle
Bonds, Frank M.; Fr., C. E.....Sumas
Bowen, Hiram; Sr., E. E.....Tonasket
Bowman, Blaine; So., M. E.....Tacoma
Boyd, Winfield; Fr., M. E.....Hastings, Neb.
Boynton, Philip E.; Fr., E. E.....Portland, Ore.
Bracken, V. Earl; Fr., C. E.....Redmond
Bradford, Alfred J.; Sr., C. E.....Seattle
Brandenthaler, A. Arthur; Fr., Ch. E.....Seattle
Brandenthaler, Rudolph R.; Fr., Ch. E.....Seattle
Brayton, William J.; Fr., Ch. E.....Bellingham
Brokaw, Clyde W.; Jr., C. E.....Stanwood
Brooks, John Miles; Fr., C. E.....Dewatto
Brown, Clarence L.; Fr., Ch. E.....Bellingham
Brown, Homer L.; Fr., E. E.....Seattle
Brown, Marsh W.; Fr., C. E.....Seattle
Brown, Robert Q.; So., E. E.....Goldendale
Bruce, James; So., M. E.....Seattle
Burbank, Sydney R.; Jr. E. E.....Seattle
Burns, Alfred A.; Jr., C. E.....Seattle
Bush, George Pollock; Fr., E. E.....Seattle
Bushnell, Spencer G.; Sr., C. E.....Seattle
Cadwell, Ben Lynne; Fr., E. E.....Seattle
Cameron, James Fraser; Jr., C. E.....Seattle
Campbell, John; Sr., M. E.....Seattle
Campbell, Kenneth Duncan; Fr., C. E.....Bellingham
Canfield, H. Florian; So. E. E.....Seattle
Canfield, Ralph E.; Fr., Ch. E.....Seattle
Canney, Jay C.; Jr., C. E.....Los Angeles, Cal.
Carlander, Clarence H.; Fr., Ch. E.....Seattle
Carlson, Carl A. W.; Fr., C. E.....Seattle
Carnahan, Marvin; Fr., E. E.....Kennewick
Carr, Ernest C.; So., E. E.....Seattle
Carson, Charles V.; Fr., M. E.....Seattle
Catching, Ward E.; Fr., C. E.....North Bend
Chamberlain, Samuel I.; Fr., C. E.....Aberdeen
Chapman, Ernest L.; Fr., C. E.....Seattle
Chapman, Franklin E.; Fr., Ch. E.....Seattle
Charles, Perry L.; So., Ch. E.....Seattle
Chandhuri, Debendra Kumar; Sr., E. E.....Calcutta, India
Chin, Kee H.; So., C. E.....Seattle
Cleaveland, Julian Edwin; Fr., Ch. E.....Seattle
Colfelt, Carl Robert; Fr., C. E.....Lebam
Cook, Horace L.; Fr., C. E.....Aberdeen
Cook, Ray Charles; So., M. E.....Tacoma
Coy, Roy; Sr., E. E.....Seattle
Cragan, Calvin; So., E. E.....Idaho Falls, Idaho
Crell, Julius J.; Sr., C. E.....Seattle
Crownover, Lowell G.; Fr., C. E.....Easton

Curtis, Burton F.; So., M. E.....Seattle
Dakin, Walter John; Fr., C. E.....Ferndale
Dana, Clyde A.; Fr., C. E.....Seattle
Dana, Forest C.; Sr., C. E.....Seattle
Daniels, Noah A.; Fr., E. E.....Seattle
Darland, Alvin F.; Sr., E. E.....Tacoma
Dashley, Leo Hubert; Fr., E. E.....Seattle
Davis, Cecil C.; Fr., C. E.....Seattle
Davis, Lloyd L.; So., Ch. E.....Bellingham
Day, Oswald N.; Fr., E. E.....Portland, Ore.
Dean, Ernest P.; So., M. E.....Puyallup
Dean, I. Chester; Sr., C. E.....Hoquiam
Dean, Russell H.; Fr., C. E.....Puyallup
Deggler, Martin; So., C. E.....Chehalis
Deming, George M.; Fr., Ch. E.....Seattle
DeMoss, Sam; Jr., C. E.....Seattle
Dennis, Wolcott; So., M. E.....Seattle
Derham, Peter F.; So., E. E.....Pocatello, Ida.
Deutsche, Richard E.; Fr., C. E.....Seattle
Dewhurst, J. Frederic; Fr., Ch. E.....Seattle
Dodds, John M., Jr., E. E.....Seattle
Donovan, T. Emerson; Fr., C. E.....Seattle
Doolittle, Edward P.; Fr., C. E.....Seattle
Dow, Adrian Jay; So., C. E.....Seattle
Draves, Carl Z.; So., Ch. E.....Seattle
Drips, Arthur N.; Sr., E. E.....Olympia
Driscoll, Thomas, Jr.; So., C. E.....Bremerton
Drummond, Wallace G.; So., C. E.....Seattle
Duffy, Lee; Fr., E. E.....Seattle
Dunaway, Laurence Everett; Fr., C. E.....Seattle
Durrant, Will Edward; Fr. E. E.....Everett
Dyer, J. Eugene; Fr., M. E.....Seattle
Eagleson, James M.; Fr. M. E.....Seattle
Eddy, Howard M.; So., E. E.....Seattle
Edson, Arthur A.; So., E. E.....Bellingham
Ellison, Robert W.; Jr., Ch. E.....Seattle
Elmendorf, Hartwell J.; Fr., M. E.....Seattle
Evans, D. Lester; Fr., C. E.....Seattle
Evans, Thomas P.; Fr., M. E.....Snohomish
Faas, John C. W. H.; Jr., Ch. E.....Silver Creek
Fallis, Robert M.; So., E. E.....Spirit Lake, Ida.
Farmer, Albert M.; So., C. E.....Seattle
Faubert, Edward Henry; Fr., E. E.....Shelton
Fehr, Harry L.; So., E. E.....Seattle
Finch, J. Leslie; Jr., M. E.....Boise, Ida.
Finnigan, Laurence L.; Fr., M. E.....Snohomish
Fleischhauer, J. Harold; Jr., C. E.....Seattle
Fowler, Harold D.; Sr., C. E.....Seattle
Frankland, James; Fr., C. E.....Seattle
Fraser, Garrett Alexander; Fr., C. E.....Seattle

French, Eugene Phillip; Fr., E. E.....Seattle
Fukuzawa, Tanizo; Fr., Ch. E.....Seattle
Gailey, Walter Raymond; So., Ch. E.....Seattle
Gale, Ralph E.; Fr., E. E.....Seattle
Germain, Walter Adelbert; So., E. E.....Bellingham
Gieser, Emiel Gustav; Fr., Ch. E.....Seattle
Gill, Benjamin; Fr., E. E.....Grandview
Gillette, Roswell S.; So., E. E.....Spokane
Gleason, S. Irving; So., Ch. E.....Seattle
Goodfellow, James B.; Fr., C. E.....Seattle
Gordon, Claude P.; Sr., E. E.....Bellevue
Gowen, Lance E.; So., M. E.....Seattle
Grady, Roger J.; Sr., E. E.....Oklahoma City, Okla.
Gray, Howard B.; So., C. E.....Seattle
Gray, Spencer; Fr., Ch. E.....Spokane
Greenberg, Benjamin B.; Fr., E. E.....Seattle
Grubb, William Allen; So., C. E.....Seattle
Guha, D. R.; So., M. E.....Seattle
Gunn, George Jr.; Fr., M. E.....Tacoma
Gustafson, H. Milton; So., E. E.....Everett
Gwinn, William Rex; Fr., E. E.....Seattle
Hainsworth, William Richard; Fr., Ch. E.....Seattle
Hallan, Claude; So., E. E.....Monroe
Hallgren, Edwin N.; Fr. C. E.....Seattle
Hammerly, Rex L.; Fr., E. E.....Portland, Ore.
Hammond, Harold Lynn; Fr., M. E.....Seattle
Hansen, Verne; Jr., E. E.....Everett
Harlow, Robert; So., M. E.....Portland, Ore.
Hart, Wilber P.; Fr. Ch. E.....Tacoma
Hartson, Joseph T.; Sr., C. E.....Tacoma
Hazelet, Craig Potter; Jr., C. E.....Cordova, Alaska
Hazleton, Harry B.; Jr., M. E.....Bellingham
Hedrick, L. Bruce; So., Ch. E.....Seattle
Herrick, John S.; Sr., Ch. E.....Seattle
Hibbard, Russell James; Fr., Ch. E.....Manette
Hielscher, Ernest J.; Fr., E. E.....Seattle
Hill, Curtiss L.; Fr., E. E.....Tacoma
Hill, H. Norman; Jr., C. E.....Port Townsend
Himmelsbach, Jesse R.; Fr., E. E.....North Yakima
Hoard, G. Lisle; Fr., E. E.....Seattle
Hoffard, Harold C.; Fr., E. E.....Whamock, B. C.
Hopkins, Hubert V.; Jr., C. E.....Seattle
Hostetter, Ingomar; So., Ch. E.....Tacoma
Hougen, Olav A.; Jr., Ch. E.....Tacoma
Howard, Albert Leighton; Sr., Ch. E.....Bellevue
Howard, Henry C.; Jr. Ch. E.....Seattle
Howell, L. Vern; So., C. E.....Fall City
Hughes, Robert H.; Fr., Ch. E.....Seattle
Hunt, G. Elwood; Sr., C. E.....Seattle
Hunt, Raymond C.; So., M. E.....North Yakima

Hunter, Stanley; So., E. E.....Seattle
Izhuroff, Basil A.; Sr., E. E.....Russia
Izumi, Ichisaburo; Sr., E. E.....Seattle
Jackson, Lee; Fr., C. E.....Baker, Ore.
Jacquot, Frank E.; Sr., Ch. E.....Tacoma
Jaxtheimer, Don C.; So., C. E.....Everett
Johnson, George E.; So., C. E.....Seattle
Johnson, Philip; Fr., M. E.....Seattle
Johnson, Reuben E.; Jr., M. E.....Tacoma
Joubert, Lloyd P.; Jr., E. E.....Enumclaw
Kallander, C. Henry W.; So., E. E.....Nooksack
Kauffman, Walter L.; Fr., M. E.....Tacoma
Kelliher, John Waldrip; So., M. E.....Ilwaco
Kerry, Harold E.; Jr., C. E.....Seattle
Keyes, Harmon E.; Fr., Ch. E.....Seattle
King, Kenneth M.; Fr., C. E.....Whitehall, Mont.
Kenney, Clair A. R.; Fr., M. E.....Endicott
Klein, Linas C.; Fr., M. E.....Edwall
Kongsted, Ludvig; Fr., M. E.....Seattle
Kraft, Vincent I.; Fr., E. E.....Seattle
Kuga, Kohei; Jr., E. E.....Seattle
Ladner, James G.; Fr., C. E.....Seattle
Langdon, Robert S.; So., M. E.....Sumner
Larson, Victor B.; So., Ch. E.....South Bend
Laudan, Fred P.; Fr., C. E.....Denver, Colo.
Leavitt, Leo B.; Fr., Ch. E.....Seattle
Lee, Robert Milton; Fr., C. E.....Seattle
Legg, Emmett J.; Fr., C. E.....Seattle
Lifvendahl, Gunnard; Fr., E. E.....Anacortes
Lord, Clifford; So., Ch. E.....Bellingham
Lubcke, Charles M.; Fr., E. E.....Bellingham
McCaustland, Gwynne G.; So., C. E.....Seattle
McClelland, Carl E.; Fr., Ch. E.....Seattle
McCollough, Clyde G.; Fr., M. E.....Crawfordsville, Ind.
McCombs, John; Fr., C. E.....Seattle
McCoy, Ray; Sr., M. E.....Seattle
McCracken, Ray; So., M. E.....Clarkston
McDougall, J. Clinton; So., E. E.....Seattle
MacDougall, C. Bryant; Fr. M. E.....Seattle
McIntyre, Harry J.; Jr., M. E.....Ione
McIntyre, Sydney Stuart; So., M. E.....Sedro Woolley
McJannet, Roscoe N.; Fr., C. E.....Seattle
McKeen, Ernest E.; So., E. E.....Ridgefield
McLeod, Lester R.; Fr., Ch. E.....Seattle
McMorris, Alfred W.; Jr., C. E.....Seattle
McNeill, Kenneth B.; Fr., C. E.....Montesano
MacRae, Rennie; Fr., C. E.....Burton
McRobbie, Henry W.; So., E. E.....Seattle
Mack, Friend D.; Jr., C. E.....Menlo
Manson, Harry E.; Sr., C. E.....Dockton

