

CATALOGUE for 1908-9 and

ANNOUNCEMENTS for 1909-10

OF THE

UNIVERSITY OF WASHINGTON



SEATTLE

OLYMPIA, WASH.:
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1909.

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UNIVERSITY CALENDAR

1908-1909

Semester Examinations Close.....	May 27
Baccalaureate Sunday.....	May 30
Commencement.....	Monday, May 31
Alumni Dinner.....	Wednesday, June 2

SUMMER SESSION, 1909

Registration day	Monday, June 21
Recitations begin	Tuesday, June 22
Summer session closes.....	Friday, July 30

1909-1910

FIRST SEMESTER

Examination for admission.....	Monday, Tuesday, Oct. 4, 5
Registration days.....	Monday, Tuesday, Oct. 4, 5
Recitations begin.....	Wednesday, Oct. 6
Examinations for removing conditions.....	Oct. 11-15
Thanksgiving vacation.....	Nov. 24, 12 m., to Nov. 29, 8:00 a. m.
Examinations for removing conditions.....	December 13-17
Christmas vacation.....	Dec. 23, 4 p. m., to Jan. 4, 8:00 a. m.
First semester closes.....	Friday, Feb. 11

SECOND SEMESTER

Registration days.....	Monday, Tuesday, Feb. 14, 15
Recitations begin.....	Wednesday, Feb. 16
Washington's birthday.....	February 22
Examinations for removing conditions.....	March 14-18
Decoration day	Monday, May 30
Semester examinations close.....	June 10
Baccalaureate Sunday.....	June 12
Alumni dinner.....	Tuesday, June 14
Commencement	Wednesday, June 15

Albert L. Rogers
Wahinele

THE BOARD OF REGENTS

7 Hon. ~~Maner Backus~~ *Boyle* *Lawyer*

HON. A. P. SAWYER , President.....	Seattle
Term Expires, 1914.	
HON. FRANK D. NASH.....	Tacoma
Term Expires, 1910.	
HON. D. L. HUNTINGTON.....	Spokane
Term Expires, 1910.	
HON. JOHN H. POWELL	Seattle
Term Expires, 1911.	
HON. F. A. HAZELTINE..... <i>President</i>	South Bend
Term Expires, 1911.	
HON. JOHN C. HIGGINS.....	Seattle
Term Expires, 1914.	
HON. HOWARD G. COSGROVE.....	Seattle
Term Expires, 1915.	

WILLIAM MARKHAM, Secretary of the Board.

Alex F. McEwen *Boyle* *Cornell*

OFFICERS OF ADMINISTRATION

President.....	THOMAS FRANKLIN KANE
Administration Building.	
Dean of the College of Liberal Arts.....	ARTHUR RAGAN PRIEST
Administration Building.	
Dean of the College of Engineering.....	ALMON HOMER FULLER
Science Hall.	
Dean of the School of Mines.....	MILNOR ROBERTS
Science Hall.	
Dean of the School of Pharmacy.....	CHARLES WILLIS JOHNSON
Administration Building.	
Dean of the School of Law.....	JOHN THOMAS CONDON
Administration Building.	
Dean of the School of Forestry.....	FRANCIS GARNER MILLER
Science Hall.	
Chairman of Graduate Faculty.....	J. ALLEN SMITH
Administration Building.	
Dean of Women.....	INIS H. WEED
Women's Hall.	
Registrar and Secretary of the Faculty..	HERBERT THOMAS CONDON
Administration Building.	
Head Librarian.....	WILLIAM ELMER HENRY
Administration Building.	

*Heads of Departments
about 40*

FACULTY AND OTHER OFFICERS*

THOMAS FRANKLIN KANE, PH. D., *President.*

A. B., De Pauw University, 1888; A. M., 1891; Ph. D., Johns Hopkins University, 1895; Tutor in Latin, De Pauw University, 1886-88; Professor of Latin, Lewis College, 1888-91; Scholar in Latin, Johns Hopkins University, 1893-94; Fellow in Latin, 1894-95; Professor of Latin, Olivet College, 1895-1900; Professor of Latin Language and Literature, University of Washington, 1900-2; Acting President, 1902-3; President, 1903-.

HENRY LANDES, A. M., *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-.

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.*

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-.

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; Fellow in Civil Engineering, Cornell University, 1897-98; Professor of Civil Engineering, University of Washington, since 1898; absent on leave, with American Bridge Company, Philadelphia, 1900-1901; Dean of College of Engineering, 1899-.

*The faculty is arranged in groups in the order of seniority of appointment. For directory see page 265.

ARTHUR RAGAN PRIEST, A. M., *Professor of Rhetoric and Oratory, and Dean of the College of Liberal Arts.*

A. B., De Pauw University, 1891; A. M., 1894; Principal of High School, Seale, Ala., 1891-92; Associate Principal and Professor of English, McFerrin College, 1892-93; Instructor in Rhetoric and Oratory, De Pauw University, 1893-96; Professor, 1896-98; Instructor in Oratory, University of Wisconsin, 1898-99; Professor of Rhetoric and Oratory, University of Washington, 1899-. 5

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 BYERS, PH. D., *Professor of Chemistry.*

A. B. and B. S., Westminster College, 1895; A. M., 1898; Ph. D., Johns Hopkins University, 1899; 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-. 6

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, 1887-88; 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; Professor of Spanish, 1903-. 7

TREVOR KINCAID, A. M., *Professor of Zoology.*

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-. 8

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

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-. 9

MILNOR ROBERTS, A. B., *Professor of Mining Engineering and Metallurgy and Dean of the School 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-. 10

ARTHUR SEWALL HAGGETT, PH. D., *Professor of Greek.*

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 and Latin, Worcester Academy, 1898-1901; Assistant Professor of Greek and Latin, University of Washington, 1901-02; Professor of Greek Language and Literature, 1902-. 11

FREDERICK ARTHUR OSBORN, PH. D., *Professor of Physics and Director of the 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-. 12

JOHN PHILO HOYT, LL. B., *Professor of Law.*

LL. B., Ohio State and Union Law College, 1867; Justice, Supreme Court of Washington, 1879-87 and 1889-95; Chief Justice, 1895-97; Professor of Law, University of Washington, 1902-. 13

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-. 13

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

14 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; Professor of Latin, University of Washington, 1902-.

*Absent in Germany on leave, 1908-09.

CHARLES WILLIS JOHNSON, PH. C., PH. D., *Professor of Pharmaceutical Chemistry, and Dean of the School 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; Professor of Pharmaceutical Chemistry, University of Washington, 1904-.

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

15 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.*

16 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.*

17 B. S., Hastings College, 1892; Ph. M., University of Chicago, 1896; Ph. D., University of Nebraska, 1901; Ph. 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-.

JOHN FLEMING MAIN, A. B., *Professor of Law.

A. B., Princeton University, 1891; Superintendent of Schools, Illinois, 1891-95; Law Student, University of Michigan, 1895-97; Passed State Bar Examination, Illinois, 1897; Practiced Law, Aledo, Illinois, 1897-1900; Seattle, Washington, 1900-04; Professor of Law, 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 and Mathematics, University of New Mexico, 1901-1903; Professor of Physics and Electrical Engineering, New Mexico School of Mines, 1903-04; Professor of Electrical Engineering, University of Washington, 1904-.

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, 1898; 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-.

*Resigned March, 1909, to accept appointment as judge of the superior court of King county.

EDWARD OCTAVIUS SISSON, PH. D., *Professor of Pedagogy and Director of the Department of Education.*

2 d
B. Sc., Kansas State Agricultural College, 1886; A. B., University of Chicago, 1893; Student in Berlin University, 1903-4; Ph. D., Harvard University, 1905; Teacher and Principal in Public Schools, 1886-1891; Principal, South Side Academy, Chicago, 1892-7; University Extension Reader in Psychology, University of Chicago, 1894; Director, Bradley Polytechnic Institute, Peoria, Illinois, 1897-1904; Assistant Professor of Education, University of Illinois, 1905-6; Professor of Pedagogy, University of Washington, 1906-.

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

r l
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, 1901-2; Professor of German, University of Washington, 1906-.

FRANCIS GARNER MILLER, M. F., *Professor of Forestry, and Dean of the School of Forestry.*

2 v
M. D., Iowa State Normal, 1893; Ph. B., University of Iowa, 1900; B. S. A., Iowa State College, 1901; M. F., Yale University, 1903; Superintendent of Schools, Parkersburg, Iowa, 1893-1895; Superintendent of Schools, Dunlap, Iowa, 1895, 1899; Graduate Student, Yale, 1901-1903; Professor of Forestry, University of Nebraska, 1903-1907; Professor of Forestry, University of Washington, 1907-; with U. S. Forest Service, Summers, 1901-.

Director of Good Roads
SAMUEL CHRISTOPHER LANCASTER, *Professor of Highway Engineering.*

2 3
Student, Southwestern Baptist University, Jackson, Tenn.; Resident Engineer, Illinois Central Ry., 1884-1885; Resident Engineer, Gulf, Colorado and Santa Fe Ry., and Texas Pacific Ry., 1886-1887; City Engineer, Jackson, Tenn., 1888-1906, at the same time serving as Superintendent of Water and Light Plant, 1893-1906; Chief Engineer, Madison County Good Roads Commission, 1903-1905; Consulting Engineer, Office Public Roads, Washington, D. C., 1906-; Chief Engineer, The Heights Incorporated (Seattle Golf & Country Club), 1907-; Consulting Engineer, Road Construction, Seattle Park Board, 1907-; Professor of Highway Engineering, University of Washington, 1907-.

DAVID CONNOLLY HALL, Sc. M., M. D., *Professor 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; Professor of Physical Training, University of Washington, 1908-.

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

C. E., Cornell College, 1895; M. C. E., Cornell University, 1897; Member 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; Professor of Municipal Engineering, University of Washington, 1908-.

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

Member Society of Arts, London; Oriental Scholar, S. Augustine's College, Canterbury, 1883-6; First Class Oxford and Cambridge Prelim., 1886; Rector Trinity Parish Church, Seattle, 1897-; Professional Lecturer on Oriental Philosophy and Literature, University of Washington, 1909-.

GEORGE HENRY ALDEN, Ph. D., *Associate Professor of History.*

B. S., Carleton College, 1891; A. B., Harvard University, 1893; Ph. D., University of Wisconsin, 1896; Superintendent of Schools, Tracy, Minn., 1891-92; Fellow in History, University of Chicago, 1893-95; Fellow in History, University of Wisconsin, 1895-96; Acting Assistant Professor of History, University of Illinois, 1896-97; Professor of History and Government, Cornell College, 1897-98; Professor of History and Political Science, Carleton College, 1898-1903; Assistant Professor of History, University of Washington, 1903-05; Associate Professor, 1905-.

HERBERT GALEN LULL, A. B., *Associate Professor of Education.*

Graduate Michigan State Normal College, 1898; A. B., University of Michigan, 1904; Principal Public School, Carson City, Michigan, 1898-1902; Superintendent 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-.

CHARLES CHURCH MORE, M. S., C. E., *Associate 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; five 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. Condon, C. E., Chicago; U. S. Engineer Dep't., Fort Worden, Wash.; C., M. & St. P. Ry. Co., of Washington, Seattle; Acting Professor of Civil Engineering, University of Washington, 1900-01; Associate Professor, 1907-.

HENRY KREITZER BENSON, PH. D., *Associate Professor of Chemistry, Acting Professor of Chemistry, 1907-1908.*

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-.

JAMES EDWARD GOULD, A. M., *Assistant Professor of Astronomy and Mathematics.*

Ph. B., University of Washington, 1896; A. M., Harvard University, 1907; Principal of High School, Port Townsend, 1897-99; Instructor in Physics and Chemistry, Seattle, High School, 1899-1901; Scholar, Yerkes Observatory, University of Chicago, Summer Quarter, 1906; Austin Scholar and Assistant in Astronomy, Harvard University, 1906-07; Assistant Professor of Mathematics, and Principal of the Preparatory School, University of Washington, 1901-03; Assistant Professor of Mathematics, 1903-07; Assistant Professor of Astronomy and Mathematics, 1907-.

OTHELIE 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, 1903-.

*Absent on leave, University of Chicago, 1908-09.

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

A. B., Victoria University (now Toronto), 1891; Ph. D., University of Chicago, 1900; Graduate Specialist in Classics and English, Ontario College of Pedagogy, 1891; 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, 1899-02; Professor of Latin and German, Central Normal College, Danville, Indiana, 1902-03; Assistant Professor of Latin and Greek, University of Washington, 1908-.

MAYNARD LEE DAGGY, PH. B., Assistant Professor of Rhetoric and Oratory.

Ph. B., De Pauw University, 1896; Indiana Law School, 1897-99; Instructor in English, State School for the Blind, Jacksonville, Illinois, 1896-97; Instructor in English, High School, Mount Vernon, Illinois, 1899-1900; Instructor in English, High School, Fond du Lac, Wisconsin, 1900-01; Instructor in Rhetoric and Oratory, University of Wisconsin, 1901-04; Assistant Professor of Rhetoric and Oratory, University of Washington, 1904-.

ALLEN ROGERS BENHAM, PH. D., Assistant Professor of English Literature.

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-.

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-.

HERMAN CAMPBELL STEVENS, PH. D., Assistant Professor of Psychology.

A. B., University of Michigan, 1901; Ph. D., Cornell University, 1905; Graduate Scholar in Psychology, Cornell University, 1901-03; Junior Assistant in Psychology, 1903-04; Senior Assistant, 1904-05; Assistant Professor of Psychology, University of Washington, 1905-.

FRANK MARION MORRISON, A. B., *Assistant Professor of Mathematics.*

38 A. B., University of Michigan, 1892; Graduate Student University of Chicago, 1897-99; 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-.

LOBEN DOUGLAS MILLIMAN, A. B., *Assistant Professor of Rhetoric.*

39 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 Rhetoric, University of Washington, 1905-.

IRVIN WALTER BRANDEL, PH. G., PH. D., *Assistant Professor of Chemistry.*

40 Ph. G., University of Wisconsin, 1899; B. S., 1901; M. S., 1902; Ph. D., 1906; Fellow in Pharmacy, 1899-1901; Fellow in Chemistry, 1901-02; Instructor in Pharmacy, 1902-05; Assistant Professor of Pharmacy, University of Washington, 1905-07; Assistant Professor of Chemistry, 1907-.

WILLIAM MAURICE DEHN, PH. D., *Assistant Professor of Physiological Chemistry and Toxicology.*

41 A. B., Hope College, 1893; A. M., 1896; Ph. D., University of Illinois, 1903; Graduate School University of Chicago, 1898-1900, and Summers 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 and Toxicology, University of Washington, 1907-.

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

42 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-.

JOHN WEINZIRL, PH. D., *Assistant 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 Botany, University of Washington, 1907-. 43

ARTHUR DAY HOWARD, PH. D., *Assistant Professor of Zoology.*

B. S., Amherst, 1898; M. S., Northwestern University, 1901; Ph. D., Harvard University, 1906; Fellow, Northwestern University, 1902; Assistant in Zoology, Harvard University, 1902-04; Teaching Fellow, Harvard University, 1904-05; Professor of Biology, Westminster College, Pennsylvania, 1906-08; Assistant Professor of Zoology, University of Washington, 1908-. 44

VERNON LOUIS PARRINGTON, M. A., *Assistant Professor of Rhetoric.*

A. B., Harvard University, 1893; M. A., College of Emporia, 1895; studied in the British Museum, and the Bibliotheque Nationale, on leave of absence, July, 1903, to August, 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 Rhetoric, University of Washington, 1908-. 45

ALVIN ELEAZAR EVANS, PH. D., *Acting Assistant Professor of Latin.*

A. B., Cotner University, 1896; A. M., University of Nebraska, 1898; Ph. D., University of Michigan, 1908; Instructor in Latin and Greek, Cotner University, 1898-1901; Professor of Latin and Greek, Eureka College, 1901-08; Graduate Student, University of Chicago, 1903-04; Classical Master, Racine College, 1904-06; Graduate Student, University of Michigan, 1906-08; Fellow, University of Michigan, 1907-08; Acting Professor of Latin, University of Washington, 1908-. 46

PAUL EMIL WEITHAASE, A. M., *Acting Assistant Professor of German.*

A. B., Bucknell University, 1898; A. M., 1899; Graduate Scholar, University of Pennsylvania, 1899-1900; Student, University of Leipzig, 1900; Instructor in German, Syracuse University, 1900-02; Miller Fellow in Modern Languages, University of Chicago, 1902-03; Instructor in German, Bucknell University, 1903-05; Assistant Professor of German, Bucknell University, 1905-08; Acting Assistant Professor of German, University of Washington, 1908-. 47

MERLE HAROLD THORPE, A. B., *Assistant Professor in charge of the Department of Journalism.*

48
Student, Park College, 1902; Student Leland Stanford, Jr., University, 1902-05; City Editor, Palo Alto Times, 1904; Managing Editor, Stanford Sequoia, 1904-05; Advertising and Circulation Manager, Washington Life, 1905; White House Correspondent, Washington Post, 1905-06; Hearst Bureau, Washington, 1906; Special Correspondent Cuba and Managing Editor Havana Post, 1906-07; London Mail Correspondent to Jamaica, 1907; Northwest Editor, Seattle Post-Intelligencer, 1907; Department of Journalism, University of Washington, 1907-.

INSTRUCTORS

IDA KATHERINE GREENLEE, A. B., *Instructor in English.*

49
A. B., Ohio State College, 1888; Student, Wellesley College, 1895; Student, University of Chicago, Summer of 1900; Instructor in English Literature and Rhetoric, High School, Sioux City, Iowa, 1891-95; Instructor, High School, Kansas City, Mo., 1896-98; Instructor, High School, Springfield, Mass., 1898-1900; Instructor, High School, Seattle, Wash., 1900-05; Instructor in English, University of Washington, 1905-.

HENRY LOUIS BRAKEL, A. M., *Instructor in Physics.*

50
B. S., Olivet College, 1902; A. M., University of Washington, 1905; Instructor in Physics and Chemistry, High School, St. Johns, Michigan, 1902-03; Instructor in Physics, University of Washington, 1905-.

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

51
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-.

HENRY LEE BOWLBY, B. S., *Instructor in Civil Engineering.*

52
Student at Doane College, Nebraska, 1895-97; Student at University of Nebraska, 1897-98; Student at West Point, 1898-1901; A. B. & B. S. (Civil Engineering), University of Nebraska, 1905; Railroad Engineering work, Ecuador, S. A., 1901-04; Instructor in Military Science, University of Nebraska, 1904-05; Instructor in Civil Engineering, University of Washington, 1905-.

LAVINA RUDBERG, B.S., *Instructor in Physical Training for Women.*

B.S., Northern Illinois Normal School, 1898; Graduate, Detroit School of English Literature and Physical Culture, 1901; Graduate, Flynn Normal School of Physical Education, 1902; Director of Physical Culture, Thomas Normal Training School of Music and Physical Culture, Detroit, 1900-01; Physical Director, Michigan Conservatory of Music, 1902-03; Director of Private Classes in Physical Culture, Seattle, Wash., 1903-05; Instructor in Physical Training for Women, University of Washington, 1905-.

53

CHARLES W. HARRIS, C.E., *Instructor in 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-.

52

GEORGE SAMUEL WILSON, B.S., *Instructor in 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-.

53

CHARLES MUNRO STRONG, A.M., *Instructor in 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-.

56

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 Shop Work, University of Washington, 1906-.

57

*Withdrew February, 1909, to act as Spanish interpreter for the Curtis Ethnological Expedition.

CLARENCE RAYMOND COREY, E. M., *Instructor in Mining and Metallurgy.*

58
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; Instructor in Mining and Metallurgy, University of Washington, 1907-.

59
WILLIAM THEODORE DARBY, A. M., *Instructor in English Literature.*

A. B., Yale University, 1905; A. M., Columbia University, 1907; Instructor in Williston Seminary, Williston, Mass., 1905-06.

HARVEY BRUCE DENSMORE, A. B., *Instructor in 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-.

GEORGE IRVING GAVETT, B. S. (C. E.), *Instructor in Mathematics.*

B. S., (C. E.), University of Michigan, 1893; Graduate Student in Mathematics, Leland Stanford, Jr., University, 1904-05; 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-.

62
JESSE AARON JACKSON, *Instructor in Civil Engineering.*

Student in Civil Engineering, University of Washington, 1899-1901; Inspector, U. S. Engineer Department, 1901-03; Draftsman, City Engineer's Office, Seattle, 1903-04; Head Computer, *ibid*, 1904-08; Instructor in Civil Engineering, University of Washington, 1908-.

63
JOEL MARCUS JOHANSON, A. B., *Instructor in German.*

A. B., University of Washington, 1904; Rhodes Scholar, Oxford, England, 1904-07; Instructor in German, University of Washington, 1907-.

SANDY MORROW KANE, *Instructor in Metalwork.*

Seven years' apprenticeship in iron and brass molding, machine shop, and forging, Kane and Sons, Ireland; Foreman of shops 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-. 64

WILLIAM VERNON LOVITT, A. B., PH. M., *Instructor in Mathematics.*

A. B., University of Nebraska, 1903; Principal of School, Arcadia, Nebraska, 1903-04; Fellow in Mathematics, University of Nebraska, 1904-06; Graduate Student, University of Chicago, 1906-07; Ph. M., University of Chicago, 1907; Instructor in Mathematics, University of Washington, 1907-. 65

EDWARD MCMAHON, A. M., *Instructor in 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, 1908-. 66

WILLIAM ALFRED MORRIS, PH. D., *Instructor in European History.*

A. B., Leland Stanford, Jr., University, 1901; Ph. D., Harvard University, 1907; Teacher of Latin and History, Portland High School, Portland, Ore., 1901-04; Austin Scholar, Harvard University, 1904-05; Toppan Scholar, 1905-06; Assistant in History, Harvard University and Radcliffe College, 1906-07; Instructor in European History, University of Washington, 1907-. 67

SILAS FRANKLIN SCOTT, PH. C., M. S., *Instructor in Pharmacy and Materia Medica.*

B. S., Michigan Agriculture College, 1894; Ph. C., University of Michigan, 1902; M. S., University of Michigan, 1905; Practical Druggist, Detroit, Michigan, 1902-03; Chemist, Iowa Portland Cement Company, Iowa, Kansas, 1905-06; Instructor in Pharmacy and Materia Medica, University of Washington, 1907-.

STANLEY SMITH, A. M., *Instructor in French.*

68
A. B., Leland Stanford, Jr., University, 1903; A. M., 1905; Assistant in Romance Languages, Leland Stanford, Jr., University, 1903-04; Instructor, 1904-06; Student in Europe, 1906-07; Instructor in French, University of Washington, 1907-.

CHARLES EDWIN WEAVER, PH. D., *Instructor in Geology.*

69
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-.

HIRAM B. CONIBEAR, *Instructor in Physical Training.*

70
Graduate of the Chautauqua School of Physical Education and Athletics, 1904; Trainer, University of Chicago, 1897-1901; Assistant Director Physical Culture, University of Illinois, 1901-03; Director Physical Culture and Athletics, University of Montana, 1903-05; Trainer, University of Chicago, 1905-06; Trainer, World's Champions Base Ball Team, Chicago, American League (White Sox), 1906; Coach, Track and Crew, University of Washington, 1906-.

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

71
B. S., Purdue University, 1904; C. E., Purdue University, 1907; practical work in Railway Engineering, 1902-03; with technical branch U. S. Forest Service, 1904-; in charge of Forest Service, Timber Testing Laboratory at University of Washington, 1907-; Instructor in Timber Physics, University of Washington, 1908-.

HANS JACOB HOFF, PH. D., *Instructor in German.*

72
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-.

LOUIS DWIGHT HARVELL WELD, PH. D., *Instructor in Economics.*

73
A. B., Bowdoin College, 1905; A. M., University of Illinois, 1907; Ph. D., Columbia University, 1908; Fellow in Economics, University of Illinois, 1905-06; Assistant Instructor, 1906-07; Garth Fellow in Economics, Columbia University, 1907-08; Instructor in Economics, University of Washington, 1908-.

HAROLD ALLEN THOMAS, C. E., *Instructor in Civil Engineering.*

A. B., Columbia University, 1906; C. E., Columbia University, 1908; Assistant in Surveying, Columbia University Summer School of Surveying, 1906-08; Engineering work with New York State Water Supply Commission, 1908-09; Instructor in Civil Engineering, University of Washington, 1908. 74

HOMER P. EARLE, A. B., *Instructor in Spanish.*

A. B., Stanford University, 1904; Student, Johns Hopkins University, 1904-06; Instructor in Spanish, Stanford University, 1900-01, 1906-08; Instructor in Spanish, Los Angeles High School, 1908, Jan., 1909; Instructor in Spanish, University of Washington, 1909. 73

GLENN C. BEECHLER, A. B., LL. B., *Instructor in Law.*

A. B., University of Michigan, 1904; LL. B., 1906; Instructor in Public Speaking, Butler College, Indianapolis, Indiana, 1906-07; Attorney-at-Law, Indianapolis, Indiana, 1906-09; Instructor in Law, University of Washington, 1909. 76

LECTURERS**JAMES DELMAGE ROSS, *Lecturer and Consulting Electrical Engineer on Central Station Practice.***

Chief Electrical Engineer, Municipal Light and Power Plant, Seattle.

CLARENCE E. FLEAGER, *Lecturer and Consulting Electrical Engineer on Telephones.*

B. S. in Electrical Engineering, University of Illinois; Superintendent, Inside Plant, Sunset Telephone Company.

CHARLES EVAN FOWLER, M. AM. SOC. C. E., *Lecturer on Engineering Contracts and Specifications.*

Student in Civil Engineering, Ohio State University; Bridge Engineer Hocking Valley Ry., 1887; Engineer of Construction, Indiana Bridge Co., 1889; Chief Engineer, Youngstown Bridge Co., 1891-98; Consulting Engineer, New York City, 1898-99; President and Chief Engineer, International Contract Co., to present time; President, Seattle Park Commission, 1904.

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

B. S., Iowa State College, 1878; Student, Royal School of Mines, Clausthal, Prussia, 1881-82; University of Berlin, 1883; Assayer, Livingston, Montana, 1889-94; Assayer, U. S. Assay Office, Helena, Montana, 1894-1906; Assayer, U. S. Assay Office, Seattle, Wash., 1906.

JOHN HARISBERGER, *Lecturer and Consulting Electrical Engineer on Power Transmission.*

Chief Electrical Engineer, Seattle-Tacoma Power Co.

GEORGE JAMME, *Lecturer on Coal Mining.*

Formerly Chief Engineer, Dayton Coal and Iron Co., Dayton, Tennessee; Chief of Staff for W. P. Rend, Coal Operator, Chicago; Chief Engineer, Monongahela River Consolidated Coal and Coke Co.; Mining Engineer, Seattle, Wash.

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

B. S., University of Minnesota; United States Weather Bureau Official, since 1883; Director, Washington Section, United States Weather Bureau, since 1894.

ROGER TAYLOR, C. E., *Lecturer on Copper Smelting.*

C. E., Rensselaer Polytechnic Institute, 1899; Chemist and Metallurgist, Oxford Copper Works, Bayonne, N. J., 1899-1901; Assistant Superintendent, Ontario Smelting Works, International Nickel Company, Canadian Copper Company, Ontario, Canada, 1901-05; Metallurgist, Bingham Consolidated Company, Bingham, Utah, 1905; Superintendent of Copper Works, Tacoma Smelting Company, 1905-.

FRANK B. COOPER, *Lecturer on Education.*

Superintendent, City Schools, Seattle.

GRADUATE ASSISTANTS

ELVA COOPER, A. M., *Graduate Assistant in Mathematics.*

A. B., University of Wisconsin, 1904; A. M., 1906; Teacher of Mathematics in High School, Necedah, Wisconsin, 1904-05; Graduate Scholar in Mathematics, University of Wisconsin, 1906-07; Fellow in Mathematics, Bryn Mawr College, 1907-08; Graduate Assistant in Mathematics, University of Washington, 1908-.

ALBERT HASKIN DEWEY, PH. G., *Graduate Assistant in Materia Medica and Pharmacy.*

Ph. G., University of Washington, 1907; Assistant in Chemistry, 1907-08; Graduate Assistant in Materia Medica and Pharmacy, 1908-.

CURT JOHN DUCASSE, *Graduate Assistant in Philosophy.*

A. B., University of Washington, 1908; Graduate Assistant in Philosophy, University of Washington, 1908-.

LEWIS HENRY FEE, A. B., *Graduate Assistant in Physics.*

Graduate, Western Michigan Normal School, 1905; A. B., University of Michigan, 1907; Superintendent of Schools, Scotts, Michigan, 1901-04; Graduate Assistant in Physics, University of Washington, 1907-. 3

ADA MARTITIA FIELD, A. B., *Graduate Assistant in Chemistry.*

A. B., Guilford College, N. C., 1898; Guilford Graduate Scholar, Bryn Mawr College, 1898-99; Student, 1900-01; Foundation Scholar, 1901-02; Student, Summer Term, University of Chicago, 1904, 1907; University of California, 1905; University of Washington, 1908; Instructor in Science, Idaho Industrial Institute, Welser, Idaho, 1904-07; Graduate Assistant in Chemistry, University of Washington, 1908-. 4

HOLLAND FRAZEE, A. B., *Graduate Assistant in Mathematics.*

A. B., University of South Dakota, 1906; Graduate Assistant in Mathematics, University of Washington, 1908-. 5

PHILO FAY HAMMOND, A. B., *Graduate Assistant in Physics.*

M. Di., Iowa State Normal School, 1902; Student, University of Michigan, 1903-04; A. B., University of Washington, 1907; Principal, Greeley (Iowa) Public Schools, 1902-03; Principal, Public Schools, Camas and St. John, Wash., 1904-06; Graduate Assistant in Physics, University of Washington, 1907-. 6

CARL HENNINGER, A. B., A. M., *Graduate Instructor in German.*

A. B., Indiana University, 1907; A. M., University of Illinois, 1908; Graduate Scholar, University of Illinois, 1907-08; Graduate Instructor in German, University of Washington, 1908-09. 7

ALEXANDER GRANT JACKSON, A. B., *Graduate Assistant in Forestry.*

A. B., Syracuse University, 1901; Secretary, Y. M. C. A., Waverly, N. Y., 1901-02; Editor, The Utilitarian, 1902-1906; with the O. & W. Ry. Company, 1906-07; Graduate Student, University of Washington, 1907; with U. S. Forest Service, summer of 1908; Graduate Assistant in Forestry, University of Washington, 1908-09. 8

MARGARET MAE MCLACHLAN, PH. G., B. S., *Graduate Assistant in Pharmacy.*

Ph. G., University of Washington, 1906; B. S., University of Washington, 1908; Graduate Assistant in Pharmacy, University of Washington, 1906-. 9

EDITH SIDONIE MICHELSON, A. B., *Graduate Assistant in French and Spanish.*

A. B., University of Washington, 1908; Graduate Assistant in French and Spanish, 1908-. 10

ARTHUR S. POPE, A. B., *Graduate Assistant in Mathematics.*

A. B., University of Washington, 1908; Graduate Assistant in Mathematics, University of Washington, 1908.

G. P. SENTER, A. M., *Graduate Assistant in Chemistry.*

A. B., William Jewell College, 1902; A. M., 1904; Graduate Student, Harvard University, 1904-05; Graduate Assistant in Chemistry, University of Washington, 1908.

MARTIN W. STEINKE, A. B., *Graduate Assistant in German.*

A. B., Wartburg College (Clinton, Iowa); Graduate Assistant, University of Washington, in German, February, 1909.

WALTER BELL WHITTLESEY, A. B., *Graduate Assistant in French.*

A. B., University of Washington, 1907; Graduate Assistant in French, University of Washington, 1907.

UNDERGRADUATE ASSISTANTS

FRED ASHTON, *Assistant in Chemistry.*

E. OWEN CRIM, *Assistant in Music (Band).*

GEORGE CUMBO, *Assistant in Chemistry.*

ALLAN CUNNINGHAM, *Assistant in Mining.*

HERBERT JUDSON FLAGG, *Assistant in Civil Engineering.*

CLYDE GRAINGER, *Assistant in Geology.*

CHRISTINE KANTERS, *Assistant in Gymnasium.*

MARTHA SUSAN KEATTS, *Assistant in Pharmacy.*

MABEL McMURRAY, *Assistant in Botany.*

ARTHUR THOMAS O'NEAL, *Assistant in Chemistry.*

RUSSELL PARKER, *Assistant in Journalism.*

ELMER SHERRILL, *Assistant in Chemistry.*

GEORGE ROBERT STRANDBERG, *Assistant in Surveying.*

FRED SUTTON, *Assistant in Mathematics.*

W. F. THOMPSON, *Assistant in Zoology.*

FRANK VERNON, *Assistant in Chemistry.*

JOHN J. WINTLER, *Assistant in Stock-Room (Chemistry).*

CHARLES H. WHEELON, *Assistant in Geology.*

THOMAS YOUNG, *Assistant in Stock-Room (Pharmacy).*

LIBRARY STAFF

WILLIAM E. HENRY, A. M., *Head 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; Head Librarian, University of Washington, 1906.

CHARLES WESLEY SMITH, A. B. B. L. S., *Assitant 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 Northwest History and Periodicals.*

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

JOSEPHINE MEISSNER, B. L. S., *in charge of Circulation.*

B. L. S., University of Illinois, 1906; Librarian, Nebraska State Normal School, Peru, Nebraska, 1906-07; University of Washington Library, 1907-.

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-.

STUDENT ASSISTANTS

~~GEORGE H. FRENCH, Shelf Assistant.~~

FLORENCE WHITE, *Accession Assistant.*

REX SCOTT ROUBEUSH, *Loan Desk Assistant.*

Barrie Cowgill

MUSIC STAFF

CHARLES OSCAR KIMBALL, *Director of Music.*

FREDERICK FLEMING BEALE, *Teacher of Piano.*

GRACE ZIMMERMAN, *Teacher of Piano.*

BENJAMIN F. LEVENTHAL, *Teacher of Violin.*

REGISTRAR'S OFFICE

HERBERT THOMAS CONDON, LL. B., *Registrar.*WILLIAM MARKHAM, *Bookkeeper.*~~JAY WHITEFIELD, A. B., Assistant Registrar.~~ *A. J. Collett, LL.B.*MAX HIPKOE, *Clerk.*PERCIE SIMMONS, *Telephone Assistant.**Bess Hanna Stenographer*

BUILDINGS AND GROUNDS

FRANK H. LORD, A. B., *Curator of Buildings and Grounds.*EVERETT O. EASTWOOD, M. E., *Consulting Engineer.*GEORGE L. MOTTER, *Head Gardener.*SANDY M. KANE, *Chief Engineer.*EVAN LEWIS, *Assistant Engineer.*M. S. W. BEECHEM, *Machinist.*JAMES S. KRAPE, *Carpenter.*DAVID MCDANIEL, *Head Janitor.*J. B. SPEIDELL, *Assistant Janitor.*JOHN KRAPE, *Assistant Janitor.*D. B. LILLY, *Night Watchman.*JOHN YOUNG, *Fireman.*L. D. BYERS, *Fireman.*G. S. ROSE, *Assistant at Power House.*

Eleven student janitors, each working two hours a day, are employed in addition to the regular janitors.

OTHER OFFICERS

~~FRED M. CHOLLARD, Secretary to the President.~~LILLIAN B. GETTY, *Departmental Stenographer.*JOSEPH A. BERNHARD, *Steward University Dining Hall.**Emily Arnold*

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

OLIVER P. M. GOSS, C. E., *Engineer in Timber Tests, in charge.*ARTHUR L. HEIM, E. E., *Engineer in Timber Tests.*

COMMITTEES OF THE FACULTY

ACCREDITED SCHOOLS: Professors Sisson, Priest, Osborn, and Lull.

ADVISERS:

College of Liberal Arts—

Classical freshmen and sophomores, Professor Haggett;
Modern language freshmen, A to L, Professor Frein;
Modern language freshmen, M to Z, Professor Meisnest;
Mathematico-physical freshmen and sophomores, Professor
Osborn;

Philosophical freshmen, A to L, Professor Lull;
Philosophical freshmen, M to Z, Mr. McMahon;
Scientific freshmen, Professor Brandel;
Modern language sophomores, A to L, Professor Benham;
Modern language sophomores, M to Z, Professor Patzer;
Philosophical sophomores, A to L, Professor Savery;
Philosophical sophomores, M to Z, Professor Custis;
Scientific sophomores, Professor Landes;
Special science course (preparation for medical course),
Professor Byers;
Unclassified, Professor Morrison;
Juniors, seniors, and graduates, the respective major professors.

College of Engineering—

Chemical engineers, Professor Benson.
Civil Engineers, Professor More;
Electrical engineers, Professor Magnusson;
Mechanical engineers, Professor Eastwood;

School of Mines—

All classes, Dean Roberts.

School of Pharmacy—

All classes, Dean Johnson.

School of Law—

All classes, Dean Condon.

School of Forestry—

All classes, Dean Miller.

APPOINTMENTS: Professors Sisson, Lull and major professors.

ASSEMBLY AND PUBLIC EXERCISES: Professors Daggy, Thorpe, and Kimball.

ATHLETICS: Professors Roberts, Haggett, and Lantz.

CATALOGUE: Librarian Henry, Professors Morris, and Milliman.

DISCIPLINE: Professors Frein, Eastwood, and Gould.

GRADUATION: Professors Byers, and Magnusson.

HOLIDAYS: Professors Johnson, Sidey, and Weinzirl.

HONORS AND ADVANCED DEGREES: Professors Smith, Fuller, Frein, Moritz, and Stevens.

HYGIENE AND SANITATION: Professors Hall, Weinzirl, and McCaustland.

LIBRARY: Professors Padelford, Frye, and Moritz.

MUSEUM: Professors Landes, Meany, Kincaid, and Frye.

PETITIONS: Professors Moritz, Ober, and Benham.

PROGRAM: Professors Morrison, Eastwood, and Brandel.

SENIOR SCHOLARS: Professors Padelford, Byers, Savery, and Thomson.

SPECIAL ARTS COURSE (preparation for law course): Professors Condon, Priest, and Smith.

SPECIAL SCIENCE COURSE (preparation for medical course): Professors Byers, Hall, and Weinzirl.

STUDENT ASSISTANCE: Professors Meany, Landes, and Dehn.

STUDENT ORGANIZATIONS: Deans Priest, Condon and Fuller, and Professors Savery and Thomson.

GENERAL INFORMATION

HISTORICAL SKETCH

When the first legislature of Washington territory assembled in 1854, Isaac Ingalls Stevens, the governor, spoke most forcibly in his message in favor of a public school system, and closed his remarks on this point with the following words: "I will also recommend that congress be memorialized to appropriate land for a university." Two townships were granted, the amount previously given to Oregon for a similar purpose.

On January 29, 1855, just six months from the date of the University land grant, the legislature enacted that the Territorial University of Washington should comprise two equal institutions, one at Seattle and the other on Boisford Plains in Lewis county. The granted lands were to be divided equally between the two institutions. The county commissioners who were directed to select the granted lands failed in their duty, and in 1858 the legislature united the two universities. Cowlitz Farm Prairie, in Lewis county, was chosen as the new site, and another enactment was passed for the selection of all the granted lands.

This shifting and fruitless policy in locating the Territorial University led the pioneers of the Puget sound region to secure an enactment incorporating another institution to be called the "Puget Sound University." The possibility of thus duplicating educational institutions resulted in bringing matters to a definite conclusion, and in January, 1861, the legislature relocated the Territorial University at Seattle. A board of University commissioners, consisting of Rev. Daniel Bagley, John Webster, and Edmund Carr, all of Seattle, was immediately appointed to select the granted lands, to sell them for not less than \$1.50 an acre, and to build the University within one year. This board met on Washington's birthday, 1861, and organized for work. The land was cleared, the cornerstone of the main building was laid on May 21, 1861, and the building completed within the specified year. In the autumn of 1862 the other buildings were con-

structed, and during the winter the University of Washington was opened.

The legislature in relocating the University in Seattle had stipulated that a suitable site of at least ten acres be donated by the people of Seattle. The site was selected and the major portion of it donated by Hon. Arthur A. Denny from his farm. The other portion of the site was given by Charles C. Terry and Edward Lander. A few large maple trees were left on the grounds, but all of the other trees were cleared off. The ground was plowed and harrowed, and the Rev. Daniel Bagley sowed the whole tract with grass seed he had brought from Oregon the year before.

For several years the work of the University did not rank much above that of an academy. The first class to be graduated was during the second administration of Dr. George F. Whitworth in 1876. This class consisted of one young lady, Miss Clara McCarthy, now Mrs. Wilt of Tacoma, who was graduated with the degree of bachelor of science. The honor of having first organized the University on real college lines belongs to the seventh president, Dr. A. J. Anderson.

The total number of graduates up to date is ten hundred and seventy-nine. Records of the students in earlier years were not preserved, but it is estimated that the number of those who have attended the University from its organization to the present time is over 7,500.

The building erected in 1861 was the finest educational structure at the time in the Pacific Northwest. It was the only building belonging to the institution except the president's cottage and two rather inferior dormitories. All were frame buildings. The money for the construction was obtained from the sale of the University lands. The territorial government paid out no money for the University's maintenance until 1879. Then the amount given was very small, and was to apply on tuition fees of "free" scholars to be appointed by the governor, judges, and members of the legislature. Throughout the territorial period, from 1862 to 1889, the total sum appropriated by the territory for the University was only \$34,350.

During the later years of the territorial period and the first years of statehood, the old quarters of the University became very crowded. In 1893 the state legislature provided a new site

and sufficient money to build structures of permanent character and adequate to the needs of a growing institution. On September 4, 1895, the institution moved into the new buildings, and since then the progress of the University has kept pace with the rapid development of the commonwealth.

Since the growth of the territory for years was slow and at times scarcely perceptible, it is not strange that the institution did not always make uniform progress. At the present time, however, the University of Washington is growing rapidly, and has taken its place as the continuation of the public school system, the cap-stone of the state's great educational edifice.

ENVIRONS

The University is surrounded by many things of great educational value to the students, and which are freely drawn upon in much of the instructional work. Seattle is a large and active city and affords to students the great advantages of a metropolis. Its excellent library may be used by every student, and its parks, public schools, and churches have a wholesome influence upon university life.

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

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 of the state by and with the advice and consent of the senate. Each regent is appointed for a term of six years. The Code of Public Instruction also provides that the immediate government of the institution shall be in the hands of the faculty, consisting of the president and professors, under such rules as the Board of Regents may provide.

ENDOWMENTS AND SUPPORT

The University derives its support entirely from the state. There is no income from tuition fees, as instruction in all the

departments of the University is free, and 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 the following:

(1) The two townships of land granted by Congress in 1854, nearly all selected and sold in 1860 and 1861 to build and establish the Territorial University. There remains of this old grant some three thousand acres, part of which is not yet selected.

(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 Leander. This ten-acre tract is situated in the very heart of Seattle, and is rapidly enhancing in value. The tract is now under a fifty-year lease to the Metropolitan Building company, which company took over the lease formerly held by the James A. Moore Investment company. The following table will show the terms for the remaining forty-three years of the lease, giving the period, the estimated valuation, the rate upon which the rental is based, and the annual rental:

TIME	Per Cent	Estimated Valuation	Annual Rent
First 7 years	3	\$500,000 00	\$15,000 00
Next 10 years	4	1,000,000 00	40,000 00
Next 10 years	4	2,000,000 00	80,000 00
Next 10 years	4	2,500,000 00	100,000 00
Next 10 years	4	8,500,000 00	140,000 00

(3) In addition to the above mentioned property the University was further endowed by the state on March 14, 1893, by the segregation of certain granted lands. Section 9 of the law approved on that day provides: "That 100,000 acres of the lands granted by section 17 of the enabling act, approved February 22, 1889, for state charitable, educational, penal, and reformatory institutions are hereby assigned for the support of the University of Washington." The legislature of 1903 instructed the state land commissioner to select these lands. They have been selected, and the records have been duly filed.

BEQUESTS

Prior to the session of the state legislature in 1897 it was practically impossible to expect any gratuities or bequests, as such gifts would immediately go into the treasury of the state, and become unavailable except upon appropriation by the legislature. But in the session of 1897 the Code of Public Instruction was enacted, and section 186, chapter 1, title IV., made 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 receipt and expenditure 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."

It is hoped that this provision will result before long in the erection of a number of memorial buildings, and the establishment of memorial scholarships and professorships.

EQUIPMENT

GROUNDS

The new grounds are ample to meet every need of the University. There are three hundred fifty-five acres, all within the city limits of Seattle. The site lies between Lakes Union and Washington. It has a shore line of over one mile on Lake Washington and about a quarter of a mile on Lake Union. To the southern, or Lake Union, side the land slopes gently from the highest point in the northwestern corner, which is about two hundred twenty-five feet above tide level. Toward the eastern, or Lake Washington, side the land is level for more than half its width, where it breaks off in a series of benches, terraces, and ravines.

BUILDINGS

The Administration building is a commodious structure in the style of the French Renaissance. It is constructed of cream colored pressed brick and sandstone with trimmings of terra cotta. It is three stories in height, with a finished basement. Besides laboratories and recitations rooms it contains the administration offices, and the library.

Science hall is made of red pressed brick with sandstone trimmings. It is three stories in height, with additional space in basement and attic. The large wing in the rear of the main building contains the collections of the State Museum.

The power house and machine shop is made of red pressed brick and is two stories in height.

The observatory is constructed wholly of sandstone. It occupies the highest point of ground northwest from the Administration building.

The gymnasium building is constructed of wood and contains two main halls, one for men and one for women. The men's hall has a floor space of one hundred and twenty feet in length and eighty feet in width; the women's hall has a floor space eighty

feet long and fifty feet wide. Each hall is bordered by offices, dressing rooms and bath rooms.

The dormitories, one for men and one for women, are made of brick and are so placed that they overlook Lake Washington. Each dormitory accommodates sixty students.

Several temporary wooden buildings have been erected upon the grounds for use until permanent structures can be provided. In these buildings some of the work in mining engineering and chemistry is now done.

In addition to the above buildings, which have been in use for some years, the following buildings have just been completed, viz., an Auditorium, a Chemistry building, an Engineering building, a power plant, and a forge and foundry shops. The first three are to be used temporarily by the Alaska-Yukon-Pacific Exposition as an Auditorium or Concert Hall, Fine Arts building and Machinery Exhibit building, respectively.

The Auditorium building is a classic structure of ivory colored brick and terra cotta to match. The main facade consists of a Corinthian colonnade, 180 feet long, with seven large door-ways affording ample exits and entrances. The detail of the order is modeled from the capitol of the Temple of Vesta, at Tivola, and the main cornice sustains the same classic richness of design. It is constructed of steel and wood interior, with a concrete basement.

The Chemistry building is in the Ionic style of architecture and consists of a central motive in the form of a portico of four large columns with decorative French Ionic capitols. Flanking the central motive on either side is a colonnade of pilasters of similar design. The main cornice is highly ornamented with carved moldings of rich, but classic character. The construction is of steel frame, concrete floors, and fire proof throughout; three stories high and will be furnished in an up-to-date manner.

The Engineering building is of design particularly adapted to its purpose and is composed along simpler lines. The facade consists of a series of large round arches, surmounted by gables of the Spanish Mission type. It is of ivory brick with terra-cotta gable trimmings to match. The building carries a large bracketed cornice of heavy overhang, supported by exposed wooden rafters of a pergola type with the natural stain. The construction is of

the heavy mill type with exposed surfaced wooden timbers, provision being made for a later installation of a traveling crane.

The power house plant will be installed in a red brick building and will be equipped adequately to light and heat all of the buildings on the University campus, both existing and those under construction. In a general way the equipment will be as follows:

Two 250-horse power boilers; one 200 K. W. direct connected alternating current generator; one 100 K. W. direct connecting alternating current generator; this plant will take the place of the existing power plant.

The new forge and foundry is a typical building 64 feet by 144 feet floor space and 38 feet high in the middle. It has a second story at the north end, over the machinery shop, for the wood-working department, 64 feet by 50 feet floor space, and is constructed of heavy, surfaced and framed timbers with brick veneer, concrete foundations, and earthen floor for forge and foundry, and wooden floor at northern end for machine shop.

FORESTRY BUILDING

It is expected that the Forestry building of the Alaska-Yukon-Pacific Exposition will revert to the University at the close of the fair. The style of the building is archaic Greek following the lines of the Grecian temples. It is three hundred sixteen feet long, one hundred forty-six feet wide, and two stories high. The frame work consists of huge columns made from native fir trees. The columns vary from five to six feet in diameter and from forty-two to fifty-four feet in height. The building is surmounted with a large tower on either end, giving it a maximum height of one hundred nineteen feet. The upper floor would be suitably divided into laboratories, class-rooms, and offices for the School of Forestry. The forest museum will be installed on the first floor.

**LIBRARY
LOCATION**

The library is located in the rear wing of the Administration building, with the reading and reference room on the main floor and the stack room below.

BOOKS

38,061 bound volumes are now in the library and several thousand pamphlets, making a total of nearly 50,000 titles. More than two-thirds of the volumes have been purchased within the last ten years, and have been selected with the modern idea of college work in mind, thus making it especially well suited to present needs. This is a designated depository library, and is fortunate in possessing almost a complete set of United States government publications, that are always available to any who cares to consult them.

The Frederick James Grant Memorial library of American history supplements the general library in that department.

PERIODICALS

The library receives regularly 389 periodicals, other than newspapers, including standard magazines and leading technical journals, both American and foreign, representing all phases of scholarship pursued in the University. Besides these, it receives the leading newspapers from the Pacific Northwest and a few from the large eastern cities.

READING ROOM

The reading room is on the main floor of the Administration building, and easy of access. It is an exceedingly well lighted room and well suited to its purposes. Seats at individual tables are provided for 140 readers on the main floor, and seats without tables for 160 readers in the balcony, giving a total seating capacity for 300 readers.

In the reading room, 12,000 volumes and 200 current periodicals are shelved, giving unrestricted access.

ACCESS TO STACKS

Any student may upon request obtain a stack permit, which gives him access to all the books of the library.

LENDING

Excepting reference books, periodicals, special collections, United States government publications, and books reserved for required reading in the several courses, all books are loaned for home use for a period of two weeks, subject to renewal or recall in case of special demand.

HOURS

The library is open every day in the year except Sundays and legal holidays. During the college year, it is open Mondays to Fridays from 8 a. m. to 5:30 p. m. and from 7 p. m. to 10 p. m. On Saturdays from 8:30 a. m. to 12 m. and from 1 p. m. to 5 p. m. During the vacation period it is open at least three hours a day.

SEATTLE PUBLIC LIBRARY

Besides the University library facilities, members of the University have the privilege of the Seattle Public library, now containing 110,000 volumes. This library is administered in the most modern manner and is housed in commodious quarters.

SEATTLE AS A LIBRARY CENTER

In selecting a place for educational opportunities, it must not be overlooked that students here are in the great library center of the Northwest. In this city there are already the greatest book collections within eight hundred miles. Both the University library and the Seattle Public library are growing rapidly. Seattle as a book center is growing more rapidly than any other city in the territory described.

LABORATORIES

Well appointed laboratories are as essential to the modern college and university as books and lectures. The University of Washington has the following laboratories equipped for work in the various departments.

BOTANY

The botanical laboratories are on the third floor of Science hall. The general laboratory is a room forty-one feet by forty-two feet, with a semi-circular end. It has eleven large windows and a skylight, which provide excellent light for microscopic work for forty-four students at one time. It is equipped with desk, tables and revolving chairs; with two lead-lined aquaria and water fixtures; with abundant cases for books and material, and with student lockers. There is also a case of drugs for pharmaceutical work.

The bacteriological laboratory is twenty by twenty-four feet, with accommodations for twelve students at one time. Here is a large paraffin bath, tables for reagents, and cases for glassware and chemicals. A dark room nine by twelve feet opens from it. This is fitted with shelves for storing material and serves as a storeroom. It is designed for photography, and used also for experiments in physiology, requiring a dark room.

A private laboratory for the professor in charge is supplied with tables and reagents, and permits undisturbed work.

On the fourth floor is fitted up a room sixteen by sixteen feet. This is where the herbarium work is done, and where the laboratory sections in field work meet. Adjoining are the herbarium cases.

The departments of botany and zoology have a common lecture room on the second floor, with a seating capacity of one hundred, and fitted with cases and tables. Here is also a stereopticon and screen fitted for electric light, for illustrating lectures with lantern slides.

The department is equipped with thirty-five compound microscopes, twelve dissecting microscopes, one of the best Minot microtomes, six camera lucidas, and the smaller fixtures necessary for work in preparation and study of slides for the microscope

The herbarium consists of about ten thousand specimens, representing the bryophytes, pteridophytes and phanerogams. These include the Chicago World's fair exhibit of Washington, with others added from time to time by exchange and collection. The department will be glad to receive specimens from teachers and others.