Marcy, Charles G.; Jr., E. E.....Montesano
Maris, John S.; Fr., C. E.....Seattle
Markham, John; Fr., C. E.....Centralia
Marsh, Louis S.; Jr., M. E.....Kirkland
Martin, Leonard A.; Fr., Ch. E.....Portland, Ore.
Martin, Walter G.; Sr., C. E.....Wapato
Maryatt, Roy L.; Jr., C. E.....Seattle
Masako, Frank J.; Jr., C. E.....Japan
Matson, Herman Albert; Sr., M. E.....Bellingham
Mayer, Roland A. G.; Fr., M. E.....Seattle
Mayfield, Benjamin H.; Fr., Ch. E.....Chehalis
Meenach, Harrison W.; So., C. E.....Seattle
Miller, Archie J.; So., E. E.....Enterprise, Ore.
Miller, E. Clarence; Sr., E. E.....Seattle
Moore, Edward J.; So., M. E.....Everett
Moore, Talcott; Fr., C. E.....Newport
Mori, Nathaniel R.; Jr., E. E.....Japan
Morrill, Frank James; Fr., M. E.....Coupeville
Morris, Charles F.; Fr., E. E.....Seattle
Morse, Wendell; Fr., C. E.....Seattle
Motz, August Joseph; Fr., E. E.....Seattle
Mullen, Maurice J.; So., C. E.....Seattle
Mulvey, Charles R.; Fr., M. E.....Seattle
Nakasawa, George K.; So., E. E.....Japan
Nelles, Roy H.; Fr., E. E.....Madison, S. D.
Nelson, Victor; Jr., Ch. E.....Seattle
Newberry, Arthur P.; Sr., E. E.....Kirkland
Niesz, Ralph M.; Fr., Ch. E.....Wapato
Noble, George Bayard; So., E. E.....Tacoma
Olmstead, Frank L.; Fr., E. E.....Caldwell, Ida.
O'Neill, Raymond E.; So., Ch. E.....Seattle
O'Rear, Clyde S.; Fr., M. E.....Seattle
Osborne, Edward G.; Jr., C. E.....Bellingham
Osterberg, Arnold Erwin; So., Ch. E.....Seattle
Paine, Topliff O.; Fr., C. E.....Everett
Palmquist, Clifton; Fr., C. E.....Prosser
Park, Q. W.; Sr., M. E.....Seattle
Pattee, Cecil M.; Fr., Ch. E.....Chehalis
Pederson, Edward A.; Sr., E. E.....Port Blakeley
Pendergast, Hugh; Fr., M. E.....Seattle
Perry, Clifford; So., E. E.....Ridgefield
Pershall, G. Arthur; Fr., Ch. E.....Spokane
Peters, Howard W.; So., C. E.....Bellingham
Peterson, Charles W.; Fr., E. E.....Seattle
Phelps Happer Klein; So., C. E.....Tacoma
Phillips, Walter Anderson; Fr., C. E.....Ashland, Ore.
Phipps, Frank W.; Fr., C. E.....Mount Vernon
Pickering, Lester Bert; Fr., C. E.....Chesaw
Pingley, Vishnu; Fr., M. E.....India
Pioda, Ferdinand C. R.; Fr., C. E.....Seattle

Pockman, Lloyd A.; Fr., C. E. ..... Spokane
Potter, Harold E.; Fr., C. E. ..... Seattle
Potter, Herbert B.; Fr., E. E. ..... Blaine
Powell, Edward R.; So., Ch. E. ..... Seattle
Priest, Harold R.; Fr., C. E. ..... Seattle
Purdy, Frank M.; So., C. E. ..... Tacoma
Pyle, Carl W.; Fr., E. E. ..... Wenatchee
Rader, Ray; Sr., E. E. ..... Oakland, Ore.
Rathvon, Halden E.; Jr., M. E. ..... Marysville
Rawn, Walter H.; Fr., E. E. ..... Prosser
Read, Edwin M.; So., E. E. ..... Seattle
Redeker, Carroll E.; Fr. C. E. ..... Spokane
Reierson, Thomas P.; So., M. E. ..... Portland, Ore.
Rhodes, Amos W.; Jr., C. E. ..... Centralia
Rice, Leon A.; Fr., M. E. ..... Scattle
Ricksecker, Harris; Jr., C. E. ..... Seattle
Riddell, Max H.; Fr., E. E. ..... Seattle
Ring, Russell B.; So., C. E. ..... Seattle
Robinson, Ralph C.; So., C. E. ..... Richmond Highlands
Robinson, Wilber H.; Jr., E. E. ..... Spokane
Robinson, William C.; Fr., E. E. ..... Seattle
Rogers, Foy O.; Sr., E. E. ..... Centralia
Roth, Walter; Fr., E. E. ..... Fairfield
Rowland, Harold W.; Fr., C. E. ..... Seattle
Royal, James Millard; Sr., M. E. ..... Seattle
Rubicam, Leslie; Fr., C. E. ..... Tacoma
Russell, Marvin; Fr., E. E. ..... Walla Walla
Rutherford, Carl A.; Fr., C. E. ..... Tacoma
Ryan, Francis M.; Fr., E. E. ..... Seattle
Ryan, Roger W.; So., Ch. E. ..... Auburn
Saito, Nohichiro; Jr., Ch. E. ..... Japan
Schiffer, Wilson E.; Fr., E. E. ..... Portland, Ore.
Schively, Dixon; So., M. E. ..... Seattle
Schmitz, Helmuth W.; So., M. E. ..... Seattle
Schumacher, Harold M.; So., E. E. ..... Bellingham
Schwabland, George A.; Sr., Ch. E. ..... Seattle
Scott, James D.; Fr., E. E. ..... Seattle
Servey, Mark James; Fr., M. E. ..... Bremerton
Shanly, Walter Earl; Jr., E. E. ..... Bellingham
Shaw, Melvin C.; Sr., M. E. ..... Arletta
Shelton, William M.; Fr., C. E. ..... Seattle
Shidler, Charles Wesley; Fr., E. E. ..... Burlington
Siebenbaum, John H.; Fr., E. E. ..... Port Townsend
Simons, Lewis C.; Fr., E. S. ..... Burlington
Simpich, Briggs G.; Fr., E. E. ..... Spokane
Simpson, Stewart L.; So., M. E. ..... Kent
Sinclair, Bliss; Fr., E. E. ..... North Yakima
Sisler, Harry H.; Fr., M. E. ..... Scattle
Skog, Henry A.; Fr., E. E. ..... Gig Harbor
Smalley, George; So., C. E. ..... Seattle

Smith, Frederick J.; So., E. E.....Seattle
Smith, Howard E.; So., E. E.....Blaine
Smith, Lyle; Fr., M. E.....Seattle
Smith, Theodore C.; Fr., E. E.....Seattle
Snoddy, Benjamin L.; Jr., E. E.....Arlington
Solverson, Clifford Gerald; Fr., Ch. E.....Reardan
Sorenson, Bert; Sr., E. E.....Bellingham
Sorenson, Edgar P.; Jr., M. E.....Bellingham
Spencer, Rhodes V.; Fr., E. E.....Seattle
Stanwick, Charles A.; Sr., E. E.....Seattle
Stark, Charles R.; Fr., C. E.....Seattle
Starkey, Frank W.; So., C. E.....Seattle
Stastney, Felix; So., C. E.....Seattle
Stetson, Virgil Calvin; So., C. E.....Seattle
Steuding, Paul H.; Sr., C. E.....Walla Walla
Stewart, Alex D.; Jr., C. E.....Richmond Beach
Stewart, Roy E.; Fr., M. E.....Seattle
Stillson, George H.; Sr., Ch. E.....Seattle
Stoppleman, Fred H.; Jr., E. E.....Seattle
Strandberg, Arthur M.; Jr., C. E.....Seattle
Strandberg, C. Henry; So., C. E.....Seattle
Strandrud, Christ; Fr., C. E.....Seattle
Stuchell, Edwin Wesley; Fr., M. E.....Everett
Suehiro, Matsunosuke; Jr., E. E.....Seattle
Sutton, Jesse W.; Fr., M. E.....Port Orchard
Swan, Agnes; Fr., E. E.....Seattle
Swartz, Albert William; Sr., C. E.....Granite Falls
Swartz, Leo; Sr., M. E.....Seattle
Sylliaasen, Vincent L.; Fr., C. E.....Seattle
Thomson, Alexander; So., C. E.....Seattle
Thornton, Perry F.; Fr., E. E.....Los Angeles, Cal.
Thwing, Edward Payson; Sr., E. E.....Seattle
Tift, Claire C.; Fr., E. E.....Seattle
Tinkcom, Wilber F.; So., C. E.....Cody, Wyoming
Tipton, Richard R.; Fr., C. E.....Portland, Ore.
Tolford, Harold James; Fr., E. E.....Blaine
Toy, James; So., Ch. E.....Portland, Ore.
Traill, F. William; Fr., C. E.....Seattle
Tremper, Bailey; Sr., Ch. E.....Seattle
Tudor, Guy M.; Fr., M. E.....New Dayton, Alta.
Turnbull, B. Frank; So., C. E.....Seattle
Tuttle, Walter W.; So., E. E.....Harper
Tyra, Edmund George; So., E. E.....Spokane
Vaille, Frank W., Jr.; Sr., C. E.....Seattle
Vallentine, Wilber Paul; So., C. E.....Seattle
Vandenberg, George Joe; Fr., E. E.....Ellensburg
Van Horn, Robert B.; So., C. E.....Seattle
Viele, Morris Marshall; Sr., C. E.....Orillia
Visser, Richard; Fr., E. E.....Seattle
Waller, Harold H.; Jr., C. E.....Seattle

Ward, Homer W.; Fr., C. E.....Centralia
Warner, Edgar L.; So., E. E.....Seattle
Wassard, Aage C.; Fr., C. E.....Viborg, Denmark
Wehmhoff, Byron L.; Sr., Ch. E.....Tacoma
Westaby, Charles Howe; Fr., M. E.....North Yakima
Wheeler, Leon H.; Sr., M. E.....Ellensburg
White, Chris; Sr., C. E.....Puyallup
White, Noble; So., C. E.....Goldendale
White, Roy W.; Fr., C. E.....Seattle
White, Warren E.; Fr., C. E.....Tacoma
Wilbur, Brayton; Fr., C. E.....Seattle
Willard, Edwin R.; So., C. E.....Seattle
Williams, Charles A.; Fr., E. E.....Aberdeen
Williams, Lowell E.; So., C. E.....Seattle
Williams, Walter; So., Ch. E.....Seattle
Winquest, Arthur Franklin; So., E. E.....Seattle
Winslow, Irving D.; Fr., E. E.....Centralia
Wood, Varian George; Fr., E. E.....Granite Falls
Yamada, Fred T.; So., E. E.....Seattle
Yeast, Ray C.; So., C. E.....Portland, Ore.
Yoshioka, Masa N.; Jr., E. E.....Japan
Young, Allan T.; So., C. E.....Seattle
Young, Carl L.; So., E. E.....Seattle
Young, F. Cranston; Fr., E. E.....Blaine
Young, Russell Harold; Fr., E. E.....Moran, Kan.
Zimmerman, Henry Eugene; So., C. E.....Everett