CHEMISTRY

The new chemistry laboratory, which will be available during the year, is a three story, steel frame, fire proof structure, with concrete floors and exterior of pressed brick. It consists of a building one hundred sixty-eight by sixty-one feet with an annex sixty-four by sixty-four feet. The annex consists of two floors, one of which is devoted to a lecture room, capable of seating four hundred and fifty students. The room will be equipped with a lecture table, hood, exhibition cabinets, projection lantern, automatic window shade device, and all the apparatus needed for up-to-date lecture courses in experimental chemistry. The lower floor consists of an assay and industrial laboratory, equipped with models of industrial plants of the working type; a shop equipped with wooden and steel lathes, work bench, and tools for the preparation of laboratory apparatus. There is also a large lavatory finished in marble throughout.

The main portion of the building is provided with two lecture rooms on third floor, with offices for the teaching staff, a departmental library reading room, and eight private laboratories. A series of three stock rooms, connected by an elevator and internal stairway, occupies the center of the building. These rooms will be equipped with a full stock of modern apparatus, and supplies needed for the work carried on. One of these rooms is subdivided, providing a preparation room immediately behind the lecture room.

The laboratories for students are twelve in number, and are assigned as follows: Four laboratories devoted to general chemistry, each twenty-eight by fifty-nine feet. Each is designed to accommodate seventy-two students working at one time, and is so designed that twice that number may be accommodated in sections. These laboratories are supplemented by two large weighing rooms, equipped with good balances. Two laboratories, capable of accommodating one hundred and twenty students, are devoted to qualitative analysis. One large laboratory, with a

commodious balance room, is devoted to quantitative work. One large and one smaller laboratory will be used for organic chemistry. One laboratory is intended for the work in physical and electro chemistry, one experimental laboratory, in addition to the model room, is devoted to industrial chemistry; and one large laboratory is devoted to research work. A large dark room, capable of accommodating twelve students, is available for the work in photo-chemistry. Besides the main laboratories, rooms are provided for spectrum analysis and combustions, gas analysis, etc.

All laboratories throughout are equipped with hoods, with forced draught, water, gas, distilled water, and steam. The general and qualitative laboratories are also equipped with hydrogen sulphide, furnished from a central generator. Alberene stone is used for all hoods and sinks.

ENGINEERING

CIVIL ENGINEERING

SURVEYING. The surveying equipment is complete for all plane and topographic work. It consists of one Keuffel and Esser theodolite with horizontal circle reading to ten seconds, one Buff and Buff complete engineers' transit, one Heller and Brightly complete engineer's transit, one Gurley light mountain transit with solar attachment and Jones's patent latitude arc, one Keuffel and Esser mining transit with solar attachment, three Keuffel and Esser plain transits, three Lietz and Company transits, one Brandis transit, one Seelig transit, one Gurley railroad compass, two 20-inch Gurley wye levels, one Buff and Buff 16-inch wye level, one Lietz and Company 18-inch wye level, one Buff and Berger inverting dumpy level, one Seelig wye level, one Gurley and two Keuffel and Esser plane tables, all complete with alidades; sextants, pocket transits, aneroid barometers, hand levels, chains, tapes, level and stadia rods, and other necessary minor articles.

HYDRAULIC. The hydraulic laboratory is located on the campus near the shore of Lake Washington. At present it occupies a floor space of twenty-eight by thirty-six feet. The high pressure equipment consists of one small Tutthill wheel, one Pelton wheel, and various nozzles and orifices connected to a header under a pressure of two hundred sixty-five feet. For low head experiments and pump tests there is a set of tanks and measuring weirs.

Water is furnished for illustrating the flow of water over different forms of weirs, by two centrifugal pumps with a combined capacity of six hundred gallons per minute. Larger weirs are placed in streams near the campus, making it possible for regular work to be conducted under ordinary field conditions. Stream gagings are carried on both by weir and by current meter, a number of stations having been established where daily readings are taken. A test of an existing plant will be conducted each year, the students being called upon to take an active part both in the preparation and in the test.

The available equipment includes Price electric and acoustic current meters, four difference gages, one test pressure gage, one mercury pressure gage, one hook gage, one water column, and a two-inch venturi meter.

STRUCTURAL MATERIALS. The structural materials testing laboratory contains two 30,000-pound Olsen, one 100,000-pound Riehle, and one 200,000-pound Olsen general testing machines with complete appurtenances for tension, compression and transverse tests under all ordinary conditions, including full-sized beams of timber or reinforced concrete for lengths up to sixteen feet. Power saws and a planer are available for preparing timber specimens.

An impact testing machine, which has been designed by the United States Forest Service, and is being constructed in the University shops, will be ready for use by June 1st, 1909. This has been designed to meet the requirements of a heavy hammer with a low drop. The base weighs seven thousand five hundred pounds; the hammer, with a maximum drop of three feet, may be varied in weight from five hundred to fifteen hundred pounds. It is to be automatic and autographic, not only for continued drops from the same height, but also for drops from increasing heights. It provides for transverse tests for spans up to five feet as well as for compression and shear.

CEMENT. The equipment for testing hydraulic cement is complete for all the ordinary tests as specified by the American Society of Civil Engineers. It contains a Riehle automatic shot testing machine of one thousand pounds capacity; a tempering oven; a boiler for accelerated tests; a Vicat needle apparatus and

a set of Gillmore's needles for determining initial and final set; galvanized iron pans, provided with a continuous supply of fresh water for storing briquettes; and sieves, moulds, mixing tables, and other necessary accessories.

ROAD. The road laboratory is equipped for testing materials used in the construction of roads. The impact and abrasion machines are of the standard designs adopted by the American Society for Testing Materials. This laboratory is prepared to make all tests necessary for determining the value of road material, the tests being similar to those conducted by the office of Public Roads of the Department of Agriculture, Washington, D. C.

ELECTRICAL ENGINEERING.

The equipment for the laboratories during 1908-09 may be outlined as follows:

(a) DIRECT CURRENT LABORATORY —

On a floor space twenty by forty feet are placed ten direct current generators and motors of the Westinghouse, general electric, Bullock and Western Electric manufacture. The capacities vary from two to twenty kilowatts, with a total of seventy-five kilowatts. Lamp-banks, switch-boards, rheostats, and other accessory apparatus are conveniently arranged about the room. A storage battery of seventy-two cells is placed in an adjacent room, and current is distributed in the laboratory through a separate switch-board.

(b) ALTERNATING CURRENT LABORATORY —

In this room, thirty by fifty feet, are placed eight alternating current dynamos, of commercial types, having a total capacity of seventy kilowatts. Among these may be named a two-phase and a three-phase Fort Wayne generator; three-phase Westinghouse rotary converter; Wagner, general electric, and Bullock single-phase and three-phase induction motor; and a three-phase Fort Wayne synchronous motor. The equipment also includes ten transformers of a combined capacity of eighteen kilowatts, ten lamp-banks with twelve hundred lamps; switch-board, and other accessory apparatus.

(c) COMMERCIAL LABORATORY (POWER HOUSE) —

1. Direct current, five hundred volt, seventy-five kilowatt Westinghouse generator.
2. Single-phase, sixty cycle, eleven hundred volt, sixty kilowatt Westinghouse generator.
3. Single-phase, one hundred and thirty-seven cycle, eleven hundred volt, thirty-five kilowatt generator.
4. Direct current, one hundred and twenty-five volt, twenty-two and a half kilowatt, Northern generator.

(d) PHOTOMETRICAL LABORATORY —

1. Mathews integrating photometer.
2. Three-meter bench photometer with a Lummer-Brodhuh screen.
3. Standard lamps from the National Bureau of Standards, New York testing laboratory and the Westinghouse testing laboratory.
4. Assortment of arc, Nernst, and incandescent lamps for testing purposes.

(e) INSTRUMENTS —

The laboratories are equipped for the most part with standard Weston and general electric instruments, while American, Whitney, and Westinghouse makes are also represented.

Fourteen indicating direct current portable voltmeters; nine indicating alternating current portable voltmeters; twelve indicating direct current portable ammeters; sixteen indicating alternating current portable ammeters; seven indicating portable wattmeters; nine indicating switch-board voltmeters; eight switch-board ammeters; eight integrating wattmeters; four Bristol recording volt and ammeters.

NEW LABORATORY AND ADDITIONAL EQUIPMENT FOR 1909-10 —

At the opening of the fall semester the laboratories of the department will be transferred to the new engineering building. The south half of the first floor will be devoted to the laboratories for dynamo machinery in both alternating and direct currents, photometry, electric lamps and meters, telephones, instrument makers' shop, etc. The building will be wired and suitable switchboards installed, so that the work may be done conveniently and to the best advantage.

The new power house is now completed, and contains the following electrical equipment:

1. A Westinghouse, two hundred kilowatt, twenty-three hundred volt, sixty cycle, alternator, direct connected to a reciprocating engine.
2. A Westinghouse, one hundred kilowatt, twenty-three hundred volt, sixty cycle, alternator, direct connected to a reciprocating engine.
3. A marble switch-board with all necessary instruments for indicating and recording the station output.

MECHANICAL ENGINEERING

The mechanical engineering laboratory is conveniently located on the first floor of the power house, adjoining the machine shop and engine room. There are available for indicating and testing one one-hundred horse-power Ball engine, and one one-hundred fifteen horse-power McEwen engine. For experimental purposes there is a thirty horse-power engine, which can be run condensing or non-condensing, arranged to give practice in valve setting and speed regulation. The laboratory is further equipped with a three-inch centrifugal pump, a surface condenser with air and circulating pumps, indicators, gauges, barometers, thermometers, a pyrometer, Orsat gas apparatus, injector, steam calorimeters, speed indicators, and brakes. Suitable devices are provided for testing and calibrating the apparatus used. Scales and tanks are arranged for the weighing and measuring of water used. A seven horse-power engine, to burn gas or gasoline, is fitted especially for experiment. In connection with the above are used the three horizontal tubular boilers of the power house. A seven horse-power steam turbine has been installed in such manner that it may be run either with steam under full pressure direct from the boiler or with exhaust steam from the laboratory engine. In either case the turbine itself may exhaust into the atmosphere or vacuum, several sets of nozzles being available for the various conditions.

The laboratory is also equipped with an air compressor and air brake outfit, belt testing and oil testing machines, dynamometers, and fuel calorimeters for solid, liquid, and gaseous fuels.

In addition to the above there is a one hundred horse-power cross-compound steam engine which will be located in the new

laboratory, and arranged especially for testing purposes, to be run condensing or non-condensing. It is planned to install a complete suction gas producer plant, a Corliss engine, and a two stage steam-driven air compressor.

The location of the new laboratory will be the north half of the main floor of the engineering building. A sufficient portion of the basement below the first floor will be excavated to provide the best location for condensers, tanks, etc.

The wood-working shop is equipped with lathes and benches, band saws, circular saws with boring attachment, planer, wood trimmer, and the necessary accessories.

The machine shop contains modern high speed lathes with turret attachment, planer, shaper, drill press, a universal milling machine, a universal grinding machine, metal shop saw, emery wheels, and a complete equipment for bench and vise work.

The forge shop is equipped with a power hammer and down draft forges with suitable blower and necessary accessories.

The foundry is provided with a cupola of two tons capacity and the necessary accessories.

There is under construction a new shop building, which will furnish adequate quarters for the wood shop, machine shop, forge shop, and foundry.

The floor space in this building will be approximately thirteen thousand square feet, and will be apportioned equally among the various shops.

Fourteen wood-working lathes will be added to an equal number now in the wood shop. Several new engine lathes and an automatic turret lathe will be added to the machine shop equipment. The forge shop will be supplied with nineteen down draft forges of the latest design, and one blacksmiths' forge.

To the present foundry equipment will be added a brass furnace, traveling crane, steel converter, core oven, core machine, rattlers, and all appliances and conveniences of a thoroughly modern foundry.

The library contains complete files of the transactions of the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the American Society of Electrical Engineers; the proceedings of the American Railway Engineering and Maintenance of Way Association, and the American Society

for Testing Materials; the Minutes of the Proceedings of the Institution of Civil Engineers of Great Britain; the Engineering News, the Engineering Record, the Electrical World; reports of the United States Geodetic Survey, the United States Geological Survey, the United States Reclamation Service, and the United States Army Engineers; besides a collection of general engineering books, and the current engineering periodicals.

GEOLOGY

The geological laboratories are four in number, three of them occupying rooms on the first floor of Science hall, at the right of the main hallway, with the fourth laboratory in the basement. The largest room, thirty-eight by forty-five feet, has been especially designed for mineralogy, but it is used as a laboratory for general geology as well. It is supplied with eight tables, made with tile tops and provided with gas fixtures. These tables accommodate sixty-four students at one time. For laboratory work in general geology there are working collections of minerals, rocks, and fossils, as well as sets of geologic and topographic maps. For work in mineralogy there are several cabinets filled with collections of minerals for descriptive and determinative work, collections of natural crystals, wood models, blowpipe sets, etc.

The petrographical laboratory, twenty by twenty-two feet, adjoins the one just described. For work in petrography there is provided a large lathe fitted with a diamond saw and grinding plates, run by an electric motor, and several petrographical microscopes with all accessories. The room is supplied with tile-topped tables, similar in pattern to those of the mineralogical laboratory. The working collections include a large variety of rock specimens, and sets of thin sections of minerals and rocks for use with the microscope. Leading from this laboratory is a large dark room, well arranged for photographic work.

The laboratory for physiography, twenty-two by twenty-three feet, lies across the hall from the one last described. It is well provided with maps, models, meteorological apparatus, and like equipment. At the present time this room also contains the library of the State Geological survey.

In one of the geological rooms a seismograph has lately been installed for assistance in the study of earthquake phenomena.

It is of the Bosch-Omori type, and has proved to be a very sensitive instrument, since distant earthquakes of small intensity are frequently recorded. The department is also equipped with the usual Weather Bureau instruments, such as an anemometer and tipping-bucket rain-gauge, with self-recording apparatus, barograph, thermograph, mercurial and aneroid barometers, maximum and minimum thermometers, etc. Daily records are kept for comparison with other stations.

PHARMACY AND PHARMACEUTICAL CHEMISTRY

The rooms devoted to pharmacy and pharmaceutical chemistry are located in the Administration building, and are capable of accommodating seventy-five students working at one time. They consist of three laboratories, a stock room, prescription room, three private laboratories, and a class room. The laboratories are adequately equipped with water, gas, electric lights, and electrical current for experimental purposes, as well as with excellent desks and permanent apparatus.

Everything essential to the work of the department, covering about five years' work in pharmaceutical chemistry and pharmacy, is included. The stock room is in charge of a pharmacist, and contains a complete supply of crude drugs, chemicals, and apparatus. At certain hours students are permitted to borrow all needed apparatus, which may be returned without charge if in good condition.

Students in pharmaceutical botany, physiology and bacteriology have well equipped laboratories in Science hall.

PHYSICS

The laboratories set apart for the use of the departments consist of: (1) a general laboratory, thirty by seventy feet; (2) an electrical testing room with four piers; (3) a photometry room; (4) a battery room.

The laboratories are supplied with apparatus from the best American and European makers. Among the more important pieces of apparatus may be mentioned: (1) standard balances, cathetometer, a mercury air pump, and a Geneva Society straight-line dividing engine with microscopes, so that it may be used as a comparator; (2) Helmholtz resonators and a double siren chronograph with fork; (3) Boy's radio-micrometer, Dulong and Petit's absolute expansion of liquids apparatus, Nertholet's heat

of vaporization apparatus, and a Waterman calorimeter; (4) a spectro-goniometer, two spectroscopes, polarimeter, a refractometer, a Fresnel's optical bench complete, a Rowland concave grating, a Zeiss spectrometer, and an Abbe-Pulfrich interferometer; (5) Kelvin composite balance, Weston voltmeters and ammeters, Reichsanstalt resistance, Kohlrausch bridge, Hartman and Braun's electrolytic resistance apparatus, standard condensers, Thompson galvanometers, etc.; (6) a storage battery of seventy cells; (7) Lummer-Brodhun photometer with three meter track, a Bunsen screen, standard lamps from the New York Testing laboratory and the National Bureau of standards.

The general laboratory is supplied with a number of standard reference works. A number of the more prominent periodicals in physics are constantly on file, such as *Philosophical Magazine*, *Physical Review*, *Astrophysical Journal*, *Wiedmann's Annalen* and *Beiblätter*, *Journal de Physique*, *Nature*, *Science*.

BUREAU OF TESTING

The department of physics is equipping itself as rapidly as possible to meet the demand for a bureau where scientific instruments may be accurately calibrated and tested. The primary standards of this bureau will, in so far as it is possible, be calibrated by both the Reichsanstalt and our National Bureau of standards. At present the bureau is prepared to standardize D. C. voltmeters, ammeters, and wattmeters; A. C. instruments to a less accurate degree, thermometers, and to some extent high temperature instruments. Those desiring to have work done should address the director, Frederick A. Osborn.

PSYCHOLOGY

The psychological laboratory occupies four rooms on the fourth floor of Science hall. The largest room, which is used for the general laboratory, is eighteen by thirty-six feet; two other rooms, each eighteen by eighteen feet, are used for acoustic and visual experimentation. The fourth room contains apparatus for the reaction experiment. The equipment of the laboratory includes the following pieces of apparatus: five Koenig forks; an Edelmann's Galton whistle sonometer; two organ pipes; bellows and rubber wind-bag for actuating pipes; Ellis harmonical, and other minor instruments for acoustical work; colored papers; Hering's color-blindness tester, Hering's binocular color-mixer, Hering's

color-mixer and campimeter; six electro-motors, ophthalmoscope, ophthalmotrope, stereoscopes, pseudoscope; a clock-work kymograph, a Zimmerman ergograph, a Lehman plethysmograph; a Hipp chronoscope and accessories; materials for experimentation on the cutaneous sensations and taste and smell.

MINES

The School of Mines building is located among the new University buildings on the east side of the Court of Honor of the Alaska-Yukon-Pacific exposition. All the offices, classrooms, collections, metallurgical laboratories, mining, and ore dressing equipment of the department of mining and metallurgy are to be located in this building after October, 1909. The structure is of brick with concrete foundation and sandstone finish. Although it was designed and used for several years for the University power house, its solid walls, heavy framing, excellent lighting and open interior fit it admirably for the needs of a School of Mines building. The detailed plan of arrangement is as follows:

STAMP MILLING AND CONCENTRATING PLANT

The ore dressing and mining machinery occupies a space measuring forty-seven by fifty feet with an extreme height of forty-eight feet in the southwest end of the main wing. The grizzly and jaw breakers for coarse ore stand near the ground floor. Ore suitable for stamping or crushing by rolls is elevated by a mine cage to bins near the top of the building, from which point it travels through the mill by gravity. The battery bins discharge into a Challenge feeder, leading to an Allis-Chalmers three-stamp battery. The pulp may be passed over an amalgamated plate of plain or silvered copper, through an Everett placer gold saver or through a Pierce amalgamator, thence through mercury traps. Ore to be crushed in the rolls is fed by a Taylor wall feeder to Cornish rolls, from which it may pass through a trommel or a set of shaking screens. A single Harz jig with three compartments, and a Richards pulsating jig with four compartments follow the trommel.

The classifiers are so arranged as to be interchangeable. The set consists of a Richards pulsating classifier, Richards vortex classifier, tubular classifiers, and Browne hydrometric sizer. Below these is sufficient mill height to allow of diverting the pulp to any of the following concentrators: Frue vanner, Wilfley and

New Standard, followed on a lower bench by a revolving slime table, Wilfey slimer and Overstrom table.

Samples may be taken at several points in the flow by means of a Scobey automatic tailings sampler for wet pulp, and a Snyder sampler for dry ore. When making test runs, Richards-Locke automatic feeders are used to furnish a perfectly constant stream of ore to any desired piece of apparatus. Cement making materials, road metal, paving blocks, and various artificial materials are ground or tested in an Abbe tube mill and Trojan mills. The heavy machinery rests on foundations of concrete or structural steel, and is driven by several motors, with a small amount of shafting.

Three tanks standing above the machinery yield water at constant head. Slimes and tailings are caught in sumps, from which the water may be pumped back for use again, to prevent the loss of any ore during a run. A large stock of ores, containing a wide variety of minerals, is kept on hand for testing purposes.

The mining equipment consists of complete sets of hand tools, timber framing tools, down draft forge, Jeffrey coal drill, Ingersoll-Sergeant A-35 air drill, Wood air drill, air compressor, receiver, piping, mine fan, mine pump, hydraulic motor, and various devices in use about a mine.

METALLURGY

The metallurgical furnaces occupy the south wing of the School of Mines building. Four double muffle coal fired furnaces of the usual smelter size, four pot furnaces, two gas muffles, several gasoline muffle and combustion furnaces, and a gas melting furnace are available for assaying. For other metallurgical studies there are reverberatory and cement furnaces, a kiln for clay and brick testing, a retorting furnace, a coke oven, and the usual tools and appliances.

The desks, balance room, private laboratories, stock room, sampling room, and cyanide plant are located in the main wing. The balance room is supplied with a Keller button balance, sensitive to one two-hundredth of a milligram, Oertling, Ainsworth, and Becker button balances; two Thompson analytical balances, and one Thompson button balance, sensitive to one two hundredth of a milligram, and having multiple-rider attachment. The University power plant supplies direct current for electrolytic work.

High temperatures are obtained by means of a Heraeus electrically heated tube furnace 60 cm. long, mounted on trunnions, and a Hoskins electric furnace. Temperatures from 900 to 2000 centigrade are measured by an optical pyrometer after Wanner.

The stock room is supplied with all materials usually needed in the building. Samples are reduced by means of a Sturtevant roll-jaw crusher, an Allis-Chalmers sample grinder, and a Braun disc pulverizer. The usual tools, split samplers, and large iron sampling floor are provided.

CLASSROOM

The central portion of the second floor is reserved for classrooms, drafting rooms, magazine stand, collections, etc. The offices are located in a balcony room, directly over the front entrance to the building.

There is an excellent collection of drawings and blue prints, illustrating mining and metallurgical subjects. Three hundred and nineteen stereopticon views of standard machinery, mines, plants, and mining districts are available for classroom and special lectures. The library of the School of Mines contains practically all the standard texts and reference books, besides a large collection of trade catalogues with indexes, and complete sets of the transactions of the American Institute of Mining Engineers, the School of Mines Quarterly, the Mineral Industry, the Copper Handbook and the publications of the United States Geological survey. The following magazines are on file: British Columbia Mining Record, Engineering and Mining Journal, Mining Exchange, Mining Science, Mining World, Mines and Minerals, Mining and Scientific Press, Northwest Mining Journal, Northwest Mining News, Salt Lake Mining Review, School of Mines Quarterly, and Western Chemist and Metallurgist.

ZOOLOGY

The department of zoology, which occupies the northern half of the second floor in Science hall, includes three laboratories.

The general zoological laboratory, which is semi-circular in form, is especially designed to provide an abundance of light for microscopic work. Eleven tables are so arranged as to accommodate forty-four students at a sitting. The center of the room is occupied by a large lead-lined aquarium, arranged to contain the living animals required for study. The laboratory is at present

provided with twenty dissecting microscopes, and twenty-eight compound microscopes. For advanced work more powerful lenses are provided, together with the necessary eye-pieces, substages, condensers and cameras. For the study of histology and embryology the equipment includes an incubator, paraffin bath, a Minot microtome, and all necessary reagents, stains and apparatus. A convenient dark room is provided for micro-photography and other lines of photographic work.

The zoological laboratory is amply supplied with material, both for dissection and demonstration. A great variety of marine specimens has been procured through the collection and preservation of the animal life found in Puget sound and the waters of Alaska and other parts of the Pacific coast. The extensive lakes adjoining the campus furnish an unlimited supply of fresh water organisms.

The physiological laboratory adjoins the general zoological laboratory. This accommodates twenty students and provides facilities for the experimental investigation of this phase of biology.

The entomological laboratory is a small room designed to contain the extensive collection of insects, which now comprises many thousands of specimens, derived mostly from the Pacific coast. Special facilities are offered for the study of the classification and biology of the insect fauna of the state.

An important feature of the work in zoology has been the preparation of collections of typical specimens for the use of high schools throughout the state. Assistance in the determination of specimens is also offered to teachers and others interested in the natural history of the region.

MUSEUMS

In 1899 the legislature of Washington enacted a law that the state museum should be located at the University, and provided that state, county and other officers, while in the discharge of their duties, should save all matters of a scientific or historical value and deposit them in this museum. The museum has undergone a rapid growth and is now arranged in four parts, viz.: historical, geological, zoological, and botanical. Gifts are constantly received, exchanges are often arranged, and purchases are frequently made. Very extensive collections were received from the Washington state commissions at the close of both the Louisiana Purchase and Lewis and Clark expositions. In this way particularly valuable exhibits of the mineral products, the fisheries, fruits, grains, forest products, etc., of the state have been installed. Gifts of desirable museum specimens are welcomed at all times.

BOTANICAL

The botanical museum consists of the following: (1) A herbarium of dried flowering plants, representing 8,000 species, properly labeled and kept in suitable cases. These include almost all the plant species of the state, and many from without the state. Additional specimens are constantly being received by gift and exchange. (2) A collection of mosses, the largest in the Northwest. (3) An exhibit of the fruits and nuts of the state, in large glass jars, properly labeled and neatly arranged. (4) Four cabinets of grains and grasses on the straw, from the agricultural districts of the state.

GEOLOGICAL

The geological museum is located in Science hall, on the first floor, where it occupies a room fifty by sixty feet. The collections are arranged along several lines, principally as follows: (1) An exhibit of minerals, chief among which is the Baker collection, embracing about a thousand specimens, most of which are crystallized and many of which are rare; (2) an extensive exhibit of ores from the mining districts of the Northwest, chiefly from Washington; (3) a general paleontological collection, both of animals and plants, from the fossiliferous formations of the state; (4) the college collection of paleontology from the Ward Natural

science establishment, representing all the characteristic invertebrate forms from the Palaeozoic and Mesozoic eras; (5) a comprehensive economical exhibit of clays and clay products, building and ornamental stones, coal and coke, and other useful minerals and rocks with their products; (6) collections of photographs and relief maps illustrating the geology and geography of Washington.

HISTORICAL

The historical museum is located upon the third floor of the Administration building. It contains extensive collections pertaining to the history and ethnology of the Northwest, including Alaska and the Philippine islands. Constant additions are being made to the collections in the way of gifts and purchases. Within the past year an extensive Philippine collection that was on exhibition at the Lewis and Clark exposition was purchased by the University. It is of great educational value, in that it gives one a good idea of the resources and industries of the Philippine islands, and the history and development of their peoples. At the close of the Lewis and Clark exposition the Stewart Indian collection was purchased, and is now installed in the museum. This collection embraces many thousands of specimens, consisting of Indian weapons, implements, baskets, and other things pertaining to Indian life. One of the merits of the Stewart exhibit lies in the fact that it is entirely local, having been collected along the lower Columbia river.

ZOOLOGICAL

The zoological museum is located on the second floor of the west wing of Science hall. The specimens it contains will, when all are classified and arranged, afford an excellent opportunity for the study of the fauna of the state. The nucleus of many of the collections has been formed by gifts from various sources. From Mr. Edwin C. Starks were received over one hundred mounted fishes, and through his efforts there was secured from the Field Columbian museum a beautiful series of corals.

Conchology is well represented by the extensive series of molluscs donated by Prof. O. B. Johnson, and the collection of over ten thousand shells belonging to Mr. P. B. Randolph. Mr. Randolph's collection contains specimens from all over the world, and includes a nearly complete series of the mollusca indigenous to the Puget sound region. There have also been received the

valuable and varied collections of the Young Naturalists society of Seattle. This contains beside fine series of shells, invertebrates and fishes, the large ornithological collection of Prof. O. B. Johnson. The birds of the collection have been identified and arranged by Miss Adelaide G. Pollock. The series has been greatly extended through the generosity of Dr. Clinton C. Cook, who has loaned his fine collection of passerine forms to the museum.

There has recently been received from the state commission a large number of mollusca and fishes which were exhibited at the Lewis and Clark exposition. The number of classified specimens is constantly being enlarged. During the past year extensive collections have been made in the Bermuda islands and along the Atlantic coast. From these sources many new and valuable additions have been made to the invertebrate collections.

OBSERVATORY

The observatory is housed in a substantial sandstone structure, occupying the highest point upon the University campus. It consists of a dome for the equatorial instrument, a transit room, a library and computing room, and a wash room.

The instruments include an equatorially mounted telescope of six inches clear aperture and ninety inches focal length, made by Warner and Swazey, with optical parts by Brashear. The telescope is fitted with declination and hour circles, electrically illuminated verniers, a driving clock, solar eye piece, a filar position micrometer, and a set of six eye pieces of magnifying power varying from fifty to five hundred diameters.

For the laboratory work there is a Bond sidereal chronometer (No. 1024), one standard time clock, one sidereal clock, three sextants and artificial horizons, nine sidereal globes, two black-board globes, one terrestrial globe, two small telescopes, fourteen binoculars, fifteen wooden universal instruments, one stereopticon with four hundred lantern slides, and general equipment for experiments in light.

A valuable addition to the laboratory equipment is a gift from Harvard College observatory. This gift consists of ten large photographic transparencies, twenty star charts, and twenty volumes of the Annals of the Observatory.

ADMISSION TO THE UNIVERSITY

ADMISSION TO THE FRESHMAN CLASS

The following fixed requirements have been made for the years 1907-8 to 1910-11, inclusive:

To be admitted to the freshman class students must either (a) pass an examination based on a course amounting in the aggregate to fifteen units, or (b) complete a course of the same length in an accredited school. Of these fifteen units eight and one-half are specified and required of each student; the remaining six and one-half are elective from the list of optional subjects:

SPECIFIC SUBJECTS

Algebra, $1\frac{1}{2}$ units.
English, 4 units.
U. S. History and Civics, 1 unit.
Physics, 1 unit.
Plane Geometry, 1 unit.
Total, $8\frac{1}{2}$ units.

OPTIONAL SUBJECTS

Astronomy, $\frac{1}{2}$ unit.
Botany, $\frac{1}{2}$ or 1 unit.
Chemistry, 1 unit.
Drawing, $\frac{1}{2}$ or 1 unit.
Economics, $\frac{1}{2}$ unit.
French, 1, 2 or 3 units.
*Geology, $\frac{1}{2}$ or 1 unit.
German, 1, 2, 3 or 4 units.
Greek, 1, 2 or 3 units.
History, 1, 2 or 3 units.
Latin, 2, 3 or 4 units.
*Physical Geography, $\frac{1}{2}$ or 1 unit.
*Physiology, $\frac{1}{2}$ or 1 unit.
Solid Geometry, $\frac{1}{2}$ unit.
Spanish, 1 or 2 units.
Trigonometry, $\frac{1}{2}$ unit.
Zoology, $\frac{1}{2}$ or 1 unit.

*1 unit accepted only after approval of a definite laboratory course.

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.

NOTE 2. Among the six and one-half elective units there must be included certain ones determined by each particular college or school of the University as follows:

COLLEGE OF LIBERAL ARTS

Classical group: Four units of foreign language, not less than two being Latin.

NOTE. While the language requirements for this group are specified in this way as a concession to the smaller high schools, students should by all means present, as the best preparation for entrance to the classical group, four years of Latin and three years of Greek, whenever it is possible.

Modern Language-Literature group: Four units of foreign language.

Philosophical group: Same requirement as any other group.

Science group: Two units of a foreign language, one unit of chemistry or biology, one-half units each of solid geometry and physical geography.

COLLEGE OF ENGINEERING AND SCHOOL OF MINES

Two units of a modern foreign language, one unit of chemistry and one-half unit of solid geometry.

NOTE. For the present, graduates from schools unable to offer *chemistry* and *modern* foreign language, may present a unit of biology and two units of a foreign language.

SCHOOL OF PHARMACY

The requirements may be satisfied by entrance similar to that of any other college or school of the University.

SCHOOL OF LAW

The requirements may be satisfied by entrance similar to that of any of the other colleges or schools, and the completion of one year's work in the College of Liberal Arts.

SUGGESTIONS FOR PREPARATION

The following suggestions for preparation will enable students intending to enter to understand what is expected under the head of each subject. Attention is called to the discussion of the methods of teaching the various high school subjects given in The University Bulletins.

Text-books mentioned in these suggestions are recommended as good and acceptable, but are not required to the exclusion of other good texts.

ASTRONOMY

A knowledge of general astronomy as is set forth in Young's Manual of Astronomy or the texts of Moulton and Comstock. The fundamental facts and laws of the solar system should be mastered.

BOTANY

As stated in the requirements for admission, botany may be offered as one unit or one-half unit. In the former case it should consist of at least two recitations and four laboratory hours a week for nine months; in the latter, similar work for half that period.

The student should be familiar with the gross anatomy of the flowering plants, and should have some knowledge of plant physiology and ecology. He should have at least enough experience with the compound microscope to enable him to use it properly in the laboratory; and above all he should have a good set of drawings and laboratory notes as evidences of his year's work.

The work outlined in any of the following texts will serve to indicate what is desired: Coulter's Textbook of Botany, Coulter's Plant Studies, Bergen's Foundations of Botany, Stevens' Introduction to Botany, Bergen's Elements of Botany.

CHEMISTRY

The equivalent of one year's work in the high school. The text recommended is Hessler and Smith or Newell's Descriptive Chemistry. Laboratory work is required, and the student must offer satisfactory evidence of a reasonable amount of work done and approved by his instructor in the high school.

DRAWING

The equivalent of one year's work in mechanical or freehand drawing.

ENGLISH

English A: Reading and Practice.—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject-matter, and to answer simple questions on the lives of authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate

from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books.

In preparation for this part of the examination, it is important that the candidate shall have been instructed in the fundamental principles of rhetoric.

The books set for this part of the examination in the years 1909-1911 are:

GROUP 1 (two books to be selected)

SHAKESPEARE—As You Like It; Henry V; Julius Caesar; The Merchant of Venice; Twelfth Night.

GROUP 2 (one book to be selected)

BACON—Essays; BUNYAN—The Pilgrim's Progress, part 1; The Sir Roger de Coverly Papers in the Spectator; FRANKLIN—Autobiography.

GROUP 3 (one book to be selected)

CHAUCER—Prologue; Selections from Spenser's Faerie Queene; POPE—The Rape of the Lock (Parrott); GOLDSMITH—The Deserted Village (Pound); PALGRAVE—Golden Treasury (first series), books 2 and 3, with especial attention to Dryden, Collins, Gray, Cowper and Burns.

GROUP 4 (two books to be selected)

GOLDSMITH—The Vicar of Wakefield; SCOTT—Ivanhoe; QUENTIN Durward; HAWTHORNE—The House of Seven Gables; THACKERAY—Henry Esmond; GEORGE ELIOT—Silas Marner; MRS. GASKELL—Cranford; BLACKMORE—Lorna Doone; DICKENS—A Tale of Two Cities.

GROUP 5 (two books to be selected)

IRVING—Sketch Book; LAMB—Essays of Elia; DE QUINCEY—Joan of Arc and the English Mail Coach; CARLYLE—Heroes and Hero-Worship; EMERSON—Essays (selected); RUSKIN—Sesame and Lilies.

GROUP 6 (two books to be selected)

COLERIDGE—The Ancient Mariner; SCOTT—The Lady of the Lake; BYRON—Mazeppa and the Prisoner of Chillon; PALGRAVE—Golden Treasury (first series), book 4, with special attention to Wordsworth, Keats and Shelly; MACAULAY—Lays of Ancient Rome; POE—Poems; LOWELL—The Vision of Sir Launfal; ARNOLD—Sohrab and Rastum; LONGFELLOW—The Courtship of Miles Standish; TENNYSON—Gareth and Lynette, Lancelot and Elaine, and the Passing of Arthur; BROWNING—Selections.

English B: Study and Practice.—This part of the examination presupposes more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure, and will also test the candidate's ability to express his knowledge with clearness and accuracy. In addition, the candidate may be required to answer questions involving the essentials of English grammar, and questions on the leading facts in those periods of English literary history to which the prescribed works belong.

The books set for this part of the examination in the years 1909-1911 are: SHAKESPEARE—Macbeth; MILTON—Lycidas, Comus, L'allegro, and Il Penseroso; BURKE—Speech on Conciliation with America; or Washington's Farewell Address, and Webster's First Bunker Hill Oration; MACAULAY—Life of Johnson; or, CARLYLE—Essay on Burns.

NOTE—Judicious substitutions in these lists will be allowed. Schools wishing to make substitutions would do well to refer them to the University for acceptance.

FRENCH

A good knowledge of grammar, such as may be acquired from the first part of Fraser and Squair's French Grammar, or an equivalent, is necessary.

The student must have the ability to use readily any of the elements essential to the continuation of his studies in this department. Constant drill in the composition of easy French sentences should be a large part of the student's training. Dictation should be given frequently enough to familiarize the ear with the spoken language. Emphasis should be laid upon the accuracy of pronunciation.

The reading of not less than three hundred pages of easy French prose, from at least three authors, should give the ability to translate any passage of moderate difficulty. Practical exercises in easy syntax should be given in connection with the texts read.

GERMAN

Students entering with two years of high school German should be able to translate simple German prose into good idiomatic English, to translate simple English sentences into German, and to carry on a simple conversation in German, based upon the reading. They should have a thorough knowledge of elementary grammar, and should have read about 300 pages of easy prose, chiefly narrative, including one or two short comedies.

Students who offer more than two years of German for entrance should have had systematic work in German composition and conversation, and should have read at least one German classic, preferably Schiller's *Wilhelm Tell* or Lessing's *Minna von Barnhelm*.

Valuable suggestions concerning methods of teaching, and suitable texts to be read each year may be found in the Report of the Committee of Twelve (D. C. Heath & Co., 16c), and Bagster-Collins: *The teaching of German in Secondary Schools* (Macmillan Co., \$1.25). These two books ought to be in the hands of every high school teacher of German.

GREEK

1. *Elementary Greek*.—To satisfy the requirements in elementary Greek, students must be able (a) to translate at sight easy passages of Attic prose; (b) to pass a thorough examination on the fundamental forms, constructions, and idioms of the language. This examination will be based on Xenophon's *Anabasis*, Book 2.

These requirements presuppose a preparation of at least two years in a systematic course of at least four hours a week.

2. *Advanced Greek*.—To satisfy the requirements in advanced Greek, students must be able (a) to translate at sight easy passages from Homer, with questions on Homeric forms and constructions, and on prosody; (b) to translate into Greek an easy passage of connected English narrative.

These requirements presuppose the completion of the third year of the study of Greek in a systematic course of at least four hours a week.

The following division of the work is suggested:

First year.—Elements of Greek grammar, as represented in amount by Benner and Smyth's *Beginner's Greek Book* or White's *First Greek Book*.

Second year.—Xenophon's *Anabasis*, Books I-IV; Goodwin and White's, or Smith's edition is recommended. Greek composition, as represented in amount by Bonner's or Pearson's *Greek Composition*.

Third year.—Homer's *Iliad* or *Odyssey*, at least three books; Seymour's revised edition of the *Iliad*, and Perrin and Seymour's edition of the *Odyssey* are recommended. Review of grammar and of Xenophon's *Anabasis*, with special emphasis on Book 2.

HISTORY AND GOVERNMENT

Preparatory schools are recommended to rely upon the suggestions of the committee of seven of the National Educational Association. The ideal course embraces four full years as listed in the following suggestions for preparation. In case time and equipment preclude this ideal, then one or more of the suggested fields should be chosen rather than the ineffectual attempt to cover all the fields in a so-called general history course.

All candidates for credit in entrance history are expected to do considerable work in addition to the text-book preparation. For the sake of the training involved, as well as for the information acquired and the stimulating of interest, the following exercises are recommended: supplementary reading, including the use of original material where possible; notes and digests of reading; abstracts or analyses of specified chapters, both of the text-book and supplementary reading; outlines of subjects, gathering material from all available sources; map drawing from printed data or comparison of existing maps, showing movements of exploration, migration or conquest, territorial changes, or social phenomena.

Such work should be regarded as a means rather than the end of historical study, and in every instance should be adapted in character and amount to the stage of advancement of the

class and of the individual pupil. An excellent outline for each year's work has been prepared by a special committee of The New England Teachers' Association (D. C. Heath & Co.), which may be used as a guide to supplementary reading.

1. ANCIENT HISTORY.—Special stress should be given to the history of Greece and Rome, as planned by the best modern text-books. A full year should be given to the work, and the following are recommended as among the best text-books: West's Ancient History, Wolfson's Essentials in Ancient History, and Botsford's Ancient History.

2. MEDIEVAL AND MODERN HISTORY.—This work should occupy a full year in a study of the history of the world from the death of Charlemagne to the present time. Among the best text-books are Munro and Whitcomb's Medieval and Modern History, and Harding's Essentials in Medieval and Modern History.

3. ENGLISH HISTORY.—There are many good new texts on this field. Among those commended are Larned's History of England, Andrew's History of England, and Walker's Essentials in English History. There should be collateral reading in more extensive works, such as the Epoch Monographs, Gardiner's larger history and Green's Short History of the English People. At least one year should be used in this preparation.

4. AMERICAN HISTORY AND CIVIL GOVERNMENT.—Every American high school and independent student should have abundant equipment to achieve preparation in this field with one year of work. Among the texts commended are Hart's Essentials in American History, McLaughlin's History of the American Nation, Montgomery's Student's American History, Larned's History of the United States, Channing's Student's History of the United States, Ashley's American History. With the history, or at least during the same year, should be taken the work in civil government. A knowledge of the relationships existing between subordinate and higher political units together with a description of the chief functions performed by the institutions of the various political units is expected.

Bryce's, *The American Commonwealth* (abridged edition), or Ashley's *Federal Government* are recommended as texts.

LATIN

Freshman Latin is the fifth year's work in the subject. The four years' work done in the high school must be the equivalent of the Latin course outlined by the State Board of Education, and cover substantially the following courses and subjects:

First year.—Collar and Daniell's First Year Latin, or equivalent. Subjects that must be mastered are pronunciation (with accent and quantity of vowels), regular declensions and conjugations, the vocabularies (with etymologies and English derivatives), simple rules of syntax, simple translation and Latin writing.

Second year.—Second Year Latin, Greenough, D'Ooge and Daniell; and Latin Composition, D'Ooge. Part II of Second Year Latin should be covered, with selections from Part I, and work should be done in Latin prose composition, the equivalent to one day's work a week throughout the year. If Caesar is used instead of Second Year Latin, four books should be read and prose work done one day in the week with D'Ooge's Latin Prose Composition Part I (Caesar), Jones' Latin Prose, Daniell's New Latin Composition, Part I, or Riggs-Scott's In Latinum (Caesar). The student should be familiar with the life and times of Caesar, the Roman army, and methods of war.

Third year.—Six of Cicero's Orations, with prose work one day in the week throughout the year. The prose work may be done with the Cicero section of the prose books recommended for Caesar. The student should be familiar with the life and times of Cicero, the subject of Roman oratory, Roman institutions, particularly the courts and Roman public officials. Through reading independently, the student should be able to translate an average passage of Caesar or Cicero at sight, when these authors are completed.

Fourth year.—Vergil, six books of Aeneid. Special attention should be paid to prosody, the syntax of Vergil, mythology, and the history and purpose involved in the poem.

MATHEMATICS

ALGEBRA

The required work in algebra ($1\frac{1}{2}$ units) should cover one and a half years of five recitations per week, and include the

following subjects: factors, fractions, ratio and proportion, negative quantities and interpretation of negative results, a thorough knowledge of radicals and the solution of equations involving radicals, fractional and negative exponents, the binominal theorem for positive exponents, extraction of roots, the solution of equations with one unknown, whether of the first or second degree, and with literal as well as numerical coefficients; the ordinary methods of elimination applied to equations of two or more unknowns; variation, ratio and proportion; imaginary and complex numbers and their geometrical representation.

It is recommended that the student familiarize himself with the solution of simultaneous equations of two or three unknowns by the determinant method, that he be able to solve quadratics at sight either by factorization or by formula, and that he learn to draw the graphs of linear and quadratic equations of two unknowns. No credit can be given for algebra studied in grades below the high school.

PLANE GEOMETRY

The required work in plane geometry (1 unit) should extend throughout one year of five recitations per week. Whatever textbook or method is used, the theorems of the book should not occupy over one-third of the time allotted to geometry. Another third should be given to original demonstrations of exercises; this should be insisted upon as a part of the required work in the course. The remaining third of the time should be given to experimental work, construction of models, measuring of lines and areas, numerical verification of results, and accurate work in geometrical constructions. For this purpose every student should be provided with a graduated ruler, a pair of compasses, a protractor, and a geometrical drawing tablet.

SOLID GEOMETRY

One-half year of five recitations per week. The work must cover the fundamental theorems on lines and planes in space, on polyhedrons, including a study of the regular bodies, on cylinders, on cones, and a thorough study of the sphere. Here as in plane geometry the originals should constitute an integral part of the required work. Emphasis should be put also on the accurate construction of all figures. Whenever possible, the student should be required to construct models of the solids which he is studying, either of wood, plaster, or cardboard.

PLANE TRIGONOMETRY

No credit can be given for less than one-half year's work of five recitations per week. The work should include a thorough study of the trigonometric functions, both direct and inverse; radian measure; the construction of the graphs of the trigonometric functions; the solution of simple trigonometric equations; the solution of right and oblique triangles, both by natural functions and by the aid of logarithms; a study of logarithms and facility in the use of logarithmic and trigonometric tables. Considerable time should be given to the application of trigonometry to problems in surveying, navigation, and other practical problems, and it is recommended that, where possible, the student should be required to gather the data for a few problems for himself by actually measuring certain distances and angles. Such terms as latitude, longitude, bearing, angle of elevation or depression, should be familiar.

PHYSICAL GEOGRAPHY

The preparation in this subject should include at least one full year's work with regular laboratory exercises and excursions in the field. One-half entrance credit is given only when the course is given for a half year. Davis's or Tarr's Physical Geography are examples of good texts.

PHYSICS

An amount represented by Carhart and Chute's Physics or equivalent should be given in the junior or preferably the senior year, and be preceded by algebra and plane geometry.

At least fifty hours of quantitative laboratory work must accompany the study of the text. The following list of exercises taken from Chute's Laboratory Manual (revised edition) indicates the general character of the problems desired: 39, 40, 43, 44, 53, 55, 56, 58, 60, 63, 66, 67, 69, 70, 73, 76, 79, 85, 86, 87, 97, 101, 106, 107, 110, 122, 123, 126.

PHYSIOLOGY

Study of the elements of the mechanics, the physics and the chemistry of the living body, as outlined in Walker's or Hutchinson's Physiology. The text-book should be accompanied by ex-

periments, dissection of animals and organs, and a certain amount of study of the tissues with the compound microscope.

ZOOLOGY

The student applying for a full unit of entrance credit in this subject must give evidence of nine months' work under a competent teacher, in the form of notes and drawings illustrating the course pursued. He should be familiar with the general structure of the more common forms of animal life, and he is expected to have some knowledge of the manipulation of the compound microscope. As a basis for preparation the use of Linville and Kelly's text-book of Zoology, or Jordan's Animal Life, accompanied by practical laboratory work, is suggested.

ADMISSION FROM AN ACCREDITED SCHOOL

(Note: The procedure set forth below will be modified where necessary to accord with the new Educational code as soon as the code goes into force).

Upon request of the principal of any high school or academy whose course of study embraces in kind and extent the subjects required for admission to the University, a committee of the faculty will visit the school and report upon the quality of the instruction and equipment. If the report is favorable, any graduate of that school will be admitted without examination from courses accredited.

Students from the accredited schools, in order to be admitted without examination, must bring with them a full statement of their high school or academy studies, signed by the proper authorities.

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

Correspondence relating to inspection and accrediting should be addressed to Professor Edward O. Sisson, Chairman of the Committee on Accredited Schools.

LIST OF ACCREDITED SCHOOLS

The following high schools and academies were on the accredited list March 1, 1909.

Public High Schools

Aberdeen	Olympia
Anacortes	Palouse
Arlington	Pomeroy
Auburn	Port Angeles
Bellingham, North	Port Townsend
Bellingham, South	Prosser
Blaine	Puyallup
Bremerton-Charlestown	Seattle—Washington
Centralia	Lincoln
Chehalis	Ballard
Colfax	Sedro-Woolley
Davenport	Snohomish
Dayton	Spokane
Ellensburg	Sumner
Everett	Sunnyside
Garfield	Tacoma
Hoquiam	Vancouver
Kent	Waitsburg
LaConner	Walla Walla
Mt. Vernon	Waterville
North Yakima	Wenatchee

Other Secondary Schools

Brunot Hall (Spokane)
 Seattle Seminary (Seattle)
 University of Puget Sound, Preparatory department.

Several other schools have been accredited provisionally, and will probably be placed permanently on the list when they are again inspected.

ADMISSION TO ADVANCED UNDERGRADUATE STANDING

Students from classes above the freshman 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 a semester.

Upon entrance to the University, graduates of the two years' advanced course of the normal schools of the state are given forty-eight scholastic credits and eight physical culture credits. Of the remaining seventy-two hours of work the following subjects are required, viz.: a foreign language, sixteen credits; a science, eight credits; political economy, four credits; medieval history, four credits; philosophy, eight credits; and twenty-four credits in the major study. Normal graduates who major in education, in consideration of the large proportion of pedagogical work in the normal school course, may, with the consent and advice of the department of education, take part of the twenty-four hours of major work in other departments.

ADMISSION TO GRADUATE STANDING

Graduates of this institution and of others of similar rank are admitted to graduate standing. A graduate student elects the department in which he wishes to do his major work, and is subject to the same general rules and regulations as apply to undergraduates. The work of a graduate student who is a candidate for a degree must be outlined by his major professor and approved by the Committee on Advanced Degrees.

ADMISSION AS SPECIAL STUDENTS

Persons who are at least twenty years of age will be allowed to enroll for special courses of study, on giving satisfactory evidence of their preparation to pursue the particular courses which they desire to elect.

NOTE 1. Students will not be admitted from an accredited school as special students unless they have graduated, or have not been in attendance for the previous year.

NOTE 2. Students, before being allowed to enroll as special students, must file a complete statement of credits for work done elsewhere, and these credits will be used to determine in a large degree whether or not the applicant is prepared to do university work.

UNIVERSITY LECTURES

ADDRESSES AT ASSEMBLY

Addresses by members of the faculty and by distinguished scholars and men of affairs are given Wednesdays before the student body in the men's gymnasium. By this means the work of the class-room is supplemented, and the students obtain a broader outlook upon life through the light of practical experience. The following addresses were given during 1908-1909:

- Sept. 16, 1908. Music by University orchestra.
Annual Address by President Kane.
- Sept. 30, 1908. Addresses by student leaders.
- Oct. 14, 1908. Music by University orchestra.
Address: Opportunities for the University,
Hon. Henry McLean.
- Oct. 22, 1908. The Development of the Pacific,
Hon. John Barrett.
- Nov. 2, 1908. Address by Dr. Cyrus Northrop.
- Dec. 23, 1908. Vocal solo: Miss Florence Scott.
Address: Backbone, Mr. Adam Beeler.
- Jan. 6, 1909. Address by Dr. G. Stanley Hall.
- Feb. 3, 1909. Address: Old Graduates on the Bowery,
Mr. E. C. Mercer.
- Feb. 12, 1909. Address: Abraham Lincoln, Dr. B. Whitman.
- Feb. 24, 1909. Address: The Love of Abraham Lincoln for
Shakespeare's Dramas, Mr. Chas. B. Hanford.
- Mar. 3, 1909. Address: Indigenous American Art,
Mr. A. Montgomery.
- Mar. 3, 1909. Address: Educational Development in the West,
President A. W. Harris.

UNIVERSITY LECTURE COURSE

There is given every year, under the auspices of the faculty, a series of lectures and entertainments. The course, consisting of the leading lyceum attractions of the country, is offered at a

rate so low that every student is able to attend the series. The course for 1908-9 comprise the following:

Concert: The Maud Powell Trio.

Lecture: Hon. J. Frank Hanly, former Governor of Indiana.

Lecture: Governor John A. Johnson, of Minnesota.

Lecture: Hon. Joseph W. Folk, former Governor of Missouri.

INSTITUTES AND LECTURES

The various members of the University faculty hold themselves ready to respond to call for lectures before institutes, university extension centers, clubs, and assemblies, whenever such service does not interfere with the regular work in the institution. Several of the instructors who have had experience in the lecture field and in institute work, are ready to give regular instruction in the institutes of the state and in educational organizations. Calls for work should be addressed to the individual professors, or to the secretary of the faculty, Mr. Herbert T. Condon.