UNCLASSIFIED STUDENTS

Name of Student and Department — *Home Address*

Allen, Lawrence E.; M. E.....Spokane
Archer, Aubrey Ronald; E. E.....Aberdeen
Bannister, Clyde Eugene; C. E.....Seattle
Brooks, LeRoy A. W.; E. E.....Dubuque, Iowa
Christensen, William C.; C. E.....Portland, Ore.
Fisher, Emerson; E. E.....Edwall
Fraser, William M.; E. E.....Tacoma
Gehrke, Fred F.; M. E.....Edwall
Glover, Sheldon L.; C. E.....Tacoma
Grenland, Amos S.; E. E.....Pecatonica, Ill.
Jones, Earl R.; C. E.....Tacoma
Ketchum, Fred E.; E. E.....Stanwood
McMillan, Archie; M. E.....Bellingham
Nutley, Victor L.; C. E.....Wenatchee
Reid, Harold L.; C. E.....Seattle
Sharp, Howard C.; E. E.....Seattle
Wassberg, Clarence Edward; Ch. E.....Spokane
Zaugg, Felix Rudolph; E. E.....Tacoma

SPECIAL STUDENTS

Name of Student and Department	*Home Address*
Agnew, Verne; C. E.	Tacoma
Baer, Clarence Eugene; E. E.	New Castle, Pa.
Bains, Umrao Singh, E. E.	India
Balz, L. Christian F.; E. E.	Seattle
Barton, Rensselaer G.; E. E.	Seattle
Beede, Carl H.; E. E.	Seattle
Borgen, Samuel Sextus; E. E.	Seattle
Brockway, A. L.; C. E.	Seattle
Brown, Lowell; E. E.	Seattle
Clay, Charles; E. E.	Seattle
Coombs, Donald G.; C. E.	Tacoma
Das, Niranjan; E. E.	India
Daubenspeck, Frank P.; E. E.	Seattle
Dean, R. D.; E. E.	Seattle
Dearborn, Frank W.; E. E.	Seattle
Denham, Emerson; E. E.	Seattle
Doser, Lee E.; E. E.	Seattle
Gooderham, J. Wesley; E. E.	Seattle
Grantham, J. M.; E. E.	Seattle
Gray, H. E.; E. E.	Seattle
Guha, Jatindra Nath; Ch. E.	Calcutta, India
Heath, Herbert T.; M. E.	Pullman
Hilliard, Charles P.; E. E.	Somerville, Mass.
Huelsdonk, Adolph; E. E.	Seattle
Hultberg, Noah; E. E.	Seattle
Hunting, W. Ernest; E. E.	Seattle
Johnson, C. Agnor; E. E.	Seattle
Johnson, Gale Herman; E. E.	Seattle
Jones, R. Stanley; C. E.	Tacoma
Jordan, Archie H.; E. E.	Seattle
Kalin, Albert; E. E.	Portland, Ore.
Kaneko, Takayoshi; Ch. E.	Japan
Keller, Dal C.; E. E.	Seattle
Kioka, H.; C. E.	Hiroshima, Japan
Kirsop, Chester M.; E. E.	Seattle
Kunde, Carl O.; E. E.	Seattle
LaChapelle, Oliver W.; M. E.	Mineral
Leith, Robert; E. E.	Seattle
Linvog, Chress O.; E. E.	Seattle
Livermore, L. S.; E. E.	Seattle
McClellan, Hugh D., E. E.	Seattle
MacCarthy, Frank J.; E. E.	Seattle
Marsh, Richard; C. E.	Spokane
Murray, Roscoe E.; C. E.	Seattle
Norris, Edward Walter; E. E.	Seattle
Olson, William J., E. E.	Seattle
Porter, L. Clyde; M. E.	Seattle

Read, Henry B.; E. E. ..... Seattle
Schwan, William J., E. E. ..... Austin, Minn.
Snead, Harold B.; M. E. ..... Seattle
Snow, Wilber C.; E. E. ..... Sugar Grove, Ill.
Stevens, Thomas W.; E. E. ..... Seattle
Sweet, John P.; C. E. ..... Seattle
Temple, Cecil O.; E. E. ..... Seattle
Waite, G. Theodore; E. E. ..... Seattle
Watson, O. D.; E. E. ..... Seattle
Wheeler, Royden S.; C. E. ..... Seattle
Winter, Parker D.; E. E. ..... Seattle
Young, Harry Eugene; C. E. ..... Seattle

COLLEGE OF FINE ARTS

ABBREVIATIONS

CLASSES

Sr. Senior
Jr. Junior
So. Sophomore
Fr. Freshman

Name of Student and Rank.	*Home Address.*
Ahrens, Helen I.; Fr.	Seattle
Ames, Olive; Fr.	Toppenish
Anderson, Clara; Fr.	Seattle
Anderson, Gudrun; Fr.	Seattle
Bardshar, Ruth; Fr.	Seattle
Bergh, Florence H.; Fr.	Seattle
Bonebrake, Adria N.; Fr.	Goldendale
Borst, Della M.; Jr.	Seattle
Brown, Rhenie L.; Fr.	Seattle
Buell, Persis; So.	Burlington, Wis.
Campbell, Esther M.; Fr.	Seattle
Castlebury, Audrey N.; Fr.	Boise, Idaho
Culliton, Elaine C.; Fr.	Spokane
Curtis, Neva L.; Fr.	Seattle
Dashley, Hazel M.; Fr.	Seattle
Davis, Kathleen Martha; Fr.	Chinook
Elliott, Frank O.; Fr.	Charleston
Evans, Lucy E.; So.	Fergus Falls, Minn.
Fowler, Margaret E.; Fr.	Seattle
French, Eilene; So.	Seattle
Gjertsen, Nora A.; Fr.	Spokane
Glenn, M. Lois; Fr.	Tacoma
Hassett, Bessie Mae; Jr.	Seattle
Hays, Blendine; So.	Olympia
Hedlund, Florence A.; Fr.	Spokane
Hilyer, Louise H.; Fr.	Seattle
Holmes, Anna S.; So.	Edmonds
Hopkins, Florence B.; Fr.	Seattle
Jack, Myrna; So.	Seattle
Lindsay, Irma; Fr.	Seattle
Liska, Olga; So.	Seattle
Lohman, Loretto; So.	Chinook, Mont.
Lovely, N. Frances; Fr.	Arlington
McClellan, Hortense; Fr.	Seattle
Otterson, Judith E.; Fr.	Spokane
Pepper, Ruth A.; So.	Seattle
Peterson, Carolyn L.; So.	Seattle
Pfeiffer, Alma Elvera; Fr.	Seattle
Philbrook, Madge Hiller; Fr.	Seattle
Plants, Justine E.; Fr.	Seattle
Primrose, Blanche A.; Fr.	Seattle

Remsberg, Mabel F.; So.....Seattle
Ritter, M. Olive; Fr.....Butler, Pa.
Schmitz, Emma; Jr.....Seattle
Schumaker, Elizabeth; So.....Seattle
Stahl, Eleanor E.; Jr.....Seattle
Thompson, A. Genevieve; So.....North Yakima
Tremper, Bertha S.; Fr.....Seattle
Trenholme, Mae; Fr.....Seattle
Winsor, Helen M.; Fr.....Seattle

UNCLASSIFIED STUDENTS

Name of Student.	*Home Address.*
Aram, Vivian E.	Spokane
Bonell, Hannah E.	Fall City
Denny, Elizabeth Crocker	Seattle
Elliott, Nina	Seattle
Gifford, Bessie L.	Boise, Ida.
Graham, Dorothy V.	Seattle
Weaver, Catherine	Seattle

SPECIAL STUDENTS

Name of Student.	*Home Address.*
Adams, Bessie Luella	Seattle
Brown, Ida May	Chehalis
Davidson, Harry T.	Valley City, N. D.
Fallis, Edythe L.	Spokane
Hoffman, Mrs. Frances A.	Seattle
Holcomb, Willard	Seattle
Lewis, Mrs. Carrie Tripple	Seattle
McIntyre, Isabelle	Seattle
McLaughlin, Stella Mary	Seattle
Palmquist, Laura M. E.	Seattle
Parker, Dorothy	Seattle
Read, Margaret Hadley	Seattle
White, Carroll	Clarinda, Iowa
Wyeth, Henrietta M.	Seattle

COLLEGE OF FORESTRY

ABBREVIATONS

CLASSES

Sr.	Senior	So.	Sophomore
Jr.	Junior	Fr.	Freshman

Name of Student and Rank.	*Home Address.*
Anderson, Albert C.; Fr	Colton, Ore.
Ault, Byrd M.; Fr	Enterprise, Ore.
Ayer, Ellis C.; Fr	Tumwater
Barrett, Philip E.; So	Tacoma
Billingslea, J. H., Jr.; Sr	Westminster, Md.
Blunt, Joseph; Fr	Tacoma
Boyle, Kenneth R.; Fr	Tacoma
Brooks, Fred E.; Fr	Seattle
Burris, Michael M.; Jr	New York, N. Y.
Clark, Ralph W. K.; So	Seattle
Cochran, Elvin P.; Fr	Seattle
Cochran, Lamont M.; Fr	Seattle
Coyle, William J.; Fr	Seattle
Cunning, William M.; So	Baker, Ore.
Durfee, Harold Atkinson; Fr	Hollywood, Cal.
Erickson, Harry; Fr	Hoquiam
Escher, Wiley E.; Sr	Seattle
Evans, W. Vincent; Jr	Livingston, Mont.
Faulkner, Ralph B.; Fr	Aberdeen
Fish, Walter Harold; Fr	Seattle
Fisher, David M.; So	Seattle
Foran, Harold George; So	Seattle
Gardiner, W. Kenneth; Fr	North Bend
Gardiner, W. K.; Fr	Seattle
Gilbert, George W.; Sr	Seattle
Gillespie, James T.; Fr	Albany, Mo.
Greider, Frank Carleton; Fr	Seattle
Hancock, Virgil Kinney; Sr	Coupeville
Hanson, Harley I.; So	Grand Forks, N. D.
Hobi, Frank D.; Fr	Aberdeen
Hutton, James Ferdinand; So	Portland, Ore.
Jaeger, Waldemar; Fr	Seattle
Klobucher, Frank; Sr	Spokane
Knapp, F. Roy; Fr	Seattle
Lee, Wilson K., So	Seattle
Lomax, Alfred L.; Fr	Portland, Ore.
McAdams, Richard L., Fr	Seattle
Macaulay, Norman G.; Sr	Deming
Madigan, Fred H.; Fr	Seattle
Mather, Waldo; Fr	Seattle
Mercer, F. Bernard; Sr	Seattle

Monks, Howard I.; Sr.....Bonners Ferry, Ida.
Moulton, William Roy; Fr.....Aberdeen
Mueller, Moritz L.; Jr.....Seattle
Rengstorff, Erwin H.; So.....Enumclaw
Roberts, W. Edgar; Fr.....Thornton
Rostedt, Roy Valentine; Fr.....Tacoma
Ruble, Chester; Fr.....Centralia
Saylor, Otis Dean; Fr.....Spokane
Schmaelzle, Karl Joseph; Jr.....Seattle
Schmitz, Henry; Jr.....Seattle
Schneider, Isaac; Sr.....Seattle
Shanahan, Thomas J.; So.....Seattle
Sinema, John Henry; Fr.....Twin Falls, Ida.
Startup, Kenneth S.; Fr.....Seattle
Sternberg, Henry; Jr.....Colorado Springs, Colo.
Stephens, James T.; Fr.....Spokane
Stewart, E. Allen; Fr.....Oak Harbor
Stinson, Henry C.; Sr.....Belleville, Kas.
Stuart, Philip A.; Sr.....Seattle
Studley, J. Donald; Fr.....Seattle
Vaupell, Clarence Walter; Fr.....Spokane
Vetter, George Benjamin; Jr.....Seattle
Watson, Russell; Sr.....St. Paul, Minn.
Welch, Arthur E.; Sr.....Hobart, N. Y.
Wells, Harland; So.....Kalispell, Mont.
Westerberg, J. F.; Fr.....Mill Valley, Cal.
Williams, J. S.; Sr.....Seattle
Wilson, Albert V.; Jr.....Seattle
Wood, Warren Bale; Fr.....Bellingham
Young, J. Arthur; So.....Seattle
Young, L. Pierce; So.....Seattle

UNCLASSIFIED STUDENTS

Name of Student.	*Home Address.*
Leitch, Ellsworth James	Bellingham
O'Brien, George William	Tacoma
Reavis, David B	Enterprise, Ore.
Wright, Clifford A	Portland, Ore.

SPECIAL AND SHORT COURSE STUDENTS

Name of Student	*Home Address.*
Ahl, J. Dennie; S. C	Eldon
Alexander, J. Beverley; Sp	Sedro Woolley
Ames, Jesse E.; Sp	Seattle
Bevan, Arthur; Sp	Vavenby, B. C.
Bloom, Adolph; S. C	Cromwell
Brady, Charles C.; S. C	Long Beach, Cal.
Browning, Harold A.; Sp	Los Angeles, Cal.
Calvert, Gerald F.; S. C	Vancouver, B. C.

Carelton, Smith; S. C.....Seattle
Charleson, Alex; S. C.....Vancouver, B. C.
Clark, Donald H.; Sp.....Tacoma
Conry, C. M.; S. C.....Portland, Ore.
Cook, Arthur F.; Sp.....Seattle
Dodge, Thomas E.; S. C.....Lakeside
Foster, Arthur George; S. C.....Harper
Foelich, George H.; S. C.....Barrington, Ill.
Gilkey, Charles; S. C.....Edison
Gorham, George C.; Sp.....Seattle
Hawkins, W. W.; S. C.....Skamokawa
Jones, Munroe F.; Sp.....Seattle
Lehigh, Albert M.; S. C.....Seattle
Litchfield, R. W.; S. C.....Victoria, B. C.
McKittrick, Homer E.; S. C.....Seattle
Mead, Roy H.; S. C.....Tacoma
Moreton, Theodore R.; S. C.....Minneapolis, Minn.
Morrison, Clarence V.; Sp.....Seattle
Nece, John R.; S. C.....Seattle
Nordstrom, C. J.; S. C.....Seattle
O'Leary, Patrick J.; S. C.....Scappoose, Ore.
Powell, Harvey A.; S. C.....Vavenby, B. C.
Redding, R. W.; S. C.....Seattle
Rees, H. Arthur; S. C.....Vancouver Island, B. C.
Rees, L. A.; S. C.....Vancouver Island, B. C.
Saugar, Owen Jermey; S. C.....Victoria, B. C.
Scott, Douglas F.; S. C.....Victoria, B. C.
Shaw, Porter W.; S. C.....Escanaba, Mich.
Smith, B. F.; S. C.....Tygh Valley, Ore.
Waterhouse, Frank George; Sp.....Warrenton, Ore.
Wheatley, Stanley Talbot, S. C.....Victoria, B. C.

SCHOOL OF LAW

ABBREVIATIONS

CLASSES

3rd Third Year 2nd Second Year
1st First Year

Name of Student and Rank.	*Home Address.*
Adams, John A.; 2nd	Leavenworth
Arney, Charles E., Jr.; 2nd	Spokane
Arney, J. Ward; 3rd	Spokane
Barnett, G. Dolph; 3rd	North Yakima
Beltz, Frederick A.; 3rd	Seattle
Bennett, Frederick S.; 2nd	Seattle
Brockett, Earl M.; 3rd	Seattle
Brooks, Zola O.; 3rd	Goldendale
Brown, Herman Everett; 1st	Seattle
Burford, Waldo E.; 2nd	Porterville, Cal.
Burson, James W.; 2nd	Seattle
Calderhead, Sam J.; 3rd	Seattle
Carrigan, Paul; 2nd	Seattle
Catlin, Claude; 1st	Ellensburg
Cushing, Melzar H.; 2nd	Seattle
Cushman, Arthur W.; 1st	Tacoma
Dawson, Lewis M.; 3rd	Seattle
Dickinson, Henry; 1st	Seattle
Dickson, Gordon H.; 1st	Seattle
Donley, Levi B.; 3rd	Seattle
Douglas, Malcolm; 3rd	Seattle
Downie, John; 1st	Seattle
Driver, S. Marion; 1st	Wamic, Ore.
Easton, Martin H.; 1st	Bellingham
Fairbrook, Glenn; 3rd	Seattle
Fairburn, Orville Glenn; 2nd	Fairbanks, Alaska
Fisher, Walter F.; 3rd	Lynden
Forde, Mathias Hanson, 3rd	Seattle
Franklin, Edward S.; 1st	Seattle
Fritz, Chester W.; 1st	Seattle
Gamble, Alexander James; 3rd	Seattle
Geary, John J.; 2nd	Helmville, Mont.
Godsave, Alfred Viele; 3rd	Ontario, Cal.
Gore, Lester O.; 3rd	Kalama
Griffin, Arthur R.; 3rd	Seattle
Griffin, Tracy E.; 2d	The Dalles, Ore.
Gruber, Edwin; 3rd	Winlock
Haight, James A., Jr.; 3rd	Seattle
Halvorson, Alfred; 2nd	Ridgeway, Iowa
Hammer, Paul S.; 2nd	Eatonville
Hardy, Warren H.; 3rd	Seattle

Hass, Karl F.; 2nd.....Seattle
Hayfield, Mark F.; 3rd.....Seattle
Hazen, Raymond C.; 3rd.....Seattle
Hemphill, Clarence J.; 2nd.....Auburn
Hendricks, Ford; 2nd.....Seattle
Hoffman, E. William; 2nd.....Seattle
Hoffman, Harry A.; 2nd.....Ellensburg
Hurd, C. Sumner; 3rd.....Mt. Vernon
Jones, Ira Lynn; 1st.....Mitchell, S. D.
Kenney, Samuel E.; 3rd.....Bryn Mawr
Kirk, James, Jr.; 3rd.....Springfield, S. D.
Knapp, Clarence E.; 2nd.....Seattle
Langer, Frank; 2nd.....Casselton, N. D.
Laughlin, James A.; 1st.....Mt. Vernon
Leader, Edwin O.; 1st.....Portland, Ore.
Leader, Elmer W.; 1st.....Portland, Ore.
Lee, C. Alphonso; 2nd.....Bellingham
Lind, J. Arthur; 3rd.....Seattle
Lindburg, Arthur R.; 1st.....Seattle
Lonergan, Pierce F.; 3rd.....Seattle
Lybecker, Gus; 2nd.....Seattle
McCullough, Campbell C.; 2nd.....Butler, Pa.
McDonald, Grace; 1st.....Seattle
McFee, Joel N.; 2nd.....Seattle
McMurray, Fred A.; 1st.....Seattle
McMurtrey, Joseph P.; 1st.....Troy, Mont.
Mathieu, George E.; 1st.....Seattle
Giorgetta, Hercules A.; Sp.....Dolores, Col.
Greenwood, Ray R.; Sp.....Seattle
Groshang, C. Chester; Sp.....Deer Park
Halls, Anton C.; Sp.....Hills, Minn.
Harmon, Claude B.; Sp.....Tacoma
Harris, Jack; N.....Seattle
Hartman, Harold H.; Sp.....Seattle
Hathaway, Howard; Sp.....Everett
Henretta, Henry; Sp.....Linds, N. D.
Hodge, Robert Tait; N.....Seattle
Hughs, Charles D. T.; N.....Blaine
Ingstad, Louie M.; N.....Montevideo, Minn.
Johnson, John; N.....Seattle
Johnston, Richard; Sp.....Seattle
Jones, Charlotte F.; N.....Seattle
Kane, Frank J.; N.....Seattle
Kerrigan, James Roy; Sp.....Seattle
King, Frank W.; Sp.....Seattle
Kummer, Ernest, Jr.; Sp.....Waterville
Lingle, Richard W.; Sp.....Orleans, Ind.
Long, Larry Wilson; Sp.....Seattle
Lucks, William C.; Sp.....Seattle
McCabe, James; N.....Seattle

McCarthy, Roy W.; Sp.....Seattle
MacDougall, Joseph Bruce; Sp.....Seattle
MacPherson, Wallace A.; Sp.....Tacoma
Mack, Russell V.; Sp.....Aberdeen
Martz, Earl; N.....Seattle
Matthiasson, Magnus; Sp.....Seattle
Meacham, Eugene; N.....Seattle
Millican, Alfred C.; N.....Seattle
Monson, Leigh J.; N.....Everett
Morch, P. J.; N.....Seattle
Morley, Joseph Clark; Sp.....Neillsville, Wis.
Murphy, William J.; Sp.....Seattle
Nakai, Kiyoshi; Sp.....Sakaye, Japan
Nielsen, Walter; N.....Seattle
Matzger, Nathan; 2nd.....Seattle
Morrison, H. Lorne; 2nd.....Anacortes
Mount, Wallace, Jr.; 1st.....Olympia
Murray, J. Emmett; 3rd.....London, Ohio
Murray, Welwood G.; 2nd.....Seattle
Naimy, Michael J.; 1st.....Walla Walla
Navarre, Guy F.; 3rd.....Seattle
Neibling, Harold E.; 3rd.....Seattle
Nelson, Harry B.; 2nd.....Seattle
Norton, Joseph E.; 1st.....Mt. Vernon
Parker, W. Edward; 2nd.....North Yakima
Patten, John; 3rd.....Seattle
Pierce, Ahira E.; 3rd.....Seattle
Prins, Johan Willem; 1st.....Seattle
Rains, Lester E.; 2nd.....Seattle
Roberts, George W.; 1st.....Walla Walla
Roberts, J. Vincent; 3rd.....North Yakima
Robertson, Edward W.; 3rd.....Spokane
Robison, Mabel L.; 3rd.....Seattle
Rosaaen, J. Douglas; 2nd.....Seattle
Schively, Hugh P.; 3rd.....Seattle
Scott, Irving H.; 2nd.....Puyallup
Shanedling, Joseph; 2nd.....Vancouver
Sipprell, James E.; 3rd.....Edmonds, B. C.
Skewis, Francis J.; 3rd.....Tacoma
Smith, Charles L.; 2nd.....Auburn
Soule, John Arthur; 1st.....Kent
Stevens, Dwight N.; 2nd.....Crocker's Lake
Stone, William E.; 3rd.....Everett
Taylor, Edward R.; 3rd.....Seattle
Thormodsgard, Olaf; 1st.....Spokane
Totten, William P.; 1st.....Seattle
Turner, Arlo V.; 2nd.....Seattle
Urquhart, William Muir; 3rd.....Chehalis
Van Winter, Rex; 3rd.....Seattle
Viele, W. Arthur; 3rd.....Orillia