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ASSOCIATIONS AND CLUBS

ALUMNI ASSOCIATION

The officers of the Alumni Association for 1908-9 are as follows:

President.....Seldon Burrows, '96
Secretary.....Mrs. Marion Edwards.
Treasurer.....James E. Gould, '96
Asst. Treasurer.....Delos J. Needham, '07

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. This board decides all questions relating to the student body as a whole, and controls all matters of general interest to the student community. 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 general manager has charge of all moneys received as association fees or admissions to games and contests, and is the custodian of all property belonging to the association. He is required to give a bond for three thousand dollars. Besides the general manager, there is appointed a separate manager for a student book store. The book store is located in the basement of the Administration building, and handles all the text-books, stationery, and supplies at a reduction from the usual prices.

CHRISTIAN ASSOCIATIONS

The Young Men's and the Young Women's Christian Associations each have a branch organization among the students. They give a reception at the beginning of each semester, and are active in making the new students feel at home and in assisting them in many ways.

A bureau of information and an employment bureau are maintained jointly by the two associations.

CHEMICAL JOURNAL CLUB

The Chemical Journal club was organized by the instructors and students in the department of chemistry. The members read and discuss the English and German periodicals devoted to the development of chemistry.

CLASSICAL CLUB

This club is composed of students and members of the faculty who are interested in the life and literature of the Greeks and Romans. Its meetings are held once a month.

COUNTY AND STATE CLUBS

The students from the different counties of the state and the students from some of the neighboring states maintain organizations at the University. These clubs serve the purpose of extending the acquaintance of the students that come from different high schools of the same county, and enable the students of the county organization to be helpful to the new students that enter from their county by furnishing all sorts of detailed information which has to be gained by personal acquaintance with the University. These clubs have enabled their members to wield a strong influence in the University, and have served to identify prominently with the University life, the names of the towns and counties which the club represents.

DEBATING CLUBS

There are four debating clubs in the University, viz.: Stevens, Badger, Athena, and Sahale. 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. Meetings are held weekly, and announcements of subjects for debates and of other matters of interest are made on the bulletin boards of the clubs. One or more inter-society debates are held each year, and from the contestants are largely chosen the University representatives for the intercollegiate debates.

LINCOLN LITERARY SOCIETY

The Lincoln Literary society offers to students in all departments of the University an opportunity for developing proficiency

in public speaking and a knowledge of the various forms of English composition. Active membership in the society is limited to twenty.

DEUTSCHER VEREIN

The Deutscher Verein is an organization of students and instructors interested in the study of the German language and literature, and of German life and culture. Meetings are held twice a month, on Wednesday evenings, from seven to eight o'clock. The program consists of lectures, recitations, singing, social entertainments, and dramatic performances. All students who have studied German one year or more, particularly those who intend to specialize in German, are invited to membership.

THE FOREST CLUB

The Forest club of the University of Washington was organized December 12, 1908. Its objects are to bring the students in the School of Forestry into closer relationship, and to render mutual assistance along professional lines. The club meets on the second and fourth Saturday nights of each month during the college year.

MATHEMATICAL CLUBS

The Junior Mathematical club meets on the second and fourth Wednesday of each month in room 26, Science hall, at 7:30 p. m. The club is open to every student of the University who is sufficiently interested in mathematics to contribute something toward a program at least once during the year.

The Mathematics Journal and Research club meets on the second Tuesday evening of each month in room 26, Science hall, at 7:30 p. m. The club consists of teachers and advanced students in the department of mathematics.

MUSICAL ORGANIZATIONS

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

The Choral society includes both students of the University and outside singers. It was organized for the purpose of promoting general musical culture, and to give the students an opportunity to study and perform standard choral works. This chorus has been organized but four years, and in that time has attained a most phenomenal growth and popularity. The rehearsals are conducted by the director of music.

The Glee clubs are open to students who are successful in the tryouts, which are held during the first semester.

There is no regular department of music in the University, but private instruction may be had at special rates, on the piano, violin, orchestral instruments, and in harmony and singing, from teachers of experience and ability.

The orchestra was organized in 1898. It furnishes music for assemblies, dramatic, and musical performances, and for many other events of the college year. It is composed of the most competent players of orchestral instruments in the University, selected by examination. The study of standard overtures, grand opera selections and other high grade numbers is systematically taken up at the rehearsals, which are conducted by the director of music.

The band furnishes music for assemblies, track meets, football games, outdoor celebrations, and many other occasions. It is open to students who show sufficient musical ability. The study of standard music of a good grade is taken up at the rehearsals, which are conducted by an instructor. The band was uniformed this past year, and is now well equipped.

MOZART CLUB

The Mozart club was organized in 1908. This club exists for the purpose of furthering the musical interests of the University, of promoting a closer relationship among the members of the musical organizations, and of bringing about social intercourse among its members. All students of the University who have taken part in any musical organization are eligible to membership.

PHILOLOGICAL ASSOCIATION

This 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. The regular time of meeting is the last Wednesday of September, November, January, March, and May.

POLITICAL SCIENCE CLUB

This club is composed of students and members of the faculty interested in political science. Meetings are held on the first and third Wednesdays of the month, at 7:30 p. m. At these meetings

there are papers and addresses on political, social, and economic subjects. It is the plan of the club to have one meeting each month devoted to papers prepared by students of the University, and one evening each month given to an address by some person not connected with the University.

SIGMA XI

A chapter of the national society of Sigma Xi has been established at the University. The purpose of the society is to encourage research work along scientific lines. Its membership is composed of teachers and graduate students.

WASHINGTON UNIVERSITY STATE HISTORICAL SOCIETY

The Washington University State Historical society was organized in 1903, and incorporated under the laws of the state. The purpose of this organization is to preserve the historical documents and records of the Northwest, and of the state of Washington; to purchase, maintain, and mark the places of historical interest; to engage in and to promote research relating to the Indians and Indian tribes; to promote by every legitimate means antiquarian, archeological, and scientific research; and to preserve or publish the results of all such investigations. This society aims to co-operate with the state University in the promotion of research work in the fields in which the Northwest is especially rich.

The officers and trustees of the society are as follows: Clarence B. Bagley, president; John P. Hoyt, vice-president; Roger S. Green, treasurer; Edmond S. Meany, secretary; Cornelius H. Hanford, Thomas Burke, and Samuel Hill, trustees.

STUDENT EXPENSES

TUITION

Tuition is free to all students of the state of Washington in all colleges and schools of the University, except in the Summer School. In the Summer School the tuition is ten dollars, as the Summer School is conducted independently by members of the faculty.

BOARD AND ROOM

In the two dormitories, one for men and one for women, board and rooms are furnished at cost. During the past year the price of board and room has been \$17.50 a calendar month. This includes heat and light. The rooms are furnished with a spring bed, table, dresser, wardrobe, and chairs; but the student is expected to supply his own bed linen, bedding, mattress, towels, floor rug, and any articles of luxury that may be desired.

A deposit of fifteen dollars, which is returned at the end of the year, must be made with the registrar in advance by all students desiring to stay at the dormitory. The charge to each student is simply large enough to maintain the dormitories in a manner that will insure comfortable rooms, wholesome food and generally healthful surroundings. The University does not desire to make any profit from the dormitories.

There is always a large number of students who prefer to obtain homes with private families. There are many opportunities for this, and the registrar is always ready to give information and assistance to students seeking such places. In the past the expense of board and lodging with private families has ranged from eighteen dollars to thirty dollars per month.

LABORATORY DEPOSITS

The University does not desire to make any profit from the deposits paid by the students for work in the laboratories. In many cases no fees are charged, except for damage to apparatus, when payment for the cost of the damage is required. The other deposits are based upon the average cost of materials used by the

individual student in the laboratories. Laboratory deposits are made with the registrar in advance. These deposits in the several laboratories are as follows:

ASSAYING.—A deposit of fifteen dollars is made by all students registering for course 1. Any part of this amount that may be left to the credit of the student, after deducting the cost of materials consumed and of breakage, is refunded upon order of the head of the department.

ASTRONOMY.—A deposit of fifty cents for each hour of credit is required of all students in courses 1, 2, 1a, 5 and 6. The deposit is intended to cover the cost of materials, breakage, and laboratory guides.

BOTANY.—Materials for dissection, stains, alcohol, and other reagents, and typewritten laboratory outlines are furnished each student, which cost one dollar for each hour's credit, except in research work, where the cost is determined by the nature of the work done and materials used; and in bacteriology where an additional two dollar deposit is required to cover breakage.

CHEMISTRY.—At the beginning of each semester each student in chemistry will be required to make a deposit of ten dollars with the registrar before being assigned to his desk. Of this deposit there will be deducted the cost of chemicals, gas, water, etc., and the remainder, less breakage, will be returned.

ELECTRICAL ENGINEERING.—A deposit of one dollar for each hour of credit is made in all laboratory courses. The student also pays for any damage or injury that may come to any instrument or machine entrusted to him.

FORESTRY.—A deposit of one dollar is made in courses 1, 2, 5 and 6, and two dollars in courses 13, 15 and 16. The student is also expected to pay for damage to any instrument entrusted to him.

GEOLOGY AND MINERALOGY.—In courses 1, 1a and 2 a deposit of one dollar is made, in course 5 a deposit of two dollars is made.

METALLURGY.—In course 1 the deposit is fifteen dollars; in courses 2, 4, 5 and 6, five dollars each; in courses 7 and 8, ten dollars each; and in courses 9, 12, three dollars each.

PHARMACY.—The total deposit of first year students taking work in pharmacy, chemistry, botany and physiology is twenty-three dollars for the first semester, and twenty-two dollars for the second semester. Second year students have a deposit of twenty dollars per 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 each semester. The total cost per year seldom exceeds thirty dollars, the amount varying with the care and economy of the student.

PHYSICS AND ELECTRICAL ENGINEERING.—Students are required to make a deposit of five dollars with the registrar. From this deposit is deducted pay for materials and repair of apparatus, and the remainder, less breakage, is returned.

PSYCHOLOGY.—A deposit of one dollar is made for each of the laboratory courses offered in experimental psychology. These courses are philosophy 1-2 and philosophy 7-8. The deposit is intended to cover the cost of materials, breakage, and laboratory directions. Any excess over this cost will be refunded at the end of the course.

SHOP WORK.—A deposit of three dollars is required of each student in wood work. A deposit of two dollars is required of each student in iron work.

STRUCTURAL MATERIALS.—A deposit of three dollars will be required for the course structural materials 10. This is to cover the cost of materials used. The unexpended balance will be returned.

ZOOLOGY.—For the courses in zoology, involving laboratory work, a deposit is required to cover the estimated cost of the laboratory outlines, materials, and reagents used by the students. For the regular courses, the amount is one dollar for each hour's credit. In research work the amount of the deposit is subject to special arrangement, according to the nature of the investigation.

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 normal 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 in the city. There is a limited amount of work which the Board of Regents is disposed to give to students. This includes assistance in the library, the laboratories, the engine rooms, and janitor work. The dining hall affords work for a number of students throughout the college year. Students needing work to help pay their way through the University are given every possible aid by the Faculty Committee on Student Assistance. There is also an employment bureau conducted by students to secure work for students who have to make their own expenses. The official records of the registrar's office show that twenty-two (22%) per cent. of the students enrolled in 1908-09 are entirely self-supporting, while thirty (30%) per cent. more are partially dependent upon their own resources. There is no reason why an ambitious and capable young man or woman desiring an education should not obtain it at the University of Washington.

SCHOLARSHIPS AND PRIZES

CHEMISTRY

A friend of the University has provided a scholarship of one hundred fifty dollars to be awarded annually to a student of the department of chemistry who is carrying regular college work. The person securing the scholarship will be selected by the instructors of the department on the basis of scholarship in the courses taken in the department, of scholarship in other departments, and of personality. This scholarship was awarded for the year 1908-09 to Eldin V. Lynn.

A prize of one hundred dollars has been offered to students of the department of chemistry by Mr. Thomas T. Kerl, of Cœur d'Alene, Idaho. This prize will be awarded to the student presenting the best paper on an industrial topic involving the products of the Pacific Northwest. The award is to be made in June. Subject: Oil of Cedar. In 1908 the prize was given to Albert H. Dewey.

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 1908-09 the prize was awarded to Lloyd Black, Reuben Hilien, and Leo Jones.

DECLAMATION

Hon. Alden J. Blethen offers annually the sum of one hundred dollars for prizes in declamation. The contests, two in number, one in oratorical declamation, and one in narrative and dramatic declamation, are held at the University in May of each year. These contests are open to pupils in attendance at any one of the accredited high schools of the state. The prizes are twenty-five dollars for first place, fifteen dollars for second place, and ten dollars for third place in each contest. In 1908 the winners in the oratorical section were: 1st, Robert Denny, Everett; 2nd, Mary Barrell, Seattle (Broadway); 3rd, Grace Barnes, Tacoma.

The winners in the dramatic section were: 1st, Loren Morrison, Anacortes; 2nd, Beatrice Austin, Seattle (Lincoln); 3rd, Louise Waite, Sumner.

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. In 1907-8 this scholarship was awarded to R. Percy Snoke.

THE R. C. ERSKINE PRIZE

Mr. R. C. Erskine, of Seattle, gives annually a cash prize of fifty dollars to the member of the senior class who presents the best original oration. The purpose of Mr. Erskine in offering this prize is to stimulate interest in the study of political and social problems, with special reference to the peculiar problems of the city of Seattle and the state of Washington. This contest, open only to seniors, was held in the early part of March, 1909. The prize was awarded to Glenn S. Corkery.

LATIN

A scholarship of sixty dollars has been provided through the generosity of Judge Burke, of Seattle, to be awarded annually to the student in the department of Latin who does the best work in the sophomore year. Candidates must be carrying a full year of college work, and the scholarship will be awarded on the basis of both the work in Latin and that in the other subjects of their course. The first award was made at commencement in 1908 to Marian S. Colkett.

ORATORY

In 1896 the King County Bar association offered an annual cash prize of one hundred dollars, to be competed for by the students of the Universities of Washington, Oregon and Idaho. The work of maintaining this incentive to improvement of oratory was kept up until 1907 by a voluntary committee of the association, consisting of E. F. Blaine and W. S. Fulton. In 1907 Mr. E. F. Blaine himself became sponsor for the prize, which is now known as the E. F. Blaine prize in oratory. The prize was awarded in 1908 to Jesse Bond of the University of Oregon.

PHILO SHERMAN BENNETT PRIZE

The Philo Sherman Bennett prize is "for the best essay discussing the principles of free government." This prize, the annual income on four hundred dollars, is awarded at commencement time. This foundation was established by the will of the late Philo Sherman Bennett, of New Haven, Conn., through William J. Bryan acting as trustee. The trustee was directed under the will to select twenty-five colleges in which to establish these prizes, and this institution is among those chosen. At commencement, 1908, this prize was awarded to Seymore I. Stone.

PHYSICS

Mr. James A. Moore offers a scholarship of one hundred dollars, to be awarded at commencement, to that student in the College of Liberal Arts who has done the best work in physics during the year. To be eligible a student must have had at the time of the award at least eight hours each in physics and mathematics, and he must continue his work in the department the following year.

THE SEATTLE BAR ASSOCIATION GIFT

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 representatives of the Law Schools of Oregon and Washington.

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. His work must be in not less than two nor more than four allied subjects; and it must be correlated so that it will bear upon some common field. The senior scholars for 1908-9 are: Caroline Connors, Mabel Durham, Edna Enyart, Adelaide Fischer, David P. Johns, J. Merrill McGee, Ralph S. Montgomery, Hjlmar Osterud, Laura Smith, Fred H. Sutton.

THE JOHN WALTER ACKERSON SCHOLARSHIP FOR WOMEN

This scholarship, of one hundred dollars, is to be awarded annually to a member of the junior class. The award will be

made by a committee of the faculty on the basis of (1) scholarship, and (2) personal influence and activity in elevating student interests. Of the young women in the junior class measuring up to the standards contemplated in this scholarship, preference will be given to the ones who are financially more or less dependent on their own resources.

The scholarship is due to the generosity of Mrs. S. Louise Ackerson. It is named in honor of her husband, the late John Walter Ackerson, a pioneer of Washington, who built the first mill in Tacoma, and was one of the founders of the great lumbering industries centering in that city.

THE BIG RED APPLE SCHOLARSHIP

Through the efforts of the Chelan County club, an organization composed of students in the University from Chelan county, a scholarship of two hundred dollars has been established in the University. This scholarship is to be given to the most deserving student in the graduating class of the Wenatchee High School, based upon class standing and participation in student activities. The scholarship is to be known as the Big Red Apple Scholarship, taking its name from the fact that the award is made by the business men of Wenatchee, the Home of the Big Red Apple. This scholarship was awarded for the year 1908-9 to Fred Ellis Hamilton.

UNIVERSITY FELLOWSHIPS

By the will of Sarah Loretta Denny the sum of \$25,000 was bequeathed to this University for the establishment of University fellowships. Announcements will be made later concerning the fellowships provided for in this bequest.

UNIVERSITY REGULATIONS

REGISTRATION

Registration days are the first and second days of each semester. After a student has presented himself at the office of the Registrar, he is assigned to the proper class officer, who assists him in arranging his schedule of studies.

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. No student is allowed to carry more than sixteen hours or fewer than twelve hours per week, exclusive of physical culture and shopwork, without official consent granted by the faculty committee on petitions.

Three hours of gymnasium work per week are required of all students throughout the first and second years. Eight credits in physical culture are required of all candidates for a degree. This does not apply to any student entering as a junior or senior. The Deans and Physical Director together have authority to allow a student to substitute for gymnasium work, when it seems advisable, the proper corresponding amount of scholastic work. Substitutions to be valid must be signed by the Dean concerned and the Physical Director, and must be filed in the Registrars's office.

A student who has once been registered for a study may not withdraw from said study without the written consent of his class officer endorsed by the instructor.

All responsibility of following the requirements for graduation from the several courses, as published in the catalogue of the University, rests with the student concerned.

The work of the senior year must be done in residence.

EXAMINATIONS

The regular semester examinations are held twice each year. Examinations for the first semester are held the last week in January, while those for the second semester are held in June during the week prior to Commencement week. Examinations for removing conditions are held during the week following the fall registration, the week preceding the Christmas vacation, and the first week in March.

DEGREES

The courses leading to baccalaureate degrees in the College of Liberal Arts, the College of Engineering, and the School of Mines, are arranged to cover a period of four years. The course in the School of Pharmacy covers two years, and an advanced course takes two years longer. To complete the course in the School of Law two years are required. The courses leading to masters' degree are not less than one year.

In the College of Liberal Arts are given the degrees of bachelor of arts (A.B.), bachelor of science (B.S.), and master of arts (A.M.); in the College of Engineering, bachelor of science (B.S.), civil engineer (C.E.), mechanical engineer (M.E.), and electrical engineer (E.E.); in the School of Mines, bachelor of science (B.S.) and engineer of mines (E.M.); in the School of Pharmacy, pharmaceutical chemist (Ph.C.), and bachelor of science (B.S.); and in the School of Law, bachelor of laws (LL.B.).

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

DEGREE WITH HONORS

A degree with honors in his major subject will be conferred upon a student who has attained a grade of A in his major department, an average grade of B+ in other departments, and has never been conditioned in any subject.

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.

TEACHERS' CERTIFICATES

The University is authorized by law to issue the following teachers' certificates, valid in all public schools of the state:

I. *The University Normal diploma*, valid for a period of five years, is granted on the following conditions:

1. Attainment of a bachelor's degree equivalent to that of the College of Liberal Arts of the University of Washington.
2. Completion of twelve hours in the department of education, including course 2, history of education, four hours; and eight hours selected from the following courses: 1, 3, 4 and 6. Eight hours out of the twelve are credited on the 128 hours re-

quired for graduation; the remaining four hours are not so credited, but count only for the Normal diploma.

3. Completion of the teachers' course in the student's major subject.

4. 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 teacher will be considered.

Recommendation to teach particular subjects will be granted to those who have made appropriate special preparation.

II. *The University Life diploma*, valid during the life of the holder, is granted to candidates who fulfill the requirements for the Normal diploma, as set forth above, and also give satisfactory evidence of having taught successfully for at least twenty-four months.

NOTE.—All diplomas issued before June, 1909, will be life diplomas, as provided in the law in force up to that date.

SYSTEM OF GRADES

1. The following is the system of grades:

H.....	Honor.	} Full credit.
S.....	Satisfactory.	
P.....	Passed.	
C.....	Conditioned.	Half credit.
*F.....	Failed.	No credit.

These grades are final. However, by taking the course a second time and passing, a conditioned student may receive the other half credit. An incomplete is given only for excusable delinquencies.

2. In addition to the requirement of total number of credits for a degree, there is the further requirement that three-fourths of that number of credits must be obtained by the grades of H or S: *Provided, however*, That not more than 96 such credits need be obtained for any degree. (This rule does not apply to shop work).

3. Only grades of H or S may be counted toward a graduate degree.

*These grades correspond approximately to the old marking scheme as follows: H—90—96; S—96—80; P—80—70; C—70—60; F—60—0.

ORGANIZATION OF THE UNIVERSITY

THE UNIVERSITY OF WASHINGTON EMBRACES:

THE COLLEGE OF LIBERAL ARTS,

THE COLLEGE OF ENGINEERING,

THE SCHOOL OF MINES,

THE SCHOOL OF PHARMACY,

THE SCHOOL OF LAW,

THE SCHOOL OF FORESTRY,

THE SUMMER SCHOOL.

COLLEGE OF LIBERAL ARTS

THE FACULTY

THOMAS FRANKLIN KANE, Ph. D., *President.*

/ ARTHUR RAGAN PRIEST, A. M., Professor of Rhetoric and Oratory,
Dean.

HENRY LANDES, A. M., Professor of Geology and Mineralogy.

✓ EDMUND STEPHEN MEANY, M. L., Professor of History.

3 J. ALLEN SMITH, Ph. D., Professor of Political and Social Science.

✓ HORACE BYERS, Ph. D., Professor of Chemistry.

CAROLINE HAVEN OBER, Professor of Spanish.

TREVOR KINCAID, A. M., Professor of Zoology.

FREDERICK MORGAN PADELFORD, Ph. D., Professor of English Literature.

ARTHUR SEWELL HAGGETT, Ph. D., Professor of Greek.

FREDERICK ARTHUR OSBORN, Ph. D., Professor of Physics and Director of the Physics Laboratories.

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

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

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

THEODORE CHRISTIAN FRYE, Ph. D., Professor of Botany.

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

EDWARD O. SISSON, Ph. D., Professor of Pedagogy and Director of the Department of Education.

FREDERICK W. MEISNEST, Ph. D., Professor of German.

DAVID CONNOLLY HALL, Sc. M., M. D., Professor of Physical Training.

→ ALVIN ELEAZAR EVANS, Ph. D., Acting Professor of Latin.

GEORGE HENRY ALDEN, Ph. D., Associate Professor of History.

*Absent in Germany on leave, 1908-9.

HERBERT GALEN LULL, A. B., Associate Professor of Education.

HENRY KREITZER BENSON, Ph. D., Associate Professor of Chemistry.

JAMES EDWARD GOULD, Ph. D., Assistant Professor of Mathematics.

*OTTILLIE GERTRUDE BOETZKES, A. M., Assistant Professor of German.

THOMAS KAY SIDEY, Ph. D., Assistant Professor of Greek and Latin.

MAYNARD LEE DAGGY, Ph. B., Assistant Professor of Rhetoric and Oratory.

ALLEN ROGERS BENHAM, Ph. D., Assistant Professor of English Literature.

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

HERMAN CAMPBELL STEVENS, Ph. D., Assistant Professor of Psychology.

FRANK MARION MORRISON, A. B., Assistant Professor of Mathematics.

LOREN DOUGLAS MILLIMAN, A. B., Assistant Professor of Rhetoric.

IRVIN WALTER BRANDEL, Ph. G., Ph. D., Assistant Professor of Chemistry.

OTTO PATZER, Ph. D., Assistant Professor of French.

JOHN WEINZIRL, Ph. D., Assistant Professor of Bacteriology.

ARTHUR DAY HOWARD, Ph. D., Assistant Professor of Zoology.

VERNON LOUIS PARRINGTON, A. M., Assistant Professor of Rhetoric.

PAUL EMIL WEITHAASE, A. M., Acting Assistant Professor of German.

MERLE HAROLD THORPE, A. B., Assistant Professor of Journalism.

*Absent on leave, University of Chicago.

INSTRUCTORS

- HENRY LOUIS BRAKEL, A. M., Instructor in Physics.
HIRAM B. CONIBEAR, Instructor in Physical Training.
WILLIAM THEODORE DARBY, A. M., Instructor in English Literature.
HERVEY BRUCE DENSMORE, A. B., Instructor in Greek.
HOMER P. EARLE, A. B., Instructor in Spanish.
GEORGE IRVING GAVETT, B. S., (C. E.), Instructor in Mathematics.
IDA KATHERINE GREENLEE, A. B., Instructor in English.
HANS JACOB HOFF, Ph. D., Instructor in German.
JOEL MARCUS JOHANSON, A. B., Instructor in German.
WILLIAM VERNON LOVITT, A. B., Ph. M., Instructor in Mathematics.
EDWARD MCMAHON, A. M., Instructor in American History.
WILLIAM ALFRED MORRIS, Ph. D., Instructor in European History.
LAVINA RUDBERG, B. S., Instructor in Physical Training.
STANLEY SMITH, A. M., Instructor in French.
*CHARLES MUNRO STRONG, A. M., Instructor in Spanish.
CHARLES EDWIN WEAVER, Ph. D., Instructor in Geology.
LOUIS DWIGHT HARVELL WELD, Ph. D., Instructor in Economics.

GRADUATE ASSISTANTS

- ELVA COOPER, A. B., A. M., Graduate Assistant in Mathematics.
CURT JOHN DUCASSE, Graduate Assistant in Philosophy.
LEWIS HENRY FEE, A. B., Graduate Assistant in Physics.
ADA MARTITIA FIELD, A. B., Graduate Assistant in Chemistry.
HOLLAND FRAZEE, A. B., Graduate Assistant in Mathematics.
PHILO FAY HAMMOND, A. B., Graduate Assistant in Physics.
CARL HENNINGER, A. B., A. M., Graduate Instructor in German.
EDITH SIDONIE MICHELSON, A. B., Graduate Assistant in French and Spanish.
ARTHUR S. POPE, A. B., Graduate Assistant in Mathematics.
G. P. SENTER, A. M., Graduate Assistant in Chemistry.
MARTIN W. STEINKE, A. B., Graduate Assistant in German.
WALTER BELL WHITTLESEY, A. B., Graduate Assistant in French.

UNDERGRADUATE ASSISTANTS

FRED ASHTON, Assistant in Chemistry.

E. OWEN CRIM, Assistant in Music (Band).

GEORGE CUMBO, Assistant in Chemistry.

CLYDE GRAINGER, Assistant in Geology.

CHRISTINE KANTERS, Assistant in Gymnasium.

MABEL McMURRAY, Assistant in Botany.

ARTHUR THOMAS O'NEAL, Assistant in Chemistry.

RUSSELL PARKER, Assistant in Journalism.

ELMER SHERRILL, Assistant in Chemistry.

FRED SUTTON, Assistant in Mathematics.

W. F. THOMPSON, Assistant in Zoology.

FRANK VERNON, Assistant in Chemistry.

CHARLES H. WHEELON, Assistant in Geology.

PURPOSE

The College of Liberal Arts is intended to furnish a general training in language, literature, science and philosophy, of the same standard as that set by the oldest colleges of this country.

Throughout the course the student has large liberty in choosing his subjects, but through the advice of some member of the faculty he is guided in everything after the general direction of his work has been once determined.

COURSES IN THE COLLEGE OF LIBERAL ARTS

The requirements for graduation from the College of Liberal Arts are the satisfactory completion of certain prescribed subjects together with a major, a minor, and sufficient free electives to make up a total of one hundred and twenty-eight credits.

PRESCRIBED SUBJECTS

The prescribed subjects are the following:

	Credits
English composition	8
English literature	8
Foreign language	16
Mathematics	4
Science	8
Philosophy	8
Economics	4
Medieval history	4
Physical training	8

A credit is used to represent one recitation a week for a period of one semester. A subject requiring four hours a week for one semester represents four credits; if it requires four hours a week for one year, it represents eight credits.

MAJORS AND MINORS

Not later than the beginning of his junior year, a student is required to select some department to which he will devote his first attention. This department will be known as his major department, and its head will be his major adviser. He will be expected to elect as a minor certain other related subjects. The grouping of majors and minors under the different courses has been definitely determined.

TABLE OF MAJORS AND MINORS.

Course.	I.—CLASSICAL. *		II.—MODERN LANGUAGE AND LITERATURE.					
	Greek.	Latin.	French.	Spanish.	German.	Rhetoric.	English Literature.	Journalism.
Major 24 hrs.								
Minor 16 hrs.	Latin, Modern language.	Greek, Modern language.	Italian, Spanish, German, Greek, Latin.	French, Italian, German, Latin.	French, English literature, Latin.	English literature, Philosophy, Political science, History, Journalism.	Rhetoric, Philosophy and Psychology, Education, European history, 5th and 6th year of Latin, 3rd and 4th year of any other language, Journalism.	English literature, History, Science, Political science.

III.—PHILOSOPHICAL.

Philosophy.	Psychology.	Education.	Political and Social Science.	History.
Education, Political science, European history, Rhetoric and Argumentation, English literature, Mathematics, Physics.	Education, Political science, Mathematics, Physics, Chemistry, Zoology.	Philosophy and Psychology, Political science, History, Zoology, Any subject to be taught by the student.	Philosophy and Psychology, Education, History, Rhetoric and Argumentation, English literature, Botany, Zoology.	Philosophy and Psychology, Education, Political science, Rhetoric, English literature, Geology, Botany, Zoology.

	IV.—SCIENTIFIC.					
	Mathematics.	Physics.	Chemistry.	Botany.	Zoology.	Geology.
	Physics, Astronomy, Philosophy, Chemistry, Botany, Zoology, Geology.	Mathematics, Astronomy, Chemistry, Botany, Geology.	Botany, Zoology, Geology, Mathematics, Physics.	Chemistry, Zoology, Geology, Psychology, Physics.	Chemistry, Botany, Geology, Psychology.	Chemistry, Botany, Zoology, Mechanical drawing, Surveying, Mathematics, Physics.

* Those who do not present Greek for entrance must finish Greek 4, if Greek is not chosen as a major or minor in the classical group.

NOTE 1. The minor shall not be distributed over more than two subjects, and no prescribed work shall count toward a minor.

NOTE 2. Not more than 40 hours' credit in a major subject may count toward a bachelor's degree, and not more than 24 hours in any other one subject.

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

I. CLASSICAL.	II. MODERN LANGUAGE AND LITERATURE.	III. PHILOSOPHICAL.	IV. SCIENTIFIC.	
<i>Freshman.</i>	<i>Freshman.</i>	<i>Freshman.</i>	<i>Freshman.</i>	<i>*Freshman.</i>
Latin..... 8	Foreign language.....16	Foreign language..... 8	Foreign language... 8	English 8
Greek..... 8	English..... 8	English..... 8	English..... 8	History or
English..... 8	Mathematics..... 4	Mathematics..... 4	Mathematics..... 4	Foreign language... 8
Mathematics..... 4	History..... 4	History..... 4	Science..... 8	Mathematics..... 8
History..... 4	Physical training... 2	Science..... 8	Physical training.. 2	Science or
Physical training... 2	.....	Physical training... 2	.....	Elective..... 8
<i>Sophomore.</i>	<i>Sophomore.</i>	<i>Sophomore.</i>	<i>Sophomore.</i>	<i>Sophomore.</i>
Latin..... 8	Foreign language..... 8	Foreign language..... 8	Foreign language... 8	Foreign language... 8
Greek..... 8	English literature... 8	English literature... 8	English literature... 8	Mathematics..... 8
English literature... 8	Political economy... 4	Philosophy..... 8	History..... 4	Physics..... 8
Science..... 8	Philosophy..... 8	Political economy... 4	Political economy... 4	Elective or
Physical training... 2	Physical training... 2	Physical training... 2	Science..... 8	English literature... 8
.....	.....	Elective..... 4	Physical training.. 2	.....
<i>Junior.</i>	<i>Junior.</i>	<i>Junior.</i>	<i>Junior.</i>	<i>Junior.</i>
Philosophy..... 8	Science..... 8	Major.....	Philosophy..... 8	Philosophy..... 8
Political economy... 4	Major.....	Minor.....	Major.....	Political economy or
Major..... 8	Minor.....	Elective.....	Minor.....	Elective..... 4
Minor elective.....12	Elective.....	.....	.....	Foreign language or
.....	.....	.....	.....	Elective..... 4
.....	.....	.....	.....	Physics..... 8
.....	.....	.....	.....	Mechanics and
.....	.....	.....	.....	Spherical astronomy 8
<i>Senior.</i>	<i>Senior.</i>	<i>Senior.</i>	<i>Senior.</i>	<i>Senior.</i>
Major.....	Major.....	Major.....	Major.....	Major.....
Elective.....	Elective.....	Minor.....	Minor.....	Minor.....
.....	.....	Elective.....	Elective.....	Elective.....

* Suggested Course for Teachers of Mathematics and Physics.

For recommendation to teach mathematics or physics in the high schools of the state the student must have secured, in addition to the specified requirements for the A. B. degree, twelve credits in mathematics (including analytics and calculus), sixteen credits in physics (including courses 1, 2, 3, 4 catalogue of 1908-9), and eight credits in mechanics and spherical astronomy.

SCHEME OF ELECTIVES

The following courses given outside the College of Liberal Arts may be counted toward a bachelor of arts degree. However, not more than twelve such credits altogether shall be counted toward this degree.

SCHOOL OF LAW

Elementary law }
Contracts } Total amount allowed, six credits,
Constitutional law }

Provided, such courses may be elected by juniors and seniors only.

Provided, further, that such law courses may not be counted for both the A. B. and LL. B. degrees. If counted for the A. B. degree, an equivalent number of additional liberal arts credits shall be required for the LL. B. degree.

Provided, further, that such law courses may not be counted in the liberal arts requirements for the LL. B. degree.

SCHOOL OF PHARMACY

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

SCHOOL OF ENGINEERING

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

{ Provided, that when either of these courses is offered in the }
{ College of Liberal Arts, credits for the corresponding course in }
{ the School of Engineering shall cease to apply. }

SCHOOL OF MINES

General metallurgy—four credits.

MUSIC

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

SCIENTIFIC COURSE PREPARATORY TO MEDICAL COURSE

Students who wish to specialize in the sciences, with a view of studying medicine after graduation, must offer two years of Latin as an entrance requirement. For such students the following course leading to the B. S. degree is offered:

<i>Freshman.</i>		<i>Sophomore.</i>	
English	4	English literature.....	8
Mathematics.....	4	German or French.....	8
Chemistry.....	8	Organic chemistry	8
German or French.....	8	Zoology.....	8
Botany.....	8	Physical training.....	2
Physical training.....	2		
<i>Junior.</i>		<i>Senior.</i>	
Physiology.....	8	Psychology.....	8
Physics	8	Political economy.....	4
Comparative anatomy.....	8	Elective	20
Bacteriology.....	8		

NOTE—Electives should be histology, physiological chemistry, pharmacy, materia medica, toxicology or bacteriological hygiene.

DEPARTMENTS OF INSTRUCTION

ASTRONOMY

ROBERT EDOUARD MORITZ, *Professor*;JAMES EDWARD GOULD, *Assistant Professor*.

The work of the department of astronomy is planned for three classes of students:

1. For those who desire some knowledge of astronomy as a part of a liberal education.
2. For engineers and others who need some knowledge of astronomy as a part of their technical training.
3. For those who wish to pursue the subject more intensively than either of the other classes.

1, 2. GENERAL ASTRONOMY. *Two hours.* M., W., 11. Lectures and recitations. A study of the fundamental facts, principles, and laws of the planetary and stellar universe. The six-inch telescope in the observatory will be used for illustrative purposes. May be taken either in the freshman or sophomore year, preferably in the latter. This course combined with 1a and 2a may be chosen as the required science in the College of Liberal Arts. Courses 1, 2, 1a and 2a are recommended to be taken together.

Assistant Professor GOULD.

1a, 2a. GENERAL ASTRONOMY. *Two hours.* Laboratory and observation, T. 1-4 and clear evenings. A study of the sun's diurnal path, the path of the moon and planets, constellations, time, the celestial sphere, the almanac and American Ephemeris, use of telescope, spectroscope, sextant, etc. Prerequisite (after 1909-10) mathematics 1. Must be accompanied by 1 and 2.

Assistant Professor GOULD.

3, 4. ENGINEERING ASTRONOMY. *Two hours.* M., Th., 9. Lectures and work with instruments. The elements of spherical trigonometry and its applications to the celestial sphere. A study of such fundamental facts and principles as relate to the various determinations of azimuth, latitude and time. Determination of azimuth, latitude, longitude and time, by means of the sextant and theodolite.

Assistant Professor GOULD.

5. SPHERICAL ASTRONOMY. *First semester. Two hours. M., Th., 10.* Introduction of spherical trigonometry. Co-ordinates on the celestial sphere and their transformations. The motion of the earth; precession and nutation. Eclipses and occultations. Prerequisites (after 1909-10) mathematics 1 and 2.

Assistant Professor GOULD.

6. ANALYTIC MECHANICS. *Second semester. Two hours. M., Th., 10.* Mathematical treatment of the laws of force and motion. Prerequisites (after 1909-10) mathematics 5 and 6.

Assistant Professor GOULD.

7, 8. PRACTICAL ASTRONOMY. *Two hours throughout the year. T., F., 10.* Precise determination of time, latitude, longitude and azimuth, by means of the fixed transit. Observation and computation of results. Correction to observations, parallax, refraction, aberration, etc. Theory of the instrument. Use of star catalogue. Prerequisites, astronomy 1a, 2a, 5, and mathematics 5, 6, and 11. (Not given in 1909-10.)

Assistant Professor GOULD.

9, 10. THEORETICAL ASTRONOMY. *Two hours throughout the year.* The elements of celestial mechanics. The problems of two and three bodies. Computation of cometary and planetary orbits. Variations and perturbations. Prerequisites, astronomy 1a, 2a, 5, 6, and mathematics 11. (Not given in 1909-10.)

Assistant Professor GOULD.

BOTANY

THEODORE CHRISTIAN FRYE, *Professor;*

JOHN WEINZIRL, *Assistant Professor of Bacteriology.*

The courses in botany are planned with the following things in view: (a) to give the students an opportunity to become familiar with the plants of this region; (b) to bring out the unity of structure and similarity of function in the plant kingdom as a part of a general education; (c) to prepare students for teaching or investigation; (d) to meet the requirements for students of pharmacy, forestry, and domestic science.

SUBJECTS

1, 2. ELEMENTARY BOTANY. Sec. A, M., T., W., 10-12; Sec. B, M., W., 2-5; Sec. C, T., Th., 2-5. This course is planned for those who *do not offer a year* of botany for entrance. It includes the study of a few types of the lower plants; types of ferns and

flowering plants with a view to their structure and physiology; variations in part and the reasons why; analysis of a few plants; elements of plant physiology. Students may enter the second semester. [Instructor.]

3, 4. FIELD BOTANY. W., F., 1. Laboratory, W., F., 2-4. This or 3a, 4a, is the regular course *for those who offer one year* of botany for entrance. The course is designed to familiarize the student with the plants of the region. The field and laboratory work is the collection and analysis of plants, and their mounting for herbaria. The lectures and recitations are chiefly on the distribution, uses, and products of the plants collected. This course is for those who wish to know our plants, or who expect to teach botany. The lectures of 3a, 4a, may be taken with it, making it a six-hour course. Professor FRYE.

3a, 4a. ECOLOGY. *Two hours.* T., 9; Th., 11. This, or 3, 4, is the regular course *for those who offer one year* of botany for entrance. The lectures are on the geographical distribution of plants, and the factors which determine it. The course may be taken without field work, but it is better to take the field work of 3, 4, with or before it. Professor FRYE.

5, 6. CRYPTOGAMIC BOTANY. T., Th., 1; laboratory, T., Th., 2-4. This course consist of a study of the types of plants from the lowest to the highest, with a view to tracing the evolution of the plant kingdom. The work is mainly in the algæ, fungi, and bryophytes; but the ferns and flowering plants are taken up in reference to reproduction. Prerequisites, botany 1 and 2 or their equivalent. Professor FRYE and Assistant Professor WEINZIRL.

7. GENERAL BACTERIOLOGY. *First semester.* M., W., 3; laboratory, Sec. A, M., W., 1-3; Sec. B, M., W., 4-6. The methods of growing and studying bacteria are first taken up; the structure, functions, and distribution are considered at some length; a brief review of the applications closes the course. During the second semester, medical students will take course 8; all others are advised to enter course 10. Prerequisite, a course in either botany or zoology, and a course in chemistry.

Assistant Professor WEINZIRL.

NOTE.—A student deficient in either of these subjects may be admitted, provided the deficient subject is elected at the same time.

8. **MEDICAL BACTERIOLOGY.** *Second semester.* M., W., 3; laboratory, Sec. A, M., W., 1-3; Sec. B, M., W., 4-6. Continuation of course 7. Pathological conditions, toxins, reactive products formed in the blood and immunity are considered in general. Each specific bacterial disease is then taken up in detail. An introduction to the protozoal diseases closes the course. This course is planned for students who intend to study medicine.

Assistant Professor WEINZIRL.

9. **BACTERIOLOGICAL HYGIENE AND SANITATION.** *Second semester.* T., Th., 4; laboratory, Sec. A, M., W., 1-3; Sec. B, M., W., 4-6. Continuation of course 7. The methods of transmission and conditions leading to disease, the distribution and economic importance, methods of prevention, etc., are considered.

Assistant Professor WEINZIRL.

9a. **BACTERIOLOGICAL HYGIENE.** *Second semester. Two hours.* T., Th., 4. This course is identical with course 9, except that no laboratory work and no prerequisites are required.

Assistant Professor WEINZIRL.

10. **BACTERIOLOGICAL DIAGNOSIS.** *First or second semester.* Hours to be arranged. This course is intended for students who may wish to specialize as teachers, or for public health work. One or more forenoons (Saturday may be included) must be available for work in the public laboratories in the city of Seattle. Weekly conferences. Credit in proportion to work accomplished.

Assistant Professor WEINZIRL.

11, 12. **BACTERIOLOGICAL PROBLEMS.** Laboratory, Sec. A, M., W., 1-3; Sec. B, M., W., 4-6; Secs. A and B, F., 1-3. First or second semesters, or both. A laboratory course, taking up such problems as the individual student may desire and the laboratory facilities permit. The following topics are suggested: milk supplies of cities; public water supplies; sewerage disposal; disinfection; research problems. Weekly conferences. Credit in proportion to work accomplished. Students may enter the second semester. This is the regular second year work. Students electing this course should have the equivalent of a year's work in bacteriology.

Assistant Professor WEINZEL.

13. **PHARMACY BOTANY.** *First semester.* F., 9-12. Structure of roots, stems, rhizomes, leaves, barks. Types are studied with a view to locating the elements; later the dry drugs are studied for the recognition of kinds of cells in them. [Instructor.]

14. PHARMACY BOTANY. *Second semester.* Th., F., 9-12. Variations in stems, leaves, roots, parts of flowers, seeds, fruits. Study of types of the various families of phanerograms, and the analysis of plants in the spring with a view to fixing the chief characters of the families. [Instructor.]

15. FOREST PATHOLOGY. *First semester.* T., F., 10; laboratory, T., Th., 2-4. About six weeks will be spent in studying the structure of woody stems; the remainder in the study of the diseases of plants, chiefly of trees. Professor FRYE.

16. PLANT PHYSIOLOGY. *Second semester.* T., F., 10; laboratory, T., Th., 2-4. Two recitations and four hours laboratory work. The general laws of plant activities; discussing the manner in which gases, water, and salts get into a plant; how food is formed from them; how it is digested and assimilated; and how the plant grows and moves. Prerequisite, 1 and 2.

Professor FRYE.

17, 18. FOODS. M., 8; T., 9; laboratory, F., 1-5. The microcopy of foods and food adulterants. Lectures on the processes of manufacturing food products. [Instructor.]

19, 20. ECOLOGY. Three credits per semester. Saturday only. Class meets at some stated point about 9 a. m., regardless of weather, and walks two to eight miles while collecting plants, stopping for campfire lunch at noon, returning to Seattle about four p. m. Conferences or lectures at any time during the period, on plant ecology, and on the interesting features of the plants secured. Occasional meetings at the University for mounting the plants collected and dried. The course will not be given with a class of fewer than eight persons. Professor FRYE.

21. PLANT HISTOLOGY. *Second semester.* Hours to be arranged. One recitation and six hours laboratory work. The preparation of slides for the microscope. Includes imbedding, use of the microtome and various stains, examination of tissues, methods of drawing, measurements of magnifications. (Not offered in 1909-10). Professor FRYE.

CHEMISTRY

HORACE G. BYERS, *Professor*;

HENRY KREITZER BENSON, *Associate Professor*;

IRWIN WALTER BRANDEL, *Assistant Professor*;

WILLIAM MAURICE DEHN, *Assistant Professor*;

—————, *Instructor*.

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.

1a, 2a. **ENGINEERING CHEMISTRY.** *Both semesters.* Lecture, Tu., F., 11. Laboratory sections, Tu., Th., 9-12; Tu., Th., 2-5; W., F., 2-5; M., 2-5; S., 9-12. This course is designed primarily for engineers, but is open to all students who have had a year's work in chemistry in an accredited high school. It consists of 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. The text books used are Smith's General Chemistry, Smith's Laboratory Manual and Byers and Knight's Qualitative Analysis.

Professor BYERS, Instructor and Assistants.

1, 2. **GENERAL CHEMISTRY.** *Both semesters.* Lectures, M., W., 11. Laboratory sections, Tu., Th., 9-12; Tu., Th., 2-5; W., F., 2-5. 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. Text books, Smith's College Chemistry and Laboratory Manual.

Associate Professor BENSON, Instructor and Assistants.

1b. **GENERAL CHEMISTRY.** *Second semester.* W., F., 8. Laboratory sections, W., F., 1-4. To meet the needs of students coming from high schools at the beginning of the second semester, the course 1a, 2a is repeated, beginning the second semester. 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 course, such students must elect some other four-hour course in the department of chemistry.

Assistant Professor DEHN and Assistant.

2b. GENERAL CHEMISTRY. *First semester.* Continuation of 1b of second semester. [Not given, 1909-10.]

Assistant Professor DEHN and Assistant.

1c. GENERAL CHEMISTRY. *First semester.* Tu., W., Th., F., 8. Laboratory, Tu., W., Th., F., 1-4. A course in inorganic chemistry for students of pharmacy and of domestic science. A lecture course of four hours per week and a laboratory course of twelve hours per week is provided and the subject so treated as to meet the special requirements of students in pharmacy and domestic science. Text book: Smith's College Chemistry and Laboratory Manual. This course is followed by 3c, 4c, and 5b.

Assistant Professor BRANDEL.

3, 4. ORGANIC CHEMISTRY. *Both semesters.* M., Tu., Th., 10. Laboratory, M., 1-4; Sat., 9-12. A lecture course on the chemistry of the compounds of carbon. Laboratory work on the preparation of representative compounds. Holleman's text is used in connection with the lectures. Assistant Professor BRANDEL.

3c. ORGANIC CHEMISTRY. *Second semester.* Tu., F., 8. Laboratory, Th., F., 1-4. This course is essentially a repetition, beginning the second semester, of course 3, 4. It will therefore be completed in the first semester of the following year. The course consists of two lectures and six laboratory hours per week and is especially designed to meet the needs of students of pharmacy and domestic science.

Assistant Professor BRANDEL.

4c. ORGANIC CHEMISTRY. *First semester.* This course is a continuation of 3c. (Not given in 1909-10).

Assistant Professor BRANDEL.

5. ADVANCED QUALITATIVE ANALYSIS. *First semester.* Tu, 9; Th., 11. Laboratory Tu., Th., 1-4. 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.

Professor BYERS.

5b. **ELEMENTARY QUALITATIVE ANALYSIS.** *Four hours. First semester.* M., Th., 9. Laboratory, M., W., 1-4. Chemistry 1, 2, is followed by a course in qualitative analysis. The course consists of two lectures and six laboratory hours per week. Text book: Byers and Knight. Assistant Professor DEHN.

5b. **ELEMENTARY QUALITATIVE ANALYSIS.** *Second semester. Four hours.* W., F., 8. Laboratory, Tu., W., 1-4. This course is a repetition of 5b of first semester, for pharmacy students.

Assistant Professor BRANDEL.

6. **QUANTITATIVE ANALYSIS.** *Both semesters.* Th., 11. Laboratory, first semester, W., Th., F., 1-4; second semester, Tu., W., Th., 1-4. Gravimetric and volumetric analysis. Olsen's Quantitative Analysis. Twelve laboratory hours and one recitation per week.

Assistant Professor DEHN.

7. **INDUSTRIAL CHEMISTRY.** *First semester.* M., W., 9. Laboratory, Tu., Th., 1-4. Two lectures and two laboratory periods. Prerequisites, chemistry 2a, or 5b. Lectures deal with the preparation of compounds of industrial importance, and with the principles underlying various industrial processes; such as fractional distillation, fractional crystallization, solid solutions, colloidal solutions, catalysis, and hydrolysis. Laboratory work consists of the preparation of technical compounds and the testing of them, to comply with prescribed specifications.

Associate Professor BENSON.

8. **INDUSTRIAL CHEMISTRY.** *Second semester.* M., W., F., 9. Laboratory, M., W., F., 1-4. A course designed primarily for engineering students. It takes up subjects of importance along engineering lines and discusses them with respect to manufacture and applications. About one-half of the time is spent in a discussion of the manufacture and applications of iron and steel. This treatment will be supplemented by lantern slide illustrations, trips to industrial plants, and by numerous drawings and samples. Each student will be expected to prepare a paper on some assigned subject.

Associate Professor BENSON.

9. **PHYSICAL CHEMISTRY.** *First semester.* M., 8; Th., 11. Laboratory, Tu., Th., 1-4. An elementary course consisting of lectures upon fundamental principles of chemistry, based upon physical measurements. The laboratory work consists of determi-

nations of molecular weights by the various methods, construction of solubility curves, specific gravity, and conductivity measurements, etc. Prerequisites, 6, and college physics.

Associate Professor BENSON.

10. ELECTRO CHEMISTRY. *Second semester.* M., 8; Th., 11. Laboratory, Tu., Th., 1-4. 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. Prerequisites, 8 and college physics.

Professor BYERS.

11. INORGANIC PREPARATIONS. *Second semester.* Hours to be arranged. Methods of preparation of important inorganic compounds. Designed to illustrate special chemical principles. Twelve laboratory hours per week. Prerequisite, 6.

Professor BYERS.

12, 13. SPECIAL METHODS. Hours to be arranged. Analysis of water, gas, etc. This course is essentially an advanced course in quantitative analysis, and it will take up subjects in addition to those indicated according to the line of work which the student hopes to pursue later. This course is open only to advanced students of the department, and will be given by the member of the staff most interested in the special subjects chosen. The work of the first semester will be essentially the same for all students.

Professor BYERS.

14, 15. ADVANCED ORGANIC CHEMISTRY. W., F., 9 A special study of the chemistry of dyestuffs will be made the first semester. The second semester will be devoted to the study of the chemistry of alkaloids or of sugars. Special laboratory work may be arranged. Prerequisites, 4 and 6.

Assistant Professor BRANDEL.

16. INVESTIGATION. Any student who has completed at least three years' work in chemistry may, if he desires, 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 a master's degree.

17. **PROSPECTORS' COURSE.** Time to be arranged. To meet the demand, a special course in chemistry will be given to miners who may enter January 1, and will continue to April 1. It will not require any previous knowledge of chemistry, and will be merged into a course of qualitative analysis. The text-book required is Brownlee.

Associate Professor BENSON.

18. **CHEMICAL CLUB.** A journal club consisting of members of the teaching force and of advanced students in the department meets every Thursday evening to discuss current events, and to listen to prepared papers on topics of special interest.

19. **PHOTO—CHEMISTRY.** *Second semester.* Hours to be arranged. A study of the effect of light on various chemicals and chemical reactions, with special reference to the chemistry of photography. The laboratory work consists of the chemical study of photographic developing, fixing, printing, toning, etc. Prerequisite, 2.

Assistant Professor BRANDEL.

DOMESTIC SCIENCE.

At the time of the publication of this bulletin, a director for the work in domestic science has not been chosen. For this reason a detailed statement of the courses to be offered will not be given. Prospective students may feel assured, however, that standard courses will be given.

For students who wish to specialize in domestic science with a view to teaching the subject in the high school, the University has established a four-year course leading to the degree of B. S. in domestic science, only the first two years of which will be given in 1909-10.

Students entering the University for the purpose of taking the course in domestic science must offer for entrance the requirements for admission to any group of the Liberal Arts College, or a certificate of graduation from an accredited high school course in domestic science.

EDUCATION

EDWARD OCTAVIUS SISSON, *Professor;*

HERBERT GALEN LULL, *Associate Professor;*

FRANK B. COOPER, *Superintendent of Seattle Public Schools,*
Special Lecturer;

_____, *Instructor.*

The department of education offers its work both to students who are preparing to teach and to others who desire to be acquainted with the main facts and principles of education as a social process in which all intelligent persons are concerned.

Students are not regularly admitted to the department before the junior year. A knowledge of elementary psychology is prerequisite to all courses, except course A. Philosophy 1a is recommended in fulfillment of this requirement. Some knowledge of ethics, sociology, and zoology is very desirable, and is required of students doing major work in education.

NORMAL DIPLOMAS

For information concerning the normal diplomas of the University, which are valid in all public schools of the state, see Teachers' Certificates, page 89.

SUBJECTS

1. PRINCIPLES OF EDUCATION. *First semester, 9.* Chief topics: the nature and development of the child as the basis for the methods and processes of education; ideals of individual and social character as determining the aim of education; physical, intellectual and moral training; the special task and methods of the school and the teacher, as compared with other agencies such as the home, the calling, the church, social intercourse; the branches of study, their values and method; discipline, organization, and administration. Professor Sisson.

2. HISTORY OF EDUCATION. *First semester, 11.* This course is offered in the belief that a serious study of the history of education is necessary to a perspective view and a true understanding of modern educational agencies and forces. Owing to the shortness of the time in which this course must be presented and to the relative importance of the various periods of education for the teacher, the history of modern education beginning with Comenius will be emphasized. Prerequisite, mediæval history.

Associate Professor LULL.

2. Repeated. *Second semester, 9.* [Instructor.]

3, 4. **OBSERVATION AND TEACHING.** *Two hours.* Afternoons of Wednesday and one other day. This course includes the systematic observation and study of school work in both elementary grades and high school. Later the students are assigned to do actual teaching in the various schools. The course is planned for those who have not had experience in teaching.

Associate Professor LULL and Instructor.

6. **THE HIGH SCHOOL.** *Second semester, 11.* Outline of historical development; aim and function in school system; peculiar characteristics of high school age, early adolescence; the course of study; election and prescription; discipline; student activities; social life; training for vocation and leadership; a study of typical high schools; organization and administration. The course will include some visiting of high schools in the vicinity.

Professor Sisson and Instructor.

7, 8. **EDUCATIONAL PSYCHOLOGY.** *Two hours.* T., 9; Th., 11. In this course those psychological elements which have direct application to teaching problems will be studied. The following topics indicate in a general way the character of the course: Instincts and capacities of the child, apperception, interests, responses of conduct, responses of feeling, motor education. Prerequisite, an amount of general psychology equivalent to that included in philosophy 1a.

NOTE.—This course is not in any sense a duplication of any course offered by the department of philosophy.

Associate Professor LULL and Instructor.

10. **SCHOOL ADMINISTRATION.** *Second semester. One hour.* W., 4-5. Practical consideration of the management of town and city school systems. Some of the topics treated will be: The motive of school administration; organization and its agency; conditioning elements in management; the superintendent and his relations; the principal and his functions; the individual and the system; the determination and promotion of teaching efficiency; the generation of confidence and support; the reduction of friction and waste; and community forces in relation to the school. Open to advanced students, especially those who have had teaching experience.

Superintendent COOPER.

11, 12. JOURNAL CLUB. *Two hours.* Fri., 2-4. The work consists of reports and discussions based on the reading of current educational magazines. The aim of this course is to familiarize the student with educational problems of the present.

[Instructor.]

13. COMPARATIVE STUDY OF SCHOOL SYSTEMS. Time and credit to be arranged. Attention is given mainly to the United States, Canada, Germany, England, France; students are encouraged to study some limited field intensively. Emphasis is placed upon secondary schools. Prerequisite, four hours in education.

Professor Sisson.

14. SOCIAL ASPECT OF EDUCATION. *Two hours. Second semester.* Tu., 2-4. The essentially social nature of the human being; education a process of socialization; the agencies of education socially viewed: family, school, church, community, calling, state; the peculiar relation of the state to education; social elements in the curriculum and in the school; society's concern and activity in the school. Prerequisites, four hours in education.

Professor Sisson.

15, 16. EDUCATIONAL CLASSICS. M., Th., 10. The work of this course consists of a comparative study of the doctrines of eminent educational thinkers, ancient and modern. Among those to be studied are the following: Plato, Aristotle, Rabelais, Milton, Montaigne, Comenius, Locke, Rousseau, Pestalozzi, Herbart, Froebel, Spencer.

[Instructor.]

17. THE ELEMENTARY SCHOOL. *Two hours.* M., 2-4. This course is designed for students preparing to teach in the elementary grades and, also, for those preparing for superintendencies and principalships of elementary schools. Chief topics for study and discussion: Elementary school curricula; grading and promotion; discipline; methods of instruction; supervision of instruction; group activities; play-grounds.

Associate Professor Lull.

20. EDUCATIONAL SEMINARY. Th., 7-9. P. M. The work of the seminary in 1909-10 will deal with the problem of moral training in the school. The department has for some time been collecting material on this subject, including reports of investigations, descriptions of European systems of moral and religious in-

struction, discussions by eminent authorities, and various papers. For senior and graduate students who have had at least four hours in education. Professor Sisson.

Education A. THE CITIZEN AND EDUCATION. *Second semester.* Tu., 2. *Primarily for students who do not intend to teach; open to all students.* Education and national welfare: the private citizen and education: the genius of American education; educational agencies: family, school, church, social intercourse, the press, the calling, amusement and recreation: home training; the school: teachers, studies, control and support, progress; education of the tastes and the will. Lectures, discussions, reading. Professor Sisson.

ENGLISH LANGUAGE AND LITERATURE

FREDERICK MORGAN PADEL FORD, *Professor;*

ALLEN ROGERS BENHAM, *Assistant Professor;*

VERNON LOUIS PARRINGTON, *Assistant Professor;*

IDA KATHERINE GREENLEE, *Instructor;*

WILLIAM THEODORE DARBY, *Instructor.*

SUBJECTS

X 1, 2. HISTORY OF ENGLISH LITERATURE. Sections at 8, 9, 10, 11, 1, 2. Portions of Spencer, Shakespeare, Milton, Addison, Pope, Gray, Burns, Cowper, Wordsworth, Lamb, Carlyle, Ruskin, Arnold, Newman, and Stevenson are read and discussed. The study of literature is accompanied with practice in English composition.

Professor PADEL FORD, Assistant Professors BENHAM, PARRINGTON, Mr. DARBY, and Instructor.

NOTE.—One play will be given annually in connection with this course, to which all members of the course will be eligible.

3. THE GEORGIAN POETS. *First semester,* 9. A critical study of the nature and romantic movements, as illustrated in the poetry of Keats, Byron, Shelley, and Wordsworth. Prerequisite, 2. Professor PADEL FORD.

4. THE VICTORIAN POETS. *Second semester,* 9. The first half of the semester is devoted to Browning, the second half to the pre-Raphaelite movement, quite as much attention being given to the painting as to the poetry. Prerequisite, 2.

Professor PADEL FORD.

5, 6. PRINCIPLES OF LITERARY CRITICISM. Hours to be arranged. An inductive course, designed to furnish sound principles for literary criticism. Literature of a wide range is discussed, and the relation of literature to the other arts defined. A strictly graduate course. Professor PADEL FORD.

7. MEDIEVAL CHRONICLES AND TALES. *First Semester.* An attempt to discover what literary material the Germans had when they first appear in history; and the changes in, and additions to this, down to about 1500. Study of Beowulf and The Song of Roland, of the legends of Charlemagne and Siegfried (in translation). Prerequisites, rhetoric 2, and English literature 2. (Omitted, 1909-10).

8. MEDIEVAL CHRONICLES AND TALES. *Second semester.* The studies of 7 are continued, but the material used is the Arthurian legend (as seen in Goeffrey of Monmouth, the *Mabinogion* and Mallory's *Morte d'Arthur*) and the English ballads. (Omitted 1909-10).

9, 10. COLLEGE ENTRANCE REQUIREMENTS. Sec. A, 9; Sec. B, 2. A normal course designed especially for those advanced students who wish to prepare to teach English in the high school. The history of English teaching is reviewed, problems in the teaching of English are discussed, the entrance requirements are critically studied, bibliographies for high school libraries are prepared, and a large number of editions of the required classics are examined. Prerequisites, 1, 2. Miss GREENLEE.

11, 12. OLD AND MIDDLE ENGLISH. Sec. A, 9; Sec. B, 1. During the first semester the Old English language and literature are studied. Reading is begun at the earliest practicable moment, and the study is made as literary in character as is consistent with a thorough grounding in the rudiments of the language. Some time is given to considering the early English civilization. During the second semester, Middle English texts are read. Prerequisites, two courses in literature. Required of all students majoring in the department.

Assistant Professor BENHAM and Instructor.

13. CHAUCER AND HIS CONTEMPORARIES. *First semester,* 11. Readings in Chaucer, Langland, Gower, and the *Pearl*. 12 suggested as prerequisite. Assistant Professor BENHAM.

14. ENGLISH LITERATURE FROM CHAUCER TO ELIZABETH. *Second semester*, 11. Readings in Mallory's *Morte d'Arthur*, the *Bal-lads*, and Skeat's *Specimens of English Literature 1398-1597*. Pre-requisite, 13.
Assistant Professor BENHAM.

15, 16. Identical with rhetoric 5, 6.

17, 18. Identical with rhetoric 7, 8.

19, 20. WORLD'S GREAT CLASSICS. (Men) 10. A study of some of the world's masterpieces, such as *The Odyssey*, *The Di-vine Comedy*, *Faust*, etc. This course is open only to men. Pre-requisite, 2.
Professor PADELFOORD.

21. EARLY ENGLISH LITERATURE. *Two hours. Second sem-ester*. Hours to be arranged. A wider study of texts than is afforded by course 11, which is prerequisite.

Assistant Professor BENHAM.

22, 23. THE DEVELOPMENT OF THE ENGLISH DRAMA. 10. A his-torical review of the English drama, from the mystery play to modern times, is given in lectures. Representative plays of the different periods are read and discussed. (Not given in 1909-10).

Mr. DARBY.

24, 25. SHAKESPEARE. 10. A study of all the plays.

Mr. DARBY.

26. AMERICAN LITERATURE. *First semester*, 11. A study of the literary production of America from the settlement of the colonies to the rise of the New England school, emphasis being laid upon the revolutionary writers, upon the beginnings of nine-teenth century letters, and upon the Knickerbocker school. Lec-tures, reports from assigned readings, and a thesis.

Assistant Professor PARRINGTON.

27. AMERICAN LITERATURE. *Second semester*, 11. A study of the New England and Southern schools, and of later movements in American letters, special consideration being given to the relation between contemporary English and American literary development. Lectures, reports from assigned reading, and a thesis.

Assistant Professor PARRINGTON.

Courses 26 and 27 are open only to those who have had courses 1 and 2 or the equivalents. Candidates must secure the consent of the instructor before they may enroll in either course.

FRENCH

PIERRE JOSEPH FREIN, *Professor*;

OTTO PATZER, *Assistant Professor*;

STANLEY SMITH, *Instructor*;

WALTER BELL WHITTLESEY and EDITH SIDONIE MICHELSON,
Graduate Assistants.

The first year of work in this department is devoted to a thorough study of grammatical forms. The French texts read are made the basis for a practical application of the rules of grammar, and are also used for drill in pronunciation. The training in phonetics is begun early in the course, and it is accompanied by the use of a text book.

The work of the second year is divided into two parts: one half of the time is devoted to modern syntax, and the other half to the translation into English of some of the best literary works of the nineteenth century. Towards the middle of the second semester, the recitations are conducted as far as practicable in French.

In the third year a course in conversation is given along with composition; the subject of the composition is made the basis for conversation, each being given on alternate days.

The courses are so arranged that students may pursue the study of French consecutively, whether they enter at the beginning of the first or the second semester. Provision is thus made for students who have had any number of semesters of French in the high school.

SUBJECTS

1, 2. **ELEMENTARY.** Sections at 8, 9, 10, 11, 2. Fraser and Squair's French Grammar, part I; Daudet, *La Belle Nivernaise*; Labiche et Martin, *Voyage de M. Perrichon*; Merimee, *Colomba*. Emphasis is laid upon the acquirement of a correct pronunciation, and a systematic drill in composition is given. No credit is offered for entrance.

Assistant Professor PATZER, Mr. SMITH, Mr. WHITTLESEY, Assistant.

1a. *Second semester*, 8. Repetition of course 1, intended primarily for those who enter the University at the beginning of the second semester, but open to all. Provision is made for an uninterrupted course of two or more years for those desiring it.

Mr. WHITTLESEY.

2a, 3a. Continuation of 1a. 1. Beginning in September and continuing throughout the year. Open to those who have had only one semester of French in the University, and to those who have had one year of French in the high school. Those who have studied French one year in the University or three semesters in the high school may enter the class at the beginning of the second semester.

Mr. WHITTLESEY.

4a. Continuation of 3a. *First semester.* 8. This course completes two full years of French. Those wishing to continue the work may enter courses 6 and 8.

Mr. WHITTLESEY.

3, 4. NINETEENTH CENTURY READING AND SYNTAX. Sections at 8, 10, 1. Two hours per week are devoted to the syntax of the present day, and two hours per week are spent in translating masterpieces of the literature of the entire century. The work in syntax is based upon Fraser and Squair's French Grammar, part II. The texts read in 1908-9 were About, *Le Roi des Montagnes*; Loti, *Pecheur d'Islande*; Hugo, *Hernani*; Daudet, *Tartarin de Tarascon*; Rostand, *Cyrano de Bergerac*. No credit if offered for entrance. Prerequisite, 2 or 2a.

Assistant Professor PATZER and Mr. SMITH.

5; 6. COMPOSITION AND CONVERSATION. 9. The exercises for composition will be founded upon the customs and manners, history, geography, literature and industries of France. Conversation, two days per week but only one credit, will be centered upon the composition exercise of the previous day. Composition (M. and W.) may be taken without the conversation (Tu. and Th.) but it is not advisable to take the conversation without also taking the composition. Prerequisite, 4 or an equivalent.

Assistant Professor PATZER.

7, 8. CLASSICAL FRENCH. Section A, three hours per week of reading and one hour of composition. M., W., Th., 9. (Course 9, 10 is a one-hour course, planned to be added to 7, 8 so as to make a four-hour course of third-year French.) Mr. SMITH.

Section B, four hours of translation. 10. The student is given a general knowledge of the literature of the entire classical period, but the reading is selected from the works of only a few of the most noted writers. The texts to be read are: Corneille, *LeCid*, Horace, *Polyeucte*; Moliere, *Le Bourgeois*, *Gentilhomme*, *Les Precieuses Ridicules*, *Le Tartuffe*; Racine, *Andromaque*,

Athalie; Boileau, L'Art Poétique; La Fontaine, Fables. Prerequisite, 4 or an equivalent. Assistant Professor PATZER.

9, 10. ADVANCED PROSE COMPOSITION. *One hour.* T., 9. Systematic review of French syntax, and the translation into idiomatic French of moderately difficult English prose. Themes. Prerequisite, 4 or an equivalent. Mr. SMITH.

11. THE FRENCH DRAMA. *First semester.* The aim of this course is two-fold: to acquaint the student with the best French dramatic literature since the Pleiade, and to furnish an admirable medium for French conversation in the class room. This course may be taken in the same year with course 7, 8, but it may not precede it. Professor FREIN.

(Given in alternate years with course 13; it will not be given in 1909-10).

12. HISTORY OF THE FRENCH LITERATURE OF THE NINETEENTH CENTURY. *Second semester.* Lectures in French; assigned reading of some of the works of each important author, with copious notes to be submitted for inspection; special topics assigned to each student for careful study, and report to the class. Prerequisite, 8. Professor FREIN.

(Given in alternate years with course 14; it will not be given in 1909-10).

13. LYRIC POETRY. *First semester,* 11. An introduction to French versification, structure of the verse, hiatus, rhyme; variations in the stanzas, and in the forms of the lyric poems. Short history of French lyric poetry. Special attention is given to the lyrics of the Romantic period. Canfield's French Lyrics is used to give the student a knowledge of the important writers of the French lyric, but the poems of Lamartine, De Musset and Hugo are studied from more complete editions of their works. Prerequisite, 4 or an equivalent. Professor FREIN.

(Given in alternate years with course 11; it will be given in 1909-10).

14. HISTORY OF FRENCH LITERATURE FROM THE RENAISSANCE TO THE ROMANTIC MOVEMENT. *Second semester,* 11. Lectures in French, and assigned reading from the important authors. Prerequisite, 8. Professor FREIN.

(Given in alternate years with course 12; it will be given in 1909-10).

15. TEACHERS' COURSE. *Second semester. Two hours. W., F.,*

1. Study of phonetics, and review of grammar from the teacher's standpoint. Discussion of books, magazines, and courses of study.
Professor FREIN.

16, 17. OLD FRENCH READING. 10. Elements of Old French grammar, and translation of Old French texts from Bartsch, *Chrestomathie de l'Ancien Français*. Open only to advanced students.
Professor FREIN.

18, 19. HISTORY OF OLD FRENCH LITERATURE. 2. This course is open to advanced students, even to those who have not read any Old French texts. It is intended to furnish an opportunity to become acquainted with the very rich literature written in France previous to the Renaissance. The course will be given in French.
Professor FREIN.

GEOLOGY

HENRY LANDES, *Professor*;

GEORGE NELSON SALISBURY, *Lecturer in Meteorology*;

CHARLES EDWIN WEAVER, *Instructor*.

In this department about one-half of the subjects offered might be styled general subjects, and are such as may be taken by any one as a part of a liberal education. The remaining subjects are more technical and are designed for those who wish to engage in geological work as a profession. The method of instruction is in the main by lectures, laboratory exercises, and field work, and in every course a certain amount of reading is required. Lantern slides, photographs, maps, models, etc., are used extensively in a majority of the subjects as important means of illustration. In the laboratories for mineralogy and petrography, there are good collections of minerals and rocks, with several petrographical microscopes and lathes for cutting and grinding rock sections. The country contiguous to the University is an inviting region for field work; while the University library has in it all of the government publications pertaining to the work of the department, besides much of the general literature on geology.

SUBJECTS

1, 2. GENERAL GEOLOGY. Section A, M., W., F., 9; section B, M., W., F., 11; section C, M., W., F., 2. Laboratory, T., Th., 2-5, or T., Th., forenoon. A year's course treating of the principal

facts and general principles of the science. Lectures and recitations. Occasional field trips on Saturday. [Instructor.]

1a. GENERAL GEOLOGY. *First semester.* M., 8; Tu., 9; Th., 11, and laboratory on Friday, 2-6. A semester's course for engineering students. Lectures and recitations. Professor LANDES.

3. METEOROLOGY. *First semester.* Tu., Th., F., 10. Laboratory to be arranged, afternoon. A general consideration of the atmosphere; winds and storms; the causes and distribution of rainfall; weather; climate; etc.

Professor LANDES and Mr. SALISBURY.

4. PHYSIOGRAPHY. *Second semester.* Tu., Th., F., 8; one laboratory period, time to be arranged. This course includes a study of the surface features of the earth, considered in the light of their origin and history; lectures upon the ocean, dealing with its composition, temperature, waves, currents, tides, life, etc.; instruction and practice in making relief maps.

Professor LANDES.

5. MINERALOGY. *First semester.* W., F., 8. Two laboratory periods, M., W., 1-4. Descriptive and determinative mineralogy. Practice in the determination of unlabeled minerals by means of their physical properties and by blowpipe analysis.

Dr. WEAVER.

6. OPTICAL CRYSTALLOGRAPHY. *Second semester.* W., F., 8. Two laboratory periods, M., W., 1-4. Chemical and optical properties of crystallized matter. Demonstrations of the different methods of investigation of the rock forming minerals in thin sections under the microscope. Use of the polarizing microscope and preparation of thin sections.

Dr. WEAVER.

7. GLACIAL GEOLOGY. *First semester. Two hours.* W., F., 8. Lectures, required reading, and discussions upon the characteristics of glaciers, and the geological work that they accomplish. Excursions to the glaciers of Mount Rainier, and field examinations of the glaciated regions about Puget sound. Prerequisite, some knowledge of general geology.

Professor LANDES.

8. VULCANISM AND METAMORPHISM. *First semester.* T., Th., 8. A discussion of the theories concerning volcanoes and volcanic phenomena. The general principles of metamorphism; the

behavior of rocks under fracture and flowage with the resulting petrographical changes in them. Prerequisite, some knowledge of general geology.

Dr. WEAVER.

9. **PETROGRAPHY.** *First semester.* M., W., F., 11. Laboratory Th., 1-4. Principles and methods of investigation of rock forming substances. A study of the distinguishing characteristics of the different groups and species of rocks with practice in their determination by modern petrographical methods. Preparation of thin sections.

Dr. WEAVER.

10. **ECONOMIC GEOLOGY.** *Second semester.* 10. A study of the origin and extent of metalliferous veins and ore deposits; varieties of coal, extent and locations of coal fields; gas and oil; origin, occurrences, and uses of clays; buildings and ornamental stones; minor mineral products of use in the arts and of commercial importance. Prerequisites, 1, 2 and 5. Professor LANDES.

11, 12. **PALAEONTOLOGY.** M., Tu., Th., 10. One laboratory period, M., 1-4. The general principles of the study of fossil organisms, with their geologic and geographic distribution. A laboratory study of the most important forms of fossil invertebrates. Excursions in the field in the vicinity of Puget sound.

Dr. WEAVER.

13. **CONTINENTAL EVOLUTION.** *First semester.* T., Th., 11. A study of the geological history of sedimentation, volcanic activity, the major earth movements, and geographic changes in the development of the North American continent. Prerequisite, some knowledge of general geology.

Dr. WEAVER.

14. **GEOLOGY AND GEOGRAPHY OF WASHINGTON.** *Second semester. Two hours.* M., 8; T., 9. Lectures and discussions concerning the general geology and principal features of the geography of the state, with particular reference to the things of economic importance. Prerequisite, some knowledge of general geology.

Professor LANDES.

15, 16. **FIELD WORK.** Time to be arranged. Instruction and practice in methods of field observation and in interpretation of results. A study of the geological conditions in the vicinity of Puget sound with occasional more extended excursions.

Professor LANDES and Dr. WEAVER.

17, 18. **RESEARCH.** Credit and hours to be arranged. Investigation of special problems in geology. To be taken by permission.
Professor LANDES and Dr. WEAVER.

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 forestry. Professor LANDES.

B. **PROSPECTORS' 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. Dr. WEAVER.

GERMAN

FREDERICK WILLIAM MEISNEST, *Professor*;
OTTILIE GERTRUDE BOETZKES,* *Assistant Professor*;
PAUL E. WEITHAASE, *Acting Assistant Professor*;
JOEL MARCUS JOHANSON and HANS J. HOFF, *Instructors*;
CARL HENNINGER and MARTIN STEINKE, *Graduate Assistants*.

Students who have not studied German before entering the University will ordinarily not find it advantageous to choose German as their major study. Those taking courses 3 and 4 in their freshman year should devote at least four hours each semester during the remaining three years to the study of German if they choose German as their major study. Courses 13 and 14, 19 and 20, should be taken by all students who desire to teach German, either as a major or minor subject.

1, 2. **FIRST YEAR.** Sections at 8, 9, 10, 2. Pronunciation, grammar and easy readings with practice in speaking and writing. For beginners.

Assistant Professors BOETZKES and WEITHAASE and Mr. HENNINGER.

1a. **FIRST YEAR.** *Second semester*, 8. Course 1 repeated.
Mr. STEINKE.

2a, 3a. **ADVANCED FIRST YEAR**, 1. For students who have had course 1a, or one year in the high school. Mr. HENNINGER.

* Absent on leave 1908-9.

3, 4. SECOND YEAR. Sections at 8, 9, 10, 11, 1, 2. Modern prose, narrative and dramatic, and at least one drama by Schiller or Lessing. Review of grammar, elementary syntax and composition. For students who have had courses 1, 2, or two years of high school German.

Assistant Professors BOETZKES and WEITHAASE, Dr. HOFF and Mr. JOHANSON.

4a, 5a. ADVANCED SECOND YEAR, 8. Modern prose and dramas. For students who have had 3a, or three years in the high school.
Mr. JOHANSON.

5. SCHILLER. *First semester.* Sections at 9, 10, 1. Introductory study of his life and selected works. Wallenstein and Die Braut von Messina. Open to students who have had four years of high school German.

Assistant Professors BOETZKES and WEITHAASE, and Dr. HOFF.

6. GOETHE. *Second semester.* Sections at 9, 10, 1. Introductory study of his life and selected works. Egmont, Hermann und Dorothea, Iphigenie and Goetz von Berlichingen.

Assistant Professors BOETZKES and WEITHAASE and Dr. HOFF.

7, 8. MODERN GERMAN DRAMAS. *Two hours.* M., Th., 1. Selections from Grillparzer, Hebbel, Sudermann and Hauptmann. A rapid reading course.
Mr. JOHANSON.

9, 10. MODERN GERMAN NOVELS. *Two hours.* Selections from Freytag, Scheffel, Hauff, Ludwig and Sudermann. A rapid reading course. (Omitted in 1909-10).
Mr. JOHANSON.

11, 12. SCIENTIFIC GERMAN. *Two hours.* T. 9, Th. 11. A rapid reading course for students specializing in the general sciences.
Mr. JOHANSON.

13, 14. GERMAN CONVERSATION, COMPOSITION AND SYNTAX, 11.
Dr. HOFF.

FOR UNDERGRADUATES AND GRADUATES

15. GERMAN LYRICS AND BALLADS. *First semester,* 10. Reading and interpretation of the best and most characteristic German lyrics and ballads of Goethe, Schiller, Heine, Uhland, Geibel, and others.
Professor MEISNEST.

16. HISTORY OF GERMAN LITERATURE. *Second semester, 10.* Selected readings, reports and lectures. A general survey for students specializing in German. Professor MEISNEST.

17. LESSING. *First semester, 11.* Introductory study of his life and selected works. Emilia Galotti, Nathan der Weise and Hamburgische Dramaturgie or Laokoon. Professor MEISNEST.

18. GOETHE'S FAUST. *Second semester, 11.* Reading, interpretation and discussion of parts I and II, with collateral reading in Faust literature. Professor MEISNEST.

19, 20. TEACHER'S COURSE. *Two hours.* T. 9, Th. 11. First semester: elementary phonetics, practice in pronunciation. Second semester: review of grammar from the standpoint of the teacher, critical study of the methods of teaching German, discussion of text-books and course of study for high schools, and observation. Professor MEISNEST.

FOR GRADUATES

21, 22. STORM AND STRESS PERIOD. *Two hours.* Assigned readings, reports and lectures. (Omitted in 1909-10). Professor MEISNEST.

23, 24. ROMANTIC SCHOOL. *Two hours.* M., Th., 9. Assigned readings, reports and lectures. Professor MEISNEST.

25, 26. MIDDLE HIGH GERMAN. *Two hours.* Grammar and selected readings. Nibelungenlied, Kudrun, Walther von der Vogelweide. (Omitted in 1909-10). Dr. HOFF.

27. OLD HIGH GERMAN. *First semester. Two hours.* W., F., 9. Grammar and selected readings. Dr. HOFF.

28. GOTHIC. *Second semester. Two hours.* W., F., 9. Grammar and selected readings. Dr. HOFF.

GREEK

ARTHUR SEWALL HAGGETT, *Professor*;HARVEY BRUCE DENSMORE, *Instructor*.

The general plan of the courses is as follows: courses 1 and 2 are intended for those who do not present Greek for entrance, and are preparatory to the others. In these courses special attention will be paid to the mastery of the fundamental forms and constructions of the language, and to the acquisition of a vocabulary sufficient for fairly easy and rapid translation. *All students, however, who wish to enter the classical group of studies are strongly urged to present the regular three years of preparatory Greek for entrance, whenever it is possible.*

In the remaining courses more attention will be paid to the reading of Greek as literature, and to the life and thought of the Greeks.

1. **ELEMENTARY GREEK.** *First semester.* Section A (men), 9; section B 10, for beginners. No credit allowed if offered for entrance. This course will not count toward a minor in the classical group. Professor HAGGETT and Mr. DENSMORE.

2. **XENOPHON.** *Second semester.* Section A (men), 9; section B, 10. Xenophon's *Anabasis*, with exercises in writing Greek. No credit allowed if offered for entrance. This course will not count toward a minor in the classical group. Prerequisite, 1.

Professor HAGGETT and Mr. DENSMORE.

3. **HOMER AND LYRIC POETRY.** *First semester,* 9. Selections from Homer's *Odyssey*; followed by selections from the elegaic, iambic, and melic poets. Prerequisite, 2. Professor HAGGETT.

4. **LYRIC POETRY AND HERODOTUS.** *Second semester,* 9. Continuation of the reading of the lyric poets; followed by selections from Herodotus. Prerequisite, 3. Professor HAGGETT.

5. **DRAMATIC POETRY.** *First semester,* 1. One play of Euripides and one of Sophocles, with study of the history of the Greek drama and the Greek theatre. Prerequisite, 4.

Professor HAGGETT.

6. **DRAMATIC POETRY.** *Second semester,* 1. One play of Aeschylus and one of Aristophanes. Prerequisite, 5.

Professor HAGGETT.

7. **PHILOSOPHY.** *First semester. Two hours. M., W., 11.* Plato's *Apology* and *Crito*, and selected passages from the *Phædo* and other dialogues. Elective for juniors and seniors who have finished course 6.
Professor HAGGETT.

8. **ORATORY.** *Second semester. Two hours. M., W., 11.* Selections from *Lysias* and *Demosthenes*, with study of the development of Greek oratory. Elective for juniors and seniors who have finished course 6.
Professor HAGGETT.

9. **EPIC POETRY.** *First semester. Two hours. M., W., 11.* Rapid reading of selections from *Homer* and *Hesiod*, supplemented by lectures and topical reading. This course is designed to give a comprehensive knowledge of the life and literature of the epic age. Elective for juniors and seniors who have finished course 6.
Professor HAGGETT.

10. **HISTORICAL PROSE.** *Second semester. Two hours. M., W., 11.* Selections from *Thucydides* and *Xenophon*, with study of the era of the Peloponnesian war; lectures on Greek historiography. Elective for juniors and seniors who have finished course 6.
Professor HAGGETT.

NOTE.—Courses 7-8 and 9-10 will be given in alternate years.

11. **GREEK ANTIQUITIES.** *First semester. Two hours. M., W., 2.* (1) Public and private life; (2) mythology and religion; (3) art and archæology. Primarily for classical majors and minors. Open to all students. This course is designed to be followed by Latin 11.
Mr. DENSMORE.

12. **GREEK HISTORY.** *First semester. Two hours. T., Th., 2.* The history of Greece from the earliest times to the Roman subjugation. Open to all students. This course is designed to be followed by Latin 12.
Mr. DENSMORE.

13. **GREEK LITERATURE.** *First semester. Two hours.* Lectures and readings from English translations, with assignment of selected works for special study and periodic written tests. Open to all students. A knowledge of Greek is not required.
Professor HAGGETT.

14. **GREEK LITERATURE.** *Second semester. Two hours.* Continuation of course 13.
Professor HAGGETT.

HISTORY

EDMOND STEPHEN MEANY, *Professor*;GEORGE HENRY ALDEN, *Associate Professor*;EDWARD McMAHON and WILLIAM ALFRED MORRIS, *Instructors*.

Effort is made to give the students a survey of the field of history, as broad as possible without detracting from a thoroughness of the study. With this in view, the courses are arranged in the order it is desired that the work be followed. Stress is laid upon the use of the best authorities, and upon frequent reference to historical sources, whenever available. The library is being constantly enriched in the lines of history. A special library, known as the Frederic James Grant Memorial Library of American History, has been greatly increased within the last few years. Students are also trained in methods of history, receiving practice in the collection and use of materials for local history, as well as in the preparation of theses in the broader fields.

PRELIMINARY COURSES

OPEN TO FRESHMEN

1. **MEDIEVAL HISTORY.** *First semester.* Section A, 9; section B, 1. *Second semester.* Section A, 9; section B, 1. A study of the history, civilization and principal institutions of Western Europe from the later Roman Empire to the Italian Renaissance. Text-book, lectures, prescribed and collateral reading. Once a week the class meets in small sub-sections for recitation. This course is required of all Liberal Arts students, except those who have offered for entrance a half unit on the same field, in which case the history requirement may be otherwise satisfied by direction of class adviser.

Dr. MORRIS and assistants.

2. **MODERN EUROPE.** *Both semesters,* 9. Beginning with the Renaissance, the historical development of Europe is studied from the continental point of view. Text-book lectures, and special work with source and secondary material. Prerequisite, 1.

Associate Professor ALDEN.

3, 4. **ENGLISH HISTORY,** 10. An outline of political and constitutional history will serve as a framework for the study of the economic, social, and intellectual development of the nation. In

addition to the lectures and text-book, collateral reading will be required.

Associate Professor ALDEN.

INTERMEDIATE COURSES

NOT OPEN TO FRESHMEN

5. GREECE. *Two hours. First semester.* M., W., 2. A study of the Hellenic peoples from Homer till the Roman subjugation. Not open to students who have presented a year's work in ancient history for entrance. For 1909-10 see course 11, department of Greek. Mr. DENSMORE.

6. ROME. *Two hours. Second semester.* T., Th., 2. From the foundation of the city to the fall of the Western Empire with particular attention to the development of Roman political institutions. Not open to students who have presented a year's work in ancient history for entrance. For 1909-10 see course 12, department of Latin. Mr. DENSMORE.

7, 8. HISTORY OF THE UNITED STATES, 9. A general survey with emphasis upon political history. Lectures, text-book, collateral reading and topics. Prerequisite, 2, or 3 and 4. Mr. McMAHON.

9. MAKERS OF THE NATION. *Two hours. First semester.* T., 9; Th., 11. Lectures on the lives of Washington, Franklin, Jefferson, Jackson, Clay, Webster, Lincoln, Grant, Lee, and others. Professor MEANY.

10. THE FRENCH REVOLUTION AND NAPOLEONIC ERA. *First semester*, 11. A study of the causes as seen in conditions of the old regime, the forces that produced the Revolutionary excesses and made Napoleon's career possible, and the forces that brought about his overthrow. Lectures, class discussions, and library work. Open to those who have had course 2.

Associate Professor ALDEN.

11. EUROPE SINCE 1814. *Second semester*, 11. The development of liberal political systems in European states and the course of international relations to the present time are studied as a means of understanding present political conditions in Europe. Prerequisite, 10. Associate Professor ALDEN.

12. MEDIEVAL CIVILIZATION. *Second semester.* Designed to supplement course 1 by a more special study of the intellectual

life of the feudal period, and a somewhat detailed treatment of the organization of society. Prerequisite, 1. Dr. MORRIS.

13. THE HISTORY OF FRANCE TO 1515. *Second semester*, 8. A study of the political and institutional development of France to the close of the middle ages. Students should have a reading knowledge of easy French, such as will ordinarily be gained from the second year's work. Prerequisite, 1. Dr. MORRIS.

ADVANCED COURSES

FOR JUNIORS AND SENIORS

Students must have at least one year of history to elect any course in this group.

14. THE ERA OF THE RENAISSANCE AND REFORMATION. *First semester*, 8. The central idea of the course is that of the intellectual transition from medieval to modern times. Prerequisite, 2. Dr. MORRIS.

15, 16. ENGLAND UNDER THE TUDORS AND STUARTS. *Two hours*. M., W., 2. A course dealing with constitutional and religious struggles in the sixteenth and seventeenth centuries, economic and social changes, international relations, the development of sea-power, and the founding of the British Empire. Prerequisite, 3 and 4. Associate Professor ALDEN.

17, 18. ENGLISH CONSTITUTIONAL HISTORY, 10. Beginning with the early Germans, the development of the principal legal and governmental institutions of the English people is traced through the Anglo-Saxon, Norman and Plantagenet periods. A general review is then made of English constitutional progress, from the fifteenth century to the present time. There are lectures, prescribed reading, and written reports embodying the results of individual investigation. Open to juniors or seniors who have had 3 and 4, and to law students of satisfactory attainments.

Dr. MORRIS.

19, 20. SEMINARY IN MODERN HISTORY. *Two hours*. T., Th., 2. A close study, chiefly from sources, of a particular phase of recent European development. Topical reports and personal conferences. Primarily for graduates, but open to undergraduates of sufficient preparation. Associate Professor ALDEN.

21, 22. NORTHWESTERN HISTORY. *Two hours.* M., W., 11. From the earliest voyages to the settlement and organization of the territories. Lectures. Theses on assigned topics.

Professor MEANY.

23. SPAIN IN AMERICA. *First semester,* 10. 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. Lectures and theses.

Professor MEANY.

24. DEVELOPMENT OF THE PACIFIC. *Second semester,* 10. History of the countries bordering upon the Pacific ocean, with special reference to the changes now in progress of development. Lectures, collateral reading and theses.

Professor MEANY.

25, 26. HISTORY OF AMERICAN DIPLOMACY. *Two hours.* Tu., F., 11. A study of the treaties and foreign policy of the United States. Open to those who have taken a narrative course in American history.

Professor MEANY.

27, 28. ECONOMIC AND SOCIAL HISTORY OF THE AMERICAN COLONIES, 8. Attention will be given to European conditions and to the motives and methods of colonization. A study will be made of the transfer of population to the colonies, of the social, economic and political forces that acted on it there, followed by a study of the issues leading to the political revolt and independence of the colonies.

Mr. McMAHON.

29. HISTORY OF THE UNITED STATES, 1783-1828. *First semester.* A study of the organization of the government of the United States and the leading forces shaping its development down to the presidency of Jackson. (Omitted 1909-10). Mr. McMAHON.

30. HISTORY OF THE UNITED STATES, 1828-1860. *First semester,* 11. A continuation of course 29, bringing the study down to the outbreak of the Civil War. In this and the preceding course Constitutional History will be studied as the outgrowth of economic and social conditions in the physiographic sections.

Mr. McMAHON.

31. CIVIL WAR AND RECONSTRUCTION. *Second semester,* 11. A general study of the civil war and the period of reconstruction. Some attention will be given to the problems growing out of this period.

Mr. McMAHON.

32. METHODS OF TEACHING HISTORY. *Second semester. Two hours. M., Th., 1.* A course with especial reference to the work of secondary schools. Text-books, assigned readings, courses of study and the best method of presentation will be considered. Required of advanced students who expect to teach history.

Mr. McMAHON.

33, 34. SEMINARY IN AMERICAN HISTORY. *Two hours credit. One evening a week.* This course is primarily for graduates or other advanced students, and will follow the seminary plan of instruction. In 1909-10 a detailed study of the constitutional, economic, and social history of the American colonies will be made.

Mr. McMAHON.

ITALIAN

PIERRE JOSEPH FREIN, *Professor;*

STANLEY SMITH, *Instructor.*

SUBJECTS

1, 2. ELEMENTARY, 11. The first year in Italian corresponds to the same course in French and Spanish. The books used will be Grandgent's Italian Grammar, Grandgent's Italian Composition, Bowen's First Italian Readings and two or three easy texts from modern Italian authors. The course will be open only to those who have entrance credits in French or Spanish. No student will be allowed to begin Italian and French (or Spanish) the same year.

Mr. SMITH.

3, 4. ADVANCED. *Two hours. T. 9, Th. 11.* Selections from Dante's *La Divina Commedia*. Open only to those who have completed Italian 1, 2.

Professor FREIN.

DEPARTMENT OF JOURNALISM

MERLE THORPE, *Assistant Professor;*..... *Instructor;*..... *Laboratory Assistant.*

Men and women intending to enter newspaper work as a profession or as a stepping stone to higher literary endeavor should be given that specialized university training which has long been accorded to other professions. With this in view, the department will outline the students' four years' work so that each subject may lend itself to the purpose of the department. Special stress will be laid on the study of social and economic problems, political history, and English literature. The department itself will endeavor to teach the student to express his ideas in clear-cut, virile English, and to develop any original style he may possess.

Practical journalism will be studied, following as closely as possible the work in a newspaper office. The department will install a laboratory this summer, in which a six-column four-page daily paper will be published. For this a 12,000 word daily telegraph service has been secured from the United Press Association. Classes will be organized into a staff, members in turn acting as telegraph, northwest, and news editors; editor-in-chief, managing editor, editorial writers, and reporters. On Fridays a "Sunday" edition of eight pages will be published, containing interesting and instructive feature stories. In short, the department's idea of an ideal newspaper will be worked out. In addition to the daily, students will have opportunity of working on the literary monthly and the *Alumnus* magazine.

Metropolitan papers will be studied throughout the four years in an endeavor to develop the student's sense of news value. The press associations, the law of libel, and copyright, the history and development of the American press, and similar topics will be covered fully by lectures and required reading. The Seattle papers are co-operating with the department in its effort to afford training for the coming newspaper men of the state. Through their courtesy, students last year edited the magazine section of the *Seattle Sunday Times*, and were guests of the *Post-Intelligencer*, accompanying reporters on their rounds, editing copy, and observing other work. As further testimony of the

active support of the press of the state, a dozen prominent editors addressed the department on various phases of the work.

Since its organization, a little more than a year ago, the department has had an extraordinary growth, sixty-six students now registering for the four years' course. This is due to the fact that it offers work of a cultural nature, and at the same time sends the student out with a profession. It gives a student a large part of a liberal arts course, and allows him to specialize. This appeals to high school students who wish more culture, yet who feel that they must choose their vocation at once and begin specialization, sacrificing breadth for strength. The study of journalism as outlined bridges over the two extremes in education—the German conception of specialization and the English idea of culture.

The work as outlined below leads to an A. B. degree.

SUBJECTS

1, 2. ENGLISH COMPOSITION, 8. Short daily news stories with critical study of newspaper writing. Course designed to familiarize student with working tools of facile writer, and to develop individual style. (Identical with Rhetoric 1, 2). [Instructor.]

1a. ENGLISH COMPOSITION, 10. *Second semester.* Repetition of course 1. For students entering second semester.

[Instructor.]

2a. ENGLISH COMPOSITION. *First semester,* 10. Repetition of course 2. For students who entered second semester.

[Instructor.]

3, 4. SOPHOMORE COMPOSITION, 9. Intensive studies of prose writers; study of representative essays on style; the law and technique of the drama; with daily themes.

Assistant Professor THORPE.

5, 6. ADVANCED COMPOSITION, 1. Continuation of course 4, along more ambitious lines. Open to all who have done good work in sophomore composition. Assistant Professor THORPE.

7, 8. THE NEWSPAPER, 9. Students will gather and write university news. Practical work in writing semi-feature and feature stories. Lectures on: evolution of the American press; the press association; development and work of the reporter; the

correspondent, war, Washington and special; women in newspaper work; the Sunday paper; newspaper photography and cartooning; law of libel and copyright; tainted news, political and advertising; the circulation department; the advertising department; fake stories; how local news is collected; writing; editing and managing editors; journalism in England, France, and Germany; the weekly journal; the magazine; what a paper owes the public; journalism vs. literature; trend of modern journalism.

[Instructor.]

9, 10. THE SHORT STORY, 8. A historical and critical study of representative short stories with practical work of gathering material, constructing and sketching plots, developing characters, etc., including a brief survey of the types of prose fiction.

Assistant Professor THORPE.

11, 12. ADVANCED JOURNALISM, 11. Reading copy; head-writing; "making up"; study and writing of editorials; weekly lectures on place of newspaper in political history, and economy of daily paper; comparison and study of same story in large dailies; and gathering of city news.

Assistant Professor THORPE.

14. DEVELOPMENT OF THE MODERN NEWSPAPER. *Second semester*, 9. Course designed for those who do not intend to follow the profession of journalism, but who wish a knowledge of the historical growth and inner workings of the newspaper. Lectures, with study of various papers, journals, and magazines. Open to all. (Identical with Journalism 8).

[Instructor.]

15. BIBLIOGRAPHY. *One hour*. T., 1. A study of library methods of classification and cataloguing; use of reference books; making of bibliographies on various subjects. Course designed to give student facility in finding material.

[Instructor.]

17. INTERVIEW. *Two hours*. Th., 1-3. Students will thoroughly study each week some phase of social, economic, or political problem, then impersonate an authority and submit to interview by another member of the class. Entire class will then write extended article on matter obtained from interview.

[Instructor.]

19, 20. LABORATORY. *Three hours*. Section A, 10-12; section B, 1-3; section C, 3-5. Five times a week.

[Lab. Assistant.]

SUGGESTED COURSE IN JOURNALISM

FRESHMAN			
<i>First Semester—</i>	Hours	<i>Second Semester—</i>	Hours
Journalism 1.....	4	Journalism 2.....	4
Language, modern.....	4	Language, modern.....	4
History 1.....	4	Trigonometry.....	4
Science.....	4	Science.....	4
Physical training.....	2	Physical training.....	2
	<hr/> 18		<hr/> 18
SOPHOMORE			
Journalism 3.....	4	Journalism 4.....	4
Language, modern.....	4	Language, modern.....	4
History 2, 8, 10.....	4	English literature 2.....	4
English literature 1.....	4	Political science 1.....	4
Physical training.....	2	Physical training.....	2
	<hr/> 18		<hr/> 18
JUNIOR			
Journalism 7.....	4	Journalism 8.....	4
Journalism 19.....	3	Journalism 20.....	3
Philosophy 1 or 3.....	4	Philosophy 2 or 4.....	4
Law, elementary.....	2	Law, criminal or	
Elective—		Law, torts.....	2
History		Elective—	
English literature 7		History	
Political science 8 or 15		English literature 8	
Journalism 5.....	4	Political science 4 or 16	
	<hr/> 17	Journalism 6.....	4
			<hr/> 17
SENIOR			
Journalism 9 or		Journalism 10 or	
Journalism 11.....	4	Journalism 12.....	4
Journalism 17.....	2	Electives.....	12
Electives.....	12		<hr/> 16
	<hr/> 18		

LATIN

DAVID THOMSON,* *Professor*;THOMAS KAY SIDEX, *Assistant Professor*;ALVIN E. EVANS, *Acting Assistant Professor*;HARVEY BRUCE DENSMORE, *Instructor*.

The college courses outlined below are planned for students who have already had four years of training in Latin. For those who, on entering the University, substitute modern language credits in part for the necessary amount of Latin, preliminary courses are offered, corresponding to the third and fourth year courses in the high schools. It is assumed that those who have had the four years of training have gained a mastery of Latin forms and inflections, a general knowledge of syntax, the ability to read Latin correctly, and a vocabulary sufficient to enable them to translate simple passages at sight with considerable ease. Hence, in these courses less prominence is given to this technical training, and attention is directed rather to Latin as literature, and to the study of Roman life and customs. In the freshman year, however, a systematic survey is taken of syntax and construction, and practice is given in the writing of Latin. This serves as a review and allows a closer observation of the principles underlying syntax than is practicable in the earlier work. Other special topics taken up are briefly indicated in the statement of the courses.

COLLEGE COURSES

1. CICERO. *First semester*. Sections at 8, 9, 10. De Senecute; Tacitus: Germania, with exercises in prose composition and sight translation. Primarily for freshmen.

Professor THOMSON and Assistant Professor SIDEX.

2. LIVY. *Second semester*. Sections at 8, 9, 10. Book I and selections from others of the early books. In other respects, this course is a continuation of course 1.

Professor THOMSON and Assistant Professor SIDEX.

3. CATULLUS. *First semester*, 10. (Simpson's Selections); HORACE: Odes and Epodes. Prerequisites, 1 and 2. Primarily for sophomores.

Assistant Professor SIDEX.

* Absent on leave 1908-9.

4. **PLAUTUS.** *Second semester*, 10. *Captivi* and *Menæchmi*; **TERENCE:** *Phormio* and *Adelphi*. Primarily for sophomores.
Assistant Professor SIDEX.

5. **CICERO.** *First semester*, 11. *Letters* (Abbott's Selections); **HORACE:** *Epistles*. Prerequisites, 3 and 4.

Professor THOMSON.

6. **PLINY.** *Second semester*, 11. *Letters* (Westcott's Selections); **SENECA:** *Epistulæ Morales*. (Selections.)

Professor THOMSON.

5a. **TACITUS.** *First semester.* *Annals*, Books I, IV-VI. Prerequisites, 3 and 4. Primarily for juniors and seniors. (Not given in 1909-10.)

Professor THOMSON.

6a. **JUVENAL.** *Second semester.* *Satires*; **MARTIAL:** *Epi-grams* (Stephenson's Selections). Primarily for juniors and seniors. (Not given in 1909-10.)

Professor THOMSON.

7 **CAESAR.** *First semester.* *Two hours.* M., Th., 1. *Bellum Gallicum*, Books V-VII and selected portions of *Bellum Civile*; **SUETONIUS:** *Life of Julius Cæsar*. Prerequisites, 5 and 6, or may be taken along with these. Primarily for juniors and seniors.

Assistant Professor SIDEX.

8. **SALLUST.** *Second semester.* *Two hours.* M., Th., 1. *Catiline*; **VERGIL:** Selections from the *Bucolics* and the *Georgics*; *Ancient Lives of Vergil*. A continuation of course 7.

Assistant Professor SIDEX.

9. Lectures on the teaching of preparatory Latin and discussion of matters connected therewith. *First semester. Two hours.* T., F., 11. Practice in the writing of Latin. Review of the portions of Cæsar, Cicero and Vergil usually prescribed in high schools. Teaching by the members of the class, under the supervision of the instructor. Prerequisites, 5 and 6, or may be taken along with these. Primarily for juniors and seniors.

Assistant Professor SIDEX.

10. A continuation of course 9. *Second semester. Two hours.* T., F., 11. From time to time, visits will be made to schools where Latin is taught, and reports upon the teaching observed will be presented by the members of the class.

Assistant Professor SIDEX.

Courses 7-10 constitute a teachers' course, provided for those who are preparing to teach Latin in the high schools, and are prescribed for the normal diploma, in the case of those whose major is Latin.

11. ROMAN ANTIQUITIES. *Second semester. Two hours. M., W., 2.* Lectures on such topics as the Roman name, the family, education, trades, professions, amusements, amphitheaters, aqueducts and public roads, illustrated by slides, photographs and cuts, whenever possible. Open to all students. Mr. DENSMORE.

12. ROMAN HISTORY. *Second semester. Two hours. Tu., Th., 2.* The history of Rome from the foundation of the city to the fall of the Western Empire, with particular attention to the development of Roman political institutions. Open to all students. Mr. DENSMORE.

13. LUCRETIVS: *de Rerum Natura. Two hours* (to be arranged) throughout the year. For graduate students. Professor THOMSON.

14. PLAUTUS AND TERENCE. A rapid reading course intended primarily for seniors and graduates. *Two hours* (to be arranged) throughout the year. Professor THOMSON.

15. LATIN COMPOSITION. *First semester. Two hours* (to be arranged). For advanced students. Professor THOMSON.

16. LATIN COMPOSITION. *Second semester. Two hours.* Continuation of course 15. Professor THOMSON.

PRELIMINARY COURSES

These do not count towards the major of twenty-four hours.

A. CICERO. *First semester, 8.* Orations, with exercises in syntax and prose composition. Mr. DENSMORE.

B. CICERO. *Second semester, 8.* Orations. Course A continued. Mr. DENSMORE.

C. VERGIL. *First semester, 11.* Aeneid, books I-III, with exercises in syntax and practice in the reading of Latin hexameters. Mr. DENSMORE.

D. VERGIL. *Second semester, 11.* Aeneid, books IV-VI. A continuation of course C. Mr. DENSMORE.

LIBRARY SCIENCE

A considerable demand is being made upon the University to offer courses in library science. This matter is now under consideration and it is probable that we may be able to provide for courses soon, covering at least one year of library training.

MANUAL ARTS

At the time of the publication of this bulletin, a director for the work in manual arts has not been chosen. For this reason a detailed statement of the courses to be offered will not be given. Prospective students may feel assured, however, that standard courses will be given.

MATHEMATICS

ROBERT EDOUARD MORITZ, *Professor*;

JAMES EDWARD GOULD and FRANK MARION MORRISON,

Assistant Professors;

GEORGE IRVING GAVETT and WILLIAM VERNON LOVITT, *Instructors*;

ARTHUR POPE, ELVA COOPER, FRED SUTTON, and ROBERT H. FRAZEE,

Graduate Assistants.

ADVICE AS TO CHOICE OF COURSES

Mathematics may be studied for several distinct purposes; the courses which the student takes should be selected with reference to his particular purpose. Under each of the four headings below the course best adapted to certain ends are enumerated in the order in which they should be taken.