Walsh, John R.; 3rd.....Wenatchee
Walske, Max C.; 1st.....Auburn
Wapato, Louie; 1st.....Manson
Ward, Arthur Hoyt; 2nd.....Centralia
Watanabe, Harly S.; 3rd.....Seattle
Watters, Lisle; 2nd.....Everett
Welts, Robin V.; 3rd.....Seattle
Wetherby, Loren A.; 2nd.....Tacoma
Wienir, Eimon L.; 2nd.....Seattle
Wilson, Harry; 2nd.....Vancouver, B. C.
Winter, H. Earle; 1st.....Everett
Young, George E.; 2nd.....Sumner

SPECIAL STUDENTS AND NIGHT STUDENTS

Name of Student	*Home Address*
Anderson, C. Andy; N.	Montevideo, Minn.
Anderson, Oscar B.; Sp.	Seattle
Billings, Oscar H.; N.	Seattle
Blaisdell, Christopher C.; N.	East Franklin, Me.
Bozorth, Claude A.; N.	Woodland
Brott, Robert R.; N.	Seattle
Carr, Arthur R.; N.	Seattle
Carson, Albert A.; Sp.	Seattle
Cassel, A. Park; N.	Seattle
Clise, Francis D.; Sp.	Seattle
Cobb, Albert; Sp.	Seattle
Coffman, Robert Gates; N.	Chehalis
Conger, Elias; Sp.	Nehigh, Neb.
Conklin, Grover A.; N.	Seattle
Conner, Jack R.; Sp.	Seattle
Dakin, Harold M.; Sp.	Ferndale
Douglas, Walter T.; N.	Seattle
Evers, Volney P.; N.	Seattle
Felt, Norris E.; N.	Seattle
Francis, Kenneth L.; N.	Seattle
Norris, Stewart Matthew, Sp.	Burlington
O'Connor, Thomas E.; N.	Seattle
Oleson, Alfred C.; Sp.	Seattle
Osborn, George R.; N.	Seattle
Osborne, Thomas W; Sp.	Riffe
Owen, Thomas C; N.	Seattle
Pierce, Frank R.; N.	Seattle
Raymond, Mabel D.; N.	Seattle
Richardson, Margaret; N.	Seattle
Riley, Frank G.; Sp.	Tacoma
Robbins, Benjamin I.; Sp.	Tacoma
Robinson, Ralph; Sp.	Spokane
Rogers, Fred B.; Sp.	Seattle
Ross, Bert C.; Sp.	Seattle

Royce, Thompson Morton; N.....Spokane
Saboe, Martin L.; Sp.....Seattle
Sanders, Claude; Sp.....Seattle
Sanders, Will; N.....Seattle
Sessen, William Conover; Sp.....Seattle
Seydel, Benjamin Franklin; N.....Iowa City, Iowa
Sharkey, Harold; Sp.....North Yakima
Stewart, Robert; N.....Seattle
Swanson, Andrew C.; Sp.....Seattle
Tucker, W. Sherman; Sp.....Galata, Mont.
Van Horn, Roy; Sp.....Seattle
Wade, Jessie A.; N.....Seattle
Wallin, James R.; Sp.....Farmington
Ward, Montague; N.....Seattle
Wells, Ernest F.; N.....Seattle
Wendells, Arthur J.; N.....Seattle
Wright, Louis R.; N.....Seattle

COLLEGE OF MINES

ABBREVIATIONS

CLASSES

Sr. Senior	So. Sophomore
Jr. Junior	Fr. Freshman

Name of Student and Rank	*Home Address*
Anderson, Clarence; Fr	Seattle
Baker, Fred C.; Fr	Seattle
Baker, James B.; Fr	Tacoma
Berg, J. Edward; Sr	Seattle
Bernhardt, Roy B.; Fr	Seattle
Blogg, Cecil F.; Fr	Seattle
Boulton, Henry G.; Fr	Chico
Brown, Walter F.; Fr	Clarkston
Brown, Warren O.; So	Seattle
Burgert, Wilbur C.; Sr	Seattle
Buzard, James Arthur; Fr	Seattle
Carlberg, Edward F.; So	Wenatchee
Clulow, William M.; Jr	Wenatchee
Cogswell, L. Harold; Sr	Seattle
Cole, C. Cecil; So	Seattle
Davis, Addison J.; Fr	Seattle
Dobson, Percy Grenride; Fr	Seattle
Drylie, Thomas F.; So	Issaquah
Fotheringham, Thomas H.; Fr	Seattle
Gerhardt, Louis G.; So	Seattle
Gleason, Villeroy, Jr.; Sr	Seattle
Godbe, Earl T.; Sr	Seattle
Halferdahl, Arthur; Sr	Seattle
Hallum, Odean T.; So	Seattle
Hardie, James Rogers; Fr	Spokane
Harr, Adolph B.; Fr	Portland, Ore.
Hastings, Harlow H. A., Jr.; Jr	Seattle
Hawley, Neal C.; Jr	Seattle
Hazelet, Calvin Cheever; So	Cordova, Alaska
Hoff, Conrad F.; So	Seattle
Johnson, Guy J.; Sr	Seattle
Johnson, Jesse C.; Fr	Seattle
Jones, William F.; Fr	Buckley
Kittilsby, Herbert; Fr	Seattle
Larson, Wallace R.; Fr	Tacoma
Lee, Robert E.; So	Colville
Lovejoy, Eugene Owen; Fr	Coupeville
McCulloch, Luther John; Fr	Seattle
McKibbin, Wilbur B.; Fr	Kahlotus

McLeod, Donald G.; Fr.....Seattle
Madigan, Walter; So.....Seattle
Merrill, Levi; Fr.....Blaine
Oliver, Percy R.; Fr.....Keyport
Pape, Theodore R.; Jr.....Seattle
Pike, Roscoe W.; Fr.....Seattle
Pilgrim, Earl Richard; So.....Seattle
Polson, Franklin Arnold; Fr.....Hoquiam
Presley, BeVan; Jr.....Seattle
Schofield, George I.; So.....Seattle
Schug, Granville Elwood; Jr.....Easton, Pa.
Scovell, Harold B.; Fr.....Seattle
Sharkey, Leo F.; Fr.....Seattle
Sheedy, R. Warren; So.....Seattle
Sims, Arthur G.; So.....Seattle
Slack, Albert E.; Fr.....Seattle
Sprague, Hollister; So.....Seattle
Stillinger, Charles B.; Fr.....Iron Mountain, Mont.
Swart, Arthur H.; Jr.....Seattle
Sweeney, Edward L.; Jr.....Tacoma
Talbot, Henry H.; Fr.....Tacoma
Tuck, Clarence M.; Fr.....Seattle
Waters, Harvey J.; Fr.....Corning, Cal.
Whittier, W. Harrison; So.....Seattle
Wilcox, E. Roscoe; Jr.....Seattle
Wright, Lawrence B.; Jr.....Snohomish

SPECIAL STUDENTS AND SHORT COURSE STUDENTS

Name of Student — *Home Address*

Adkins, Ernest LeRoy, S. C.....West Sound
Anese, A.; S. C.....Gallipoli, Turkey
Bailey, R. H.; S. C.....Seattle
Betts, G. A.; S. C.....Sandy Hook, Conn.
Bjorneberg, John L.; S. C.....Norway
Borgen, Samuel S.; S. C.....Black Diamond
Bulmer, William; Sp.....New York City, N. Y.
Burrows, Hugh Dudley, S. C.....Seattle
Butler, M. C.; Sp.....Seattle
Callanan, William L.; S. C.....Janesville, Wis.
Cockrell, Frank M.; S. C.....Dallas, Texas
Connell, John; S. C.....Seattle
Cullyford, H. W; S. C.....Los Angeles, Cal.
Dahl, Sigurd H.; S. C.....Itranto Station, Iowa
Dally, J. Newton; S. C.....Seattle
Dane, Jesse N:; S. C.....Mankato, Minn.
Davis, William A.; S. C.....Los Angeles, Cal.
Donohoe, Thomas J., S. C.....Seattle
Ernst, Joseph; S. C.....Nome, Alaska
Gormley, Samuel; S. C.....Belfast, Ireland

Hovland, John; Sp.....Norway
Kroll, Cornelius; S. C.....Seattle
MacKenzie, John; S. C.....Ireland
McCandless, L. A.; S. C.....Lincoln, Neb.
McCandles, Sam A.; S. C.....Lincoln, Neb.
McDonald, Thomas; S. C.....Fairbanks, Alaska
Mogridge, William J.; S. C.....Tiverton, England
Morrison, Charles M.; S. C.....East Brady, Pa.
Nearhouse, Iver I.; S. C.....Norway
Parker, Franke L.; S. C.....Shanghai, China
Passage, William H.; S. C.....New York
Phillips, Florence O.; S. C.....Austin, Texas
Phillips, J. Taylor; S. C.....Austin, Texas
Phillips, Mrs. J. W.; S. C.....Austin, Texas
Porter, Clay; S. C.....North Bend
Sapp, C. S.; S. C.....Olympia
Scharringhausen, H. P.; S. C.....Seattle
Shaw, Cecil Bartlett; S. C.....Plymouth, Eng.
Sherrod, Heiser Hott, Sp.....Seattle
Simenstad, Charles; Sp.....Seattle
Sullivan, David; S. C.....Seattle
Thorne, F. W.; S. C.....Kremlin, Mont.
Townsend, Cecil G.; S. C.....West Toronto, Ont.
Trimble, E. T.; S. C.....Seattle
Turner, Harry; S. C.....Seattle
Valin, John, Jr.; S. C.....Seattle
Willmore, Albert Harry; S. C.....Seattle
Young, John Henry; S. C.....Seattle

COLLEGE OF PHARMACY

ABBREVIATIONS

CLASSES

Sr.	Senior	So.	Sophomore
Jr.	Junior	Fr.	Freshman

Name of Student and Rank	*Home Address*
Ball, Alice A.; Sr	Seattle
Beaver, Charles W.; Fr	Sumner
Berens, Arthur H.; Fr	Tacoma
Boatman, Willis W.; So	Orting
Bock, Elfrieda; So	Seattle
Bonebreak, A. Crede; Sr	Goldendale
Carroll, Burdin H.; So	Colville
Carroll, Ruth H.; So	Seattle
Chiba, Yasukichi; Fr	Tokyo, Japan
Christensen, Martin H.; Fr	Olympia
Conner, Ray B.; Jr	Everett
Curry, Mark E.; So	Tacoma
Donahue, Charles D.; So	Dayton
Eager, Ben F., Jr.; Jr	Mt. Vernon
Ford, Sam S.; Fr	Seattle
Gannon, Bertha; Jr	Seattle
Geil, LaRoy H.; Fr	Walla Walla
Goodrich, Forest J.; Sr	Seattle
Gregg, Raleigh A.; So	Sumner
Hale, Vern W.; Fr	Bellingham
Hannon, R. Roger; So	Seattle
Harris, Carl E.; Fr	Wilbur
Henry, Clara M.; Fr	Roslyn
Hilton, Jeffery; Fr	Marysville
Hilton, Omega; Fr	Marysville
Hope, Claude V.; Fr	Tacoma
Houser, March H.; Jr	Seattle
Hoxsey, Maurice Y.; Jr	Spokane
Johnston, Daniel H.; Fr	Toledo
Kath, Henry L.; Fr	Seattle
Kinder, Garrel M.; So	Walla Walla
Kinne, Seward B.; So	Selah
Kittilsby, Gudrun; Fr	Seattle
Lamb, Earl F.; So	Toppenish
Lew, Soun H.; Fr	Seattle
McGogy, James Frank; Fr	Shenandoah, Iowa
McNerthney, Henrietta; So	Tacoma
Maske, Wm. N.; So	Seattle
Nelson, George W.; Fr	South Bend
Nerone, B. M. Nicholas; Fr	Seattle
Ottesen, May S.; So	Juneau, Alaska

Palmer, J. Clarence; So.....Everett
Patek, Ralph C.; Fr.....Seattle
Patton, Gerald S.; Sr.....Seattle
Peckenpaugh, Charles Irving; Fr.....Kennewick
Peterson, Everett N.; Fr.....Snohomish
Platt, Earl M.; Sr.....Seattle
Race, Harry R.; Jr.....Coupeville
Richey, Charles A.; Sr.....Seattle
Robinson, Frank C.; Fr.....The Dalles, Ore.
Schreuder, Otis; So.....Seattle
Sewell, Glenn O.; Jr.....Lewiston, Ida.
Sewell, Hugh F.; So.....Bow Island, Alta.
Smith, Truman W.; Fr.....Seattle
Thomas, Colwyn G.; Fr.....Seattle
Turner, Clyde H.; Fr.....Marysville
Umbarger, Francis Bernard; So.....Burlington
Van Cott, Albert B.; Fr.....Seattle
Wickman, Bertha; Fr.....Dawson, Yukon Territory
Woodcock, William; Fr.....Seattle

UNCLASSIFIED STUDENTS

Name of Student	*Home Address*
Finkelberg, Gertrude Ida	Seattle
Rockwell, Winfield A	Tacoma

SPECIAL STUDENTS

Name of Student	*Home Address*
Bloomer, Andrew Webster	Carrollton
Buettner, Ernest	Tacoma
Campbell, Mrs. Lalla	Port Orchard
Clark, Frederick W	North Yakima
Cozzetto, Antonio	Italy
Fields, James D	Woodland
Filz, Milton H	Seattle
Hawn, E. W	Charleston
Hendricks, William E	Ellensburg
Heyes, George	Seattle
Kempinsky, Harold A	Buckley
Kinnee, T. Edmund	Seattle
Moore, Clarence F	Walla Walla
Nichols, Lynden	Bremerton
Schwarz, Anton John	Seattle
Smith, Edgar N	Edmonds
Stanley, William Homer	Waterville
Stephens, R. Granville	Memphis, Texas
Thedens, Fred	Ferndale
Tulley, Glenn S	Puyallup
Wyllys, Donn James	Puyallup

SUMMER SESSION STUDENTS 1913

Adams, Rose ..... Yakima
Ake, Mary Frances ..... Mountain Home, Idaho
Albright, Ella ..... Seattle
Alexander, Albert Fred ..... Centralia
Alexander, Charlotte M. ..... Seattle
Allen, Beryl B. ..... Seattle
Allen, Mildred ..... Greencastle, Indiana
Allen, Nell B. ..... Hoquiam
Amidon, Mabell J. ..... Seattle
Anderson, Ada Charlotte ..... Yacolt
Andrain, F. L. ..... Kiona
Arges, Julia E. ..... Seattle
Argo, Arnold Clarence ..... Corvallis, Ore.
Arneson, Ruby C. ..... Granger
Arnquist, Josephine ..... Corviche
Aspinwall, Mabel C. ..... Seattle
Aubert, Claudius P. ..... Colville
Babcock, Gertrude N. ..... Everett
Bagley, Mrs. Carrie B. ..... Seattle
Bagley, Walter Ethen ..... Seattle
Bailey, Myron E. ..... Seattle
Baisden, Leo Barnard ..... Seattle
Baker, Bess ..... Missoula, Mont.
Baker, Edith ..... Eugene, Ore.
Baker, Lois L. ..... Kalispell, Mont.
Barish, Saul W. ..... Seattle
Barney, Ruby Mildred ..... Seattle
Barrett, Geo. G. ..... Lewiston, Idaho
Barry, Cornelius ..... Seattle
Bash, Virginia ..... Seattle
Bateman, Amy Rachel ..... Helena, Mont.
Beall, Bessie K. ..... Blaine
Beanblossom, Geo. W. ..... Renton
Bechen, Carrie Isadore ..... Hillsboro, Ore.
Beck, Geo. Frederick ..... Snoqualmie
Belden, Florence A. ..... North Yakima
Benham, Bess ..... Seattle
Bennett, E. Allen ..... Seattle
Benson, Perry H. ..... Crescent City, Cal.
Berg, Clara W. ..... Walla Walla
Berg, Ida Blanche ..... Missoula, Mont.
Bergivick, Christine ..... Portland, Ore.
Berry, Karl Russell ..... Vancouver, B. C.
Berts, Chas. Allen ..... Seattle
Besancon, Marcella L. ..... Bellingham
Bihler, Mary L. ..... Ogden, Utah

Bissell, Addison J. ..... Seattle
Blake, Mrs. Clara E. ..... Leadville, Colo.
Bledsoe, Mrs. Laura L. ..... Mace, Idaho
Blough, Allie ..... Seattle
Bock, Elfrieda Charlotte ..... Seattle
Bonney, Zaidee E. ..... Tacoma
Bonsall, Opal ..... Spokane
Boroughs, Minnie ..... White Salmon
Borrill, Marjorie ..... Chelan
Boub, Meta ..... Seattle
Boucher, Laura Elizabeth ..... Walla Walla
Bowers, Bessie A. ..... Spokane
Bowers, James Bert ..... Stanwood
Bowers, Marion R. ..... Spokane
Bowyer, Helen ..... Naches
Boyd, Louise B. ..... Portland, Ore.
Brant, M. Kathryn ..... Chicago, Ill.
Breckner, Norman J. ..... Chicago, Ill.
Brenneman, Erna M. ..... Hennepin, Ill.
Brinck, Raoul Alphonse ..... Edison
Brinck, Stephen M. ..... Anacortes
Broher, Blandina S. ..... Minneapolis, Minn.
Brome, Alice M. ..... Butte, Mont.
Brome, Laura ..... Butte, Mont.
Brome, Frances ..... Butte, Mont.
Brome, Frances W. ..... Butte, Mont.
Brown, J. Emmet ..... Bucoda
Brown, Lulu Albia ..... Seattle
Bruce, Harriet L. ..... Seattle
Bryant, Clara M. ..... Seattle
Bryan, Genevieve ..... Elma
Buchanan, Fred Lee ..... Fortson
Burgess, Edith ..... Kelso
Burnett, Malen ..... Walla Walla
Burns, Jessie E. ..... Tenino
Burns, Omar Allen ..... Seattle
Burroughs, Hazel ..... Seattle
Burton, Jennie L. ..... Seattle
Byerly, Marion ..... Seattle
Cady, O. H. ..... Seattle
Campbell, Blanche ..... Seattle
Carlisle, Isabelle ..... Everett
Carpenter, Abbie J. ..... Klamath Falls, Ore.
Carpenter, Allen Fuller ..... Seattle
Carpenter, Nina E. ..... Hastings, Nebr.
Carr, Mrs. Helen ..... Seattle
Carroll, Jos. Douglas ..... Seattle
Carson, Wm. H. ..... Seattle
Carssow, Ida H. ..... Lewiston, Ida.
Casey, Alice N. ..... Oshkosh, Wis.

Caskin, Ivanilla Marie.....Seattle
Catton, Nellie May.....Bonzonia, Mich.
Chancey, Mrs. B. A. H.....Aberdeen
Chase, Mrs. May M.....Seattle
Chopson, Estelle.....Seattle
Clabaugh, Eva.....Ellensburg
Clark, Anna M.....Redmond
Clark, Frank Jones.....Seattle
Clark, Lydia G.....Bellevue
Clifford, C. W.....Everett
Clifton, Richard Ladue.....Ephrata
Close, Frankie.....Ephrata
Coates, Frank G.....Coupeville
Cobb, Tina Marie.....Seattle
Cobb, Francis Winfield.....Renton
Coleman, George B.....Woodburn, Ore.
Coleman, Ula.....Ouray, Colo.
Colkett, Marion Lombard.....Seattle
Collier, Edith Lorne.....Seattle
Comegys, Elsie Helen.....Snohomish
Conaway, H. Gail.....Tacoma
Cook, Helen Marie.....Seattle
Cook, Julia Geraldine.....Seattle
Cooper, Mrs. Gladys Sperry.....Santa Barbara, Calif.
Cooper, Mary B.....Seattle
Corbitt, Hugh Blake.....Seattle
Corliss, Helen L.....Seattle
Corskie, James M.....Seattle
Cox, Claudia Louise.....Walla Walla
Cox, Manning W.....Bremerton
Culver, Ida.....Seattle
Cummins, Robt. A.....Tacoma
Cunningham, Harry Bates.....Seattle
Cutler, Homer.....Southbridge, Mass.
Daggett, Adeline Marie.....Lewiston, Ida.
Daly, Loretta.....Chewelah
Danforth, Myrtle May.....Stevens Point, Wis.
Danforth, Sarah E.....North Yakima
Daniels, Elizabeth.....Pacific City
Davidson, Floy.....The Dalles, Ore.
Davidson, Sadie.....Seattle
Day, Walter Julius.....Seattle
DeChesne, Victor Chas.....Seattle
Delahunty, Abbie B.....Spokane
Delsing, Henry H.....Issaquah
DeMerchant, Leo A.....Oroville
Denny, F. W.....Seattle
Denton, Grace.....Vashon
DeRemier, Anna C.....Seattle
Deringer, Laura T.....Seattle

DeTourville, Audrey ..... Seattle
Dimmitt, A. Wallace ..... Renton
Dimmitt, Beniah ..... Seattle
Dimmitt, Lorris ..... Foster
Doane, Mona ..... Spokane
Dobbin, Martha ..... Enterprise, Ore.
Dobbins, Eva Eunis ..... Seattle
Donaldson, Jeannette S. ..... Spokane
Dougherty, B. L. ..... Dryad
Douglas, Maud Anna ..... Seattle
Douglas, Thos. Edmund, Jr. ..... Seattle
Drowatsky, Dora ..... Tomah, Wis.
Drumm, Frank C. ..... Gladstone, Ore.
Drumm, Mabel ..... Gladstone, Ore.
Drummond, Jessie ..... Tacoma
Durdle, M. C. ..... Enumclaw
Dyer, Blanche ..... Bingham Lake, Minn.
Eastwood, Julia E. ..... Seattle
Eaton, Eloise ..... Seattle
Edmunds, K. R. ..... Odessa
Edwards, Lila B. ..... Seattle
Egan, Anna M. ..... Seattle
Elliott, Mrs. Dora B. ..... Seattle
Elliott, Eleanor Rebecca ..... Spokane
Elliott, Hiram Woodard ..... Charleston
Elliott, M. Olive ..... Seattle
Ellis, Lycurgus ..... Latah
Elwood, Lura ..... White Salmon
Elzey, Ethel ..... Bremerton
Emerson, Frances Marie ..... Corbin, Mont.
Enegren, Helen Margery ..... Seattle
Engleson, Alice Vivian ..... Washougal
Farrar, Grace ..... Seattle
Farrar, Mayme ..... Seattle
Fasel, Elsa ..... Butte, Mont.
Fay, Carrie E. ..... Seattle
Fenton, Enid Elizabeth ..... Seattle
Fenton, Mrs. Zilpah E. ..... Seattle
Ferrin, Anna ..... Anaconda, Mont.
Fettke, Margaret E. ..... Tacoma
Finch, Martha M. ..... Aberdeen
Finch, Mary Louise ..... Aberdeen
Finch, Volney C. ..... Tacoma
Fisher, Howard John ..... Kapowsin
Fitzgerald, Chas. Reynolds ..... Salt Lake City, Utah
Fletcher, Gladys M. ..... Creston
Foley, Josephine ..... Marysville
Fonner, Delma ..... Spokane
Forbes, George G. ..... White Salmon
Fowler, Eva May ..... Seattle