A. Mathematics as a means to mental discipline and culture. Courses 1, 2, 3, 4, 5, 6.

B. Mathematics as an instrument for use in other arts and sciences. Courses 1a, 2a, 3, 4, 5a, 5b, 6a, 9, 10, 11.

C. Mathematics as a special field for high school teachers. Courses 1, 2, 3, 4, 5, 6, 7, 8, 14, 15.

D. Mathematics as a separate science or profession. Courses 1, 2, 3, 4, 5, 6, 7, 8, and as many of the following courses as possible.

Students expecting to major in mathematics, should take astronomy or chemistry in the freshman year; also German or French, preferably German, though a reading knowledge of both these languages is highly desirable. Physics should be taken in

the sophomore year. Furthermore, students in mathematics will do well to take a course in descriptive geometry and drawing in the engineering college.

Courses marked (E) are primarily for engineering students, though course 11 is extremely helpful to students of mathematics as well as to all advanced students of applied science.

SUBJECTS

FOR LOWER CLASSMEN

1. PLANE TRIGONOMETRY. *Each semester*; eight sections. Sections at 8, 9, 11, 1, 2. This course is required of all freshmen in the College of Liberal Arts. *Students who expect to take mathematics 2 should register in the sections at 11 the first semester.* Students conditioned in entrance algebra must remove the condition before registering for trigonometry. Taylor's Plane and Spherical Trigonometry, Crockett's 5 place tables. Prerequisite, all entrance requirements in mathematics.

Professor MORITZ, Assistant Professor MORRISON, Mr. GAVETT, Mr. LOVITT [Instructor], Miss COOPER, [Assistant.]

2. COLLEGE ALGEBRA. *Second semester*, 11. The course includes a study of the binomial theorem for positive and negative exponents; imaginary numbers; mathematical induction; the doctrine of limits and indeterminates, permutations, combinations, and the elementary theorems in probability, determinants; the principle of undetermined coefficients; and an introductory study of the binomial, logarithmic, exponential and trigonometric series, and their convergence. Will be replaced by a course in beginning analytical geometry in 1909.

Professor MORITZ.

1a. PLANE TRIGONOMETRY AND HIGHER ALGEBRA. Prerequisites, 1. *Each semester. First semester*, seven sections; sections at 8, 9, 1. *Second semester*, two sections; sections at 10, 11. Primarily for engineering students. The work in algebra deals with topics supplementary to the work in trigonometry, such as complex numbers and their trigonometric representation, DeMoivre's theorem, solution of trigonometric equations, the theory of logarithms, the logarithmic series, construction of logarithmic and trigonometric tables, the sine and cosine series, and the trigonometric solution of the cubic. Crockett's Trigonometry, Crockett's 5 place tables,

C. Smith's Treatise on Algebra. Prerequisites, one year in plane geometry, one and one-half years elementary algebra.

Assistant Professor GOULD, Mr. GAVETT, Mr. LOVITT, [Instructor],
Mr. POPE.

2a. ANALYTIC GEOMETRY AND HIGHER ALGEBRA. *Each semester. First semester*, one section at 1; *second semester*, seven sections, at 8, 9, 1. The fundamental conceptions and theorems in plane analytical geometry; the construction of loci from their equations; the deduction of the equations to loci from given conditions; transformation of co-ordinates; the straight line. The algebra consists of lessons supplementary to the analytical geometry, viz.: determinants; indeterminates and limiting values; interpretation of imaginary and infinite roots; elementary theorems in the theory of equations, etc. Candy's Analytical Geometry. C. Smith's Treatise on Algebra. Prerequisites, 1a.

Assistant Professor GOULD, Mr. GAVETT, Mr. LOVITT, [Instructor],
Mr. SUTTON.

3, 4. SOLID GEOMETRY. *Two hours*. Section A. M., W., 2. Section B. T., Th., 2. The usual theorems and constructions, with exercises and application to mensuration. Required of engineering students who do not offer solid geometry for admission. Open to all students who have completed plane geometry. Should be taken during the first or second year by students who are preparing to become teachers of mathematics. Well's Solid Geometry.
Mr. SUTTON.

5. ANALYTIC GEOMETRY. *First semester*, 10. For Liberal Arts students. Cartesian and polar coordinates; curves and their equations; the straight line; transformation of coordinates; the circle; conic sections and the equation of the second degree; Cartesian coordinates in space; the plane; the straight line in space; the sphere, the cylinder and the cone; the quadratic surfaces and the equation of the second degree in three variables. Nichol's Analytic Geometry. Prerequisites, 1 and 2.

Assistant Professor MORRISON.

5a. ANALYTIC GEOMETRY FOR ENGINEERS. *Two hours; each semester. First semester*, four sections. T., Th., 8; W. F., 8; M., Th., 10; T., F., 10. *Second semester*, one section at 11, Tu., F.

Mr. GAVETT, [Instructor.]

Continuation of 2a. Study of the conic sections, and the elements of solid analytics. Must be preceded by 1a and 2a. Candy's Analytical Geometry. Prerequisites, 1a, 2a, 3, and 4.

Assistant Professor GOULD, Mr. GAVETT.

5b. DIFFERENTIAL CALCULUS FOR ENGINEERS. *Each semester; first semester*, four sections; two at 8, two at 10; *second semester*, one section at 11. Open only to students who are also taking 5a. This course considers the subject with reference to the needs of engineers. Granville's Calculus. Prerequisites, 1a, 2a, 3, and 4.

Assistant Professor MORRISON, Mr. GAVETT, Mr. LOVITT, Mr. SUTTON, Mr. POPE.

6. DIFFERENTIAL AND INTEGRAL CALCULUS. *Second semester*, 10. An elementary course, covering the fundamental principles and their applications both of the differential and integral calculus. Osborne's Differential and Integral Calculus. Prerequisites, 1, 2, 3, 4, and 5.

Assistant Professor MORRISON.

6a. INTEGRAL CALCULUS FOR ENGINEERS. *Each semester: first semester*; one section at 11; *second semester*, four sections, two at 8, two at 10. The integral calculus treated with reference to its application to the various branches of engineering. Granville's Calculus. Prerequisites, 1a, 2a, 3, 4, 5a, and 5b.

Assistant Professor MORRISON, Mr. GAVETT, Mr. LOVITT, [Instructor], Mr. POPE.

FOR UPPER CLASSMEN AND GRADUATE STUDENTS

7. ADVANCED CALCULUS I. *First semester*, 9. Partial and total differentiation; change of variables, orthogonal transformations; elimination; partial integration; line, space and surface integrals; Green's theorem; parametric derivation; curve tracing. Prerequisites, 6 or 6a.

Professor MORITZ.

8. ADVANCED CALCULUS II. *Second semester*, 9. Continuation of 7. Definite integrals; gamma and beta functions; elliptic integrals; applications to the theory of probability; elements of the theory of functions of complex variable. Professor MORITZ.

9. DIFFERENTIAL EQUATIONS. *First semester*, 10. Solution of ordinary and partial differential equations with applications to geometry and physics. Especially designed for students majoring in physics. Prerequisites, 6 or 6a. Assistant Professor GOULD.

10. ANALYTIC MECHANICS. *Second semester*, 10. Mathematical treatment of the laws of force and motion. Especially designed for students majoring in physics. Will be replaced by a course in Fourier's Series and Spherical Harmonies in 1909. Prerequisites, 6 or 6a. Assistant Professor GOULD.

11. LEAST SQUARES. *Two hours. First semester*. W., F., 9. Primarily for engineering students, but open to all students who have completed the differential calculus. A study of the best methods for the adjustment of observations, and the determination of probable errors, with numerous applications to actual problems. Merriman's Least Squares. Assistant Professor GOULD.

12, 13. DIFFERENTIAL GEOMETRY. *Two hours*. T., Th., 2. Application of the infinitesimal calculus to the study of geometry. The right line in space, the plane, the conoids, twisted curves and surfaces. Prerequisites, 6 or 6a. Mr. LOVITT.

14. TEACHER'S COURSE I. HISTORY OF MATHEMATICS. *First semester. Two hours*. M., W., 2. A brief course in the history of mathematics. Prerequisites, 6 or 6a.

Assistant Professor GOULD.

15. TEACHER'S COURSE II. TEACHING OF MATHEMATICS. *Second semester. Two hours*. M., W., 2. Open to students who have completed 6 or 6a. The course deals with such questions as: the educational value of mathematics; a study of curricula in foreign schools; the course of mathematics in the high schools; a discussion of the various methods of presenting the several high school branches of mathematics; correlation of algebra and geometry; methods of reviews and examinations and grading of papers; discussion of text-books; collection of bibliographies on topics of interest; etc. Prerequisites, 6 or 6a.

Assistant Professor GOULD.

16. PROJECTIVE GEOMETRY. *First semester*, 11. A study of geometric properties by section and projection. The anharmonic ratios, involution, the theorems of Pascal, Brianchon and Desargues, projective theory of polar curves and lines, etc. (Offered alternate years, given in 1909-1910.)

Assistant Professor MORRISON.

17. MODERN ANALYTIC GEOMETRY. *Second semester*, 11. Trilinear coordinates, method of abridged notation, reciprocal polars,

harmonic properties of conics, invariants and covariants of conics. (Offered alternate years, given in 1909-1910.)

Assistant Professor MORRISON.

18. THEORY OF FUNCTIONS OF THE COMPLEX VARIABLE. *First semester*, 11. The theories of Cauchy, Weierstrass and Riemann; conformal representation, integrability, etc. (Offered in alternate years, not given in 1909-1910.) Assistant Professor MORRISON.

19. FOURIER'S SERIES AND SPHERICAL HARMONICS. *Second semester*. Fourier's and allied series, with applications to mathematical physics. (Offered in alternate years, not given in 1909-1910.) Assistant Professor MORRISON.

20. THEORY OF EQUATIONS. *First semester*, 10. Theory of equations, with a brief survey of the theories of Abel and Galois. (Offered alternate years, given in 1909-1910.)

Professor MORITZ.

21. MODERN ALGEBRA. *Second semester*, 10. (Offered in alternate years, given in 1909-1910.) Professor MORITZ.

22. HIGHER ALGEBRA. *First semester*. Chrystal's Higher Algebra, with lectures, and journal readings. (Not given in 1909-1910.) Professor MORITZ.

23. SELECTED TOPICS. *Second semester*. Lecture course with journal readings. Survey course of modern theories and developments. Theory of pure form. Graßman's theory of extension, Hamilton's quaternions, Pierce's Linear associative algebras, Boole's symbolic logic, insolubility of classic problems, Demorgan's generalized algebraic processes, the theory of ratients, Cantor's transfinite manifolds, etc. (Offered alternate years, not given in 1909-1910.) Professor MORITZ.

24. MATHEMATICS JOURNAL AND RESEARCH CLUB. Meets on the first and third Tuesday evenings of each month in room 26, Science hall, at 7:30 p. m. The club consists of advanced students and teachers of the department of mathematics. Its purpose is to review current mathematical literature, and to discuss the research work carried on by members of the club.

Professor MORITZ.

25. JUNIOR MATHEMATICS CLUB. Meets on the second Wednesday of each month in room 26, Science hall, at 7:30 p.m. The club is open to every student of the university who is sufficiently interested in mathematics to contribute something toward a program at least once during the year.

Students conditioned in the mathematics requirements for admission may remove the condition with the assistance of a tutor, regularly authorized by the department, and paid by the student.

MILITARY TRAINING.

The University was authorized by the Legislature at its last session to provide for three years military training, and negotiations are now being carried on by the University authorities with the United States War Department relative to the assigning of a regular officer to direct this work and in regard to equipment for military drill. The definite program of military training will be announced later.

MUSIC

CHARLES OSCAR KIMBALL, *Director.*

Not to exceed twelve credits will be allowed toward a Bachelor of Arts degree, for the following work in music:

HARMONY. Private or class lessons under supervision of the director, not to exceed two credits a semester.

PRACTICAL PERFORMANCE. Advanced work on piano, orchestral instruments or in singing, satisfactorily done at the University under supervision of the director, and a specified amount of work accomplished each semester, not to exceed two credits a semester.

Full information regarding this work and the requirements may be had by consulting the director.

UNIVERSITY CHORUS. Two rehearsals each week for the study of serious choral works, two credits for each year's work, on recommendation of the director.

UNIVERSITY ORCHESTRA. Two rehearsals each week for the study of standard orchestral compositions; two credits for each year's work, on recommendation of the director.

Any credits earned in the other electives, namely, Law, Pharmacy or Engineering, will be deducted from a total of twelve in music, as counting towards the A. B. degree.

ORIENTAL HISTORY, LITERATURE, AND INSTITUTIONS

REV. HERBERT H. GOWEN, F. R. G. S., M. R. S. A.,
Professorial Lecturer.

1. *First semester; three hours.* Tuesdays, Wednesdays, Thursdays, 2-3 p. m. Subjects: The history, literature, political and social institutions of the oriental countries bordering on the Pacific. *China*, its races and people, geography, industries, political and social history, literature and religions, international relations. *Japan*, ethnology, geography, history, great periods of literature, religions, arts, international relations.

2. *Second semester.* Asiatic and Pacific problems considered primarily as affecting the United States. Hawaii and the Philippines, oriental trade relations of the United States with the Far East. Special study of oriental problems as they arise.

3. *First semester; three hours.* Tuesdays, Wed., and Thurs., 3-4 p. m. The Aryan movements in Asia; the literature, religions and philosophies of Persia from the time of the fall of Babylon; the rise and literature of Mohammedanism.

4. *Second semester.* *India*, its history and literature, religions and philosophies from the Aryan invasion to the decline of the Mogul empire.

PHILOSOPHY

WILLIAM SAVERY, *Professor;*

HERMAN CAMPBELL STEVENS, *Assistant Professor;*

The aims of this department are five:

First. To aid students to entertain clear ideas and to think consistently. (To this end the courses in logic and metaphysics are especially adapted.)

Second. To help those students who desire to think independently on the ultimate problems of reality. (Metaphysics.)

Third. To furnish a part of the general culture of some students by acquainting them with the thoughts of the great thinkers of the past. (History of philosophy.)

Fourth. To teach worthy moral ideas and to establish a proper basis for conduct. (Ethics.)

Fifth. To teach the facts of psychology to those interested in the study of the mind or in the allied studies of biology, sociology

or pedagogy. (Psychology, elementary, experimental and general.)

Courses 3 and 2 are adapted to those intending to study law.

Course 1 is a prerequisite to the study of education, unless the student has taken elsewhere elementary psychology.

Majors in philosophy should take 1 and 2 in their sophomore year.

The requirements in philosophy may be satisfied by two of the following courses: 1, 2, 3, 4, (except 2 and 4 may not both be counted); or by 5 and 6.

SUBJECTS

1. **ELEMENTS OF PSYCHOLOGY.** *First semester, 10.* One three hour laboratory period afternoons. A study of the facts and laws of consciousness and their relation to the body. Text: Thorndike's Elements of Psychology. Lectures and laboratory.

Assistant Professor STEVENS.

2. **ELEMENTS OF ETHICS.** *Second semester, 10.* One recitation hour afternoons. A study of the meaning of value, the nature of the good, duty, the moral virtues, and institutions. Some account of progress, and the problem of pessimism. Text: Paulsen's System of Ethics. Lectures and recitations.

Professor SAVEBY.

3. **ELEMENTS OF LOGIC.** *First semester, 10.* One recitation hour afternoons. A study of the nature of clear ideas and valid reasoning, deductive and inductive. Analysis of fallacies. Some account of the aims of the natural sciences. Text: Jevons' Lessons in Logic. Lectures and recitations.

[Instructor.]

4. **INTRODUCTION TO PHILOSOPHY.** *Second semester, 10.* An elementary study of the main problems of philosophy—including ethics—and their typical solutions in the history of philosophy. Texts: Perry's Approach to Philosophy and Paulsen's Introduction to Philosophy. Lectures and recitations.

[Instructor.]

5, 6. **HISTORY OF PHILOSOPHY, 8.** The aim in this course is both historical and constructive. Text: Weber's History of Philosophy. Readings in the philosophies studies. Lectures and recitations. Prerequisite, junior standing. No prerequisites in philosophy. Professor SAVEBY and Assistant Professor STEVENS.

7, 8. METAPHYSICS, 9. A study of the theory of knowledge and the nature of reality—including the self and the physical world and their mutual relation and evolution. The two main present day tendencies in metaphysics will be considered at length; namely,

1. Absolute idealism in the writings of Bradley and Royce.
2. Radical empiricism in the writings of William James and his followers.

Lectures and discussions. Prerequisite, one year of philosophy.
Professor SAVERY.

9, 10. PRINCIPLES OF PSYCHOLOGY. *Three hours.* M., W., F., 11. A systematic study of the principles of psychology. Attention will be paid mainly to the fundamental principles of the subject rather than to method or matters of fact. James's *Principles of Psychology* will be read. Prerequisite, 1.

Assistant Professor STEVENS.

12. EXPERIMENTAL PSYCHOLOGY. One, two, or three hours, according to the amount of laboratory work done. *Second semester.* M., Tu., Th., 1 to 4. The object of this course is both to acquaint the student with the experimental methods and results of this science and to afford a general training in scientific method and technique. Qualitative experiments upon sensation, affection, attention, action, perception, and association of ideas will constitute the bulk of the work. Titchener's *Manual, Qualitative*, Pt. I, will be used as text-book. The student is strongly advised to take courses in physiology, with special reference to the nervous system, and in physics, either along with, or before taking this course. Prerequisite, 1.

Assistant Professor STEVENS.

13, 14. RESEARCH. Original research in psychology may be undertaken by students who are fitted for it. Credits will be determined by the amount of work done.

Assistant Professor STEVENS.

16. THE PHILOSOPHY OF SCHOPENHAUER. *Three hours.* M., Tu., Th., 1. Schopenhauer's *World and Will and Idea* will be read and discussed. A study will be made of his idealism, conception of the will and pessimism, with the relation of the latter to the views of Von Hartmann. Prerequisite, one year of philosophy.

[Instructor.]

17, 18. SEMINARY IN ETHICS. THE EVOLUTION OF MORALITY. *Three hours credit.* One evening a week. A sociological and ethical study of the origin and growth of moral ideas, judgments and emotions with Westermarck as text; followed by the criticism of contemporary moral standards (as given in Sidgwick's *Methods of Ethics*) viewed in the light of this development.

This course is primarily for graduates or other advanced students.

Professor SAVERY.

PHYSICS

FREDERICK A. OSBORN, *Professor*;

HENRY LOUIS BRAKEL, *Instructor*;

The instruction in this department is designed to meet the needs of three different classes of students: first, those who desire some work in physics as a part of a liberal education; second, those who intend to prepare themselves for teaching physics; and third, those who pursue it as a preparation for engineering.

1. Students who wish physics as a part of a liberal education are advised to elect 1, 2, 3, and 4.

2. Students who major in physics or are preparing to teach it, should elect freshman mathematics and chemistry, and begin their work in physics the sophomore year.

SUBJECTS

(a) FOR STUDENTS IN THE COLLEGE OF LIBERAL ARTS.

1. MECHANICS. *First semester*, 9. Three class periods and one two-hour laboratory period per week. Laboratory, M., W., 2-4. Prerequisite, trigonometry.

Professor OSBORN and Instructor.

2. WAVE MOTION AND SOUND. *Second semester*, 9. Three class periods and one two-hour laboratory period. Laboratory, M., W., 2-4. Prerequisite, 1. Professor OSBORN and Instructor.

3. HEAT AND LIGHT. *First semester*. Three class periods and one two-hour laboratory period. Prerequisites, 1 and 2. (Not given in 1909-1910).

4. ELECTRICITY. *Second semester*. T., W., F., 8. Three class periods and one two-hour laboratory period. Laboratory, T., 1-3. Prerequisites, 1 and 2. (Given first semester 1909-10).

Mr. BRAKEL.

5. **HEAT.** *First semester.* Hours to be arranged. The course consists of three lectures and one laboratory period. The lectures present the more important aspects of the subject, both experimental and theoretical. Pure thermo-dynamics will also be presented.

The laboratory work lays stress on the calibration, use and practical handling of temperature measuring instruments, the use of calorimetric methods, the determination of coefficients of expansion and the mechanical equivalent of heat. Prerequisite, 3. [Instructor.]

6. **HIGH TEMPERATURE THERMOMETRY.** Hours to be arranged. *Second semester.* A laboratory course taking up the construction and use of thermostats, calibration and use of thermo-elements, resistance thermometers and pyrometers. Prerequisite, 5. [Instructor.]

7. **VIBRATORY PHENOMENA AND SOUND.** *First semester.* Hours to be arranged. This course consists of three lectures and one laboratory period. The lectures develop and discuss the mathematical expressions for simple harmonic motion, wave form, vibrating systems with one degree of freedom, damped vibrations, forced vibrations, propagation of sound in an elastic medium, etc. The equations so developed are applied to the explanation of the phenomena of sound, light, and electrical oscillations. The laboratory work is a study of certain problems in sound, such as rating of a spring by the stroboscopic method, absolute rate of a string, etc.; and in electricity of the determination of the wave length, damping, etc., of electric oscillations. Prerequisite, 2 and calculus. Professor OSBORN.

8. **LIGHT.** *Second semester.* Hours to be arranged. This course consists of three lectures, and one laboratory period. The lecture work aims to present and discuss the most important optical researches from the early beginnings up to the present time; the mathematical theories in elementary form and the experiments upon which they are founded are given and in addition a study is made of the more important experiments and measurements, such as the velocity of light, wave lengths, indices of refraction, interference phenomena, etc. The laboratory work gives the student an acquaintance with and a training in the use of the more important optical instruments used in inves-

tigation, such as the spectrometer, the refractometer, the polarimeter, gratings, plane and concave, and the interferometer. Prerequisites, 3 and calculus. Professor OSBORN.

9. LIGHT. *First semester.* Hours to be arranged. This course offers advanced laboratory work in light. A more extended use and application of the instruments of course 8. To students who show special fitness opportunity is given to do some research. The amount of credit is arranged with the individual student. Prerequisite, 8. Professor OSBORN.

10. 'ELECTRO-CHEMISTRY AND THEORIES OF E. M. F. OF CELLS. *First semester.* Hours to be arranged. Two class periods and one four-hour laboratory period. The class work discusses the general electro-chemical phenomena, the theories of electrolysis and the theories of E. M. F. of cells. The laboratory work consists of conductivity measurements, migration velocity of ions, use of coulometers, study of concentration cells, single electrode potential, preparation of material, construction, and testing of standard cells. Prerequisite, 4, and eight hours of chemistry. Mr. BRAKEL.

14. HISTORY OF PHYSICS. *First semester. Two hours.* Prerequisites, 1, 2, 3, 4, and special permission. (Not given in 1909-1910).

15. TEACHER'S PHYSICS. *Second semester. Two hours.* This is a lecture course and seminar combined. It is intended for those who are preparing to teach physics. Prerequisites, 1, 2, 3, 4, and special permission. (Not given 1909-1910).

16. PHYSICS COLLOQUIUM. *Both semesters. One hour.* Open only to graduate students, and major students on special permission.

17. DYNAMO MACHINERY. *First semester.* This is course — in electrical engineering. Prerequisite, special permission. Professor MAGNUSSEN.

18. ALTERNATING CURRENTS. *First semester.* This is course — in electrical engineering. Prerequisite, 17. Professor MAGNUSSEN.

20. GRADUATE WORK. Courses 5 to 14 are for major and graduate students. Students who are prepared will be given opportunity to do research work along various lines.

Students conditioned in physics for admission to the University may take it up in the summer session; or they will be given an opportunity to work off the condition under a tutor appointed by the department and paid by the student.

(b) FOR STUDENTS NOT IN THE COLLEGE OF LIBERAL ARTS.

1a. MECHANICS AND WAVE MOTIONS. *First semester*, 11. Four class periods and one four hour laboratory period. Prerequisite, freshman mathematics.

Professor OSBORN, Mr. BRAKEL and Instructor.

1a. MECHANICS AND WAVE MOTION. *Second semester*, 10. A repetition of 1a. Laboratory, Th., 1-4. [Instructor.]

2a. HEAT, LIGHT, ELECTRICITY. *Second semester*, 11. Four class period and one two hour laboratory period.

Professor OSBORN, Mr. BRAKEL and Instructor.

2a. HEAT, LIGHT, ELECTRICITY. *First semester*, 10. A repetition of 2a. Laboratory, Th., 1-5.

3a. ELECTRICAL MEASUREMENTS. *First semester*. T. 9, Th. 11. Laboratory, W., F., 1-5. One four hour laboratory period. This course treats of the theories of the methods used in the accurate determination of electrical quantities, and the theory and description of standard instruments for measuring these quantities. The laboratory work consists of precision methods for measuring resistance, current strength, electro motive force, wattage, and the calibration of electrical instruments. Prerequisite, 2a.

Mr. BRAKEL.

4a. ELECTRICAL MEASUREMENTS. *Two hours. First semester*. M., 8. One three hour laboratory period. An abridgement of course 3a, designed for mechanical engineering students, with emphasis on the theory, construction and use of electrical measuring instruments. Prerequisite, 2a. Laboratory, F., 1-5.

Mr. BRAKEL.

5a. ELECTRICAL MEASUREMENTS. *One hour. Second semester*. One three hour laboratory period. A continuation of 3a, the measurement of capacity and inductance. Prerequisite, 3a. Laboratory, W., F., 1-5.

Mr. BRAKEL.

PHYSICAL TRAINING

DAVID CONNOLLY HALL, *Professor;*

LAVINA C. RUDBERG, *Instructor for Women;*

HIRAM B. CONIBEAR, *Instructor;*

CHRISTINE C. KANTERS and WILLIAM B. COOK, *Student Assistants.*

The department of physical training aims to meet the needs of the students in three ways: first, to offer a means of systematic exercise and body training; second, to give each student a medical examination and to advise in matters of physical well-being; third, to offer instruction suitable for teachers who may desire to carry on the work in the graded schools, in high schools, or on public playgrounds.

REQUIREMENTS FOR GRADUATION

The requirements in physical training for the several schools are as follows:

College of Liberal Arts, courses 1-4 inclusive.

College of Engineering, courses 1-4 inclusive.

School of Forestry, courses 1-4 inclusive.

School of Pharmacy B. S., courses 1-4 inclusive.

School of Pharmacy Ph. G. course, courses 1-2 inclusive.

DIPLOMA IN PHYSICAL TRAINING

The department is frequently asked to recommend teachers who are competent to conduct work in physical training in the public schools. In order to prepare teachers to meet this demand, the department has planned a course of study which is based upon the requirements for the degree of bachelor of arts, but to which have been added certain courses, bringing the total number of hours prescribed and elective up to 132. Upon the satisfactory completion of the course as outlined, the candidate will receive, in addition to the degree of bachelor of arts, a diploma in physical training.

The specific requirements are as follows: zoology 1, 2, 3, 4, 7, 8, 9, 12; education 1, 2, 6; physical training 1, 2, 3, 4, 5, 6, 7, 8.

COURSES

1. CALISTHENICS. Sections at 10, 11, 2, 3, 4. Introductory course with light apparatus, including dumb-bells, Indian clubs; wands and tactics. 2 credits.

2. CALISTHENICS. Sections at 10, 11, 2, 3, 4. A continuation of course 1. 2 credits. Prerequisite, 1.

3. GYMNASTICS. Sections at 10, 11, 2, 3, 4. Introductory course with heavy apparatus, including horse, parallel bars, horizontal bars, tumbling, fencing, and wrestling. 2 credits. Prerequisite, 2.

4. GYMNASTICS. Sections at 10, 11, 2, 3, 4. A continuation of course 3. 2 credits. Prerequisite, 3.

5, 6. PHYSICAL EXAMINATIONS AND PRESCRIPTION OF EXERCISES. Instruction in class and squad work. Ten hours a week throughout the year. 4 credits. Limited to diploma course students.

7, 8. A continuation of course 5, 6. Ten hours a week throughout the year. 4 credits. Hours to be arranged.

9. FENCING, BOXING, AND WRESTLING. Elective for seniors and juniors.

COURSES FOR WOMEN

Suitable dress, consisting of black bloomers and unbleached middy blouses, are worn by all women taking work in the gymnasium.

1. CALISTHENICS. Sections 11, 2, 3, 4. Introductory course, consisting of free exercises and work with dumb-bells, wands, æsthetic dancing and apparatus work. 2 credits.

2. CALISTHENICS. Sections at 11, 2, 3, 4. A continuation of course 1. 2 credits. Prerequisite, 1.

3. CALISTHENICS. Sections at 11, 2, 3, 4. Advanced work with light apparatus together with classic dancing. 2 credits. Prerequisite, 2.

4. CALISTHENICS. Sections at 11, 2, 3, 4. A continuation of course 3. 2 credits. Prerequisite, 3.

5, 6.—7, 8. Similar to courses for men.

9. Gymnastic exercises, games, and folk dancing, applicable to the grammar grades. Elective for seniors and juniors. Hours to be arranged.

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 in football may be substituted by a limited number for courses 1 and 3.

Training for the track and baseball teams may similarly be substituted for courses 2 and 4.

Training for the crews may be substituted in like manner for courses 2, 3 and 4.

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 class adviser.

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.

POLITICAL AND SOCIAL SCIENCE

J. ALLEN SMITH, *Professor*;

VANDERVEER CUSTIS, *Assistant Professor*;

LOUIS D. H. WELD, *Instructor*.

The chief objects of this department are to be of service to the student from a cultural and disciplinary point of view, and at the same time to aid in fitting him for a life of useful citizenship, whatever his vocation may be. This applies not only to the men, but also to the women. The fundamental courses do not deal, except in an incidental way, with the technique of any business or profession—unless it be that of teaching the subject. They deal in a broad, general way with certain important principles affecting the material welfare of mankind, and with the relation of the individual to the other members of society.

In the second place, courses have been arranged which, while having a general educational utility, are designed to be of direct service to the student in connection with his chosen life work. These courses furnish no substitute for practical business experience; but the student, by reason of his special training and his grasp of the principles underlying economic and social activity, should be better able to recognize and take advantage of the opportunities that come within his reach.

Course 1 may be regarded as the gateway to the work of the

department. It is true that there are one or two courses for which it is not a prerequisite; but even these can be taken with greater advantage if preceded by course 1. For all advanced work it is an important preliminary. The course is prescribed for all students in the College of Liberal Arts, the College of Engineering, the School of Mines, and the School of Forestry. It is recommended, especially in the case of the men, that it be taken in the sophomore year; and only in exceptional cases should it be postponed beyond the junior year. Freshmen will not be admitted, except by special consent of the instructor.

The special attention of students who expect to enter the School of Law is called to courses 3, 19, and 20. Prospective high school teachers of civics and economics should give special attention to courses 3, 7, 19, and 20. Students of history will find courses 3 and 9 especially useful. Those who look forward to religious or social work are advised to take courses 3, 4, and 7. Students who wish to engage in business will naturally be among those who major in the department, and their courses will be selected with special reference to the line of activity that they wish to follow. All such, however, will naturally take courses 5, 6, 9, and 12.

1. THE ELEMENTS OF ECONOMICS. *First or second semester. First semester*, section A, 8; section B, 1; *second semester*, section C, 8. An introductory study of the laws governing the economic activities of man; and some of their more important applications. The course will be conducted partly by lectures, and partly by oral discussions, with frequent written tests. Students are advised to take it in the sophomore year. Freshmen will not be admitted, except by special consent of the instructor.

Assistant Professor CUSTIS, Dr. WELD, and Instructors.

3. PRINCIPLES OF SOCIOLOGY. *First semester*, 1. A study of the nature and causes of social development. Special attention will be given to an examination of the origin and function of some of the more important social institutions, such as the family, religion, and the state. The course may with special advantage be preceded by or taken in connection with philosophy 1. Prerequisite, 1.

Assistant Professor CUSTIS.

4. SOCIAL PROBLEMS. *Second semester*, 1. A study of some of the more important problems of contemporary American society, such as poverty, pauperism, intemperance, and crime; and

the methods of dealing with them. The course will be taken with greater benefit if preceded by course 3. Prerequisite, 1.

Assistant Professor CUSTIS.

5. ECONOMIC GEOGRAPHY. *First semester*, 11. A study of the resources and industrial conditions of the leading commercial nations, and the principal commodities entering into international commerce, with special reference to the United States.

Dr. WELD.

6. COMMERCIAL METHODS. *Second semester*. *Two hours*. M., Th., 1. A study of methods of marketing products, and organization of business for that purpose. The course will deal with such subjects as advertising, the exchanges, and the development of domestic and foreign markets.

Dr. WELD.

7. PRINCIPLES OF ECONOMICS. (Advanced course). *First semester*, 9. This course is designed primarily for those who wish a greater knowledge of theoretical economics than can be obtained in course 1. It will be largely devoted to those phases of the subject which are attracting the attention of the leading economists of today. A special effort will be made to aid the student in developing the ability to deal with economic problems. Prerequisite, 1.

Assistant Professor CUSTIS.

8. INDUSTRIAL ORGANIZATION. *Second semester*, 9. A study of modern industry, with special reference to the higher forms of organization, such as the trust. Among the subjects taken up will be: the development of the modern business corporation; the causes of combination and the forms which it assumes; the promotion and financing of trusts; the advantages and disadvantages of such organizations; and their relation to the state. Prerequisite, 1.

Assistant Professor CUSTIS.

9. THE ECONOMIC HISTORY OF THE UNITED STATES. *First semester*, 10. A study of the social and industrial development of the United States, together with its financial history. Among the subjects taken up will be the economic effects of slavery, the civil war, the protective tariff, and immigration.

Dr. WELD.

10. PUBLIC FINANCE AND TAXATION. *Second semester*, 10. A study of the principles governing public expenditures and revenue, with special attention to the subject of taxation with a view to determining the merits and defects of the present system.

Dr. WELD.

12. HISTORY OF COMMERCE AND COMMERCIAL POLICIES, 11. *Second semester.* A survey of ancient, medieval, and modern commerce, the tariff history of the principal commercial nations, and the effects of commercial treaties. Special attention will be given to the tariff policy of the United States, the history of its merchant marine, and the development of its trade on the Pacific. Dr. WELD.

14. INSURANCE. *Second semester. Two hours.* T., F., 1. The various kinds of insurance, such as life, fire, and marine, will be studied. The course will deal more with the economic aspects of insurance than with the legal and actuarial side. Dr. WELD.

15. MONEY AND BANKING. *First semester, 9.* A discussion of the principles relating to this branch of economics, followed by a review of the more important monetary and banking legislation of the last century. Prerequisite, two courses in economics.

Professor SMITH.

16. TRANSPORTATION. *Second semester, 9.* A study of modern methods of transportation. Some attention will be given to roads, canals and ocean routes, but these will be viewed mainly in relation to the railway system. The various questions arising in connection with the construction, operation, and regulation of the railway business will be discussed. Prerequisite, 1.

Professor SMITH.

17. LABOR. *First semester. Two hours.* M., W., 11. The effect of modern industrial changes upon the wage-earning class; the growth of labor organizations and their objects and methods; employers' associations; labor legislation. Prerequisite, 1.

Professor SMITH.

18. MUNICIPAL GOVERNMENT. *Second semester. Two hours.* M., W., 11. The development of municipal government in the United States and its relation to the state government; present tendencies in municipal organization; municipal problems. Prerequisite, 1.

Professor SMITH.

19, 20. CONSTITUTIONAL GOVERNMENT, 10. In this course special attention will be given to the origin and growth of American political institutions. During the first semester the national government will be studied, comparisons being made with the governments of other countries. State and local governments will re-

ceive attention during the second semester. This course should be preceded or accompanied by 1. Professor SMITH.

21, 22. SEMINARY IN POLITICAL THEORIES. *Two hours.* Time to be arranged. This course, though designed primarily for graduate students, is open to undergraduates who have sufficient preparation in economics, history, and government.

Professor SMITH.

24. PUBLIC INTERNATIONAL LAW. *Second semester. Two hours.* The history and development of public international law with special reference to American diplomacy.

Professor CONDON.

RHETORIC AND ORATORY

ARTHUR RAGAN PRIEST, *Professor;*

MAYNARD LEE DAGGY, LOREN DOUGLAS MILLIMAN, and VERNON

LOUIS PARRINGTON, *Assistant Professors;*

IDA KATHERINE GREENLEE, *Instructor.*

The objects sought for in the courses here outlined are: (1) to secure a skillful use of English in writing, and an appreciation of it in literature; and (2) to develop skill, power and readiness in oratory and debate. To these ends there will be much writing, and frequent practice in prepared and in extemporaneous speaking.

SUBJECTS

1. ENGLISH COMPOSITION. *Both semesters. First semester.* Sections at 8, 9, 10, 11, 1, 2, *Second semester.* Section at 1. Daily and fortnightly themes, together with a study of the principles of rhetoric. Text: part I of Genung's Working Principles of Rhetoric. Each student will meet the instructor for private consultations. Required of freshmen in the College of Liberal Arts. Students who can give evidence, by examination, of superior training in English composition may omit course 1. Professor PRIEST, Assistant Professors MILLIMAN and PARRINGTON, and Instructors.

X 2. ENGLISH COMPOSITION. *Second semester.* Sections at 8, 9, 10, 11, 1, 2. Open to all students who have completed course 1. Ten sections. Daily and fortnightly themes, with private conferences. Part II of Genung's Working Principles of Rhetoric, and

specified readings from modern English prose. Required of freshmen in the College of Liberal Arts.

Assistant Professors MILLIMAN and PARRINGTON, and Instructors.

1a. ENGLISH COMPOSITION. *First and second semesters. First semester.* Sections at 8, 1.; *second semester*, section at 1. This course is designed to so fit the student in the use of good English as to enable him to express his thoughts smoothly and correctly. Toward this end he will be expected to prepare both daily and weekly themes. Each student will meet the instructor once a week for private consultation on his theme work. Genung's Working Principles of Rhetoric will be used as the guide in all kinds of English construction, especially in the art of letter writing and other business forms. Required of all freshmen in the College of Engineering and the School of Mines.

Professor PRIEST, Miss GREENLEE.

3, 4. ADVANCED PROSE COMPOSITION. *Two hours.* M., Th., 1. A practical study of the problems of the different discourse forms. Prerequisite, 2. Assistant Professor MILLIMAN.

5. ESSAY AND ORATION. *First semester. Two hours.* M., W., 11. This course comprises a study of the essay and the oration as types of advanced composition. Weekly themes with conferences. Prerequisite, 2. Assistant Professor DAGGY.

6. FORMS OF PUBLIC DISCOURSE. *Second semester. Two hours.* M., W., 11. In this course an analytical study of oratorical masterpieces is made, with constant practice in the composition of the commemoration address, the eulogy, and other forms of public discourse. Prerequisite, 5. Assistant Professor DAGGY.

7, 8. DRAMATIC COMPOSITION. *Two hours.* M., W., 2. A course based upon the inductive study of the technique of the drama. Lectures on the principles of dramatic criticism. Practical work in the composition of the drama, required of all students.

[Instructor.]

9. ADVANCED ARGUMENTATION. *First semester. Two hours, afternoon.* Practice in briefing selected masterpieces of argumentation. Each student will also present original briefs. Practice in argumentative composition. Text: Baker's Principles of Argumentation, revised edition. Prerequisite, 2.

Assistant Professor DAGGY.

10. **DEBATING.** *Second semester. Two hours, afternoons.* Practice in preparation and delivery of debates. Prerequisites, 2, 9, and 13. Assistant Professor DAGGY.

13. **ORAL EXPRESSION.** *Each semester. Sections at 10, 1.* The purpose of this course is to cultivate a direct and natural delivery; to stimulate correct thinking; and to develop the imagination. Vocal technique, including breathing, poise, action and correct vocalization, is given much attention. Daily practice in reading and speaking is required of all students.

Assistant Professor DAGGY and Instructor.

14. **PRACTICAL PUBLIC SPEAKING (Men).** *Each semester. Two hours. T., F., 11.* A practical study of the principles of public speaking with reference to the needs of business and professional life. Open only to men who have completed course 13 with a grade of B-|-.

Assistant Professor DAGGY.

15. **DRAMATIC READING.** *First semester. Two hours. T., Th., 2.* A study of the classic drama from the point of view of vocal expression. Representative plays, such as Merchant of Venice, Hamlet, and As You Like It, are read; and selected scenes are acted by members of the class. Prerequisite, 13. [Instructor.]

16. **DRAMATIC READING.** *Second semester. Two hours. T., Th., 2.* A continuation of course 16. The contemporary dramas are read, and selected scenes are presented by members of the class. Prerequisite, 15. [Instructor.]

17. **ENGLISH ORATORY.** *First semester, 9.* A study of the relation of representative orators to the development of the political and social institutions of England from the sixteenth century to the present day. The principal orations of Elliot, Wentworth, Walpole, Chatham, Burke, Mansfield, Fox, Pitt, Cobden, Bright, and Gladstone are read and analyzed.

Assistant Professor DAGGY.

18. **AMERICAN ORATORY.** *Second semester, 9.* A critical study of the orations of Otis, Henry, Hamilton, Webster, Calhoun, Phillips, Beecher, Lincoln, and other representative orators.

Assistant Professor DAGGY.

SCANDINAVIAN

The University was authorized by the legislature at its last session to provide for work in Scandinavian. This work will be provided for under this authorization and definite announcements will be made later.

SPANISH

CAROLINE HAVEN OBER, *Professor*;

CHARLES MUNRO STRONG* and HOMER P. EARLE, *Instructors*;

EDITH S. MICHELSON, *Graduate Assistant*.

In this department considerable time is given to colloquial Spanish. The close relations of the United States with Central and South America, and the various lands where Spanish alone is spoken have increased the value of a speaking knowledge of this language.

While due attention is given to the rich, but little known literature of the golden age, and the varied writings of the present century, full opportunities are also offered to acquire a knowledge of practical and commercial Spanish.

SUBJECTS

1, 2. ELEMENTARY. Sections at 8, 9, 11, 1, 2. Lessons in Spanish on every-day topics, training of the ear and tongue. Essentials of Spanish grammar; readings from modern Spanish authors. Professor OBER, Mr. EARLE and Miss MICHELSON.

1a. ELEMENTARY. *Second semester*. Sections at 10, 2. The same work as in course 1, offered for the benefit of students entering the University at this time.

Mr. EARLE and Miss MICHELSON.

2a. ELEMENTARY. *First semester*. Sections at 10, 2. Continuation of course 1a.

Mr. EARLE and Miss MICHELSON.

3, 4. PRACTICAL. Sections at 10, 1. Business correspondence, commercial terms and conversation, readings selected chiefly from Spanish newspapers and magazine articles of the day. Prerequisite, 2 or 2a.

Professor OBER and Mr. EARLE.

*See foot note page 19.

5, 6. LITERARY. 9. Knapp's Spanish Readings. Spanish poetry. Ford's Spanish Anthology. Essays written on literary subjects. Prerequisite, 2 or 2a. Miss MICHELSON.

7, 8. ADVANCED. M., Tu., W., 11. Literature of the sixteenth and seventeenth centuries. Lope de Vega; Calderon; the Auto Sacramental; Spanish poems of the Cid; Spanish literature of the fifteenth century. Prerequisite, 5 or 6. Professor OBER.

9, 10. SPANISH NOVEL. *Two hours.* Tu., Th., 8. Study of the Spanish novel beginning with the "Novela Picaresca," having its origin in Spain, and including the "Novela de Costumbres," the historical novel, and the religious novel. Works read partly in class and partly outside: Gil Blas, Dona Perfecta, Pepita Jiménez, and selections from Pérez Galdós and Pérez Escrich. Prerequisite, 4 or 6. Professor OBER.

11, 12. HISTORY OF SPANISH LITERATURE. *Two hours.* Th., F., 11. Prerequisite, 4 or 6. Professor OBER.

13, 14. DON QUIJOTE. *Two hours.* Th., F., 11. Open only to advanced students. Professor OBER.

15, 16. ADVANCED PROSE COMPOSITION. *One hour.* T., 9. Prerequisite, 4 or 6. Mr. EARLE.

17, 18. TEACHERS' COURSE. *First semester. Two hours.* W., F., 8. Discussion of methods of teaching Spanish. Outlines of practical lessons. Practice work. Conversation. (This course may be given in place of Spanish 11, 12, or Spanish 13, 14, the choice depending on the preparation of the students applying). Professor OBER.

19, 20. SPANISH READINGS. Advanced reading course. Time to be arranged. Individual work in the library with frequent written reports. Designed to give greater familiarity with modern Spanish literature and ease in reading Spanish works. Open only to advanced students. Professor OBER.

ZOOLOGY

TREVOR KINCAID, *Professor*;ARTHUR DAY HOWARD, *Assistant Professor*.

In this department the more elementary courses are designed with special reference to the place of zoology in the general scheme of a liberal education. By means of the laboratory method the student is brought in direct contact with the facts of nature, and taught to interpret the phenomena of life at first hand. An effort is also made to pave the way for a more thorough understanding of the related sciences in which biological principles play an important role.

The advanced courses are more technical in character, and are planned to meet the needs of those wishing to specialize in biology, and for students intending to enter the medical profession.

The environment of the University offers a most favorable opportunity for the study of natural history. The shores of Puget sound are near at hand, and make possible the study of marine animals in the living condition, while the lakes whose shores form portions of the boundaries of the campus swarm with fresh water organisms.

SUBJECTS.

1, 2. ELEMENTS OF ZOOLOGY. M., W., 11. Laboratory, M., W., or Tu., Th., 2-4. A general review of zoological science, involving a study of the structure, classification and habits of the principal types included in the great branches of the animal kingdom. This course includes a series of lectures upon the more important theories of biology in order that the student may pursue the work from an interpretative standpoint. Field work is regarded as an essential feature, and parties are frequently taken to the sea shore and to other points of zoological interest during the season.

Professor KINCAID.

3, 4. VERTEBRATE ANATOMY. M., W., 11. Laboratory, M., Th., 1-4. The comparative structure of the vertebrate organs studied by dissection of six backboned animals, and the evolution of the various systems traced from the lowest fishes up to man. Prerequisite, 1 and 2 or their equivalent.

Assistant Professor HOWARD.

5. HISTOLOGY. *First semester.* M., Th., 9. Laboratory, Tu., Th., or W., F., 1-4. The investigation of the microscopic structure of animal tissue from the derivative standpoint, including the study of the fundamental types of cell, and the methods used in the preparation of microscopic slides. Prerequisite, 1 and 2 or their equivalent. Professor KINCAID.

6. VERTEBRATE EMBRYOLOGY. *Second semester.* M., Th., 9. Laboratory, M., W., or T., Th., 1-4. A study of the comparative developmental history of the vertebrates, based upon the embryonic development of the chick, with supplementary work upon the embryos of other vertebrate forms. Professor KINCAID.

7. ELEMENTARY PHYSIOLOGY. *First semester.* Tu., Th., 9. Laboratory, Tu., Th., 10-12; Tu., Th., 2-4. The human body, its tissues and organs, and their functions with especial reference to hygiene. In the laboratory experimental work is given together with dissection and microscopic examination of illustrative material. Assistant Professor HOWARD.

8. EXPERIMENTAL PHYSIOLOGY. *Second semester.* Tu., Th., 9. Laboratory, Tu., Th., 2-4. The physiology of muscle and nerve, of the circulatory and respiratory organs studied from the standpoint of the investigator. Prerequisite, 7. Assistant Professor HOWARD.

9. MAMMALIAN ANATOMY. *Second semester.* Tu., Th., 8. Laboratory, M., Th., 2-4. The special anatomy of the skeleton, muscles, blood vessels and nerves, with reference to human anatomy. Preparatory to a medical course. Assistant Professor HOWARD.

10. FOREST ZOOLOGY. *First semester.* Tu., Th., 8. Laboratory, 2 hours per week. A discussion of the animal life characteristic of forest, including the classification, habits, economic relations, propagation, and protection of forest animals. Professor KINCAID.

11. FOREST ENTOMOLOGY. *Second semester.* Tu., Th., 8. 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. Laboratory, two hours per week. Professor KINCAID.

12. **ETHNOLOGY.** *First semester.* Tu., F., 11. The study of the human species from the zoological standpoint, including a discussion of the races of mankind, their origin, migrations, distribution, and customs. Illustrated by means of lantern slides. No prerequisite.

Professor KINCAID.

13. **EVOLUTION.** *Second semester.* Tu., F., 11. A series of lectures upon the more important biological problems related to the general theory of organic evolution, including variation, selection, mutation and heredity. Illustrated by stereopticon views. Prerequisite, zoology 1, botany 1, or their equivalent.

Professor KINCAID.

14. **NORMAL COURSE.** *Second semester. Two hours.* T., F., 9. Designed to meet the needs of students who expect to teach zoology in the high schools of the state.

Professor KINCAID.

15, 16. **ANIMAL ECOLOGY.** Hours to be arranged. A study of the adaptations of animals, including their habits, means of protection, and relation to environment. Lectures, laboratory work, and field operations. Hours and credit to be arranged.

Professor KINCAID.

17, 18. **RESEARCH.** Hours to be arranged. Students who are capable of carrying on independent research will be allowed to do so under the direction of the instructors in charge. Hours and credits to be arranged.

Professor KINCAID and Assistant Professor HOWARD.

COLLEGE OF ENGINEERING

FACULTY

- THOMAS FRANKLIN KANE, Ph. D., *President.*
- ALMON HOMER FULLER, C. E., Professor of Civil Engineering, *Dean.*
- HENRY LANDES, A. M., Professor of Geology and Mineralogy.
- JOHN THOMAS CONDON, LL. M., Professor of Law.
- HORACE BYERS, Ph. D., Professor of Chemistry.
- MILNOR ROBERTS, A. B., Professor of Mining Engineering and Metallurgy.
- FREDERICK ARTHUR OSBORN, Ph. D., Professor of Physics and Director of the Physics Laboratories.
- ROBERT EDOUARD MORITZ, Ph. D., Ph. n. D., Professor of Mathematics and Astronomy.
- CARL EDWARD MAGNUSSON, Ph. D., E. E., Professor of Electrical Engineering.
- EVERETT OWEN EASTWOOD, B. S., C. E., M. A., Professor of Mechanical Engineering.
- SAMUEL CHRISTOPHER LANCASTER, Professor of Highway Engineering.
- ELMER JAMES MCCAUSTLAND, C. E., Professor of Civil Engineering.
- DAVID CONNOLLY HALL, M. D., Professor of Physical Training.
- CHARLES CHURCH MORE, C. E., Associate Professor of Civil Engineering.
- JAMES EDWARD GOULD, Ph. B., Assistant Professor of Astronomy and Mathematics.
- HENRY KREITZER BENSON, Ph. D., Assistant Professor of Chemistry.
- VANDERVEER CUSTIS, Ph. D., Assistant Professor of Economics.
- FRANK MARION MORRISON, A. B., Assistant Professor of Mathematics.
- LOREN DOUGLAS MILLIMAN, A. B., Assistant Professor of Rhetoric.
- IRVIN WALTER BRANDEL, Ph. D., Assistant Professor of Chemistry.
- IDA KATHERINE GREENLEE, A. B., Instructor in English.
- HENRY LOUIS BRAKEL, A. B., Instructor in Physics.
- FRANK EDWARD JOHNSON, E. E., Instructor in Electrical Engineering.
- HENRY LEE BOWLBY, B. S., Instructor in Civil Engineering.
- CHARLES W. HARRIS, C. E., Instructor in Civil Engineering.

GEORGE SAMUEL WILSON, B. S., Instructor in Mechanical Engineering.

SAMUEL THOMAS BEATTIE, Instructor in Woodwork.

GEORGE IRVING GAVETT, B. S. (C. E.), Instructor in Mathematics.

WILLIAM VERNON LOVITT, A. B., Instructor in Mathematics.

CHARLES E. WEAVER, Ph. D., Instructor in Geology.

SANDY MORROW KANE, Instructor in Metalwork.

CLARENCE RAYMOND COREY, E. M., Instructor in Mining and Metallurgy.

HAROLD ALLEN THOMAS, A. B., C. E., Instructor in Civil Engineering.

LEWIS D. H. WELD, Ph. D., Instructor in Political Science.

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

JAMES DELMAGE ROSS, Lecturer and Consulting Electrical Engineer on Central Stations.

JOHN HARISBERGER, Lecturer and Consulting Electrical Engineer on Power Transmission.

CLARENCE E. FLEAGER, Lecturer and Consulting Electrical Engineer on Telephones.

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

ROGER TAYLOR, B. S., Lecturer on Copper Smelting.

GEORGE STRANDBERG, Assistant in Surveying.

HERBERT JUDSON FLAGG, Assistant in Surveying.

PURPOSE

The College of Engineering offers four complete courses: chemical, civil, electrical and mechanical engineering.

The aim of this college is to impart such training as will prepare its graduates for successful careers in their chosen professions. During the freshman and sophomore years there is laid a broad foundation of mathematics, physics, chemistry, English, drawing, and surveying. The last two years are devoted to work more purely professional. The usual methods of textbook study, recitations, and lectures are employed. The student is required to supplement these, as far as possible, with actual practice in the field and laboratory, and by making tests of available commercial plants. Occasional inspection tours among the varied engineering interests in Seattle and vicinity furnish excellent illustrations. Engineering students are strongly advised to devote their vacations to surveying, draughting, work in fac-

tories, repair shops, electric light, and railway stations and similar work, in order to obtain commercial experience and a better appreciation of the relation of technical training to practical work.

Class room and public lectures of special interest to engineers are given from time to time by the leading consulting and contracting engineers of the vicinity.

The Pacific Northwest in its present state of rapid development offers exceptional opportunities for engineers and engineering students. The large amount of work under construction and in operation furnishes splendid object lessons for illustrating and supplementing the University work. The engineers of the vicinity have been very generous in extending courtesies to the classes on their various trips of inspection, and thoughtful in considering them when in need of assistance. All of the graduates of the college have been immediately placed in desirable positions, and a large percentage of the undergraduates have always been able to secure vacation work with surveying parties, in draughting rooms, and in power plants and factories.

The state of Washington is exceedingly well supplied with water power, a considerable portion of which is still in its undeveloped state. This offers a great field for hydraulic and electrical engineers for the most economical and flexible means of utilizing this power and distributing it by the agency of electricity.

The Snoqualmie falls station, the Puget Sound Power company's plant at Electron on the Puyallup river, and the Seattle municipal plant on Cedar river, having a combined output of fifty thousand horse power, are all within forty miles of the University, and delivering power into the city. They are splendid examples of hydraulic and electrical development and of high tension and power transmission work.

Numerous other plants are in successful operation throughout the state. As the country continues to develop, the increased demand for power will call for development of many of the still unused water powers, and demand the services of men especially trained to do that kind of work and do it economically. Especial attention is being given to this phase of the hydraulic and electrical courses.

The course in chemical engineering is designed for those who wish a thorough training in the fundamental branches of engi-

neering as a means of strengthening their work in the applied lines of chemistry, and in the belief that such a system of training will increase the present tendency for the chemists of the large industries to develop into superintendents and managers.

Highway improvement commands more attention today than ever before. Men competent to construct highways in America are few in number. The International Road Congress held in Paris called particular attention to this need throughout the world. The University of Washington offers a course in highway engineering to help supply this demand in this state.

The Park board of the city of Seattle is engaged in constructing an elaborate system of playgrounds, parks, and boulevards, which will offer excellent opportunity for study and observation.

The state of Washington has appropriated more than one million, two hundred and fifty thousand dollars for the improvement of highways during the next two years. Four large rock crushing plants will be put in operation for supplying the necessary stone. Students who avail themselves of the training offered will find a broad field open to them.

GOVERNMENT TIMBER TESTING SERVICE

The United States government through its forest service has located at the University of Washington a government timber testing station. Two timber testing engineers of the forest service are stationed here, and actual work in the investigation of the mechanical properties of Northwestern timber is regularly carried on. Engineering students find much of interest and value in this work. The structural materials testing laboratory is used jointly for this work and for University instruction and investigation.

The laboratory has recently been moved to its final location in the new engineering building—one of the permanent structures provided by the 1907 legislature for the use of the Alaska-Yukon-Pacific exposition and the University. Special exhibition tests of timber will be made by the forest service throughout the exposition.

LABORATORIES

For a description of the laboratories of the College of Engineering, as well as the other University laboratories used by engineering students, see pages 43-47.

ADMISSION

The requirements for admission to the freshman class of the College of Engineering are:

English	4
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
Chemistry	1
Modern language	2
U. S. history and civics.....	1
Elective	3
<hr/>	
Total	15

Graduates from schools unable to offer *chemistry* and *modern* foreign language may present a unit of biology and two units of a foreign language.

For more specific information concerning the preparation necessary to meet the above requirements and list of electives, see page 60 and following.

It is desirable for the student to review his preparatory mathematics just before entering the College of Engineering. By such a step much time will be saved and the work of the college will be rendered far more valuable to him.

The freshman work in the several courses is identical, thus making it possible for a student to delay the definite choice of a course until the beginning of the sophomore year.

The work of the first five semesters in all courses will be repeated each semester during the year 1909-10. Additional subjects will be repeated in the following years. This makes it possible for a student to enter in either September or February, with the assurance of securing work in its regular sequence.

SEMINARY

The senior and junior students meet for an hour each week with their respective class adviser for the consideration and discussion of engineering questions, not specifically covered by the class room work. In connection with this each student does sys-

tematic reading in the engineering periodicals, and submits oral and written reports, which are discussed by the class.

THESIS

A graduating thesis is required of each senior of the College of Engineering. It is intended that this thesis shall represent original research or design in some branch of engineering, or the careful 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.

DEGREES

The courses of the College of Engineering lead to the degree of bachelor of science (B. S.), in civil, electrical, mechanical, and chemical engineering, respectively.

DEGREES WITH HONORS

A degree with honors in engineering may be conferred upon any student of the College of Engineering who is recommended by the engineering faculty.

ADVANCED DEGREES

The master's degrees in engineering, namely, civil engineer (C. E.), mechanical engineer (M. E.), and electrical engineer (E. E.), will be conferred upon graduates in engineering who give evidence of having been engaged in responsible work for three years in their chosen profession and present a satisfactory thesis.

COURSE IN THE COLLEGE OF ENGINEERING

The subjects in each department are described in full under the departmental statements, page 180, and following.

Course in Chemical Engineering

*First Semester—**Second Semester—*

FRESHMAN YEAR			
	Hours		Hours
Plane trigonometry and higher algebra, 1a.....	4	Analytic geometry and higher algebra, 2a.....	4
Chemistry, 1a.....	4	Chemistry, 2a.....	4
Engineering drawing, 1a....	4	Engineering drawing, 1b....	4
English composition, 1.....	4	Plane surveying, 3a.....	4
Shop, 1a.....	2	Shop, 1b.....	2
Physical training, 1.....	2	Physical training, 2.....	2
	<hr/>		<hr/>
	16 + 4		16 + 4

SOPHOMORE YEAR			
	Hours		Hours
Analytic geometry, 5a.....	2	Calculus, 6a.....	4
Differential calculus, 5b....	4	Physics, 2a.....	5
Physics, 1a.....	6	Quantitative analysis, 6....	4
Qualitative analysis, 5.....	4	Industrial chemistry.....	4
Physical training, 3.....	2	Physical training, 4.....	2
	<hr/>		<hr/>
	16 + 2		17 + 2

JUNIOR YEAR			
	Hours		Hours
Mechanics, 5a.....	5	Mechanics, 5b	4
Organic chemistry, 3.....	4	Organic chemistry	4
Metallurgy, 1.....	4	Metallurgy, 2.....	4
Mineralogy, 5.....	3	Hydraulics, 6a, or Elective..	4
	<hr/>		<hr/>
	16		16

SENIOR YEAR			
	Hours		Hours
Bacteriology or		Elective	4
Water supply, 6c.....	4	Industrial electricity.....	4
Gas and water, 11.....	4	Thesis	4
Physical chemistry, 9.....	4	Electro chemistry.....	4
Elements of steam eng., 6... 2			<hr/>
	<hr/>		16
	16		

Course in Civil Engineering

First Semester—

Second Semester—

FRESHMAN YEAR

Hours		Hours	
Plane trigonometry and higher algebra, 1a.....	4	Analytic geometry and higher algebra, 2a.....	4
Chemistry, 1a	4	Chemistry, 2a	4
Engineering drawing, 1a....	4	Engineering drawing, 1b....	4
English composition, 1.....	4	Plane surveying, 3a.....	4
Shop, 1a	2	Shop, 1b	2
Physical training, 1.....	2	Physical training, 2.....	2
<hr/>		<hr/>	
16 + 4		16 + 4	

SOPHOMORE YEAR

Hours		Hours	
Analytic geometry, 5a.....	2	Industrial chemistry, 8.....	4
Differential calculus, 5b....	4	Calculus, 6a.....	4
Physics, 1a	6	Physics, 2a.....	5
City surveying, 3b.....	3	Topographic surveying, 3c... 3	
Engineering drawing, 1c....	2	Roads and pavements, 9a....	1
Physical training, 3.....	2	Physical training, 4.....	2
—		—	
17 + 2		17 + 2	

JUNIOR YEAR

Hours		Hours	
Mechanics, 5a.....	5	Mechanics, 5b.....	4
Political science, 1a.....	4	Hydraulics, 6a	4
Railroads, 4a.....	4	Railroads, 4b	4
Geology, 1a.....	4	Masonry construction, 8....	5
	<hr/>		<hr/>
	17		17

SENIOR YEAR

	Hours		Hours
Bridges, 7a.....	4	Bridges, 7b	3
Water supply and irrigation, 6d	3	Sanitary engineering, 6e....	3
Hydraulic power, 6b.....	3	Contracts and specifica- tions, 11.....	2
Structural materials, 10....	3	Thesis	3
Option (groups 1, 2, or 3)..	4	Options (groups 1, 2, or 3).	6
	<hr/>		<hr/>
	17		17

Options will be chosen with the consent of the class adviser from the following groups:

GROUP 1

	Hours		Hours
Astronomy, 3.....	2	Astronomy, 4	2
Least squares, 11.....	2	Geodesy, 3d.....	2
		Elective	2

GROUP 2

	Hours		Hours
Highway location, 9b.....	2	Highway construction, 9d...	2
Highway construction, 9c...	2	Highway economics, 9f.....	2
Highway metals, 9e.....	1	Parks and boulevards, 9g....	2

GROUP 3

	Hours		Hours
Bridges, 7c.....	2	Bridges, 7d.....	2
Mechanics, 5c.....	2	Mechanics, 5d.....	2
		Elective	2

Course in Electrical Engineering

First Semester—

Second Semester—

FRESHMAN YEAR

Hours	Hours
Plane trigonometry and higher algebra, 1a..... 4	Analytic geometry and higher algebra, 2a..... 4
Chemistry, 1a 4	Chemistry, 2a 4
Engineering drawing, 1a.... 4	Engineering drawing, 1b.... 4
English composition, 1..... 4	Plane surveying, 3a..... 4
Shop, 1a 2	Shop, 1b 2
	Physical training, 2..... 2
—	—
16 + 4	16 + 4

SOPHOMORE YEAR

Hours	Hours
Analytic geometry, 5a..... 2	Calculus, 6a 4
Differential calculus, 5b..... 4	Industrial chemistry, 8..... 4
Physics, 1a 6	Physics, 2a..... 5
Machine design, 5a..... 3	Machine design, 5b..... 2
Mechanism, 10 2	Elements of steam engineer- ing, 6 2
Shop, 3a..... 2	Shop, 4a..... 2
Physical training, 3..... 2	Physical training, 4..... 2
—	—
17 + 4	17 + 4

JUNIOR YEAR

Hours	Hours
Mechanics, 5a..... 4	Mechanics, 5b..... 5
Political science, 1a..... 4	Hydraulics, 6a..... 4
Electrical engineering, 1a, 1c. 3	Electrical engineering, 1b, 1d. 6
Electrical measurements, 4a.. 4	Electrical measurements, 4b.. 1
Experimental engineering, 13a 2	—
—	16
17	

SENIOR YEAR

Hours	Hours
Alternating currents, 6a, 6c.. 5	Alternating currents, 6b, 6d.. 5
Electric railways, 2..... 2	Central stations, 8a..... 2
Telephones, 9a..... 2	Power transmission, 8b..... 2
Commercial testing, 7..... 3	Elective 2
Steam turbines, 26..... 2	Thesis 4
Dynamo design, 10a..... 1	—
Hydraulics, 6b 1	15
—	
16	

Course in Mechanical Engineering

First Semester—

Second Semester—

FRESHMAN YEAR

Hours	Hours
Plane trigonometry and higher algebra, 1a..... 4	Analytic geometry and higher algebra, 2a..... 4
Chemistry, 1a..... 4	Chemistry, 2a..... 4
Engineering drawing, 1a.... 4	Engineering drawing, 1b.... 4
English composition, 1a.... 4	Plane surveying, 3a..... 4
Shop, 1a 2	Shop, 1b 2
Physical training, 1..... 2	Physical training, 2..... 2
—	—
16 + 4	16 + 4

SOPHOMORE YEAR

Hours	Hours
Analytic geometry, 5a..... 2	Calculus, 6a..... 4
Differential calculus, 5b..... 4	Industrial chemistry, 8..... 4
Physics, 1a 6	Physics, 2a..... 5
Machine design, 5a..... 3	Machine design, 5b..... 2
Mechanism, 10..... 2	Elements steam engineer- ing, 6 2
Shop, 3a 2	Shop, 4a 2
Physical training, 3..... 2	Physical training, 4..... 2
—	—
17 + 4	17 + 4

JUNIOR YEAR

Hours	Hours
Mechanics, 5a..... 4	Mechanics, 5b..... 5
Political science, 1a..... 4	Hydraulics, 6a..... 4
Electrical engineering, 1a.... 2	Electrical engineering, 1b, 1c. 3
Physics, 3a..... 2	Valve gears, 8..... 2
Engines and boilers, 7a.... 2	Engine and boiler design, 7b.. 2
Experimental engineering, 13a 2	—
Shop, 4b 2	16
—	—
16 + 2	

SENIOR YEAR

Hours	Hours
Hydraulics, 6b 1	Gas engines, 15..... 2
Machine design, 5c..... 2	Machine design, 5d..... 2
Experimental engineering, 13b 2	Experimental engineering, 13c 2
Graphic statics, 12..... 3	Heating and ventilating, 16.. 2
Thermodynamics, 11..... 2	Elective 2
Steam turbines, 28..... 2	Contracts and specifica- tions, 11 2
Elective 2	Thesis 4
Structural materials, 10a.... 2	—
—	16
16	

DEPARTMENTS OF INSTRUCTION

CIVIL ENGINEERING

ALMON HOMER FULLER, *Professor*;
SAMUEL CHRISTOPHER LANCASTER, *Professor*;
ELMER JAMES MCCAUSTLAND, *Professor*;
CHARLES CHURCH MORE, *Associate Professor*;
HENRY LEE BOWLBY, *Instructor*;
CHARLES W. HARRIS, *Instructor*;
HAROLD ARTHUR THOMAS, *Instructor*.
CHARLES EVAN FOWLER, *Lecturer*;

SUBJECTS

1a. ENGINEERING DRAWING. *Each semester.* Section A, M. 8, W. 9, M., F., 9-11; section B, M., F., 10, W., F., 2-4; section C, M., W., 9, T., Th., 2-4; section D, M., 8, Th., 9, T., 9-11, Th., 10-12; section E, W., Th., 11, T., Th., 2-4; section F, M., 11, W., 2, M., 2-4, W., 3-5; section G, M., W., 9, T., Th., 9-11. The elements of descriptive geometry including projections of points, lines, and planes; instruction in use of instruments and practice in linear drawing; construction from printed descriptions in orthographic projection; lettering including the Roman and Gothic alphabets and a practical free hand alphabet for working drawings. Prerequisites, plane and solid geometry.

Mr. HARRIS, Professor MCCAUSTLAND, Mr. THOMAS.

2a. ENGINEERING DRAWING. *Each semester.* Continuation of 1a. Curved surfaces, plane sections and section lining; intersection of simple geometric forms; rotation of points, lines and planes; warped surfaces.

Mr. HARRIS, Professor MCCAUSTLAND, Mr. THOMAS.

1c. ENGINEERING DRAWING. *Two hours. Each semester: First semester, M., 1-4; second semester, T., 2-5.* Application of descriptive geometry to perspective drawing. Drawings in linear perspective. Free hand drawing. Sketching from objects, both in projection and in perspective. Free hand topographical sketches. 1c repeated second semester. Mr. BOWLBY and Mr. THOMAS.

3a. PLANE SURVEYING. *Each semester.* Section A, W., F., 1, T., 1-5; section B, W., F., 1, T., 1-5; section C, T., F., 8, Sat., 8-12; section D, T., F., 8, Sat., 8-12; section E, T., F., 8, Sat., 8-12; section F, W., F., 1, T., 1-5. Theory of chain, compass, and transit surveying, leveling, the adjustment and use of instruments, methods used in the United States public land surveys, computations of area, maps. Prerequisites, drawing 1, and mathematics 1a.
Mr. THOMAS and Assistants.

3b. CITY AND MINE SURVEYING. *Three hours. Each semester.* Section A, M., 8, Tu., 1-5; B, Tu., 9, Th., 1-5. Study of the precision necessary to be obtained; survey of a convenient portion of the city, and field and office work of laying out a new addition. Mining survey methods. Field and office work connected with a survey of one of the tunnels on the University campus. Pen and pencil topography. Prerequisite, 3a.
Mr. BOWLBY.

3c. TOPOGRAPHIC SURVEYING. *Three hours. Each semester.* W., 8, F., 1-5. Colored topography; base line measurements; transit triangulation; plane table, stadia and hydrographic surveys; maps. Prerequisite, 3b.
Mr. BOWLBY.

3d. ELEMENTS OF GEODESY. *Two hours. Second semester.* W., 9, F., 2-5. General study of the figure of the earth and of the methods and instruments used in precise surveys over large areas; field work. Prerequisites, 3c, mathematics 11, preceded or accompanied by astronomy 1, 2.
Mr. THOMAS.

3e. FOREST SURVEYING. *First semester.* Instruction in the use of drawing instruments and practice in linear drawing; free hand lettering; tracing of maps. Theory of chain, compass, level and transit surveys. Methods used in the United States public land surveys. Platting of notes and calculation of areas. This course is for sophomores in the School of Forestry. Prerequisite, mathematics 1a.
Mr. BOWLBY.

3f. FOREST SURVEYING. *Second semester.* Drill in the use of the plane table, aneroid barometer, traverse board, Brunton pocket transit, hand level, and transit with stadia in the making of topographical surveys. Use of conventional signs as adopted by the United States forest service. Actual surveys of timbered land and a study of the advantages and disadvantages of the various methods of making them. Prerequisite, forest surveying 3e.
Mr. BOWLBY, Mr. THOMAS.

4a. RAILROAD LOCATION. *Each semester.* M., Th., 10; Sat., 8-12. Theory of circular curves, spirals and turnouts. Making the reconnoissance, preliminary, location and construction surveys for a mile or more of railway. Maps, profiles, cross-sections, earth-work computations and estimates. Prerequisite, 3c. Mr. BOWLBY.

4b. RAILROAD ECONOMICS. *Second semester.* M., W., Th., F., 1. Continuation of 4a. Study of the conditions controlling the economic relation of location, construction and maintenance. Details of construction. Mr. BOWLBY.

5a, 5b. MECHANICS. *5a each semester. First semester:* section A, T., W., Th., 8, T., W., 2-5; section B, T., W., Th., 9, M., 2-5; section F, 9-12; section C, W., T., Th., 10, Th., F., 2-5. *Second semester:* section A, T., W., Th., 8, T., 2-5; section B, M., W., Th., 10, M., 2-5; section C, M., W., Th., 9, W., 2-5. Five hours. *5b each semester, four hours.* Statics, dynamics and mechanics of materials. Solution of problems by graphic and analytic methods. Recitations and computations. Prerequisites, mathematics 6a, physics 1a and 1a. Associate Professor MORE.

5c, 5d. ADVANCED MECHANICS. *Two hours. First semester.* M., W., 11; *second semester,* M., T., 10. An elective course in advanced structural mechanics, in which consideration is given to the general theories of flexure, elasticity and least work, with application to continuous girders, elastic arches, etc. Prerequisites, 5b and 8. Associate Professor MORE.

6a. HYDRAULICS. *Second semester.* Section A, M., T., W., 11, M., 2-5; section B, T., W., Th., 8, W., 2-5; section C, M., T., Th., 10, F., 2-5. Flow of water through pipes and orifices, over weirs and in open channels; energy, impulse and reaction of jets with application to impulse wheels. A brief review of hydrostatics is given at the beginning of the semester. This course must be preceded or accompanied by 5b. Mr. HARRIS.

6b. HYDRAULIC POWER. *Three hours. First semester.* M., F., 8, Sat., 8-12. Stream flow, storage and generation of power. Development and theory of present types of turbines; design of a spillway dam, penstock and reaction turbine; test of an existing power plant. Prerequisite, 6a. Mr. HARRIS.

6c. HYDRAULIC MOTORS. *One hour. First semester. M., 1-3.* Development and theory of water wheels and turbine pumps; design of a reaction turbine. Prerequisite, 6a. Mr. HARRIS.

6d. WATER SUPPLY AND IRRIGATION. *Three hours. First semester. T., Th., 8, F., 1-5.* A study of the design and construction of water supply and irrigation systems. Lectures, recitations and design. Prerequisite, 6a. Professor McCAUSTLAND.

6e. SANITARY ENGINEERING. *Three hours. Second semester. T., Th., 9, M., 2-5.* The collection and disposal of organic wastes. Sewerage systems and sewage disposal plants. Septic tanks and the bacterial purification of sewage. Lectures, recitations and design. Prerequisite, 6d. Professor McCAUSTLAND.

7a, 7b. BRIDGES. *First semester. T., F., 10, M., W., 1-4; second semester, M., W., 1, T., Th., 1-4.* Stresses, design and deflection of simple trusses with parallel and with non-parallel chords. Analytic and graphic methods. Complete detail drawing of a portion of some structure. Estimates of cost. Prerequisites, 5b and 8. Professor FULLER.

7c, 7d. HIGHER STRUCTURES. *Two hours. First semester. T., F., 11; second semester, T., F., 9.* Theory and design of draw-bridges, cantilever and suspension bridges, metallic and reinforced concrete arches. Must be preceded or accompanied by 7a and 7b. Professor FULLER.

8. MASONRY CONSTRUCTION. *Second semester. Five hours.* Section A, M., T., 8, Th., F., 9-12; section B, M., T., 9, Th., F., 2-5. A study of the properties of the materials employed in masonry construction and their use in foundations, piers, abutments, retaining walls, dams and arches. Recitations and design. Prerequisites, engineering drawing 1c, preceded or accompanied by mechanics 5b. Professor MORE.

9a. HIGHWAYS. *One hour. Second semester.* A series of illustrated lectures touching road economics; methods employed in different countries, construction, repairs, maintenance. Recitations and assigned readings, required for sophomores in civil engineering. The lectures are open to the public without credit. Professor LANCASTER.

9b. HIGHWAY LOCATION. *Two hours. First semester. T., F., 11.* Theory of location as applied to country roads, city streets, drives and boulevards. A study of the difference between railway and highway location. Lectures, recitations and assigned readings. Prerequisites, 4b and 8. Professor LANCASTER.

9c. HIGHWAY CONSTRUCTION. *Two hours. First semester. W., 11, M., 9-12.* A study of the details of highway construction. The proper organization and methods of keeping costs and accounts to insure a wise expenditure of all funds, and obtain the confidence of the community. Also a study of drainage, grading, and the treatment of the wearing surface of every type of road, whether of earth or the best types of gravel and crushed stone. Professor LANCASTER.

9d. HIGHWAY CONSTRUCTION. *Two hours. Second semester. W., 11., M., 9-12.* Continuation of 9c. Taking up the construction of different types of city streets and pavements, embracing a study in the field of actual construction on the University campus. Discussion of methods employed by other states engaged in road construction. Professor LANCASTER.

9e. HIGHWAY METALS. *One hour. First semester. Th., 9-12.* A study of the proper selection of materials for use in metalling the surface of roads to meet the varying conditions of traffic. Location of quarries and installation of machinery for crushing rock. Laboratory work; testing rock to determine its hardness, toughness, and cementing value. Professor LANCASTER.

9f. HIGHWAY ECONOMICS. *Two hours. Second semester. T., Th., 11.* The economic justification for improved highways. Collection of highway statistics. A study of the various state road laws. The effects of wagon tires of varying widths. Lectures, recitations, and research. Professor LANCASTER.

9g. PARKS AND BOULEVARDS. *Two hours. Second semester. T., F., 9.* A study of the most noted parks and boulevards of this country and Europe. Relation of area of parks and pleasure grounds to area of cities. Illustrated lectures, recitations, and assigned readings. Papers and lectures by eminent authorities. Professor LANCASTER.

10a. STRUCTURAL MATERIALS. *Three hours. First semester. T., 9, T., Th., 1-5.* A study of the physical properties of wood, iron,

steel, stone, brick, cement, concrete, etc. Lectures and laboratory work. Prerequisite, 5b. Professor FULLER.

11. **CONTRACTS AND SPECIFICATIONS.** *Two hours. Second semester.* F., 11. Lectures on the law of contracts and a study of engineering specifications. Professor CONDON and Mr. FOWLER.

ELECTRICAL ENGINEERING

CARL EDWARD MAGNUSSON, *Professor;*

FRANK EDWARD JOHNSON and ———, *Instructors.*

JAMES DELMAGE ROSS, JOHN HARISBERGER and CLARENCE E. FLEAGER, *Lecturers;*

1a. **ELECTRICAL ENGINEERING.** *Two hours. Each semester.* Section A, M., 8, T., 11; section B, M., W., 11. Theory of the magnetic circuit; construction, operation, and characteristics of direct current generators and motors. The theory is illustrated and supplemented by a large number of quantitative problems taken from modern commercial machines. [Instructor.]

1b. **ELECTRICAL ENGINEERING.** *Two hours. Second semester.* Section A, Th., F., 11; section B, M., W., 11. Continuation of course 1a, and including storage batteries and the principles of photometry. [Instructor.]

1c. **ELECTRICAL ENGINEERING LABORATORY.** *One hour. Each semester.* Section A, F., 1-4; section B, M., 1-4. Experimental study of direct current machinery. To be taken in connection with course 1a. [Instructor.]

1d. **ELECTRICAL ENGINEERING LABORATORY.** *Four hours. Second semester.* Section A, Th., 1-5; section B, T., 1-5. Continuation of course 1c and taken in connection with course 1b. [Instructor.]

1e. **ELECTRICAL ENGINEERING LABORATORY.** *One hour. Second semester.* M., 2-5. A short course for mechanical engineers. Mr. JOHNSON.

1f. **ELECTRICAL ENGINEERING.** *Three hours. Second semester.* W., F., 8, W., 2-5. This course deals with the more important industrial application of electricity, and is especially arranged to meet the needs of civil engineers. Mr. JOHNSON.

1g. ELECTRICAL ENGINEERING. *Three hours. First semester.* This course deals with the application of electricity to mining, and is especially arranged for students in mining engineering.

Professor MAGNUSSON.

2. ELECTRIC RAILWAYS. *Two hours. First semester. T., Th., 11.* Electrical equipment, roadbed, rolling stock, construction and operation of direct current, single phase and poly-phase systems.

Professor MAGNUSSON.

4a. ELECTRICAL MEASUREMENTS. *Four hours. First semester. M., 8, W., F., 1-5.* Prerequisites, physics, 1a, 2a. Mr. BRAKEL.

4b. ELECTRICAL MEASUREMENTS. *One hour. Second semester. T., Th., 2-5.* Prerequisite, 4a. Mr. BRAKEL.

4c. ELECTRICAL MEASUREMENTS. *Two hours. First semester.* For mechanical engineers. Mr. BRAKEL.

6a, 6b. ALTERNATING CURRENTS. *Three hours. M., W., F., 9.* Theory and application of alternating currents, power measurements, alternators, transformers, induction motors, synchronous motors, rotary converters, and accessory apparatus.

Professor MAGNUSSON.

6c, 6d. ALTERNATING CURRENTS LABORATORY. *Two hours. Section A, F., 1-5; section B, W., 1-5.* Experimental study of alternating current machinery.

Professor MAGNUSSON.

7. COMMERCIAL TESTING. *Three hours. First semester. W., 1-4, Sat., 8-11.* Practical testing of machines and appliances in commercial use, locating grounds, inspecting and testing of new installations.

Professor MAGNUSSON, Mr. JOHNSON.

8a. CENTRAL STATIONS AND ELECTRIC LIGHTING. *Two hours. Second semester. T., Th., 9.* Location, design and operation of central stations. Electric lighting systems.

Mr. ROSS and Instructor.

8b. POWER TRANSMISSION. *Two hours. Second semester. T., Th., 11.* Theory, construction and operation of electric transmission systems. Professor MAGNUSSON and Mr. HARISBERGER.

9a. TELEPHONES. *Two hours. First semester. M., W., 11.* Theory, construction, and operation of telephones. General central station telephone practice. Messrs. JOHNSON and FLEAGER.

9b. **TELEPHONES AND TELEGRAPHS.** *Two hours. Second semester.* M., W., 11. Details of central station apparatus. Testing and locating faults. Multiplex and wireless telegraphs. Prerequisite, 9a.
Mr. JOHNSON.

10a. **DESIGN OF ELECTRICAL APPARATUS.** *One hour. First semester.* M., 3-5. Complete design of one direct current generator.
[Instructor.]

10b. **DESIGN OF ELECTRICAL APPARATUS.** *Two hours. Second semester.* M., 3-5. Design of switchboards and transformers, or A. C. generators or motors.
[Instructor.]

11. **METERS.** *Two hours. First semester.* A study of different types of electrical meters, and problems arising in the measuring of electrical energy for various commercial needs.

Mr. JOHNSON.

MECHANICAL ENGINEERING

EVERETT OWEN EASTWOOD, *Professor;*

GEORGE SAMUEL WILSON, *Instructor;*

SAMUEL THOMAS BEATTIE, *Instructor in Woodwork;*

SANDY MARROW KANE, *Instructor in Metalwork.*

1a. **CARPENTRY AND WOOD-TURNING.** One four hour exercise a week, each semester. The student receives training in the use and care of wood-working tools. Instruction and practice is given in sawing, planing, chiseling, champfering, grooving, framing, tenoning, mortising, dovetailing, splicing, gluing. Exercises in turning include consideration of speeds, use of gouges, chisels, nosing tools, side tools, parting tools, and calipers. Mr. BEATTIE.

1b. **PATTERN MAKING AND CABINET WORK.** One four hour exercise a week, each semester. Same schedule as 1a. The pattern making includes the construction of core boxes, and such patterns as pipe fitting, valves, pulleys, and machine parts. This is followed by a series of exercises in cabinet-work embracing the application to more difficult and advanced work of the principles previously given. Mining engineers are given practice in framing of mine timbers, working from drawings and blue prints.

Mr. BEATTIE.

1c. **MANUAL ARTS.** Supplemental course in woodwork intended for those who expect to teach the subject. The work will

be adapted to the individual needs and preparation of the student.

Mr. BEATTIE.

3a. FORGE AND FOUNDRY. One four hour exercise each week of the first semester. The student is given 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. In the foundry the student is given work in iron and brass; bench and floor moulding, core-making, and is instructed with the view toward proficiency in management of the cupola.

Mr. KANE.

4a. MACHINE WORK. One four hour exercise each week of the second semester. Same schedule as 3a. The course begins with exercises in chipping, filing, and scraping. These are followed by work on the lathe in both iron and brass, including straight and taper turning, centering, chucking, screw cutting, boring, drilling and tapping, knurling and polishing. A few exercises on other machines are given.

Mr. KANE.

4b. MACHINE WORK. One four hour exercise each week of the first semester. Continuation of 4a, including more difficult work on the lathe, and the use of the milling machine, grinder, planer and shaper.

Mr. KANE.

4c. MANUAL ARTS. Supplemental course in machine work intended for those who expect to teach the subject. The work will be adapted to the individual needs and preparation of the student.

Mr. KANE.

In giving the course of shop work it is not the object of the department to make tradesmen of the engineering students, but to give them sufficient experience to make them competent judges of shop work. A series of lectures is given during the progress of each course on the construction, care, and selection of all shop tools. In general, explanation and instruction will be given the class collectively before each exercise embodying new work or new principles. This will be supplemented by individual instruction.

5a. ELEMENTS OF MACHINE DESIGN. *Three hours. Each semester.* Section A, Th., 11, W., F., 1-4; section B, M., 8, W., F., 1-4. A study of the design of machine details, giving practice in the

application of modern formulæ and manufacturers' standards. Design of bolts, riveted joints, boiler staying, bearings, etc. Prerequisite, engineering drawing, 2a. Mr. WILSON.

5b. ELEMENTS OF MACHINE DESIGN. *Two hours. Each semester.* W., F., 1-4. A continuation of course 5a, consisting in the design of gearing, cone pulleys and belt transmission. Practice in tracing and blue printing will comprise a part of this work. Prerequisite, 5a. Mr. WILSON.

5c. DESIGN OF SPECIAL MACHINERY. *Two hours. First semester.* W., F., 1-4. Special problems in the design of hoisting and pumping machinery are assigned. Attention is given to the theory of design and the methods employed by various builders. Prerequisites, 5b and mechanics 5a. Mr. WILSON.

5d. ADVANCED MACHINE DESIGN. *Two hours. Second semester.* W., F., 1-4. Special problems in the design of machine tools, and automatic machinery are given, suited to the abilities and inclination toward specialization of the students. Prerequisites, 5c, 10, and mechanics 5b. Mr. WILSON.

5f. ELEMENTS OF MACHINE DESIGN. *One hour. Each semester.* First five weeks. F., 8-11, F., 1-4. For students taking mining engineering, an abridgement of 5a. Mr. WILSON.

6. ELEMENTS OF STEAM ENGINEERING. *Two hours. Each semester.* Section A, W., F., 8; section B, T., Th., 8. Brings before the student the various forms of steam apparatus used in modern power plants, considering the construction, use, and reasons for installing such apparatus. The course tends to create a working vocabulary in this branch of engineering.

Professor EASTWOOD.

7a. ENGINES AND BOILERS. *Two hours. First semester.* W., F., 9. A study of 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. Prerequisite, 6. Professor EASTWOOD.

7b. DESIGN OF ENGINES AND BOILERS. *Two hours. Second semester.* T., F., 1-4. A study of the theory of the design and its application. One complete problem will be assigned for solu-

tion in the class room. Special reference will be made to the methods employed by various engine and boiler manufacturers. Prerequisites, 5b, 7a, and mechanics 5a. Professor EASTWOOD.

8. VALVE GEARS. *Two hours. First semester.* Th., 11, F., 9-12. A course in the theory and practice of designing the various kinds of valve gears for steam engines. Prerequisite, 6 or 7a. Mr. WILSON.

10. MECHANISM. *Two hours. First semester.* Section A, W., F., 9; section B, T., Th., 9. A study of the operation of machines involving the transmission of forces and the production of determinate motions. Preceded or accompanied by machine design, 5a. Mr. WILSON.

11. THERMODYNAMICS. *Two hours. First semester.* M., F., 11. A consideration of the fundamental principles underlying the transformation of heat into work, with reference to the steam engine, the gas engine and hot air engine, including the discussion of the properties of gases and vapors, and the operation of refrigerating machinery; a study of the use and efficiency of the simple, compound, and multiple expansion engine. The solution of numerous problems arising in practice are required. Prerequisites, 7a, physics 1a, 2a; and mathematics 6a.

Professor EASTWOOD.

12. GRAPHIC STATICS OF MECHANISM. *Three hours. First semester.* M., 8, T., Th., 10-12. The graphic determination of the forces acting at different points in machines used for hoisting, crushing, punching and power transmission. Also, a study of the effects of friction and the stiffness of ropes and belts. Prerequisite, mechanics 5a. Professor EASTWOOD.

13a. EXPERIMENTAL ENGINEERING. *Two hours. First semester.* Section A, M., 1, M., 2-4; section B, Th., 1, Th., 2-4. Calibrations of thermometers, gages, indicator springs, etc. Friction and mechanical efficiency tests of the simple steam engine are made. One complete engine and boiler test with report is required. Prerequisites, 6 or 7a, and physics 1a, 2a. Mr. WILSON.

13b. EXPERIMENTAL ENGINEERING. *Two hours. First semester.* M., 9, M., 10-12. A continuation of course 13a, involving more extended and complete investigations. Special attention is

given to the theory involved and previous experiments. Gas and fuel analysis. Prerequisite, 13a. Mr. WILSON.

13c. EXPERIMENTAL ENGINEERING. *Two hours. Second semester. Tu., Th., 1-3.* An advanced course in commercial testing. Special advantages are enjoyed in this work in having the privileges of a number of the large power plants extended to the department. The work will be carried on from the commercial standpoint, and reports made from the same point of view. Prerequisite, 13b. Professor EASTWOOD and Mr. WILSON.

15. GAS ENGINES. *Two hours. Second semester. Mo., W., 11.* A study of the development of gas engineering, including the different types of gas engines, and gas producers and methods of testing. Prerequisite, 6 or 7a. Mr. WILSON.

16. HEATING AND VENTILATING. *Two hours. Second semester. M., W., 9.* A course of lectures and recitations considering the various systems of heating and ventilating, methods of design and tests. Professor EASTWOOD.

20. RAILWAY MECHANICAL ENGINEERING.. *Two hours. First or second semester. W., F., 11.* Mechanical engineering as related to the machinery and maintenance of railways. Mr. WILSON.

25. POWER PLANTS. *Two hours. Second semester. T., Th., 9.* A study of the design of power plants involving their location, buildings, prime movers, power transmission, etc. Professor EASTWOOD.

26. STEAM TURBINES. *Two hours. First semester. Tu., Th., 9.* The theory, construction and design of steam turbines. Professor EASTWOOD.

30. NAVAL ARCHITECTURE. *First semester. Two hours. T., Th., 1-4.* Elective. A course in theoretical naval architecture, involving the calculations common to ship construction, including areas, volumes, weights, stability, streams, resistance, and powering. Instructions will be given by lectures and recitations, accompanying regular drafting room work. Professor EASTWOOD.

31. **SHIP DRAWING AND DESIGN.** *Second semester. Two hours.* Hours to be arranged. Elective. An application of the principles of naval architecture to the design of a steamship for a definite purpose. Having given the conditions under which the vessel is to operate, the student determines the type best suited for the purpose, and the dimensions and form of the hull. The work is continued by fairing the lines, determining the general arrangement, and the scantlings in accordance with the rules of the American bureau of shipping. Professor EASTWOOD.

CHEMICAL ENGINEERING

HORACE G. BYERS, *Professor*;
HENRY KREITZER BENSON, *Associate Professor*;
IRVIN WALTER BRANDEL, *Assistant Professor*;
WILLIAM MAURICE DEHN, *Assistant Professor*;
GUY P. SENTER, *Graduate Assistant*.

1a, 2a. **ENGINEERING CHEMISTRY.** This course is designed primarily for engineers, but is open to all students who have had a year's work in chemistry in an accredited high school. It consists of two lectures and six laboratory hours per week. At least one of these laboratory hours is devoted to quiz work upon the subject matter of the lectures.

The text-books used are Smith's General Chemistry, Smith's Laboratory Manual, and Byers and Knight's Qualitative Analysis. Professor BYERS and Assistants.

1b, 2b. **GENERAL CHEMISTRY.** *Second semester.* To meet the needs of students coming from high schools at the beginning of the second semester the course 1a, 2a is repeated. Strong students or those carrying light courses are permitted to elect this course when without the prerequisite high school course; but to satisfy the required work of the engineering course such students must elect some other four-hour course in the department of chemistry.

Assistant Professor DEHN.

1, 2. **GENERAL CHEMISTRY.** Lecture, M., W., 11. Laboratory, T., Th., 9-12; T., Th., 2-5; W., F., 2-5. Many students come from accredited schools in which chemistry is not required. To meet the needs of such, a course is offered consisting of two lectures

and six hours laboratory work per week. Text-books: Smith's College Chemistry and Laboratory Manual.

Associate Professor BENSON and Assistants.

3, 4. ORGANIC CHEMISTRY. M., T., Th., 10. Laboratory M., 1-4; S., 9-12. A lecture course on the chemistry of the compounds of carbon. Laboratory work on the preparation of representative compounds. Holleman's text is used in connection with the lectures.

Assistant Professor BRANDEL.

5. ADVANCED QUALITATIVE ANALYSIS. *First semester.* T., 9, Th. 11. Laboratory, Tu., Th., 1-4. 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.

Professor BYERS.

5b. ELEMENTARY QUALITATIVE ANALYSIS. *Two hours. First semester.* M., Th., 9. Laboratory, M., W., 1-4. Chemistry, 1, 2, is followed by a course in qualitative analysis. The course consists of two lectures and six laboratory hours per week. Text-book: Byers and Knight.

Assistant Professor DEHN.

6. QUANTITATIVE ANALYSIS. *Second semester.* Th., 11. Laboratory, W., Th., F., 1-4. Gravimetric and volumetric analysis. Olsen's Quantitative Analysis. Twelve laboratory hours, and one recitation per week.

7. INDUSTRIAL CHEMISTRY. *First semester.* M., W., 9. Laboratory, T., Th., 1-4. Two lectures and two laboratory periods. Prerequisites, 2a or 5b. Lectures deal with the preparation of compounds of industrial importance, and of the principles underlying various industrial processes, such as fractional distillation, fractional crystallization, solid solutions, colloidal solutions, catalysis, and hydrolysis. Laboratory work consists of the preparation of technical compounds, and testing of same to comply with prescribed specifications.

Associate Professor BENSON.

8. INDUSTRIAL CHEMISTRY. *Second semester.* M., W., F., 9. Laboratory, M., W., F., 1-4. A course designed primarily for engineering students. It takes up subjects of importance along engineering lines, and discusses them with respect to manufacture

and applications. About one-half of the time is spent in a discussion of the manufacture and applications of iron and steel. This treatment is supplemented by lantern slide illustrations, trips to industrial plants and by numerous drawings and samples. Each student is required to prepare a paper on some assigned subject.

Associate Professor BENSON.

9. PHYSICAL CHEMISTRY. *First semester.* M. 8, Th. 11. Laboratory, T., Th., 1-4. An elementary course consisting of lectures upon fundamental principles of chemistry based upon physical measurements. The laboratory work consists of determinations of molecular weights by the various methods, construction of solubility curves, specific gravity and conductivity measurements, etc. Prerequisites, 6 and college physics.

Associate Professor BENSON.

10. ELECTRO CHEMISTRY. *Second semester.* W., F., 8. Laboratory, W. and F. afternoons. 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. Prerequisites, 8 and college physics.

Professor BYERS.

12, 13. SPECIAL METHODS. Analysis of water, gas, etc. This course is essentially an advanced course in quantitative analysis, and takes up subjects in addition to those indicated according to the line of work which the student hopes to pursue later. This course is open to only advanced students of the department. It is given by the member of the staff most interested in the special subjects chosen. The work of the first semester is essentially the same for all students.

Professor BYERS.

ASTRONOMY

ROBERT EDOUARD MORITZ, *Professor;*

JAMES EDWARD GOULD, *Assistant Professor.*

3, 4. SPHERICAL ASTRONOMY. *Two hours.* M., Th., 9. Lectures and work in the observatory. A study of spherical trigonometry and its applications to spherical astronomy, together with a preliminary study of such fundamental facts and prin-

ciples as relate to the various determinations of azimuth, latitude, and time. Determination of azimuth, latitude, longitude and time by means of the sextant and theodolite.

Assistant Professor GOULD.

GEOLOGY

HENRY LANDES, *Professor*;

CHARLES EDWIN WEAVER, *Instructor*.

1a. GENERAL GEOLOGY. *First semester*. M., 8, Tu., 9, F., 2-6, and laboratory on M. afternoon. A semester's course for engineering students. Lectures and recitations.

Professor LANDES.

5. MINERALOGY. *First semester*. W., F., 8. Two laboratory periods, M., W., 1-4. Descriptive and determinative mineralogy. Practice in the determination of unlabeled minerals by means of their physical properties and by blowpipe analysis.

Mr. WEAVER.

6. OPTICAL CRYSTALLOGRAPHY. *Second semester*. W., F., 8. Two laboratory periods, M., W., 1-4. Chemical and optical properties of crystallized matter. Demonstrations of the different methods of investigation of the rock forming minerals in thin sections under the microscope. Use of the polarizing microscope and preparation of thin sections.

Mr. WEAVER.

MATHEMATICS

ROBERT EDOUARD MORITZ, *Professor*;

JAMES EDWARD GOULD and FRANK MARION MORRISON, *Assistant Professor*;

GEORGE IRVING GAVETT and WILLIAM VERNON LOVITT, *Instructors*.

1a. PLANE TRIGONOMETRY AND HIGHER ALGEBRA. *First semester*. Eight sections. The work in algebra deals with topics supplementary to the work in trigonometry, such as complex numbers and their trigonometric representation, DeMoivre's theorem, the theory of logarithms, the construction of logarithmic and trigonometric tables, and sine and cosine series, and the trigonometric solution of the cubic. Crockett's Trigonometry, Crockett's Tables, Smith's Treatise on Algebra. Prerequisites,

one year plane geometry, one and one-half years' elementary algebra.

Assistant Professor GOULD and Messrs. GAVITT and LOVITT, Instructor and Assistants.

2a. ANALYTIC GEOMETRY AND HIGHER ALGEBRA. *Second semester.* Six sections. The fundamental conceptions and theorems in plane analytic geometry; the construction of loci from their equations; the deduction of the equations to loci from given conditions; transformation of co-ordinates; the straight line. The algebra consists of lessons supplementary to the analytic geometry, viz: determinants; indeterminates and limiting values; interpretation of imaginary and infinite roots; elementary theorems in the theory of equations, etc. Candy's Analytical Geometry, Smith's Treatise on Algebra. Prerequisites, 1a.

Assistant Professor GOULD and Messrs. GAVITT and LOVITT, Instructor and Assistants.

5a. ANALYTIC GEOMETRY. *Two hours. First semester.* Application of analysis in the study of the conic sections and other plane curves. Introduction to solid analytics. Candy's Analytical Geometry. Prerequisites, 1a, 2a and solid geometry.

Mr. GAVITT and Instructor.

5b. DIFFERENTIAL CALCULUS. *First semester.* A study of the infinitesimal calculus, with special reference to the needs of engineers. Granville's Calculus. Prerequisites 1a, 2a, 3 and 4. Assistant Professors MORRISON and GOULD and Messrs. LOVITT and GAVITT.

6a. DIFFERENTIAL AND INTEGRAL CALCULUS. *Second semester.* Continuation of course 5b.

Assistant Professor MORRISON and GOULD and Mr. LOVITT.

11. METHOD OF LEAST SQUARES. *Two hours. First semester.* M., F., 9. An exposition of the theory of errors with numerical applications. Prerequisites, 6a or 6.

Assistant Professor GOULD.

METALLURGY

MILNOR ROBERTS, *Professor;*CLARENCE RAYMOND COREY, *Instructor;*HARVEY L. GLENN and ROGER TAYLOR, *Lecturers.*

1. FIRE ASSAYING. *First semester.* Th., 11, T., Th., 1-5. One lecture and three laboratory periods. The testing of reagents, the crushing, sampling, and assaying of ores, furnaces and mill products for lead, silver, gold and tin; also, the assay of base and dore bullion. Prerequisite, chemistry 6.

Professor ROBERTS.

2. GENERAL METALLURGY. *Three hours. Second semester.* Th., F., 11, Th., 1-4. Two lectures and one laboratory period. Lectures and laboratory experiments on the properties of metals and alloys, fuels, refractory materials, furnaces and the extraction of common metals (except iron) from their ores. Visits to smelters. Prerequisites, geology 4, chemistry 6, metallurgy 1.

Professor ROBERTS.

7. WET ASSAYING. *Three hours. First semester.* W., 9, T., 1-4, S., 8-11. The technical methods for the determination of copper, lead, zinc, etc., in ores and furnace products. Prerequisite, chemistry 6.

Mr. COREY.

8. METALLURGICAL ANALYSIS. *Three hours. Second semester.* Laboratory practice in technical methods of analysis of coals, slags, and industrial products, etc. Prerequisites, chemistry 6 and metallurgy 7.

Mr. COREY.

PHYSICAL TRAINING

DAVID CONNOLLY HALL, *Professor.*

1. CALISTHENICS.. Sections at 10, 11, 2, 3, 4.
2. CALISTHENICS. Sections at 10, 11, 2, 3, 4.
3. GYMNASTICS. Sections at 10, 11, 2, 3, 4.
4. GYMNASTICS. Sections at 10, 11, 2, 3, 4.

PHYSICS

FREDERICK A. OSBORN, *Professor*;

HENRY L. BRAKEL, *Instructor*;

..... *Instructor*;

..... *Graduate Assistant*.

1a. MECHANICS AND WAVE MOTION. *Six hours. First or second semester.* Laboratory one four hour period.

2a. HEAT, LIGHT AND ELECTRICITY. *Five hours. Second or first semester.* Laboratory one three hour period.

3a. ELECTRICAL MEASUREMENTS. *First semester.* Two class periods and one four hour laboratory period.

4a. ELECTRICAL MEASUREMENTS. *Two hours. First semester.* One class period and one three hour laboratory period. Short course for mechanical engineering students.

5a. ELECTRICAL MEASUREMENTS. *One hour. Second semester.* One three hour laboratory period.

POLITICAL AND SOCIAL SCIENCE

VANDEVEER CUSTIS, *Assistant Professor*;

LOUIS D. H. WELD, *Instructor*.

1. THE ELEMENTS OF ECONOMICS. *First or second semester. First semester, sections at 8 and 1; second semester, section at 8.* An introductory study of the laws governing the economic activities of men, and some of their more important applications. The course will be conducted partly by lectures, and partly by oral discussions, with frequent written tests. Students are advised to take it in the sophomore year. Freshmen will not be admitted, except by special consent of the instructor.

Assistant Professor CUSTIS, Dr. WELD.

RHETORIC

ARTHUR RAGAN PRIEST, *Professor*;

IDA KATHERINE GREENLEE, *Instructor*.

1. ENGLISH COMPOSITION. *First and second semester.* Sections at 8 and 1. Daily and fortnightly themes, together with a study of the principles of rhetoric. Text: part I of Genung's Working Principles of Rhetoric. Each student will meet the instructor for private consultations. Required of freshmen.

Professor PRIEST and Miss GREENLEE.

SCHOOL OF FORESTRY

FACULTY

- THOMAS FRANKLIN KANE, Ph. D., *President*.
FRANCIS GARNER MILLER, M. F., Professor of Forestry, *Dean*.
HENRY LANDES, A. M., Professor of Geology and Mineralogy.
J. ALLEN SMITH, Ph. D., Professor of Political Economy and Social Science.
JOHN THOMAS CONDON, L. L. M., Professor of Law.
TREVOR KINCAID, A. M., Professor of Zoology.
FREDERICK ARTHUR OSBORN, Ph. D., Professor of Physics.
THEODORE CHRISTIAN FRYE, Ph. D., Professor of Botany.
EVERETT OWEN EASTWOOD, B. S. M. A., Professor of Mechanical Engineering.
DAVID C. HALL, M. D., Professor of Physical Training.
HENRY KREITZER BENSON, Ph. D., Associate Professor of Chemistry.
JAMES EDWARD GOULD, A. M., Assistant Professor of Mathematics.
VANDEVEER CUSTIS, Ph. D., Assistant Professor of Economics.
LOREN DOUGLAS MILLIMAN, A. B., Assistant Professor of Rhetoric.
IDA KATHERINE GREENLEE, A. B., Instructor in English.
GLENN C. BEECHLER, L. L. B., Instructor in Law.
OLIVER PERRY MORTON GOSS, C. E., Lecturer in Timber Physics.
HENRY LOUIS BRAKEL, A. M., Instructor in Physics.
HENRY LEE BOWLBY, B. S., Instructor in Civil Engineering.
GEORGE IRVING GAVETT, C. E., Instructor in Mathematics.
CHARLES EDWIN WEAVER, Ph. D., Instructor in Geology.
HAROLD ALLEN THOMAS, C. E., Instructor in Civil Engineering.
Instructor in Forestry.
Instructor in Forestry.

SPECIAL LECTURERS

- E. T. ALLEN, District Forester, U. S. Forest Service, Lecturer on Forest Administration.
GEO. H. CECIL, Assistant District Forester, U. S. Forest Service, Lecturer on Forest Organization.
W. E. HERRING, Chief, Office of Engineering, District 6, U. S. Forest Service, Lecturer on Forest Engineering.

W. F. STALEY, Chief, Office of Occupancy, District 6, U. S. Forest Service, Lecturer on Lands, Privileges and Uses.

HOWARD K. O'BRIEN, Chief, Office of Grazing, District 6, U. S. Forest Service, Lecturer on Grazing.

THOMAS P. MCKENZIE, Assistant Chief, Office of Grazing, District 6, U. S. Forest Service, Lecturer on Grazing.

C. R. PIERCE, Law Officer, District 6, U. S. Forest Service, Lecturer on Forest Law.

F. E. AMES, Chief, Office of Silviculture, District 6, U. S. Forest Service, Lecturer on Timber Sales.

W. T. ANDREWS, Expert Lumberman, U. S. Forest Service, Lecturer on Log Scaling and Lumber Grading.

FRANK H. CONANT, Cruising Expert, In Charge of Timber Cruising.

BURT P. KIRKLAND, Supervisor, Snoqualmie National Forest, Lecturer on Silviculture.

STATEMENT

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 considerable 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.