Fowler, Myra Stevens.....Tacoma
Franz, Raymond F. .....Edmonds
Frazee, Mary C. .....Lafayette, Ind.
Frederickson, Bertha .....Seattle
Freeman, Ray .....Santa Barbara, Cal.
French, Frank R. .....Everett
Frerichs, Wm. Reinhard .....McMinnville, Ore.
Fretwell, Folsie .....Seattle
Frew, Rosamond .....Seattle
Friant, Josephine .....Seattle
Furnas, Lucy M. .....Mercer Island
Gabbert, Gertrude M. .....Seattle
Gabel, Marie .....Seattle
Gaffney, Ellen J. .....Seattle
Garretson, Henry H. .....Tacoma
Garton, Estelle .....Wenatchee
Gay, Alsea .....Kalispell, Mont.
Gibson, Clara Agnes .....Snohomish
Gibson, Clayton E. .....Seattle
Gibson, Helen Louise .....Leland
Gilbreath, Jas. Alvin.....Seattle
Gilmer, Lucy W. .....Fall City
Girson, Ida .....Billings, Mont.
Gist, Arthur S.....Seattle
Glass, A. F. .....White Salmon
Gleason, Ruth .....Seattle
Glockler, George .....Seattle
Glover, Oscar Kern .....Bickleton
Goble, Grace Elizabeth .....Sunnyside
Goble, Lucy Esther .....Sunnyside
Golden, Mrs. Lola G. .....Bellingham
Goldsmith, Edw. Denham.....Tacoma
Goodell, R. H. .....Yacolt
Goodnow, Marion .....Redmond
Gordon, Ella .....Aberdeen
Goss, Charlotte .....Port Orchard
Goss, Orville G. .....Olympia
Graham, Joseph W. .....Clarkston
Grantham, Grace Leo .....Ralston
Green, Eva .....Dallas, Texas
Greene, Alice M. .....Vancouver, B. C.
Greene, Helen Margaret .....Vancouver, B. C.
Greffoz, Hortense P. .....Portland, Ore.
Gregg, Kate L. .....Clarkston
Gresham, Marie .....Seattle
Griffin, Hazel B. .....Seattle
Grignon, Jessie Irene.....Seattle
Guitteau, Florence .....Renton
Hagerty, Genevieve .....Seattle
Hagerty, Nellie .....Seattle

Hall, Bertha M. ..... Snohomish
Hall, Minnie Olivia ..... Fruita, Colo.
Hanks, Cyrus A. ..... LaPlata, Mo.
Hanks, David Arthur ..... Skykomish
Hansen, Lila Elizabeth ..... Santa Barbara, Cal.
Hanson, Mathea ..... Seattle
Harkness, Hazel A. ..... Seattle
Harrington, Josephine M. ..... Seattle
Harris, Marjorie ..... Montesano
Harrison, Rachel L. ..... Butte, Mont.
Harsh, Katherine C. ..... Lewiston, Ida.
Hart, Erma O. ..... Seattle
Hartman, Frank Alexander ..... Seattle
Hayford, Lorena ..... Farmington
Heath, Minnie R. ..... Portland, Ore.
Hegman, Bertha ..... Seattle
Heine, Anna Helena ..... Tacoma
Heliker, Mrs. Florence Denny ..... Loch Kelden Lake
Helmlinge, Chas. L. ..... Seattle
Henderson, Annie R. ..... Ocean Park
Henneken, Madeline ..... Enumclaw
Herren, Laura A. ..... Weiser, Idaho
Herrick, John Sidney ..... Seattle
Herring, John P. ..... Seattle
Hess, Gladys F. ..... Seattle
Hetzel, Martha Belle ..... Colfax
Heyes, Lucy Jackson ..... Seattle
Hickenlooper, Anna ..... Everett
Higgins, Leroy M. ..... Seattle
Hill, Mrs. Ethel ..... Seattle
Hill, Madge ..... Chesterbury, Ore.
Hishikawa, Selichi ..... Seattle
Hitchings, Ruth ..... Hillegrass, Ore.
Hively, Mary Margaret ..... Wilkeson
Hogman, Bertha ..... Seattle
Hollingsworth, Ernest A. ..... Doty
Hollingsworth, Mrs. E. A. ..... Doty
Holloway, Edith Hilda ..... Helena, Mont.
Holt, Harriet G. ..... Spokane
Hood, Wm. ..... Portland, Ore.
Hopkins, Anna Elizabeth ..... Tacoma
Howard, Grace ..... Sunnyside
Hudson, Nellie Frances ..... Oak Harbor
Huff, E. Pearl ..... LaGrande, Ore.
Humphreys, Lida ..... Curwensville, Penn.
Hunt, Jas. Leroy ..... Thornton
Hunter, Daisy M. ..... Seattle
Hunter, Lila Alice ..... Seattle
Hunter, W. G. ..... Ft. Lapwai, Idaho
Hurd, Chas. Sumner ..... Mt. Vernon

Hurd, May ..... Seattle
Ikeda, Cheichi ..... Seattle
Irvine, Ethel M. ..... Seattle
Irvine, Helen ..... Seattle
Ivey, Ethel P. ..... Seattle
Jackson, Donna Elder ..... Tacoma
Jackson, Geo. Crown ..... Tacoma
Jamieson, Anna C. ..... Seattle
Jasmann, Elisa G. ..... Aberdeen
Jay, Alice M. ..... Seattle
Jensen, Arne S. ..... Lawrence
Joans, Ethel Jay ..... Earlington Heights
Johnson, Dallas D. ..... Teachers' College, Columbia
Johnson, Geneva A. ..... Centralia
Johnson, Rosamond ..... Port Orchard
Johnson, Victor Haquet ..... Raymond
Johnston, Marjorie ..... Seattle
Johnson, Wm. John ..... Seattle
Johnstone, Annabel M. ..... Seattle
Jones, Annie ..... Seattle
Jones, Frances Lee ..... Kelso
Jones, Monroe Franklin ..... Seattle
Jones, Nancy Emerson ..... Seattle
Jones, Pearl ..... Seattle
Jones, Robert D. ..... Wenatchee
Jordan, Mabel Laura ..... Bellingham
Joslin, Effie R. ..... Port Orchard
Joyce, Mabel A. ..... Seattle
Kalbus, Helen ..... Chehalis
Karrer, Anna M. ..... Seattle
Kauffman, Elizabeth ..... Seattle
Keene, Gertrude B. ..... Seattle
Keesing, Louise Dearborn ..... Seattle
Kelly, Elizabeth ..... Butte, Mont.
Kennedy, Helen ..... Olympia
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Kerr, Annie G. ..... Arlington
Kerry, Harold Edwin ..... Seattle
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King, Grace Marie ..... Waukon, Iowa
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Knapp, Ralph Reed ..... Seattle
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Knapton, Mary Alice ..... Seattle
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Kohler, Leila ..... Seattle

Kruppe, James Cornelius ..... Sioux Center, Iowa
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Langlois, Edna ..... Ritzville
Lant, Grace E. ..... Phelps City, Missouri
Larrabee, Emma D. ..... Seattle
Lawatschek, E. W. ..... Seattle
Leith, Lillie M. ..... Clatskanie, Ore.
Lenzen, Mary E. ..... Mt. Vernon
Leonard, Clara Beatrice ..... Seattle
Lewis, Mrs. Gwendelyn Taylor ..... Seattle
Lidell, Alma A. ..... Waterman
Liddell, Grace I. ..... Tacoma
Lindsay, Irma ..... Seattle
Linn, Versa ..... Seattle
Liska, Olga ..... Seattle
Liston, Mrs. Jessie C. ..... Cheyenne, Wyo.
Lively, John W. ..... Seattle
Livingston, Lallah ..... Tacoma
Long, Agnes ..... Seattle
Lortie, Rebecca E. ..... Auburn
Lovegren, Esther M. ..... Preston
Lowe, Mae ..... Oakley, Idaho
Luke, Ella R. ..... Great Falls, Mont.
Lustie, Wm. August ..... Seattle
Lux, Geo. J. ..... Richmond, Va.
MacInnes, Leona A. ..... Seattle
Mackenzie, Grace ..... Portland, Ore.
Macdonald, Victoria A. ..... Stellacoom
McAllaster, Marion ..... Seattle
McCarney, Margaret ..... Seattle
McClarren, Mabel Lillian ..... Seattle
McClelland, Delphine Zell ..... Seattle
McClure, Mary E. ..... Mossy Rock
McCollins, Clara ..... Seattle
McCorkill, Minnie ..... Prosser
McCoy, Elizabeth M. ..... Pomeroy
McDonnell, E. S. ..... Hoquiam
McDowell, Sarah A. ..... Mt. Vernon
McGee, Mattie ..... Seattle
McGrath, Helen ..... Spokane
McKain, Bernard ..... Portland, Ore.
McKenzie, Clara E. ..... Olympia
McKinley, Chas. ..... Vancouver
McLaughlin, Stella ..... Seattle
McMillen, Mabel A. ..... Seattle
McMurphy, Susannah J. ..... Tacoma
McPhee, Aletha S. ..... Seattle
McPherson, John ..... Sedro Woolley
McRae, Elizabeth ..... Portland, Ore.

Macauley, Margaret ..... Deming
Mack, F. D. ..... Menlo
Mackenzie, Grace ..... Portland, Ore.
Mahler, Mrs. Eva Elliott ..... Seattle
Madlelantz, Boniface ..... Mount Angel, Ore.
Mann, Florence ..... Seattle
Maris, Angeline B. ..... Meaderville, Mont.
Markus, Hildegard Elisabeth ..... Posen, Germany
Marston, C. May ..... Seattle
Martin, Alice J. ..... Seattle
Martin, Earl B. ..... Bremerton
Martin, Emma R. ..... Seattle
Martin, Lulu Una ..... Newport
Mason, Edith Irene ..... Seattle
Mathison, Anna May ..... Seattle
Mathieu, Irene ..... Seattle
Maxfield, Chas. Lester ..... Seattle
Meeks, Elsie ..... Waverly
Meibert, Martha E. ..... Buckley
Meyer, Walter T. ..... Bellingham
Middleton, Tressa Agnes ..... Seattle
Millay, Lottie Elsie ..... Kiona
Millegan, Nora D. ..... Great Falls, Mont.
Miller, Anna ..... Weiser, Idaho
Miller, Belle ..... Spokane
Minnis, Marjorie Elizabeth ..... Seattle
Mitchell, Edith Beatrice ..... Seattle
Mitchell, Virginia ..... Seattle
Moore, Archie L. ..... Portland, Ore.
Moore, Elsie Virginia ..... Seattle
Moore, R. W. ..... Seattle
Moore, Wert E. ..... Everett
Morgan, Mrs. Bessie C. ..... Seattle
Morgan, Jessie M. ..... Helena, Mont.
Morris, Eva Dorothy ..... Arlington
Mower, Lulu Ione ..... Blaine
Muncaster, Mary ..... Seattle
Munson, Catherina ..... Seattle
Murphy, Anna ..... Clarks Forks, Idaho
Myers, Wm. Edw. ..... Centralia
Nakai, Gentok ..... Seattle
Neikirk, Jessie ..... Seattle
Neill, Frank W. ..... Puyallup
Nelson, Annette ..... Norman
Nelson, Eunice V. ..... Norman
Nelson, Ingebor M. ..... Bryn Mawr
Nelson, Laura ..... Norman
Nelson, Nela ..... North Yakima
Nethercut, Ruth Allen ..... Lake Geneva, Wis.
Neuman, Frances H. ..... Seattle