In 1905, the United States government through its Forest Service designated the University of Washington as the site of a Government Timber Testing Station. A timber testing engineer and assistants are stationed here, and extensive scientific tests of the strengths of western timbers are regularly carried on. Sta-

dents of forestry are given the privilege of the testing laboratory and have here ample facilities for making investigations in the strength and mechanical properties of wood.

The question, "What are the opportunities for young men in forestry?" is one that is frequently raised. In reply to this very legitimate question, it may be said that the demand for trained foresters is in excess of the supply. The extensive national forests in the United States and Alaska are being put under scientific management. The proper handling of this work alone will eventually require the services of many thousands of men especially trained in forestry. Several of the states have large forest holdings, and these are employing an increasing number of foresters. Private owners of timber lands, recognizing the importance of putting their holdings under expert management, are beginning to call for men trained for this purpose. Thus it is that while the practice of forestry is still in its infancy in the United States, the call for professional foresters is already comparatively large.

ADMISSION

The requirements for admission to the freshmen class of the School of Forestry are:

	Credits.
English	4
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
U. S. history and civics.....	1
Botany	1
Foreign language	3
Elective	3

Total 15

For more specific information concerning the preparation necessary to meet the above requirements and for list of electives see page 59 and following.

Students may be admitted:

- (1) By presenting a certificate of graduation from an accredited school (for list see page 71) covering the above subjects.
- (2) By passing a satisfactory examination in the above subjects.

COURSES OF STUDY

UNDERGRADUATE COURSE

This is a four year course leading to the degree of Bachelor of Science in Forestry. It is designed to meet the needs of students who intend to take up the profession of forestry; also of those who expect to enter on a business career in some phase of the lumber industry, but who want the advantages of a university training. Certain subjects may be elected by those who wish a knowledge of forestry as a part of a liberal education. Thorough courses in the collateral sciences, language, mathematics, surveying, political economy, and elementary law are provided as a foundation for the technical courses in forestry.

A special course in lumbering is forming.

FRESHMAN YEAR			
<i>First Semester—</i>	Hours	<i>Second Semester—</i>	Hours
Rhetoric, 1.....	4	Rhetoric, 2.....	4
Botany, 5 (Crypt. Bot)....	4	Botany, 6 (Crypt. Bot)....	4
Mathematics, 1a.....	4	Civil engineering, 1a	
Forestry, 1 (Gen'l. forestry) .	4	(engineering drawing) ...	4
Physical training, 1.....	2	Forestry, 2 (general	
—	—	forestry)	4
16 + 2		Physical culture, 2.....	2
		—	—
		16 + 2	
SOPHOMORE YEAR			
	Hours		Hours
Civil engineering, 1b		Chemistry, 2.....	4
(Engineering drawing)....	4	Geology, 4 (physiography)..	4
Chemistry, 1.....	4	Forestry, 4 (silviculture)...	4
Political economy, 1.....	4	Physical training, 4.....	2
Civil engineering, 3a		—	—
(plane surveying)	4	16 + 2	
Forestry, 3 (silviculture)....	4		
Physical training, 3.....	2		
—	—		
16 + 2			
JUNIOR YEAR			
	Hours		Hours
Physics, 1a.....	4	Physics, 2a.....	4
Zoology, 10 (forest zoology) .	3	Zoology, 11 (forest	
Botany, 15 (forest pathology) 4		entomology)	3
Forestry, 5 (mesuration)....	3	Botany, 16 (plant	
Elementary law	2	physiology)	4
—	—	Forestry, 6 (mensuration)...	3
16		Mechanical engineering (ele-	
		ments of steam engineering) 2	
		Forest law	1
		—	—
		17	

SENIOR YEAR		
Hours		Hours
Forestry, 7 (management).. 2	Forestry, 8 (management)... 4	
Forestry, 9 (forest utilization) 3	Forestry, 10 (lumbering)... 6	
Forestry, 11 (wood preservation) 2	Forestry, 12 (history and policy) 2	
Forestry 13, (wood technology) 3	Forestry, 14 (dendrology)... 2	
Forestry, 15 (timber physics) 3	Forestry, 16 (forest economics) 2	
Geology, 3 (mineralogy).... 4		16
<hr/>		
17		

GRADUATE COURSE

This is a two year course leading to the degree of Master of Science in Forestry. It is designed especially for men who expect to enter the profession of forestry, and who desire a broader foundation for the work than a four year undergraduate course makes possible. Students who are graduates of this university or of other schools of like standing, and who have a satisfactory knowledge of botany, geology, physics, chemistry, trigonometry, and languages are granted this degree on completing the following courses:

Botany (15)	Forest history and policy
Forest zoology	Wood preservation
Silviculture	Wood technology
Forest mensuration	Dendrology
Forest management	Timber physics
Lumbering	Forest surveying
Forest utilization	Forest economics
	Thesis

While the completion of the course for the Master's Degree will ordinarily require two years, graduates of this University and of other institutions of equal rank, which offer courses in forestry, may complete it in one year, provided they have had at least twenty hours of technical forestry and the requisite training in the auxiliary sciences, mathematics, and language.

DEPARTMENTS OF INSTRUCTION

FORESTRY

FRANCIS GARNER MILLER, *Professor*;OLIVER PERRY MORTON GOSS, *Lecturer in Timber Physics*;..... *Instructors.*

SUBJECTS.

PRIMARILY FOR UNDERGRADUATES.

1, 2. GENERAL FORESTRY. *Four hours.* M., T., F., 10. An introductory course for those who wish a general view of the subject. In the first semester the scope and needs of forestry, its growth in the United States, and the importance of federal and state forests are considered. The course in the second semester includes a brief discussion of the principal commercial trees, their distribution, character and uses, and of forest influences. Laboratory W., 1-4. Professor MILLER.

FOR UNDERGRADUATES AND GRADUATES

3, 4. SILVICULTURE. M., W., F., 9. A study of the individual tree; forest ecology; the forest as a whole; treatment of the forest; forest regions; forest types; silvical characters of trees; seed collecting; nursery practice; transplanting. Field work, 8-12, S. Professor MILLER.

5, 6. FOREST MENSURATION. *Three hours.* T., Th., 9. Methods of determining the contents of the individual tree and of the forest; timber estimating and cruising; use of log scales; methods of studying growth; volume and yield tables; lumber grading. Field or laboratory work. 1-4 M., W. [Instructor.]

7, 8. FOREST MANAGEMENT. *Two hours.* *First semester; second semester.* *Four hours.* T., F., 11. Economic management of forest lands; working plans; forest administration; consideration of the normal forest; regulation of the yield; forest valuation; forest finance. In the second half of the second semester the work will be transferred to the field.

Professor MILLER.

9. FOREST UTILIZATION. *Three hours.* *First semester.* W., F., 8. Laboratory period to be arranged. This course deals with

the chemical properties of wood; secondary forest products; and the utilization of waste. Professor MILLER.

10. LUMBERING. *Six hours. Second semester. W., F., 8.* This course includes methods of logging; transportation, and milling in the principal lumber regions of the U. S.; lumbering in the Northwest is given special emphasis; buying and selling timber lands; marketing the product. Regular students of forestry are required to submit a comprehensive report of logging operations based upon a personal investigation. During the last half of the semester the work will be carried on in the field.

[Instructor.]

11. WOOD PRESERVATION. *Two hours. First semester. M., W., 11.* Causes of decay; methods of treating wood to prolong durability—seasoning, charring, application of paint, tar, or oil to the surface, impregnating with various wood preservatives. Class-room work is supplemented by visits to wood treating plants.

[Instructor.]

12. FOREST HISTORY AND POLICY. *Two hours. Second semester. M., W., 11.* Forest policy of the U. S.; forestry in the states and our island possession; the rise of forestry abroad.

[Instructor.]

13. WOOD TECHNOLOGY. *Three hours. Second semester. M., T., 10.* Wood structure, heartwood, sapwood, spring and summer wood; non-porous, ring-porous, diffuse-porous woods; color, odor, resonance, porosity, grain, knots; identification and classification of the principal commercial woods. Laboratory to be arranged.

[Instructor.]

14. DENDROLOGY. *Two hours. Second semester. M., 10.* The life history of trees; laws governing the growth of trees; monographic studies of trees; identification of trees and shrubs; silvical characters of trees. Laboratory to be arranged.

[Instructor.]

15. TIMBER PHYSICS. *Three hours. First semester. T., F., 10.* 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. Laboratory work to be arranged.

Mr. Goss.

16. FOREST ECONOMICS. *Two hours. Second semester. T., F., 10.* The forest as a resource; relation of the forest to public health, water power, irrigation, grazing, soil erosion, navigation; forest taxation. [Instructor.]

BOTANY

THEODORE CHRISTIAN FRYE, *Professor.*

5, 6. CRYPTOGRAMIC BOTANY. W., F., 9. Laboratory Tu., Th., 1-3. This course is open to those who offer one year of botany for entrance, or who have taken botany 1 and 2. It is a study of types of plants from the lowest up, with a view of tracing the evolution of the plant kingdom. The work is mainly in the algae, fungi, and bryophytes, but the ferns and flowering plants are taken up with reference to seed formation.

Professor FRYE.

15. FOREST PATHOLOGY. *Second semester. Two hours recitation, two hours laboratory work.* A study of the tissues found in woody stems; their use to the plants; their development; their diseases.

Professor FRYE.

16. PLANT PHYSIOLOGY. *Second semester. Two hours recitation, four hours laboratory work.* The general laws of plant activities; discussing the manner in which gases, water and salts get into a plant, how food is formed from them, how it is digested and assimilated, and how the plant grows and moves. Prerequisites, 1 and 2.

Professor FRYE.

CHEMISTRY

HENRY KREITZER BENSON, *Associate Professor.*

1, 2. GENERAL CHEMISTRY. Tu., F., 11. Four hours laboratory work per week. Text books, Smith's General Chemistry and Laboratory Manual. Associate Professor BENSON.

CIVIL ENGINEERING

HENRY LEE BOWLBY, *Instructor.*

3c. FOREST SURVEYING. *First semester.* Instruction in the use of instruments and practice in linear drawing; free-hand lettering; tracing of maps; theory of chain, compass, level and transit surveys, and instruction in the use and adjustment of

the instruments used; methods used in the United States public land surveys; platting of notes, calculation of areas and map making.

Mr. BOWLBY.

3f. FOREST SURVEYING. *Second semester.* Thorough drill in the use of the plane table, aneroid barometer, Brunton pocket transit, traverse board, hand level and transit and stadia in making actual surveys of timbered land and a study of the advantages and disadvantages of the various methods employed; use of conventional signs in a topographic map as adopted by the United States Forest Service. Prerequisite, forest surveying, 3e.

Mr. BOWLBY.

GEOLOGY

HENRY LANDES, *Professor*;

CHARLES EDWIN WEAVER, *Instructor*.

4. PHYSIOGRAPHY. *Second semester.* Tu., Th., F., 8. Laboratory hours to be arranged. This course includes a study of the surface features of the earth, considered in the light of their origin and history; lectures upon the ocean, dealing with its composition, temperature, waves, currents, tides, life, etc.; instruction and practice in making relief maps.

Professor LANDES.

5. MINERALOGY. *First semester.* W., F., 8. Two laboratory periods, Tu., F., 1-3:30. Descriptive and determinative mineralogy. Practice in the determination of unlabeled minerals by means of the physical properties and by blowpipe analysis.

Mr. WEAVER.

LAW

JOHN THOMAS CONDON, *Professor*;

GLENN C. BEECHLER, *Instructor*.

ELEMENTARY LAW. *Two hours. First semester.* Text-book: Robinson's Elementary Law.

Mr. BEECHLER.

FOREST LAW. *One hour. Second semester.* General laws of the United States land department; regulations by which timber is acquired from the United States government; United States forest laws, and Forest Service regulations by which the right to acquire and use the timber from the national forests is obtained; laws and regulations of Washington by which timber and timber land is acquired from the state; laws and regula-

tions of British Columbia by which timber and timber land is acquired from the Province; general laws in reference to the transfer of timber and timber land between individuals; law of trespass upon timber land; law of conversion of timber and timber products.

Professor CONDON.

MATHEMATICS

JAMES EDWARD GOULD, *Assistant Professor*;

GEORGE IRVING GAVETT, *Instructor*.

1a. PLANE TRIGONOMETRY AND HIGHER ALGEBRA. *Each semester.* The work in algebra deals with topics supplementary to the work in trigonometry, such as complex numbers, and their trigonometric representation, De Moivre's theorem, solution of trigonometric equations, the theory of logarithms, the logarithmic series, construction of logarithmic and trigonometric tables, the sine and cosine series and the trigonometric solution of the cubic. Crockett's Trigonometry, Crockett's 5 place tables, C. Smith's Treatise on Algebra.

Assistant Professor GOULD and Mr. GAVETT.

MECHANICAL ENGINEERING

EVERETT OWEN EASTWOOD, *Professor*.

6. ELEMENTS OF STEAM ENGINEERING. *Two hours. Second semester.* W., F., 9:25. Brings before the student the various forms of steam apparatus used in modern power plants, considering the construction, use and reasons for installing such apparatus. The course tends to create a working vocabulary in this branch of engineering.

Professor EASTWOOD.

PHYSICAL TRAINING

DAVID CONNOLLY HALL, *Professor*.

1, 2. FLOOR AND APPARATUS WORK.

3, 4. FLOOR AND APPARATUS WORK.

PHYSICS

FREDERICK A. OSBORN, *Professor*;

HENRY L. BRAKEL, *Instructor*.

1a. MECHANICS AND WAVE MOTION. *Five hours. First or second semester.* Laboratory one three hour period.

2a. HEAT, LIGHT AND ELECTRICITY. *Five hours. Second or first semester.* One three hour laboratory period.

POLITICAL ECONOMY

J. ALLEN SMITH, *Professor*;VANDERVEER CUSTIS, *Assistant Professor*.

1. THE ELEMENTS OF ECONOMICS. *First semester*. Sections 8 and 1. An introductory study of the principles governing the production and distribution of wealth, with special reference to some of the most important aspects of modern industry.

Professor SMITH, Assistant Professor CUSTIS.

RHETORIC

LOREN DOUGLAS MILLIMAN, *Assistant Professor*;IDA KATHERINE GREENLEE, *Instructor*.

1. ENGLISH COMPOSITION. Sections at 8, 9, 10, 11, 1 and 2. Short daily and weekly themes, together with a study of the principles of rhetoric. Text, part I of Genung's Working Principles of Rhetoric. Each student will meet the instructor for private consultation at least once every week.

Assistant Professor MILLIMAN, Miss GREENLEE.

2. ENGLISH COMPOSITION. *Second semester*. Ten sections. Open to students who have completed course 1. Daily and fortnightly themes, with private conferences. Part II of Genung's Working Principles of Rhetoric, and specified readings from modern English prose.

Assistant Professor MILLIMAN, Miss GREENLEE.

ZOOLOGY

TREVOR KINCAID, *Professor*.

10. FOREST ZOOLOGY. *Three hours. First semester*. Tu., Th., 8. A discussion of animal life characteristic of the forest, including the classification, habits, economic relations, propagation and protection of forest animals.

Professor KINCAID.

11. FOREST ENTOMOLOGY. *Three hours. Second semester*. Tu., Th., 8. Laboratory, four hours per week. A course dealing with the relation of insects common to the forest, including the classification and habits of forest insects, and the practical handling of insects injurious to forest welfare.

Professor KINCAID.

SPECIAL SHORT COURSE

The United States Forest Service co-operates with the University in offering a special course of twelve weeks planned for forest rangers and guards desiring to increase their efficiency, or for those who wish to fit themselves for such duties; also for cruisers, logging superintendents, woodland owners and others who wish to acquire a knowledge of the general principles of forestry, and methods by which timberlands are handled to insure continuous crops.

The course opens Tuesday, January 4 and closes Friday, March 25. Several of the special courses are given by experts from the Forest Service. The others are handled by various departments of the University. The work is given by lectures, in the laboratory, and by actual field demonstrations. Applicants must be at least 19 years old and show ability to carry the work with profit to themselves. Admission to classes is without examination.

The expenses are as follows: Deposit, \$3.00; books, drawing instruments and stationery, \$15.00; board and lodging with private families, \$20.00 to \$25.00 per month. In addition to the above expenses, the student should allow about \$25.00 to cover expenses of field trips. The total expense for the twelve weeks, exclusive of transportation, should not exceed \$100.00.

SUBJECTS

1. FOREST MEASUREMENTS.

(1) ESTIMATING. (a) Methods in common use in the Northwest, demonstrated in woods; how to tell defect and allow for it in estimate; grading of standard timber; variation of methods according to different standards of merchantability and kinds of products, such as saw logs, mining timbers, cordwood, bolts, etc.

Mr. CONANT.

(b) Valuation survey methods; contents of felled and standing trees; use and construction of volume tables.

Professor MILLER.

(2) SCALING. Principles and comparison of log rules, especially the one used by the Forest Service; actual demonstration by expert scaler, covering instruction in allowance for defect;

transposition of timber measures—board measure into cords etc. Log grading.

Mr. ANDREWS.

2. SURVEYING.

(1) LAND SURVEYING. Use of the compass and chain and the Brunton pocket transit, with or without tape, in making rough land surveys, including rules governing closing, tying, corners, fractions, lots, meanders, etc.; simple methods of determining a true north and south line, and of obtaining the magnetic declination of the needle at any point; principles of surveying mining claims, and the United States government system of surveying the public lands; keeping and use of field notes; simple triangulation.

(2) MAPPING. Use of drawing instruments; lettering and use of conventional signs in representing topography. Use of protractor and scale; method of making rough maps without instrument or tape; special systems used for Forest Service purposes, such as timber sales, agricultural settlements, and boundary reports.

(3) ENGINEERING. Use of Wye level and hand level; contours; laying out roads and trails, and simple methods by which grades may be kept within a reasonable maximum; simple bridge construction.

Mr. BOWLEY.

3. FOREST LAW.

Interpretation of state and federal land, mining, livestock, water and forest laws which affect national forest administration; 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.

Professor CONDON, Mr. PIERCE.

4. NATIONAL FOREST ADMINISTRATION.

(1) POLICIES. Objects of forest administration. Use of the forests; timber sales, privileges, and grazing policies; organization of Forest Service; duties and qualifications of forest officers.

(2) 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; principles and details of each subject, including investigations, reports, permits, use of all forms, supervision of work; suggestions and demonstrations.

MESSRS. ALLEN, CECIL, HERRING, STALEY, O'BRIEN, MCKENZIE,
AMES, PIERCE.

5. SILVICULTURE.

Simple tree botany—genera and species of the west, their relationship and identification. Silvical character of each—their demands upon soil, light, climate; reproduction of each, naturally and how to obtain after logging; system of cutting to this end; protection of young timber; seeding habits; seed collecting; nursery practice; transplanting. Work partly in woods jointly with forest measurements. Professor MILLER, Mr. KIRKLAND.

6. GEOLOGY AND MINERALOGY.

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 coal and mineral claims; liability of soils to erosion.

Lectures supplemented by field trips and laboratory work.

Professor LANDES, Mr. WEAVER.

7. LUMBERING.

Methods of logging, in different forest regions, particularly in the Northwest; methods of transportation; the manufacture, seasoning, and grading of lumber; cost and equipment of a logging and milling plant; minor products; lumber markets.

[Instructor.]

8. FOREST VALUATION AND REGULATION.

Principals of compound interest as applied to 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. Professor MILLER.

9. DISEASES OF TREES. A course of lectures on the fungi diseases of trees. How fungi are distributed, how they get into trees, and what they do in them. General causes and nature of decay. The general principals underlying the treatment of diseased trees.
Professor FRYE.

10. FOREST ZOOLOGY.

A series of six lectures dealing with the animal life of the forest, with especial reference to species which are of economic importance. Wednesday, 8.
Professor KINCAID.

11. MISCELLANEOUS LECTURES BY SPECIALISTS.

First aid to the injured; horseshoeing and veterinary science; lumber market and timber values; range problems; forage values and methods of handling sheep and cattle on the range; other allied subjects.

THE SCHOOL OF LAW

ACADEMIC YEAR 1909-10

FACULTY

THOMAS FRANKLIN KANE, Ph. D., *President*.

JOHN T. CONDON, LL. M., Dean and Professor of Law.

JOHN P. HOYT, LL. B., Professor of Law.

*JOHN FLEMING MAIN, A. B., Professor of Law.

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

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

GLENN C. BEECHLER, A. B. LL. B., Instructor in Law.

HISTORY

The Law School was established in 1899 with a course extending over two years of thirty-six weeks each. The course was extended to three years of thirty-six weeks each in 1908 and students will be entered for that extended course at the beginning of the school year of 1909-10.

LOCATION

The Law School, upon its establishment, was located downtown, in the city of Seattle, but in the fall of 1903 it was moved to the University campus, where it now is.

The University campus is located about thirty minutes' ride on the street cars from the courts in the city of Seattle, where the students of the Law School are afforded a splendid opportunity to observe the workings of the courts.

The bar of King county, in which Seattle is located, is particularly strong, and Seattle is the county seat and has seven departments of the Superior Court of King county in continuous session, trying civil and criminal cases and hearing motions and demurrers.

The United States Circuit and District Courts hold regular sessions in this city and the United States Circuit Court of Appeals convenes in Seattle at regular intervals.

* Resigned to accept appointment as judge of the superior court of King county.

PURPOSE

The purpose of the Law School is to give scientific instruction in the principles and history of the English Common Law and in the practical application of those principles to the present day affairs of life and thus to prepare students for the practice of the law in any state using the English Common Law system as a basis of its jurisprudence. And in addition to this we aim to give the student a thorough drill in the special application of these principles in the State of Washington.

REQUIREMENTS FOR ADMISSION

The requirement for admission to the Law School is the satisfactory completion of thirty-four hours in the College of Liberal Arts, four hours of which must be physical training.

Students from other law schools of high grade, who are otherwise qualified to enter this School of Law, will ordinarily receive credit, not exceeding one year, for work satisfactorily completed in residence at such schools corresponding in amount and character to that required at this school. The right is reserved to refuse such credit, in whole or in part, save upon examination.

Candidates for advanced standing must spend at least one full college year in this school.

A detailed statement of the requirements for admission to the freshmen class of the College of Liberal Arts will be found at page 60 of this catalogue.

REGULAR STUDENTS ADVANCED STANDING IN LAW

If, in addition to satisfying these entrance requirements for regular standing, 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 one year's 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.

SPECIAL STUDENTS

Nor person will be admitted as a special student in law unless he is twenty years of age and his general education is such

as to entitle him to take the state bar examination, viz., freshman standing in the College of Liberal Arts in the University of Washington, or the completion of a full four years' course in a high school of approved standing, or the holding of a certificate or diploma recognized as equal or equivalent to a diploma from such high school or the holding of a first grade teacher's certificate in this state, or a certificate of higher grade.

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 to enable them to clear up their entrance requirements in law.

DATES OF REGISTRATION AND EXAMINATION

REGISTRATION. Monday and Tuesday, October 4th and 5th, 1909.

EXAMINATION. For entrance to Law School, Monday, October 4th, 1909, and for advanced standing in law, Tuesday, October 5th, 1909.

COURSES OF INSTRUCTION

FRESHMEN YEAR

JURISPRUDENCE, GENERAL PRINCIPALS OF. *Two hours per week.*
First semester. Text-book: Pollock's First Book of Jurisprudence.
Professor CONDON.

CONTRACTS. *Three hours per week; entire year.* Text-book: Keener's Cases on Contracts. Professor LANTZ.

TORTS. *Two hours per week; entire year.* Text-book: Ames and Smith's Cases on Torts. Two volumes and supplement. Professor

PROPERTY. *Two hours per week; entire year.* Text-book: Gray's Cases on Property, volumes I and II. Professor

AGENCY. *Two hours per week; first semester.* Text-book: Mechem's Cases on Agency supplemented by a selection of Washington cases. Professor HOYT.

PERSONS. *Two hours per week; second semester.* Text-book: Woodruff's Cases on Domestic Relations and the Law of Persons, supplemented by a selection of Washington cases. Professor LANTZ.

PLEADING. *Two hours per week; entire year.* Text-book: Ames's Cases on Common Law Pleading in first semester and Hinton's Cases on Code Pleading, second semester, and Hepburn's Development of Code Pleading as collateral reading for second semester. Professor CONDON.

CRIMINAL LAW. *Two hours per week; first semester.* Text-book: Mikell's Cases on Criminal Law, supplemented by the new Washington Criminal Code and cases. Professor

EQUITY. *Two hours per week. Second semester.* Text-book: Ames's Cases on Equity Jurisprudence, volume I. Professor HOYT.

ADMINISTRATIVE LAW. *Two hours per week; second semester.* Text-book: Ames's Cases on Equity Jurisdiction, volume I and Washington cases. Professor CONDON.

PROCEDURE I AND II. *One hour per week.* These courses are planned as laboratory courses to accompany the course in pleading. In course I the student will be required to copy and draft original writs and declarations and other pleadings at common law and to copy and draft proceedings in equity; and in course

II to do the same character of work in reference to code pleading which occupies the second half of the course on pleading.

Professor

HOW TO FIND THE LAW I AND II. *One hour per week; entire year.* This course consists of five lectures on legal bibliography, followed by a study of the system of legal classification employed in the leading digests and encyclopaedias, etc., used by lawyers and a series of selected practical problems in finding and keeping a record of the law.

JUNIOR YEAR

EQUITY JURISDICTION. *Two hours per week; entire year.* Text-book: Ames' Cases on Equity, volume II, supplemented by a selection of Washington cases. Professor HOYT.

EVIDENCE. *Two hours per week; entire year.* Text-book: Wigmore's Cases on Evidence, supplemented by a selection of Washington statutes and cases. Professor CONDON.

PROPERTY. *Two hours per week; entire year.* Text-book: Gray's Cases on Property, volumes III and V.

Professor

CORPORATIONS, PRIVATE. *Two hours per week; entire year.* Text-book: (To be announced later.)

Professor

BILLS AND NOTES. *Two hours per week; first semester.* Text-book: Huffcut's Cases on Negotiable Instruments.

Professor LANTZ.

SALES, INCLUDING CONDITIONAL SALES AND SALES UNDER SALES IN BULK ACT IN WASHINGTON. *Three hours per week; first semester.* Text-book: Williston's Cases on Sales and Washington statutes and cases.

Professor

QUASI-CONTRACTS. *Two hours per week; first semester.* Text-book: Scott's Cases on Quasi-Contracts. Professor CONDON.

CARRIERS. *Two hours per week; second semester.* Text-book: (To be announced later.) Professor LANTZ.

BANKRUPTCY. *One hour per week; second semester.* Text-book: Williston's Cases on Bankruptcy. Professor HOYT.

PARTNERSHIP. *Two hours per week; second semester.* Text-book: (To be announced later.) Professor LANTZ.

DAMAGES. *Two hours per week; second semester.* Text-book: Beale's Cases on Damages, supplemented by a selection of Washington cases. Professor LANTZ.

LIENS. *One hour per week; second semester.* Text-book: Washington statutes and cases, supplemented by a few cases selected from other states. Professor

LEGAL INTERPRETATION. *One hour per week; first semester.* Text-book: (To be announced later.) Professor CONDON.

PROCEDURE III AND IV. *One hour per week; entire year.* A continuation of courses I and II of freshman year, to consist of the procedure in civil and criminal actions, in the Justice and Superior Courts. Professor CONDON.

HOW TO FIND THE LAW III AND IV. *One hour per week; entire year.* A continuation of courses I and II of freshman year. Professor CONDON.

MOOT COURT. *One hour per week; entire year.* Argument of questions of law based upon statements given out to students by faculty. Professor CONDON.

SENIOR YEAR.

CONSTITUTIONAL LAW. *Two hours per week; entire year.* First semester, Federal; second semester, State of Washington, Text-book: (To be announced later.) Professor CONDON.

PROPERTY. *Two hours per week; entire year.* Text-book: Gray's Cases on Property, volume VI for first semester and Washington statutes and cases on community property of husband and wife for second semester. Professor

INSURANCE. *Two hours per week; first semester.* Text-book: Woodruff's Cases on Insurance and Washington statutes and cases. Professor LANTZ.

TRUSTS. *Two hours per week; first semester.* Text-book: Ames's Cases on Trusts. Professor

CONFLICT OF LAWS. *Two hours per week; first semester.* Text-book: Beale's Shorter Selection of Cases on Conflict of Laws.
Professor

MUNICIPAL CORPORATIONS. *Two hours per week; second semester.* Text-book: Smith's Cases on Municipal Corporations and Washington Constitution, statutes and cases.
Professor

ATTACHMENTS AND GARNISHMENTS, JUDGMENTS AND EXECUTIONS. *Two hours per week; first semester.* Text-book: Washington statutes and decisions.
Professor HOYT.

ADMIRALTY. *Two hours per week; first semester.* Text-book: Ames's Cases on Admiralty.
Professor LANTZ.

WILLS. *Two hours per week; first semester.* Text-book: (To be announced later.)
Professor

SURETYSHIP. *Two hours per week; first semester.* Text-book: Ames's Cases on Suretyship.
Professor LANTZ.

MORTGAGES. *Two hours per week; first semester.* Text-book: Wyman's Cases on Mortgages and Washington statutes and cases.
Professor

TAXATION. *Two hours per week; first semester.* Text-book: Goodnow's Cases on Taxation and Washington Constitution, statutes and cases.
Professor CONDON.

PUBLIC INTERNATIONAL LAW. *Two hours per week; second semester.* Text-book: (To be announced later.)
Professor CONDON.

CIVIL LAW, INTRODUCTION TO. *Two hours per week; second semester.* Text-book: Howe's Studies in Civil Law.
Professor CONDON.

EXTRAORDINARY LEGAL REMEDIES. *Two hours per week; second semester.* Text-book: Robert's Cases on Extraordinary Legal Remedies and Washington statutes and cases.
Professor

PROCEDURE V AND VI. *One hour per week; entire year.* Consisting of a study of the proceedings in Probate, Admiralty in Equity, in United States courts, and the appellate procedure of the state of Washington.

OFFICE PRACTICE. *One hour per week; entire year.* Conveyancing and examination of abstracts, care of a law office generally, drawing wills and contracts, preparation of briefs and office accounting. Professor

MOOT COURT. *One hour per week; entire year.* Trial of jury cases and assignment of Moot Court cases.

LECTURE COURSES

Legal Ethics.	Public Land Law and Land
Mining Law.	Office Practice.
Medical Jurisprudence.	Oregon Practice.
Irrigation.	Idaho Practice.
Parliamentary Law.	

These are extra courses for which no credits are given, and are elective.

COURSES REQUIRED OF CLASS OF 1910

The following courses will be required of all students who entered Law at the beginning of the school year 1908-9. After the present school year of 1909-10 these courses will be discontinued and replaced by the courses outlined in the foregoing three year course. This statement is made necessary by reason of the fact that during the school year of 1909-10 the class of 1910 will be entitled to graduate under the former two year plan.

SECOND YEAR COURSE UNDER FORMER PLAN

PROPERTY (a) REAL PROPERTY. Text-book: Gray's Cases on Property, 2d Edition, volume II, first semester, and volume III, second semester. *Two hours per week; entire year.*

(b) This course also includes a study of the community property system regulating the property rights of husbands and wives in force in Washington and several other Pacific states.

Professor

EQUITY. Hutchins' Cases on Equity, supplemented by a selection of Washington cases. *Two hours per week; entire year.*
Professor HOYT.

NEGOTIABLE INSTRUMENTS. Text-book: Huffcut's Cases on Negotiable Instruments, supplemented by a study of the Washington Negotiable Instrument Act, and the Washington cases. *Two hours per week; first semester.*
Professor LANTZ.

PARTNERSHIP. Text-book: Burdick's Cases on Partnership, supplemented by a selection of Washington cases. *Two hours per week; first semester.*
Professor LANTZ.

PRIVATE CORPORATIONS. Text-book: Smith's Cases on Private Corporations. *Three hours per week; first semester.*
Professor

SURETYSHIP. Text-book: Ames's Cases on the Law of Suretyship, supplemented by a selection of Washington cases. *Two hours per week; second semester.*
Professor LANTZ.

PRIVATE INTERNATIONAL LAW. Text-book: Minor's Conflict of Laws, supplemented by a selection of Washington and other cases. *Two hours per week; first semester.*
Professor CONDON.

MUNICIPAL CORPORATIONS. A study of the Washington Constitution, statutes and cases upon this subject, supplemented by lectures. *Two hours per week; second semester..*
Professor

CONSTITUTIONAL LAW. Text-book: McClain's Cases on Constitutional Law, supplemented by a selection of Washington cases. *Two hours per week; second semester.*
Professor CONDON.

WILLS AND ADMINISTRATION. Text-book: Chaplin's Cases on the Law of Wills, supplemented by a selection of Washington cases and a study of the Washington statutes. *Two hours per week; second semester.*
Professor HOYT.

ATTACHMENTS AND GARNISHMENTS. Washington statutes and a selection of Washington and other cases. *One hour per week; first semester.*
Professor HOYT.

ADMIRALTY. Text-book: Cases on Admiralty Law, supplemented by a selection of later cases. *One hour per week; first semester.*
Professor LANTZ.

MINING LAW. Lectures. *One hour per week; second semester.*

EVIDENCE. Text-book: Thayer's Cases on Evidence, supplemented by a selection of Washington cases. *Two hours per week; entire year.*
Professor CONDON.

FEDERAL JURISDICTION. Text-book: Thayer's Federal Jurisdiction, supplemented by a selection of cases. *One hour per week; second semester.*
Professor

OFFICE PRACTICE. Practical work in drawing legal papers, such as contracts, deeds, wills, etc., from given statements of facts. *One hour per week; second semester.*

HOW TO FIND AND KEEP A RECORD OF THE LAW. A detailed study of the various digest classifications and of the methods of digesting and briefing and of keeping an office record of your investigation of legal questions. *One hour per week; entire year.*
Professor CONDON.

MOOT COURT. Includes the drawing of pleadings, argument of motions, demurrers, etc., the trial of cases before the court alone and before the court and a jury. *Two hours per week; entire year.*

IRRIGATION LAW. Special lectures upon this subject, open to second year students only. Time to be arranged.

ROMAN LAW AND ITS RELATION TO THE COMMON LAW. Special lectures, etc.

EVENING LAW SCHOOL

The University offers a course in law in the evening open to those who are not able to attend in the day time. The entrance 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 text-books are used. The evening classes meet three times each week. Monday, Wednesday and Friday

for three hours each evening. For graduation from the evening school the student must obtain the same number of credits as for graduation from the day school, and, owing to the fact that fewer hours per week are offered in the evening school, proportionately longer time is required to graduate.

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. The subject selected for the year 1909-10 is The Constitutionality of the 1909 Statute Abolishing Insanity as a Defense to a Crime.

INSTRUCTION IN OTHER DEPARTMENTS

Students of 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 five thousand well selected volumes, and considerable additions will be made to it each year.

Law School students have the right to use the University library, which contains about forty-one 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 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 by one year's residence work at another approved law school may count that year as one of the three years required for graduation.

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 year 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*.

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.

FEEs

There are no tuition fees.

A graduation deposit of five dollars is made by each student receiving a degree.

STUDENT EXPENSES

A general detailed statement of student expenses may be seen by reference to page 80 of this catalogue.

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 MINES

FACULTY

THOMAS FRANKLIN KANE, Ph. D., *President.*

MILNOR ROBERTS, A. B., Professor of Mining Engineering and Metallurgy, *Dean.*

HENRY LANDES, A. M., Professor of Geology and Mineralogy.

ALMON HOMER FULLER, C. E., Professor of Civil Engineering.

JOHN THOMAS CONDON, L. L. M., Professor of Law.

HORACE BYERS, Ph. D., Professor of Chemistry.

TREVOR KINCAID, A. M., Professor of Zoology.

FREDERICK ARTHUR OSBORN, Ph. D., Professor of Physics.

ROBERT EDOUARD MOBITZ, Ph. D., Professor of Mathematics and Astronomy.

EVERETT OWEN EASTWOOD, B. S., C. E., Professor of Mechanical Engineering.

D. C. HALL, Ph. B., M. D., Professor of Physical Culture.

E. J. MCCAUSTLAND, B. C. E., C. E., M. C. E., Professor of Civil Engineering.

CHARLES CHURCH MORE, C. E., Associate Professor of Civil Engineering.

JAMES EDWARD GOULD, Ph. B., Assistant Professor of Mathematics.

HENRY KREITZER BENSON, Ph. D., Associate Professor of Chemistry.

VANDEVEER CUSTIS, Ph. D., Assistant Professor of Economics.

FRANK MARION MORRISON, A. B., Assistant Professor of Mathematics.

LOREN DOUGLAS MILLIMAN, A. B., Assistant Professor of Rhetoric.

IRVIN WALTER BRANDEL, Ph. G., Ph. D., Assistant Professor of Chemistry.

CLARENCE RAYMOND COREY, E. M., Instructor in Mining and Metallurgy.

CHARLES M. HARRIS, C. E., Instructor in Civil Engineering.

GEORGE SAMUEL WILSON, B. S., Instructor in Mechanical Engineering.

HENRY LOUIS BRAKEL, A. M., Instructor in Physics.

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

HENRY LEE BOWLBY, B. S., Instructor in Civil Engineering.

GEORGE JAMME, Lecturer on Coal Mining.
 HARVEY L. GLENN, B. S., Lecturer on Assaying of Bullion.
 ROGER TAYLOR, B. S., Lecturer on Copper Smelting.
 GEORGE IRVING GAVETT, B. S., C. E., Instructor in Mathematics.
 WILLIAM VERNON LOVITT, A. M., Instructor in Mathematics.
 CHARLES EDWIN WEAVER, Ph. D., Instructor in Geology.
 HAROLD O. THOMAS, A. B., C. E., Instructor in Civil Engineering.
 SAMUEL THOMAS BEATTIE, Instructor in Wood Work.
 S. G. DEWSNAP, Assistant in Metallurgy.
 ALLAN CUNNINGHAM, Assistant in Mining.
 HUBERT I. ELLIS, Assistant in Metallurgy.

ADMISSION

The requirements for admission to the freshman class of the School of Mines are:

English	4
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
Chemistry	1
Modern language	2
History	1
Civil government	½
Elective	2½
<hr/>	
Total	15

For more specific information concerning the preparations necessary to meet the above requirements and for list of electives see page 60 and following.

Students may be admitted:

- (1) By presenting a certificate of graduation from an accredited school (for list see page 71), covering the above subjects.
- (2) By passing a satisfactory examination in the above subjects.

It is desirable for the student to review his preparatory mathematics just before entering the School of Mines. By such a step much time will be saved and the work of the school will be rendered far more valuable.

SUMMER WORK

Every student in the School of Mines is given an opportunity to become familiar with the operations of a mining district through the course catalogued as mining 9. In addition to this training, it is necessary for each student to spend several weeks in actual work pertaining to his chosen profession before he enters upon the studies of his senior year. Mining work is elected under course I, geological field studies, or mine mapping under course II, and smelter or assay practice under course III.

DEGREES

The four year courses of the School of Mines lead to the degree of bachelor of science (B. S.) in (I) mining engineering, (II) geology and mining, or (III) metallurgy. 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.

DEGREE WITH HONORS

A degree with honors may be conferred upon any student who has been recommended by the faculty of the School of Mines.

COURSES OF THE SCHOOL OF MINES

I. Course in Mining

FRESHMAN YEAR

First Semester—	Hours	Second Semester—	Hours
Mathematics, 1a (plane trigonometry, higher algebra)...	4	Mathematics, 2a (Anal. Geom., higher algebra)....	4
Chemistry, 1a (general inorganic)	4	Chemistry, 2a (general inorganic)	4
Civil engineering, 1a (Engin. drawing)	4	Civil Engin., 1 b (Engin. drawing)	4
Rhetoric, 1a (Eng. Comp.)..	4	Civil Engin., 3a (plane Surv.)	4
Mining, A, Mech. Engin., 1b (mine timber)	2	Physical training, 2.....	2
Mechanical engineering, 1a (woodwork)	2		16 + 2
Physical training, 1.....	2		
	16 + 6		

SOPHOMORE YEAR

Hours		Hours	
Geology, 1a (general).....	4	Geology, 5 (mineralogy)....	4
Mathematics, 5a (Anal. Geom.)	2	Mathematics, 6a (calculus)..	4
Mathematics, 5b (Diff. Calculus)	4	Chemistry, 6b (Quant. Anal.)	4
Physics, 1a.....	5	Physics, 2a.....	5
Civil Engin., 3b (mine surv.)	3	Physical training, 4.....	2
Physical training, 3.....	2		17 + 2
	18 + 2	Mining, 9 (field work).....	3

JUNIOR YEAR

	Hours		Hours
Metallurgy, 1 (fire assaying) .	4	Metallurgy, 2 (general).....	3
Civil Engin., 5a (mechanics)	5	Geology, 7 (petrography)...	4
Geology, 6 (optical Cryst.)..	4	Civil Engin., 3c (Topog. Surv.)	2
Political science, 1a.....	4	Civil Engin., 5b (mechanics).	4
Mech. Engin., 3a (forge, foundry)	2	Civil Engin., 6a (hydraulics)	4
		Mech. Engin., 4a (machine shop)	2
	17 + 2		17 + 2

SENIOR YEAR

	Hours		Hours
Mining, 1 (metal mining)...	4	Mining, 2 (ore dressing)....	4
Mining, 3 (milling).....	2	Mining, 6 (mining law).....	1
Mining, 5 (field work)....	1	Mining, 7 (mine examination)	1
Metallurgy, 5 (gold, silver). 3		Mining, 8 (thesis).....	2
Metallurgy, 7 (wet assaying) 3		Geology, 8 (economic).....	4
Metallurgy, 13 (design of plant)	3	Geology, 11 (field work)....	1
	16	Electrical engineering, 1f....	3
			16

II. Course in Geology and Mining

FRESHMAN YEAR

First Semester—	Hours	Second Semester—	Hours
Math., 1a (plane Trig., higher algebra)	4	Mathematics, 2a (Anal. Geom., higher algebra)...	4
Chemistry, 1a (general inorganic)	4	Chemistry, 2a (general inorganic)	4
Civil Engin., 1a (Engin. drawing)	4	Civil Engin., 1b (Engin. drawing)	4
Rhetoric, 1a (English Comp.)	4	Civil Engin., 3a (plane Surv.)	4
Mining, A, mechanical engineer- ing, 1b (mine timber)....	2	Physical training, 2.....	2
Mechanical Engineering, 1a (woodwork)	2		16 + 2
Physical training, 1.....	2		
	18 + 4		

SOPHOMORE YEAR

	Hours		Hours
Geology, 1a (general).....	4	Geology, 5 (mineralogy).....	4
Mathematics, 5a (Anal. Geom.)	2	Mathematics, 6a (calculus)..	4
Mathematics, 5b (Diff. calculus)	4	Chem., 6b (Quant. Anal.)...	4
Physics, 1a.....	5	Physics, 2a.....	5
Civil Engin., 3b (mine Surv.)	3	Physical training, 4.....	2
Physical training, 3.....	2		17 + 2
	18 + 2	Mining, 9 (field work).....	3

JUNIOR YEAR

	Hours		Hours
Mining, 4 (coal mining)....	2	Metallurgy, 2 (general).....	3
Metallurgy, 1 (fire assaying)	4	Metallurgy, 9 (pyrometry)...	2
Metallurgy, 3 (fuels).....	2	Metallurgy, 12 (clay testing).	3
Geology, 6 (optical cryst.)..	4	Geology, 7 (petrography)....	4
Political science, 1a.....	4	Geology, 12 (field work).....	1
Mech. Engin., 3a (forge, foundry)	2	Civil Engin., 3c (Topog. Surv.)	3
	—	Mech. Engin., 4a (machine shop)	2
	16 + 2		—
			16 + 2

SENIOR YEAR

	Hours		Hours
Mining, 1 (metal mining)...	4	Mining, 2 (ore dressing)....	4
Mining, 3 (field work).....	1	Mining, 6 (mining law).....	1
Metallurgy, 5 (gold, silver)..	3	Mining, 7 (mine Exam.)....	1
Metallurgy, 7 (wet assaying)	3	Mining, 8 (thesis).....	2
Geology, 9 (paleontology)...	4	Metallurgy, 4 or 6.....	3
Geology, 14 (field work).....	1	Geology, 8 (economic).....	4
	<hr/> 16	Geology, 15 (field work).....	1
			<hr/> 16

III. Course in Metallurgy

First Semester—

Second Semester—

FRESHMAN YEAR

Hours	Hours
Mathematics, 1a (plane Trig., higher algebra) 4	Mathematics, 2a (Anal. Geom., higher algebra) 4
Chemistry, 1a (general inorganic) 4	Chemistry, 2a (general inorganic) 4
Civil Engin., 1a (Engin. drawing) 4	Civil Engin., 1b (Engin. drawing) 4
Rhetoric, 1a (English Comp.) 4	Civil Engin., 3a (plane Surv.) 4
Mining, A 2	Mech. Engin., 1b (mine timber) 2
Mech. Eng., 1a (woodwork)... 2	Physical training, 2..... 2
Physical training, 1..... 2	
16 + 4	16 + 4

SOPHOMORE YEAR

Hours	Hours
Geology, 1a (general)..... 4	Geology, 5 (mineralogy).... 4
Math., 5a (Anal. Geom.)..... 2	Math., 6a (calculus)..... 4
Math., 5b (Diff. calculus)... 4	Chem., 6b (Quant. Anal.).... 4
Physics, 1a 5	Physics, 2a..... 5
Civil Engin., 3b (mine Surv.) 3	Physical training, 4..... 2
Physical training, 3..... 2	
18 + 2	17 + 2
	Mining, 9 (field work)..... 3

JUNIOR YEAR

Hours	Hours
Metallurgy, 1 (fire assaying) 4	Metallurgy, 2 (general)..... 3
Metallurgy, 10 (metallography) 3	Metallurgy, 4 (copper, lead). 3
Civil Engin., 5a (mechanics) 5	Metallurgy, 9 (pyrometry)... 2
Political science, 1a..... 4	Civil Engin., 5b (mechanics) 4
Mech. Eng., 3a (forge, foundry) 2	Civil Engin., 6a (hydraulics) 4
16 + 2	Mech. Engin., 5b (machine design) 1
	Mech. Engin., 4a (machine work) 2
	17 + 2

SENIOR YEAR

Hours	Hours
Mining, 1 (metal mining).... 4	Mining, 2 (ore dressing).... 4
Metallurgy, 3 (fuels)..... 3	Mining, 8 (thesis)..... 2
Metallurgy, 5 (gold, silver).. 3	Metallurgy, 6 (minor metals) 3
Metallurgy, 7 (wet assaying) 3	Metallurgy, 8 (analysis)..... 3
Metallurgy, 11 (problems).. 1	Geology, 8 (economic)..... 4
Metallurgy, 13 (design)..... 3	
17	16

IV. SHORT COURSE FOR MINING MEN

From January 5th to April 5th the instructors in mining engineering offer a course for the benefit of persons who are interested in prospecting, mining 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.

During the first week of the course the instruction is of a general nature. Thereafter the students select those courses which best fit their needs. It is expected that a student will elect only those courses which he can attend with considerable regularity. Students who satisfactorily complete a course of study are given a certificate stating the amount and character of work done. When a subject corresponds to one of the studies in the four year courses, University credits will be given for it. 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. Occasional trips are made to the Tacoma and Everett smelters, the United States assay office in Seattle, the coal and metal mines and the hydro-electric plants near Seattle. Tests of ore are made in the complete concentrating and stamp milling laboratory described elsewhere. Miners and prospectors who have ore samples to be assayed or tested by millrun may perform their own tests with the assistance of the professors in charge, as soon as the necessary skill has been attained.

Those who are unable to devote their whole time to the work may omit one or more of the subjects listed below, except that subjects 3 and 4 should be accompanied or preceded by subjects 5 and 6. After the usual student fee of three dollars has been paid 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. The deposits are as follows: Subject 3, fifteen dollar deposit; subject 4, five dollar deposit; subject 5, ten dollar deposit; subject 9, one dollar deposit; subject 10, two dollar

deposit. All deposits must be made at the beginning of the course.

SUBJECTS

A. MINERAL INDUSTRY. Wednesday evenings in March, 7:30 p. m. A series of three lectures illustrated by lantern slides, showing views of the mining and metallurgical industries, with details of machinery and processes.

1. **MINING.** Lectures on prospecting, development, mining systems, timbering, mine transportation, pumping, ventilation, and hydraulic mining. Practice with stamp-milling and concentrating machinery, testing of ores, etc. *Two lectures and one afternoon.*
Professor ROBERTS.

2. **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, Mr. COREY.

3. **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.*
Mr. COREY.

4. **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.*
Mr.

5. **GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS.** Laboratory practice in the determination of the common elements. *Three lectures a week, and Saturday laboratory.*
Professor BYERS.

6. **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.*
Dr. WEAVER.

7. **GEOLOGY.** Lectures on the elements of geology, the common varieties of rock, metalliferous vein and ore deposits, etc. *Twice a week.*
Dr. WEAVER.

8. **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.*

Professor CONDON.

9. **SURVEYING.**

(1) **LAND SURVEYING.** Use of the compass and chain and the Brunton pocket transit, with or without tape, in making rough land surveys, including rules governing closing, tying, corners, fractions, lots, meanders, etc.; simple methods of determining a true north and south line and of obtaining the magnetic declination of the needle at any point; principles of surveying mining claims and the United States government system of surveying the public lands; keeping and use of field notes; simple triangulation.

(2) **MAPPING.** Use of drawing instruments; lettering and use of conventional signs in representing topography. Use of protractor and scale; method of making rough maps without instrument or tape.

(3) **ENGINEERING.** Use of Wye level, hand level, traverse board; contours; laying out roads and trails, and simple methods by which grades may be kept within a reasonable maximum; survey of a mine. *Two lectures and two afternoons.*

Mr. BOWLBY.

10. **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.

Mr. KANE.

DEPARTMENTS OF INSTRUCTION

MINING ENGINEERING AND METALLURGY

MILNOR ROBERTS, *Professor*;

CLARENCE RAYMOND COREY, *Instructor*.

..... *Instructor*;

GEORGE JAMME, HARVEY L. GLENN, and ROGER TAYLOR, *Lecturers*;

S. G. DEWSNAP, *Assistant in Metallurgy*;

ALLAN CUNNINGHAM, *Assistant in Mining*;

HUBERT I. ELLIS, *Assistant in Metallurgy*.

MINING ENGINEERING

A. MINERAL INDUSTRY. *First semester.* A series of three lectures illustrated by stereopticon views. Wednesday evenings in November, 7:30 p. m. An outline of the mining and metallurgical industries of the Pacific Northwest and Alaska, illustrated by views of typical mines, mills and smelters. Required of freshmen.

Professor ROBERTS.

1. MINING. *Four hours. First semester.* Three lectures and one laboratory period. Lectures on sinking, tunneling, stoping, timbering, systems of mining, power generation, air compression, hoisting, transportation, drilling, explosives, and cost keeping. Practice in machine drilling, ventilation, air compression, and the designing of mine equipment. Prerequisite, senior standing.

Professor ROBERTS, Messrs. COREY and JAMME.

2. ORE DRESSING. *Four hours. Second semester.* Two lectures and two laboratory periods. Lectures on crushing, sampling, concentrating, amalgamating, and the arrangement of mills. Mill practice in breaking by hand and machinery, crushing by stamps, rolls and roller mills, amalgamation, panning, screen sizing, classifying, magnetic separation, concentration by jig, vanner, Overstrom table, Wilfley table and slimer, revolving slime tables, and standard concentrator, and the testing of ores by mill runs checked by sampling and assaying. Prerequisites, metallurgy 2, mechanical engineering 5b.

Professor ROBERTS and Mr. CUNNINGHAM.

3. **MILLING.** *First semester. Two hours.* One lecture and one laboratory period. Lectures and laboratory work on the details of a particular branch of ore dressing; for example, the concentration of fine sands and slimes. To be preceded or accompanied by mining 1.

Professor ROBERTS.

4. **COAL MINING.** *First semester. Two hours.* Coal mining methods, lighting, ventilation, haulage, and all phases of the mining and preparation of coal for the market, with especial reference to the geological structure of the coal fields of the Pacific coast and the local methods of mining. Occasional visits to coal mines.

Professor ROBERTS and Mr. JAMME.

5. **FIELD WORK.** *First semester. One hour.* One laboratory period (or its equivalent in total time required) and monthly seminar. Individual visits to a mine, mill, smelter, or engineering work, to be followed by a report on field notes and sketches; or, the preparation of drawings and reports from notes taken during the preceding summer.

Professor ROBERTS and Mr. COREY.

6. **MINING LAW.** *Second semester. One hour.* Lectures with required reading on the mining laws of the United States, and especially those of Washington and Alaska.

Professor CONDON.