Newman, Myrtle ..... Muskogee, Okla.
Nord, Andrea ..... Arlington
Nordborg, Erica ..... Seattle
Norris, Ernest ..... Seattle
Norris, Howard Lee ..... Seattle
Nunn, Frances Alexia ..... Seattle
Oakley, June ..... Seattle
O'Connell, Agnes E. ..... Tacoma
O'Donnell, Geo. Hugh Roe, Jr. ..... Moscow, Idaho
Ohlson, David ..... Seattle
Ohmart, Walter A. ..... Wenatchee
Olstad, Soren C. ..... Winlock
Oliver, Stanley M. ..... Medical Lake
Olson, Olga Marie ..... Port Blakeley
Osbrink, Leroy Albert ..... Custer
Ostland, Wm. ..... Clyde, Kan.
Over, Edith E. ..... Winlock
Owen, Lucile ..... Wyoming, N. Y.
Owens, Edith ..... Kennewick
Palmer, Bernice ..... Blackfoot, Idaho
Pangburn, Jessie ..... Asotin
Parish, Wm. Francis ..... Seattle
Parks, Lical ..... Seattle
Parks, Geo. Sutton ..... Seattle
Parton, Ida A. ..... Seattle
Pascoe, Myra Aurelia ..... Seattle
Passmore, Mrs. Bertha K. ..... New York City
Patten, Henrietta ..... Seattle
Pauley, Linna L. ..... Portland, Ore.
Paulsen, Mark G. ..... Seattle
Paulson, Freda Ruth ..... White Salmon
Payne, Carlista R. ..... Pe Ell
Peaslee, Emilie Stewart ..... Sedro Woolley
Pederson, Olga ..... Port Madison
Perin, Melva ..... Tacoma
Peterson, Carlyn L. ..... Seattle
Peterson, Ethel Grace ..... Spokane
Peterson, Florence E. ..... Tacoma
Peterson, Sarah P. ..... Wenatchee
Peterson, Sophia ..... Port Madison
Peterson, Tillman ..... Tacoma
Phifer, Mary Maud ..... Milton, Ore.
Pierce, Pearl A. ..... Seattle
Pittner, Ottillie M. ..... Portland, Ore.
Platner, Evalyn Idessa ..... Seattle
Platner, Goldie ..... Seattle
Poat, Homer Avery ..... Olympia
Pollock, Wm. G. ..... Summerland, B. C.
Porter, Ethel ..... Seattle
Porter, Lillian ..... Everett

Porter, Reynolds M. ..... Pateros
Potter, Agnes Marie ..... Snohomish
Potter, Chas. ..... Snohomish
Potts, Celia ..... Missoula, Mont.
Powers, James M. ..... Seattle
Prevost, Edna E. ..... Pueblo, Colo.
Priest, Harold Ragan ..... Seattle
Priest, Mrs. Jessie Nutting ..... Bellingham
Pusey, Edna M. ..... Seattle
Quigley, Agnes E. ..... Deer Park
Quigley, Anna ..... Seattle
Quilliam, Elsie B. ..... Portland, Ore.
Race, Harry R. ..... Coupeville
Ramsey, S. Gertrude ..... Seattle
Raymond, Madge E. ..... Seattle
Reavis, Nan Preston ..... Seattle
Reding, Eugenia ..... Spokane
Reeburgh, Harriet M. ..... Mangum, Okla.
Rehmke, Antoinette Marie ..... Port Orchard
Rensing, Herman ..... Benston
Revenaugh, Carl E. ..... Renton
Reynolds, Olga C. ..... Rangley
Rhodes, Fordyce W. ..... Seattle
Riley, Mrs. Mary B. ..... Seattle
Roberts, Cynthia Harte ..... Wardner, Idaho
Robertson, Jane Muriel ..... Bellingham
Robinson, Belle ..... Monmouth, Ill.
Robinson, Elizabeth L. ..... Seattle
Robinson, Maude Isabel ..... Seattle
Robison, Eliza ..... Spokane
Rodgers, Vera Mae ..... Colorado Springs, Colo.
Roelse, Dorris E. ..... Edgar, Nebr.
Roman, Elizabeth ..... Mabton
Rosaaen, Grace C. ..... Seattle
Ross, Ella C. ..... Everett
Rush, Charles ..... Limestone, Tenn.
Russell, Beulah ..... Seattle
Russell, Catherine A. ..... Seattle
Sandborn, Lynne J. ..... Potlatch, Idaho
Sands, Olea M. ..... Davenport
Sargent, Noel ..... Seattle
Sarsfield, Gerald M. ..... Seattle
Sateren, Lawrence B. ..... Everett
Satterwaite, Roberta ..... Iron Mountain, Mont.
Saunderson, Ruth ..... Issaquah
Scheurer, Margaret ..... Helena, Mont.
Schumacher, Herman J. ..... Humphrey, Nebr.
Schwabland, Geo. A. ..... Seattle
Scott, Geo. Oliver ..... Olympia
Scott, James David ..... Seattle

Sexton, Mary Helen ..... Everett
Shaffer, Leila F. ..... Seattle
Shave, Ethel ..... Seattle
Shaw, Alice H. ..... Seattle
Sheldon, Sarah M. ..... Seattle
Sherrill, Ella ..... Tacoma
Shirky, Emily ..... Oakville
Showalter, Emily ..... Everett
Siegel, Glenn Lara ..... Portland, Ore.
Siemens, Helena ..... Seattle
Signor, Eva ..... Seattle
Silverman, Esther ..... Marshfield, Ore.
Simmons, Mary ..... Seattle
Sims, Arthur G. ..... Seattle
Skjerven, Henry C. ..... Tacoma
Smith, Alice Ward ..... Seattle
Smith, Frances N. ..... Ellensburg
Smith, H. Hale ..... Seattle
Smith, Jane B. ..... Seattle
Smith, John Henry ..... Astoria, Ore.
Smith, Nell ..... Vinta, Okla.
Smith, Oren Elliott ..... Seattle
Smith, Theodore C. ..... Seattle
Spafard, Ella ..... Butte, Mont.
Spencer, Alura ..... Seattle
Spencer, Belle ..... Seattle
Spencer, Katherine E. ..... Cadillac, Mich.
Spicer, Cecil V. ..... Portland, Ore.
Squire, Mabel Annie ..... Anacortes
Squire, Walter Edmund ..... Seattle
Start, Maybelle C. ..... Seattle
Stearns, Grace ..... Vancouver
Sternberg, Betsy Pauline ..... Bellingham
Stevens, Elizabeth A. ..... Seattle
Stiff, Gertrude ..... Bozeman, Mont.
Stokesbery, Walter W. ..... Winchester, Idaho
Strand, Sophie ..... Winona
Straub, Clara May ..... Plymouth
Streator, Gertrude Inez ..... Seattle
Streeter, Mildred ..... Seattle
Studebaker, Herbert E. ..... Castlerock
Stuen, Ole J. ..... Parkland
Sullivan, Kathleen ..... Butte, Mont.
Summers, Sophie Leola ..... Seattle
Swan, James N. ..... Seattle
Talbott, V. W. ..... Renton
Tamura, Teijiro ..... Seattle
Tarp, Vera D. ..... Seattle
Taylor, Elizabeth M. ..... Seattle
Testerin, Ruby ..... Seattle

Thomas, Melissa ..... Walla Walla
Thompson, Kate ..... Seattle
Thompson, Luciole May ..... Seattle
Thompson, Maud ..... Seattle
Thompson, Muriel E. ..... Palo Alto, Cal.
Thursby, Isabella S. ..... Orange City, Florida
Toothaker, Lucy M. ..... Rover
Trempe, Louis A. ..... Nagrom
Trombly, Lemuel A. ..... Seattle
Turnbull, Lawrence E. ..... Tacoma
Turpin, Harold Lester ..... Seattle
Ulrich, Louise ..... Chewelah
Vandamant, Flora E. ..... Olympia
Vertrees, Carl ..... Hillyard
Voigt, Esther Helen ..... Spokane
Von Kalow, Elsa M. ..... Seattle
Von Neida, Grace ..... Skykomish
Waite, Netta M. ..... Seattle
Walden, Anna ..... Seattle
Walker, Mrs. Anna Sloan ..... Seattle
Wallace, Dorothy ..... Ferndale
Wallace, Herbert M. ..... Olympia
Wallace, May Alicia ..... Seattle
Wallin, James R. ..... Farmington
Walter, C. H. ..... Seattle
Wardrobe, Mary B. ..... Genessee, Idaho
Warren, Elgin Jessie ..... Davenport
Watson, Lydia M. ..... Port Townsend
Wein, Clara G. ..... Seattle
Wente, Elizabeth ..... Montesano
Wentworth, Mrs. Lois J. ..... Seattle
West, Irene ..... Seattle
Westberg, Alma E. ..... Kensington, Minn.
Westerberg, Iwar Sigurd ..... Seattle
Wetzel, M. H. ..... Port Orchard
Wheeler, Cheta H. ..... Smithfield, Ohio
Wheeler, Gladys F. ..... Seattle
Wheeler, Mary B. ..... Cedar Srpings, Mich.
White, Clyde W. ..... Lebam
Whitelaw, Dorothy ..... Seattle
Whitelaw, Wm. N. ..... Issaquah
Wickstrom, R. Pearl ..... Kellog, Idaho
Wiegman, Marie ..... Spokane
Wilcox, Genevieve ..... Mt. Vernon
Wilcox, Scott ..... Snoqualmie
Wilkie, Florence ..... Seattle
Williams, Eva H. ..... Butte, Mont.
Williams, Grace F. ..... Bozeman, Mont.
Williams, Roger E. ..... North Bend
Wilson, Emma Frances ..... Seattle

Wilson, Emma ..... Seattle
Wilson, Florence M. ..... Dallas, Texas
Wilson, Mrs. Will D. ..... Seattle
Winslow, Ella Patton ..... Seattle
Wintermute, H. S. ..... Seattle
Witmer, Anna M. ..... Port Blakeley
Wittman, Ida ..... Seattle
Witter, Mary E. ..... Bellingham
Wood, Irene B. ..... Blaine, Mont.
Woodford, Alice M. ..... Seattle
Woodworth, Madeline E. ..... Seattle
Wortman, Elizabeth ..... Kennewick
Wright, Ada S. ..... Seattle
Wright, Harrison G. ..... Seattle
Wright, Mary Agnes ..... Seattle
Wright, Myrtle ..... Eltopia
Wright, Sam A. ..... Seattle
Wyeth, Adeline B. ..... Canby, Ore.
Young, Grace Mae ..... Seattle
Young, Nell E. ..... LaGrande, Ore.
Zech, Raymond J. ..... Auburn

SUMMARY OF ENROLLMENT

BY COLLEGES AND SCHOOLS

Graduate School		154
College of Liberal Arts		1168
College of Science		389
School of Education		25
College of Engineering		489
Chemical Engineering	60	
Civil Engineering	166	
Electrical Engineering	185	
Mechanical Engineering	78	
Division of Fine Arts		70
College of Forestry		117
Four-Year Course	88	
Short Course (three months)	29	
School of Law		204
College of Mines		113
Four-Year Course	69	
Short Course (three months)	44	
College of Pharmacy		81
Total		2810

BY CLASSES

Graduate Students		154
Seniors		229
Juniors		298
Sophomores		494
Freshmen		995
Unclassified		117
Third Year Law		44
Second Year Law		42
First Year Law		30
Special Students		334
Liberal Arts	102	
Science	26	
Education	11	
Engineering	60	
Fine Arts	12	
Forestry	10	
Law	88	
Mines	4	
Pharmacy	21	
Short Course Students (Forestry and Mines)		73
		2810
Summer Session of 1913		667
		3477
Deduct Summer students now attending the University		137
Net Total for the Year		3340

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