7. **MINE EXAMINATION.** *Second semester. One hour.* Ten days during the Easter holidays. The examination of a mine or mining district, to be made by the senior class in connection with mining 2. Field notes to be checked daily.

Professor ROBERTS and Mr. COREY.

8. **THESIS.** *Second semester. Two hours.* Subjects to be assigned. Weekly consultation.

Professor ROBERTS and Mr. COREY.

9. **MINING AND METALLURGICAL EXCURSION.** *Three hours.* Beginning in 1910, a two weeks trip will be made annually at commencement time to a mine or group of mines where mine surveying and a study of mining and milling operations will be carried on. Required of all students in the School of Mines who have finished the sophomore year.

Professor ROBERTS and Mr. COREY.

METALLURGY

1. FIRE ASSAYING. *First semester.* One lecture and three laboratory periods. Th., 11; Tu., Th., 1-5. 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 dore bullion. Prerequisite, chemistry 6.

Messrs. COREY and GLENN.

2. GENERAL METALLURGY. *Three hours. Second semester.* Two lectures and one laboratory period. Th., F., 11; Th., 1-4. Lectures and laboratory experiments on the properties of metals and alloys, fuels, refractory materials, furnaces and the extraction of common metals (except iron) from their ores. Visits to smelters. Prerequisites, geology 5, chemistry 6, metallurgy 1.

Professor ROBERTS, Messrs. COREY and TAYLOR.

3. METALLURGICAL FUELS. *Three hours. First semester.* One lecture and two laboratory periods. The composition and metallurgical uses of natural and artificial fuels; the methods and costs of coking in beehive and by-product ovens, gas making, and coal briquetting. Laboratory coking tests in an oven of reduced size; furnace and calorimeter tests of various types of fuels; especially the testing of Washington coals to determine their fitness for coking, gas making, power purposes, etc.

Mr.

4. COPPER AND LEAD. *Three hours. Second semester.* Two lectures and one laboratory period. Lectures and recitations on the metallurgy of copper, including roasting of ores and matte, smelting in blast and reverberatory furnaces, converting of matte and refining of copper by furnace and electrolytic methods; the metallurgy of lead, roasting, pot roasting and smelting of lead ores, lead refining by Parks, Pattinson and Belts processes. Laboratory practice in roasting copper and lead ores and mattes, smelting and refining in reverberatory furnace and electrolytic refining. Visits to lead and copper smelters and refineries.

Mr. COREY.

5. GOLD AND SILVER. *Three hours. First semester.* Two lectures and one laboratory period. Amalgamation, cyaniding, and chlorination of gold and silver ores. Complete tests checked by assays.

Mr. COREY.

6. **MINOR METALS.** *Three hours. Second semester.* Two lectures and one laboratory period. The metallurgy of zinc, antimony, tin, mercury, nickel, etc.; a study of the plant required, the methods and costs of treatment, and the economic conditions governing the production of the minor metals. Laboratory experiments on ores and furnace products. Mr.

7. **WET ASSAYING.** *Three hours. First semester.* The technical methods for the determination of copper, lead, zinc, etc., in ores and furnace products. Prerequisite, chemistry 6.

Mr. COREY.

8. **METALLURGICAL ANALYSIS.** *Three hours. Second semester.* Laboratory practice in technical methods of analysis of coals, slags, and industrial products, etc. Prerequisites, chemistry 6, and metallurgy 7.

Mr. COREY.

9. **PYROMETRY AND ALLOYS.** *Two hours. Second semester.* One lecture and one laboratory period. Methods of measuring high temperatures. Union of metals by fusion, compression and electro-deposition; solution of metals in metals; the behavior of metals and alloys under heat, liquation, cooling curves; the rarer metals and their alloys. Laboratory practice in thermal measurements, synthesis and testing of alloys, determinations of influence of small amounts of impurities on electrical resistance, etc.

Mr.

10. **METALLOGRAPHY.** *Two hours. First semester.* One lecture and laboratory period. The constitution and microstructure of metals and alloys, especially iron and steel. The preparation and study of metal sections, photo-micrography and the use of the microscope to aid in testing structural iron and steel. Students in this course have the privilege of using the extensive collections of metal sections in the Seattle city testing laboratory.

Mr.

11. **METALLURGICAL PROBLEMS.** *One hour. First semester.* Physical chemistry for the metallurgist, slag calculations, etc. illustrated by figures quoted from the present practice at a number of smelting plants. Prerequisites, chemistry 6 and metallurgy 2.

Mr. COREY.

12. **CLAY TESTING.** *Three hours. Second semester.* One lecture and two laboratory periods. Methods of testing clays, re-

fractory materials, cement making materials. Designed especially to determine the industrial value of crude materials found in Washington. An excellent series of standard materials is at hand for comparative tests. Mr.

13. DESIGN OF PLANT. *Three hours. First semester.* One lecture and two drafting periods. The designing of foundations, furnaces, flues and stacks; the arrangement and framing of mills and metallurgical plants. Problems with all conditions and requirements stated are given to the student for solution in the drafting room. Numerous blue prints and photographs of mills, furnaces, and works are on file for reference. Mr.

THESIS. See Mining 8.

SUMMER FIELD WORK. See Mining 9.

CIVIL ENGINEERING

ALMON HOMER FULLER, *Professor*;
SAMUEL CHRISTOPHER LANCASTER, *Professor*;
ELMER JAMES MCCAUSTLAND, *Professor*;
CHARLES CHURCH MORE, *Associate Professor*;
HENRY LEE BOWLBY, *Instructor*;
CHARLES W. HARRIS, *Instructor*;
HAROLD O. THOMAS, *Instructor*.
CHARLES EVAN FOWLER, *Lecturer*;

SUBJECTS.

1a. ENGINEERING. DRAWING. *First semester.* Six sections. The elements of descriptive geometry, including projections of points, lines and planes; instruction in use of instruments and practice in linear drawing; construction from printed descriptions in orthographic projection; lettering including the Roman and Gothic alphabets and a practical free hand alphabet for working drawings. Prerequisites, plane and solid geometry.

Messrs. HARRIS and THOMAS.

1b. ENGINEERING DRAWING. *Second semester.* Continuation of engineering drawing 1. Curved surfaces, plane sections and section lining; intersection of simple geometric forms; rotation of points, lines and planes; warped surfaces.

Messrs. HARRIS and THOMAS.

3a. PLANE SURVEYING. *Second semester.* Theory of chain, compass, and transit surveying, leveling, the adjustment and use of instruments, methods used in the United States public land surveys, computations of area, maps. Prerequisites, drawing 1 and mathematics 1a. Messrs. BOWLBY and THOMAS.

3b. CITY AND MINE SURVEYING. *Three hours. First semester, until Christmas recess.* Study of the precision necessary to be obtained; survey of a convenient portion of the city, and field and office work of laying out a new addition. Mining survey methods. Field and office work connected with a survey of one of the tunnels on the University campus. Pen and pencil topography will be taken up for the remainder of the semester. Prerequisite, 3a. Mr. BOWLBY.

3c. TOPOGRAPHIC SURVEYING. *Second semester. Two hours.* Mining students enter this course after Easter recess, omitting the work in colored topography. Base line measurements; transit triangulation; plane table and stadia surveys; maps; hydrographic survey methods. Mr. BOWLBY.

5a. MECHANICS. *First semester.* Statics and dynamics. Special attention is paid to practical applications. Original problems form a prominent feature. Prerequisites, mathematics 6a and physics, 1 and 2a. Associate Professor MORE.

5b. MECHANICS. *Five hours. Second semester.* Continuation of 5a and mechanics of materials. Lectures, recitations and solution of problems. Associate Professor MORE.

6a. THEORETIC HYDRAULICS. *Second semester.* Pressure; depth and stability of flotation, center of pressure, steady water through pipes and orifices, over weirs and in open channels; energy, impulse and reaction of a jet. Preceded or accompanied by 5b. Laboratory work. Mr. HARRIS.

MECHANICAL ENGINEERING

EVERETT OWEN EASTWOOD, *Professor*;GEOGE SAMUEL WILSON, *Instructor*;SAMUEL THOMAS BEATTIE, *Instructor in Woodwork*;SANDY MORROW KANE, *Instructor in Metalwork*.

SUBJECTS

1a. CARPENTRY AND WOOD TURNING. *One four hour exercise each week of the first semester.* The student receives training in the use and care of wood-working tools. Instruction and practice are given in sawing, planing, chiseling, champfering, grooving, framing, tenoning, mortising, dovetailing, splicing and gluing. Exercises in turning include consideration of speeds, and use of gouges, chisels, nosing tools, side tools, parting tools, and calipers.

Mr. BEATTIE.

1b. PATTERN MAKING AND MINE TIMBERING. *One four hour exercise each week of the second semester.* Same schedule as 1a. The pattern making includes the construction of core boxes and such patterns as pipe fitting, valves, pulleys and machine parts. This is followed by a series of exercises in the framing of mine timbers according to various systems.

Mr. BEATTIE.

3a. FORGE AND FOUNDRY. *One four hour exercise each week of the first semester.* The student is given 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. In the foundry the student is given work in iron and brass; bench and floor moulding, coremaking, and is instructed with the view toward proficiency in management of the cupola.

Mr. KANE.

4a. MACHINE WORK. *One four hour exercise each week of the second semester.* Same schedule as 3a. The course begins with exercises in chipping, filing, and scraping. These are followed by work on the lathe in both iron and brass, including straight and taper turning, centering, chucking, screw cutting, boring, drilling and tapping, knurling and polishing. A few exercises on the other machines are given.

Mr. KANE.

5b. **ELEMENTS OF MACHINE DESIGN.** *One hour. Second semester.* A study of the design of machine details, giving practice in the application of modern formula and manufacturer's standards. Until Easter recess for mining students.

Mr. WILSON.

CHEMISTRY

HORACE BYERS, *Professor*;

HENRY KREITZER BENSON, *Associate Professor*;

IRVIN WALTER BRANDEL, *Assistant Professor*.

SUBJECTS

1a, 2a. **ENGINEERING CHEMISTRY.** This course consists of illustrated lectures supplemented by quizzes. Laboratory work during the first semester consists of illustrative experiments, many of which are quantitative. The work of the second semester is largely qualitative analysis. Smith's General Chemistry and Laboratory Manual are used and Byers and Knight in qualitative analysis. Prerequisite, a high school course in chemistry.

Professor BYERS, and Associate Professor BENSON.

6. **QUANTITATIVE ANALYSIS.** *Second semester.* Gravimetric and volumetric analysis. Olsen's Quantitative Analysis. Twelve laboratory periods per week. Prerequisite, 2a or 5b.

Assistant Professor DEHN.

GEOLOGY

HENRY LANDES, *Professor*;

CHARLES EDWIN WEAVER, *Instructor*.

1a. **GENERAL GEOLOGY.** *First semester.* A semester's course for engineering students. Lectures and recitations.

Professor LANDES.

5. **MINERALOGY.** *Second semester.* Descriptive and determinative mineralogy. Practice in the determination of unlabeled minerals by means of their physical properties and by blowpipe analysis.

Dr. WEAVER.

6. **OPTICAL CRYSTALLOGRAPHY.** *First semester.* Chemical and optical properties of crystallized matter. Demonstrations of the different methods of investigation of the rock forming min-

erals in thin sections under the microscope. Use of the polarizing microscope and preparation of thin sections. Dr. WEAVER.

7. **PETROGRAPHY.** *Second semester.* Principles and methods of investigation of rock forming substances. A study of the distinguishing characteristics of the different groups and species of rocks with practice in their determination by modern petrographical methods. Preparation of thin sections. Dr. WEAVER.

8. **ECONOMIC GEOLOGY.** *Second semester.* A study of the origin and extent of metalliferous veins and ore deposits; varieties of coal, extent and location of coal fields; gas and oil; origin, occurrences, and uses of clays; building and ornamental stones; minor mineral products of use in the arts, and of commercial importance. Prerequisites, 1, 5, and 7.

Professor LANDES.

9, 10. **PALAEONTOLOGY.** The general principles of the study of fossil organisms, with their geologic and geographic distribution. A laboratory study of the most important forms of fossil invertebrates. Excursions in the field in the vicinity of Puget sound. Dr. WEAVER.

12. **FIELD WORK.** Instruction and practice in methods of field observation and in interpretation of results. A study of the geological conditions in the vicinity of Puget sound with other more extended excursions. Professor LANDES and Dr. WEAVER.

MATHEMATICS

ROBERT EDOUARD MORITZ, *Professor;*

JAMES EDWARD GOULD and FRANK MARION MORRISON,

Assistant Professors;

GEORGE IRVING GAVETT and WILLIAM VERNON LOVITT, *Instructors;*

ARTHUR S. POPE, *Graduate Assistant;*

ROBERT FRAZER, *Graduate Assistant.*

SUBJECTS

1a. **PLANE TRIGONOMETRY AND HIGHER ALGEBRA.** *First semester.* The work in algebra deals with topics supplementary to the work in trigonometry, such as complex numbers and their trigonometric representation. DeMoivre's theorems, the theory of logarrithms, the ligarrithmic and trigonometric tables, the

sine and cosine series, and the trigonometric solution of the cubic.

Assistant Professor GOULD and Mr. GAVETT.

2a. ANALYTIC GEOMETRY AND HIGHER ALGEBRA. *Second semester.* The fundamental conceptions and theorems in plane analytical geometry; the construction of loci from their equations; the deduction of the equations to loci from given conditions; transformation of co-ordinates; the straight line. The algebra consists of lessons supplementary to the analytical geometry, viz.: determinants; indeterminants and limiting values; interpretation of imaginary and infinite roots; elementary theorems in the theory of equations; etc. Prerequisite, 1a.

Assistant Professor GOULD and Mr. GAVETT.

5a. ANALYTIC GEOMETRY. *Two hours. First semester.* Application of analysis in the study of the conic sections and other plane curves. Introduction to solid analytics. Prerequisites, 1a and 2a. Professor MORITZ and Assistant Professor MORRISON.

5b. DIFFERENTIAL CALCULUS. *First semester.* A study of the infinitesimal calculus, with special reference to the needs of engineers. Prerequisites, 1a and 2a. Assistant Professor GOULD.

6a. DIFFERENTIAL AND INTEGRAL CALCULUS. *Second semester.* Continuation of course 5b. Assistant Professor GOULD.

PHYSICAL TRAINING

DAVID CONNOLLY HALL, *Professor.*

APPARATUS AND FLOOR WORK. Section A, Tu., Th., F., 3:30; B, M., W., 3:30; C, Tu., Th., F., 4:30; D, M., W., F., 4:30.

PHYSICS

FREDERICK A. OSBORN, *Professor;*

HENRY L. BRAKEL, *Instructor.*

1a. MECHANICS AND WAVE MOTION. *Five hours. First or second semester.* Laboratory one three hour period.

2a. HEAT, LIGHT AND ELECTRICITY. *Five hours. Second or first semester.* One three hour laboratory period.

POLITICAL AND SOCIAL SCIENCE

VANDERVEER CURTIS, *Assistant Professor.*

- 1a. ELEMENTS OF POLITICAL ECONOMY. *First semester.*

RHETORIC

LOREN DOUGLAS MILLIMAN, *Assistant Professor;*

- 1a. ENGLISH COMPOSITION. *Either semester.*

SCHOOL OF PHARMACY

FACULTY

THOMAS FRANKLIN KANE, Ph. D., *President*.

CHARLES WILLIS JOHNSON, Ph. C., Ph. D., Professor of Pharmaceutical Chemistry, *Dean*.

THEODORE CHRISTIAN FRYE, Ph. D., Professor of Botany.

IRVIN WALTER BRANDEL, Ph. D., Assistant Professor of Chemistry.

WILLIAM MAURICE DEHN, Ph. D., Assistant Professor of Physiological Chemistry and Toxicology.

JOHN WEINZIRL, Ph. D., Assistant Professor of Bacteriology.

ARTHUR DAY HOWARD, Ph. D., Assistant Professor of Zoology and Physiology.

_____, Instructor in Pharmacy and Materia Medica.

MARGARET MAE MACLACHLAN, Ph. G., B. S., Graduate Assistant in Pharmacy.

ALBERT HASKIN DEWEY, Ph. G., Graduate Assistant in Materia Medica.

ARTHUR RAGAN PRIEST, A. M., Professor of Rhetoric.

FREDERICK ARTHUR OSBOEN, Ph. D., Professor of Physics.

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

ROBERT EDOUARD MORITZ, Ph. D., Professor of Mathematics.

FREDERICK W. MEISNEST, Ph. D., Professor of German.

PURPOSE

The School of Pharmacy of the University of Washington was established in 1894. It has for its chief aim the preparation of young men and women for responsible positions in the practice of pharmacy. It is well equipped to give instruction in all lines of work that constitute a liberal, as well as technical, education in this important profession. It is not the purpose of the school to give "practical drug store experience," but to give such thorough instruction in practical manufacturing, the compounding of prescriptions, materia medica, and such allied subjects as chemistry, physiology, botany, and toxicology as will enable its graduates to take first rank in their chosen line of work. Being a department of the State University, the school is able to offer its students the advantages of various liberal arts courses, which afford those pursuing advanced work a liberal scientific education.

COURSES

Two courses 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, 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 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 FOUR YEAR COURSE AS A PREPARATION FOR THE STUDY OF MEDICINE

Students who desire a thorough scientific training as a prerequisite for the study of medicine are allowed to arrange the work of the third and fourth year so as to include zoology, physiology, bacteriology, and comparative anatomy. The work of the first two years includes courses in general chemistry, organic chemistry, qualitative and quantitative analysis, physiological chemistry, toxicology, and materia medica, which, if not taken before entering upon the study of medicine must be pursued after entering a medical school.

The attention of students preparing for medicine is particularly called to the courses in pharmacy, pharmaceutical preparations, and the study of the United States pharmacopœia. The physician who is constantly prescribing pharmacopœial and National Formulary prescriptions should have a thorough knowledge of the methods of chemistry involved in these preparations, so as to avoid chemical and pharmaceutical incompatibilities in prescription mixtures. Work of this kind is all the more important as a pre-medical training, because of the fact that the curriculum of a course in medicine is too crowded to allow a thorough study of such subjects. Many of the best eastern schools of medicine are receiving our graduates, and giving them advanced credit for duplicate courses. While this may not save the student any time in obtaining the medical degree, it allows opportunity to follow up special lines of study in the college of medicine. In addition to this special training for medical studies, the student obtains the general training afforded by modern foreign language, English, mathematics, physics, and other elective liberal arts courses.

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 pharmacy, or a knowledge of drugs, is at least 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 medica and therapeutics, etc. A great many pharmaceutical chemists will be needed to carry out the analytical processes involved in the enforcement of the recent 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 University of Washington School of Pharmacy is in close touch with the government and state food and drug work, and is able to offer courses that will fit students for positions in this important line of work.

THE PREREQUISITE MOVEMENT

Several states have enacted laws requiring a college training in addition to a certain amount of high school work as a prerequisite for registration as a pharmacist. The standard of preliminary education in several of these states will soon be that of graduation from a four year high school. Since this movement is spreading rapidly, and many other states are sure to follow those now in the lead, it is desirable that young men and women of the Northwest who desire to enter the profession of pharmacy prepare themselves with a proper high school education, and then attend a school of pharmacy, the diploma of which will admit them to examination in any state in the Union. The University of Washington School of Pharmacy stands second to none in its standard of requirements for preliminary education, and character of work necessary to secure a degree; and its graduates will find no trouble in meeting the requirements of the various states.

The pharmacy law of the state has recently been amended, giving the State Board of Pharmacy the power to prescribe the preliminary training of candidates for registration. It is expected that in the near future all candidates for registration will be required to show evidence of training in a reputable school of pharmacy.

ENTRANCE REQUIREMENTS

CANDIDATES FOR DEGREES

To be admitted clear to either the two or four year course of the School of Pharmacy, students must either (a) pass an ex-

amination based on a course amounting in the aggregate to fifteen units, or (b) complete a course of the same length in an accredited school. Of these fifteen units eight and one-half are specified and required of all students; the remaining six and one-half may be selected from the list of optional subjects, except that two must be a foreign language.

Specific Subjects.

English, 4 units.
Algebra, $1\frac{1}{2}$ units.
Plane geometry, 1 unit.
Physics, 1 unit.
U. S. History and civics, 1 unit.
Total, $8\frac{1}{2}$ units.

Optional Subjects.

Greek, 1, 2, or 3 units.
Latin, 2, 3, or 4 units.
German, 1, 2, 3, or 4 units.
French, 1, 2, or 3 units.
Spanish, 1 or 2 units.
Solid geometry, $\frac{1}{2}$ unit.
Trigonometry, $\frac{1}{2}$ unit.
History, 1, 2, or 3 units.
*Physical geography, $\frac{1}{2}$ or 1 unit.
*Physiology, $\frac{1}{2}$ or 1 unit.
*Geology, $\frac{1}{2}$ or 1 unit.
Botany, $\frac{1}{2}$ or 1 unit.
Zoology, $\frac{1}{2}$ or 1 unit.
Chemistry, 1 unit.
Astronomy, $\frac{1}{2}$ unit.
Drawing, $\frac{1}{2}$ or 1 unit.
Drawing, $\frac{1}{2}$ or 1 unit.
Economics, $\frac{1}{2}$ unit.
*1 unit accepted only after approval of a definite laboratory course.

NOTE.—To count as a unit, a subject must be taught at least four times a week, in periods of not less than forty-five minutes, for a school year of not less than thirty-six weeks.

Students from accredited schools, in order to be admitted without examination, must bring with them a full statement of their high school or academy studies, signed by the proper authorities. As a rule the accredited school list of other state universities will be accepted by the University of Washington. Graduates of accredited schools in other states will present certified record of work, as in case of local students.

It will be of assistance to students from non-accredited schools, seeking admission by examination, to bring with them a certified statement of their studies.

STUDENTS NOT CANDIDATES FOR DEGREES

Students over nineteen years of age, who have not the regular high school entrance requirements, but who can give satisfactory evidence of their fitness to carry the work, may enter and pursue the regular course of study. 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 write to the Dean, giving detailed statement of their previous school training, and making mention of any practical experience in pharmacy they may have received. Such students may become candidates for a degree upon clearing all entrance conditions.

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. This degree entitles any holder who has had two years of practical experience to a certificate of registration from the State Board of Pharmacy (without examination) entitling him to practice pharmacy in the state of Washington. The graduates of the two year course are entitled to entrance to many of the best medical colleges.

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. Graduates of the four year course may continue work in the graduate school leading to the master's degree.

A degree with honors may be conferred upon a student of the School of Pharmacy if recommended for this distinction by the Dean.

CERTIFICATE GRADUATES

Students not candidates for degrees who satisfactorily pursue the studies outlined in the two year course will be granted a certificate of graduation. This certificate entitles the holder who has had two years of practical experience to a certificate of registration from the State Board of Pharmacy (without examination) entitling him to practice pharmacy in the state of Washington.

CORRESPONDENCE

Inquiries in regard to the School of Pharmacy may be addressed to the dean of the school or to the registrar of the University. It is of advantage for persons making such inquiries to state definitely their previous school training. Copies of the catalogue of the University or of the special announcement of the School of Pharmacy may be had upon application.

REQUIREMENTS FOR GRADUATION

1. (a) With degree of pharmaceutical chemist. (Entrance requirements page 249 and following.)

(b) With certificate of graduation. (Entrance requirements page 249 and following.)

FIRST YEAR, FIRST SEMESTER

	<i>Hours Credit.</i>	<i>Hours in Leo. & Rec.</i>	<i>Hours in Laboratory.</i>
Chemistry 1c	4	72 .....	.....
Chemistry 1c, Lab.	4 .....	.....	216
Pharmacy 1	2	18	54
Pharmacy botany	2	18	36
Physiology	4	36	72
Total for semester	16	144	378
Physical culture	2 .....	.....	Gymnasium.. 54

FIRST YEAR, FIRST SEMESTER

Chemistry 5b	4	36	108
Chemistry 3c	4	36	108
Pharmacy 2	4	36	108
Pharmacy botany	4	36	72
Total for semester	16	144	396
Physical culture	2 .....	.....	Gymnasium.. 54

SECOND YEAR, FIRST SEMESTER

Chemistry 4c	4	54	108
Chemistry 6	4	18	162
Materia medica 1	4	72 .....	.....
Toxicology 3	2	36 .....	.....
Pharmacy 3	2	36 .....	.....
Total for semester	16	216	270

SECOND YEAR, SECOND SEMESTER

Chemistry 14	4	36	108
Pharmacy 4	2	36 .....	.....
Pharmacy 6	4	18	162
Chemistry 8	2 .....	.....	108
Materia medica 2	4	72 .....	.....
Total for semester	16	162	378
Totals of required work...	64	666	1422
Hours in lectures and laboratories .....	.....	.....	2088
Hours in gymnasium .....	.....	.....	108

2. With degree of bachelor of science. (Entrance requirements, page 249 and following.)

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, 16 hours.

Physics, 8 hours.

Laboratory science, 16 hours.

Physical culture, one year.

The work in laboratory science may be elected in bacteriology, botany, geology, pharmacy, pharmaceutical chemistry, physics, physiological chemistry, physiology, toxicology, and zoology.

3. With the degree of master of science.

Graduates with the degree of bachelor of science, who have been accepted for a higher degree, may present themselves for examination for the degree of master of science, after at least one year of graduate study in three subjects (a major subject and two minors).

DEPARTMENT OF INSTRUCTION

PHARMACEUTICAL CHEMISTRY

CHARLES WILLIS JOHNSON, *Professor*;
IRVIN WALTER BRANDEL, *Assistant Professor*;
WILLIAM MAURICE DEHN, *Assistant Professor*.

1c. GENERAL CHEMISTRY. *First semester*. 8, Tu., W., Th., F., Lab. Tu., W., Th., F., 1-4. A course in inorganic chemistry for students of pharmacy. A lecture course of four hours per week and a laboratory course of twelve hours per week is provided and the subjects so treated as to meet the special requirements of students in pharmacy. Text-book: Smith's College Chemistry and Laboratory Manual. This course is followed by 3c, 4c, and 5c.
Assistant Professor BRANDEL.

3c. ORGANIC CHEMISTRY. *Second semester*. 8, Tu., Th., Lab. Th., F., 1-4. This course consists of two lectures and six laboratory hours per week and is especially designed to meet the needs of students of pharmacy. The course is essentially a repetition beginning the second semester, of chemistry 3, 4. It will, therefore, be completed in the first semester of the following year.
Assistant Professor BRANDEL.

4c. ORGANIC CHEMISTRY. *First semester*. This is a continuation of 3c. (Not given 1909-1910.)
Assistant Professor BRANDEL.

5b. ELEMENTARY QUALITATIVE ANALYSIS. *Four hours*. 9, M., Th., Lab. M., W., 1-4. *Second semester*. Chemistry 1c is followed by a course in qualitative analysis. The course consists of two lectures and six laboratory hours per week.
Assistant Professor DEHN.

6. QUANTITATIVE ANALYSIS. *First semester*. *Four hours*. Th., 11. 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. Laboratory W., Th., F., 1-4.
Assistant Professor DEHN.

7. ORGANIC PREPARATIONS. *Either semester.* A special study will be made of the manufacture and use of various organic compounds of pharmaceutical importance, such as new remedies. Credit and hours to be arranged. Professor JOHNSON.

8. QUANTITATIVE ANALYSIS. (Drug Assaying.) (*Two hours.*) *Second semester.* Methods of quantitatively estimating the active constituents of crude drugs and their preparations, also the assay of a number of inorganic pharmaceutical preparations. Laboratory, M., Tu., 1-4.

Professor JOHNSON and Miss McLACHLAN.

9. ALKALOIDS AND PLANT ANALYSIS. *First semester. Four hours.* The class work consists of the study of the structure and synthesis of alkaloids and of general methods of plant analysis. In the laboratory the various alkaloidal tests are studied, also methods of extracting, purifying and estimating plant principles. Laboratory three afternoons per week. Hours to be arranged. Prerequisite, quantitative and organic chemistry.

Professor JOHNSON.

10. DRUG ADULTERATION. *Second semester. Four hours.* Th., 10. The class work consists of the study of the national and various state food and drug laws, also of methods of analysis as used in the laboratory. In the laboratory pharmaceutical and chemical products are tested for purity and standard of strength. The products to be tested are purchased on the open market from stores in Seattle and other cities of the state. Laboratory, three afternoons per week. Prerequisite, quantitative and organic chemistry.

Professor JOHNSON.

11. FATS AND OILS. *First semester. Four hours.* F., 10. Study of the source, preparation and chemical nature of the various fats and oils of food and pharmaceutical use. The laboratory includes methods of identifying fats and oils and of testing for adulterants. Laboratory, three afternoons per week.

Professor JOHNSON.

12. FOOD ANALYSIS. *Second semester. Four hours.* F., 10. This course, together with courses 9, 10 and 11, is designed for students preparing for positions as food and drug analysts. Various food products on the market are analyzed for preservatives and other added ingredients that would be in opposition to

the existing food and drug laws. Published methods of the official association of agricultural chemists are used, as well as liberal reference made to standard books on analysis of foods and drugs. Laboratory, three afternoons per week.

Professor JOHNSON.

13. TOXICOLOGY. (Detection of poisons). *One hour. Either semester.* A laboratory course on the detection and estimation of poisons in animal tissues and practice in the preparation of testimony for legal cases. Hours to be arranged.

Professor JOHNSON and Assistant Professor DEHN.

14. PHYSIOLOGICAL CHEMISTRY. *Second semester. Four hours.* M., W., 9. Chemical composition of foods, tissues, secretions and excretions, their physiological and pathological changes, with special attention to the composition and clinical analysis of blood and urine. Laboratory, Th., M., 8-11.

15. PHYSIOLOGICAL CHEMISTRY. *First semester. Four hours.* Th., F., 10. A continuation of course 14 with special attention to the chemistry of the cell and individual organs and studies of sera and immunity. The laboratory practice consists largely of select quantitative methods. Laboratory, Tu., 1, 4, Sat., 9-12.

Assistant Professor DEHN.

16. URINARY ANALYSIS. *One hour. Second half of second semester.* Practical methods of analysis of normal and pathological urines. This course is included in, but may be taken separate from course 14.

Assistant Professor DEHN.

17. RESEARCH. A very wide field of research is open to students interested in physiological and pharmaceutical chemistry. Opportunity will be given students pursuing work for advanced degrees to take up special subjects for detailed investigation.

Professor JOHNSON and Assistant Professor DEHN.

PHARMACY

CHARLES WILLIS JOHNSON, *Professor;*

..... *Instructor;*

MARGARET MAE MACLACHLAN, *Graduate Assistant;*

ALBERT H. DEWEY, *Graduate Assistant.*

1. THEORY AND PRACTICE OF PHARMACY. *First semester. Two hours.* Lecture M., 8. Laboratory M., 1-4. The study of the prin-

ciples of pharmaceutical operations, such as comminution, expression, decantation, filtration, maceration, percolation, diffusion, dialysis, crystallization and precipitation. The laboratory work includes the manufacture of such preparations as best illustrate the above processes.

MISS MACLAACHLAN.

2. PHARMACEUTICAL PREPARATIONS. *Second semester. Four hours.* Lectures M., 8, Tu., 9. Laboratory M., 9 to 12 and 1 to 4. Continuation of course 1. The study of galenical and other preparations: waters, tinctures, extracts, spirits, oleoresins, etc., also of pills, suppositories, ointments, plasters, etc. The laboratory work includes the manufacture and testing of various typical preparations.

Course 2 will also be given during the first semester of the year 1909-10. Lectures M., W., 9. Laboratory M., Tu., 1-4.

MISS MACLAACHLAN.

3. U. S. PHARMACOPOEIA. *First semester. Two hours. M., Tu., 10.* A study of the inorganic and organic chemicals included in the pharmacopoeia. The manufacture, tests for purity, assay and medicinal properties are considered. Professor JOHNSON.

4. U. S. PHARMACOPOEIA AND NATIONAL FORMULARY. *Second semester. Two hours. M., Tu., 10.* 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 and in the assay processes.

Professor JOHNSON.

5. MANUFACTURING PHARMACY AND CHEMISTRY. *First semester. Hours to be arranged.* The manufacture of a number of inorganic and organic chemical compounds used in medicine, also a more complete study and manufacture of national formulary preparations than can be obtained in course 6. Mr. DEWEY.

6. MANUFACTURING PHARMACY AND PRESCRIPTIONS. *Second semester. Four hours.* Lecture Th., 11. Laboratory, W., Th., F., 1-4. Continuation of course 2. The manufacture of some of the more difficult pharmacopoeial and national formulary preparations as well as a number of organic compounds used in pharmacy and medicine. Considerable time is given to the compound-

ing of prescriptions and to the study of physical, chemical and therapeutical incompatibilities. Mr. DEWEY.

PHARMACOGNOSY, MATERIA MEDICA AND TOXICOLOGY

WILLIAM MAURICE DEHN, *Assistant Professor*;

..... *Instructor*;

ALBERT H. DEWEY, *Graduate Assistant*.

1. PHARMACOGNOSY. *First semester*. M., Tu., F., 11. A study of crude drugs, their source, methods of collecting and preserving, identification, active constituents and adulteration.

Mr. DEWEY.

2. MATERIA MEDICA AND THERAPEUTICS. *Second semester*. M., Tu., W., F., 11. A study of the action of chemicals, drugs and their preparations on the human organism in health and disease.

Mr. DEWEY.

3. TOXICOLOGY. *First semester*. Two hours. W., F., 8. Lectures and recitations on the physiological actions of various poisons, their antidotes and emergency treatment in cases of poisoning.

Assistant Professor DEHN.

PHYSIOLOGY

ARTHUR DAY HOWARD, *Assistant Professor*.

7. ELEMENTARY PHYSIOLOGY. *First semester*. Four hours. Tu., Th., 9. Laboratory Tu., Th., 10-12. 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.

BACTERIOLOGY

JOHN WEINZIRL, *Assistant Professor*.

7. GENERAL BACTERIOLOGY. *First semester*. M., W., 3. Lab. M., W., 1-3 or 4-6. The methods of growing and studying bacteria are first taken up; the structure, functions and distribution are considered at length; a brief review of the applications closes the course. During the second semester medical students will take

course 8, all others are advised to take course 10. Prerequisite, a course in either botany or zoology, and a course in chemistry.

Assistant Professor WEINZEL.

8. **MEDICAL BACTERIOLOGY.** *Second semester.* M., W., 3. Lab. M., W., 1-3 or 4-6. Continuation of course 7. Pathological conditions, toxins, reactive products formed in the blood, and immunity are considered in general. Each specific bacterial disease is then taken up in detail. An introduction to the protozoal diseases closes the course. This course is planned for students who intend to study medicine.

Assistant Professor WEINZEL.

BOTANY

Since so many of the common drugs are obtained from plants, an intelligent pharmacist should have a general knowledge of botany. Since related plants often have similar medicinal properties, a knowledge of classification becomes valuable; and in the identification of drugs, a knowledge of cell forms, and of the structure of various parts of a plant is indispensable. With these needs in mind a year's work has been outlined, including studies in cell forms and contents, and a general knowledge of classification, with special emphasis on the flowering plants.

13. **PHARMACY BOTANY.** *Two hours. First semester.* F., 9. Structure of roots, stems, rhizomes, leaves, barks. Types are studied with a view to locating the elements; later the dry drugs are studied for the recognition of kinds of cells in them. Laboratory, F., 10-12.

14. **PHARMACY BOTANY.** *Second semester.* Th., 11; F., 9. Variations in stems, leaves, roots, parts of flowers, seeds, fruits, Study of types of the various families of phanerogams, and the analysis of plants in the spring with a view to fixing the chief characters of the families. Laboratory, Th., 9-11; F., 10-12.

FRENCH

PIERRE JOSEPH FREIN, *Professor.*

1, 2. *First year.* Five sections. Frazer and Squair's Grammar. Two or three easy texts are read. Practice in pronunciation and in writing from dictation.

(For advanced courses see general catalogue.)

GERMAN

FREDERICK WILLIAM MEISNEST, *Professor.*

1, 2. *First year.* Four sections. Pronunciation, grammar and easy readings.

3, 4. *Second year.* Five sections. Grammar review, modern prose, and one drama.

(For advanced courses see general catalogue.)

MATHEMATICS

ROBERT EDOUARD MORITZ, *Professor.*

1. PLANE TRIGONOMETRY. *First or second semester.* Six sections.

(For advanced courses see general catalogue.)

PHYSICS

FREDERICK A. OSBORN, *Professor;*HENRY L. BRAKEL, *Instructor.*

1a. MECHANICS AND WAVE MOTION. *Five hours. First or second semester.* Laboratory, one three hour period.

2a. HEAT, LIGHT AND ELECTRICITY. *Five hours. Second or first semester.* One three hour laboratory period.

RHETORIC

ARTHUR RAGAN PRIEST, *Professor.*

1a. ENGLISH COMPOSITION. *First semester.* Four sections. Daily and fortnightly themes, together with the study of the principles of rhetoric. Text: Genung's *The Working Principles of Rhetoric*. Each student will meet the instructor for private consultation on his work at least once every two weeks.

(For advanced courses see general catalogue.)

GRADUATE WORK AND ADVANCED DEGREES

A graduate of any college or university of approved standing who wishes to do graduate work in this university, may be enrolled as a graduate student upon presentation of satisfactory credentials to the committee on advanced degrees.

Graduate students* are classified as,

- (1) Graduate students (candidates for advanced degrees),
- (2) Graduate students (not candidates for advanced degrees).

A graduate of this university or of any other institution of equal rank will be given full graduate standing. But in case the student is from a college whose requirements for graduation are not accepted as the equivalent of a degree from the University of Washington, he must complete the necessary amount of undergraduate work before being enrolled as a candidate for an advanced degree.

Graduate students may receive the degree of master of arts 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 years' in residence, if the candidate is employed as a teacher or regularly engaged in any other occupation or profession. Attendance during four summer schools 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 thirty-two credits, at least one-half being in the major subject, a part of which shall consist of a thesis embodying independent, though not necessarily original research. The thesis requirement may be waived, however, in individual cases with approval of the Committee on Advanced Degrees.

3. No work done in the major subject can be counted toward the master's degree, until the candidate for such degree has com-

*Graduates of this or other universities who wish to take undergraduate work in any of the technical or professional schools of the university, will be admitted upon fulfilling the requirements of the college in which they wish to enroll, but will not be classified as graduate students.

plied with the departmental requirement as to previous work in that subject, which in no case shall be less than twelve hours.

4. The proposed work of a candidate for the master's degree shall include no courses not designed primarily for upper classmen or graduate students. It shall be outlined by his major professor and submitted by him to the Committee on Advanced Degrees not later than four weeks after the beginning of the first semester's work for such degree. When the work thus outlined has been approved by the committee, the student may be registered as a candidate for a degree.

5. Upon the completion of the work as outlined, the candidate shall be examined by a committee consisting of his major professor and his other instructors. The time and place of the examination, which shall be open to the faculty, shall be announced on the official bulletin board 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 Advanced Degrees, not later than the Wednesday preceding commencement day.

6. 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 Registrar at the time of payment of the diploma fee.

The degree of master of science may be conferred on graduates of the four year Pharmacy course, the College of Engineering, the School of Forestry, and the School of Mines, subject to the general regulations governing the degree of master of arts.

THE SUMMER SCHOOL

The sixth annual summer session under the direction of the faculty of the University of Washington will begin June 21, 1909.

ADMISSION

Formal entrance examinations are not required for admission. Attendants, however, must give evidence of sufficient maturity and preparation to profit by the work offered.

THE WORK

The work of the summer session is of a threefold character:

1. The work for high school and upper grade teachers who wish further preparation.
2. Regular college work.
3. Work in graduate departments.

REGISTRATION

Registration will begin Monday morning, June 21. Prospective students are earnestly requested to be on hand the first day. All fees must be paid to the secretary at the opening of the session.

CREDITS

A student may earn six credits by securing passing grades in the requisite number of subjects, but under no condition will he be allowed to make more than this number.

TEXT BOOKS

Text books can be purchased at reduced rates at the University Co-operative Book-Store.

ASSEMBLIES

Frequent assemblies of a literary or musical character are held. These entertainments are open to students of the summer school free of charge.

ROOM AND BOARD

Room and board at the dormitories can be secured for \$36.00 for the period of six weeks. Students must, however, furnish their own bedding, mattresses, and linen. A number of mattresses belonging to the regular occupants of the dormitories are left in the rooms during the summer, and these may in some instances be rented for a small amount.

A list of desirable rooms and boarding places for any who do not care to take advantage of the dormitories may be found at the Registrar's office.

INCIDENTAL EXPENSES

An incidental deposit of ten dollars (\$10.00) is required of each student registering, and special laboratory deposits are required in certain science departments, such as physics and chemistry, to cover the cost of materials consumed. No part of the money thus derived is applied to pay for the services of any member of the faculty on the regular University pay-roll, but this fund is used for the compensation of the instructors brought in especially for the students of the summer session, and for incidental expenses and the general betterment of the session.

DIRECTORY

OFFICERS OF ADMINISTRATION AND INSTRUCTION

- Alden, G. H., Ph. D.5528 Fifteenth Ave. N. E.
Associate Professor. 13.
- Beattie, S. T.5714 Fifteenth Ave. N. E.
Instructor. 19.
- Beechler, G. C., A. B., LL. B.4119 Twelfth Ave. N. E.
Instructor. 23.
- Benham, A. R., Ph. D.1708 Ravenna Boulevard
Assistant Professor. 15.
- Benson, H. K., Ph. D.4733 University Boulevard.
Associate Professor. 14
- Boetzkes, Otilie G., A. M.,717 Belmont Ave. N.
Assistant Professor. 14.
- Bowlby, H. L., B. S.4546 Fourteenth Ave. N. E.
Instructor. 18.
- Brakel, H. L., A. M.,4556 Twelfth Ave. N. E.
Instructor. 18.
- Brandel, I. W., Ph. G., Ph. D.5732 Seventh Ave. N. E.
Assistant Professor. 16.
- Byers, H. G., Ph. D.,546 E. Fifteenth St.
Professor. 8.
- Condon, H. T., LL. B.5047 Fifteenth Ave. N. E.
Registrar and Secretary of Faculties. 28.
- Condon, J. T., LL. M.120 Thirteenth Ave. N.
Professor and Dean. 8.
- Conibear, H. B.4119 Brooklyn Ave.
Instructor. 22.
- Cooper, Elva, A. M.
Assistant. 24.
- Cooper, Frank B.1202 Fifteenth Ave. N.
Lecturer. 24.

- Corey, C. R., E. M.5826 Sixteenth Ave. N. E.
Instructor. 20.
- Cosgrove, Howard G.....Seattle
Regent. 6.
- Crollard, F. M.4115 Fifteenth Ave. N. E.
Secretary to the President. 28.
- Currie, Florence B., B. L., B. L. S....4519 Fourteenth Ave. N. E.
Catalog Librarian. 27.
- Custis, Vandever, Ph. D.4342 Brooklyn Ave.
Assistant Professor. 15.
- Daggy, M. L., A. B.....1719 Ravenna Boulevard
Assistant Professor. 15.
- Darby, W. T., A. M.1819 Kilbourne Ave.
Instructor. 20.
- Dehn, W. M., Ph. D.5027 Fifteenth Ave. N. E.
Assistant Professor. 16.
- Densmore, H. B., A. B.4549 Fifteenth Ave. N. E.
Instructor. 20.
- Dewey, A. H., Ph. G.....6302 Fifteenth Ave. N. E.
Assistant. 24.
- Ducasse, C. J., A. B.5608 Eleventh Ave. N. E.
Assistant. 24.
- Earle, H. P., A. B.4530 Eleventh Ave. N. E.
Instructor. 23.
- Eastwood, E. O., C. E., A. M.4702 Twelfth Ave. N. E.
Professor. 11.
- Evans, A. E., Ph. D.4123 Twelfth Ave. N. E.
Acting Assistant Professor. 17.
- Fee, L. H., A. B.5432 Eleventh Ave. N. E.
Assistant. 25.
- Field, Ada M., A. B.
Assistant. 25.
- Fleager, C. E., C. E.1600 Thirty-fifth Ave.
Lecturer. 23.
- Fowler, C. E., M. Am. Soc. C. E.....1600 Thirty-fifth Ave.
Lecturer. 23.

- Frazer, Holland, A. B.
Assistant. 25.
- Frein, P. J., Ph. D.4317 Fifteenth Ave. N. E.
Professor. 10.
- Frye, T. C., Ph. D.4558 Ninth Ave. N. E.
Professor. 10.
- Fuller, A. H., M. S. C. E.5208 Fourteenth Ave. N. E.
Professor and Dean. 7.
- Gavett, G. I., B. S. (C. E.)5525 Sixteenth Ave. N. E.
Instructor. 20.
- Glenn, H. L., B. S.703 Twentieth Ave.
Lecturer. 23.
- Goss, O. P. M., C. E.4721 Eleventh Ave. N. E.
Instructor. 22.
- Gould, J. E., A. M.5015 Fifteenth Ave. N. E.
Assistant Professor. 14.
- Gowen, H. H., F. R. G. S.619 Eighth Ave.
Professorial Lecturer. 13.
- Greenlee, Ida K., A. B.4246 Brooklyn Ave.
Instructor. 18.
- Haggett, A. S., Ph. D.4549 Fifteenth Ave. N. E.
Professor. 9.
- Hall, D. C., M. D.4547 Tenth Ave. N. E.
Professor. 13.
- Hammond, P. F., A. B.4532 Eleventh Ave. N. E.
Assistant. 25.
- Harisberger, John,
Lecturer. 24.
- Harris, C. W., C. E.4123 Twelfth Ave. N. E.
Instructor. 19.
- Hazeltine, F. A.South Bend, Wash.
Regent. 6.
- Henninger, Carl, A. M.4217 Tenth Ave. N. E.
Assistant. 25.
- Henry, W. E., A. M.5209 Fifteenth Ave. N. E.
Head Librarian. 27.

- Higgins, J. C.1212 Seventh Ave. W.
Regent. 6.
- Hipkoe, Max4312 Fourth Ave. N. E.
Clerk. 28.
- Hoff, H. J., Ph. D.4512 Brooklyn Ave.
Instructor. 22.
- Howard, H. D., Ph. D.4229 Twelfth Ave. N. E.
Assistant Professor. 17.
- Hoyt, J. P., LL. B.1617 Fourth Ave. W.
Professor. 9.
- Huntington, D. L.Spokane, Wash.
Regent. 6.
- Jackson, A. G., A. B.
Assistant. 25.
- Jackson, J. A.
Instructor. 20.
- Jamme, G. E.1627 Summit Ave.
Lecturer. 24.
- Johanson, J. M., A. B.4530 Fourteenth Ave. N. E.
Instructor. 20.
- Johnson, C. W., Ph. C., Ph. D.5031 Fifteenth Ave. N. E.
Professor and Dean. 10.
- Johnson, F. E., E. E.5203 Fifteenth Ave. N. E.
Instructor. 18.
- Kane, S. M.1952 Ninth Ave. W.
Instructor. 21.
- Kane, T. F., Ph. D.4525 Fifteenth Ave. N. E.
President. 7.
- Kimball, C. O.4123 Eleventh Ave. N. E.
Director of Music. 27.
- Kincaid, Trevor, A. M.4526 Brooklyn Ave.
Professor. 8.
- Lancaster, S. C.5737 Seventeenth Ave. N. E.
Professor. 12.
- Landes, Henry, A. M.4503 Brooklyn Ave.
Professor. 7.
- Lantz, Harvey, A. M., LL. B.4549 Fifteenth Ave. N. E.
Professor. 11.

- Lord, F. H., A. B.4734 University Boulevard
Curator of Buildings and Grounds. 28.
- Lovitt, W. V., A. B., Ph. M.4325 Brooklyn Ave.
Instructor. 21.
- Lull, H. G., A. B.5648 Twentieth Ave. N. E.
Associate Professor. 14.
- McCaustland, E. J., C. E., M. C. E.5264 Nineteenth Ave. N. E.
Professor. 13.
- McDonnell, Pearl, A. B.4239 Fifteenth Ave. N. E.
Periodicals and Local History Librarian. 27.
- McLachlan, Margaret M., Ph. G., B. S.
Assistant. 25.
- McMahon, Edward, A. M.4128 Brooklyn Ave.
Instructor. 21.
- Magnusson, C. E., Ph. D., E. E.4123 Twelfth Ave. N. E.
Professor. 11.
- Main, J. F., A. B.4707 Brooklyn Ave.
Professor. 11.
- Markham, William117 E. Sixtieth St.
Secretary Board of Regents. 28.
- Meany, E. S., M. L.4025 Tenth Ave. N. E.
Professor. 7.
- Meisnest, F. W., Ph. D.4705 Sixteenth Ave. N. E.
Professor. 12.
- Meissner, Josephine, B. L. S.4022 Tenth Ave. N. E.
Circulation Librarian. 27.
- Michelson, Edith S., A. B.
Assistant. 25.
- Miller, F. G., M. F.The Lisbon, University Station
Professor and Dean. 12.
- Milliman, L. D., A. B.5247 Fifteenth Ave. N. E.
Assistant Professor. 16.
- More, C. C., M. S., C. E.4309 Fourth Ave. N. E.
Associate Professor. 14.
- Moritz, R. E., Ph. D., Ph. n. D.4705 Twenty-first Ave. N. E.
Professor. 10.
- Morris, W. A., Ph. D.5015 Fifteenth Ave. N. E.
Instructor. 21.

- Morrison, F. W., A. B.4719 Fifteenth Ave. N. E.
Assistant Professor. 16.
- Nash, F. D.Tacoma, Wash.
Regent. 6.
- Ober, Caroline H.4226 Brooklyn Ave.
Professor. 8.
- Osborn, F. A., Ph. D.5215 Fifteenth Ave. N. E.
Professor. 9.
- Padelford, F. M., Ph. D.4711 Fifteenth Ave. N. E.
Professor. 9.
- Parrington, V. L., A. M.4536 Second Ave. N. E.
Assistant Professor. 17.
- Patzner, Otto, Ph. D.5232 Eighteenth Ave. N. E.
Assistant Professor. 16.
- Pope, A. S., A. B.
Assistant. 26.
- Powell, J. H.907 Thirty-seventh Ave. N.
Regent. 6.
- Priest, A. R., A. M.4504 University Boulevard
Professor and Dean. 8.
- Roberts, Milnor, A. B.4505 Fifteenth Ave. N. E.
Professor and Dean. 9.
- Ross, J. D.811 E. Harrison
Lecturer. 23.
- Rudberg, Lavina, B. S.4730 Ninth Ave. N. E.
Instructor. 19.
- Salisbury, G. N., B. S.916 Nineteenth Ave.
Lecturer. 24.
- Savery, William, Ph. D.5503 Fifteenth Ave. N. E.
Professor. 9.
- Sawyer, A. P.University Club
Regent. 6.
- Scott, S. F., Ph. C., M. S.5027 Fifteenth Ave. N. E.
Instructor. 21.
- Senter, G. P., A. M.
Assistant. 26.
- Sidey, T. K., Ph. D.4245 Brooklyn Ave.
Assistant Professor. 15.

- Sisson, E. O., Ph. D.1833 Revenna Boulevard
Professor. 12.
- Smith, C. W., A. B., B. L. S.4546 Eighth Ave. N. E.
Assistant Librarian. 27.
- Smith, J. A., Ph. D.4533 Fifteenth Ave N. E.
Professor. 7.
- Smith, Stanley, A. M.123 Eastlake Ave.
Instructor. 22.
- Stevens, H. C., Ph. D.4026 Eleventh Ave. N. E.
Assistant Professor. 15.
- Steinke, M. W., A. B.
Assistant. 26.
- Strong, C. M., A. M.4246 Brooklyn Ave.
Instructor. 19.
- Taylor, Roger, C. E.
Lecturer. 24.
- Thomas, H. A., C. E.4115 Twelfth Ave. N. E.
Instructor. 23.
- Thompson, David, A. B.4549 Fifteenth Ave. N. E.
Professor. 10.
- Thorpe, M. H., A. B.4706 Fourteenth Ave. N. E.
Assistant Professor. 18.
- Weaver, C. E., Ph. D.4706 Fourteenth Ave. N. E.
Instructor. 22.
- Weed, Inis H., A. M..... Clark Hall
Dean. 6.
- Weinzirl, John, Ph. D.4144 Tenth Ave. N. E.
Assistant Professor. 17.
- Weithaase, P. E., A. M.5608 Fifteenth Ave. N. E.
Acting Assistant Professor. 17.
- Weld, L. D. H., Ph. D.4549 Fifteenth Ave. N. E.
Instructor. 22.
- Willson, G. S., B. S.3212 Tenth Ave. N. E.
Instructor. 19.
- Whitfield, Jay, A. B.4227 Fifteenth Ave. N. E.
Assistant Registrar. 28.
- Whittlesey, W. B., A. B.
Assistant. 26.

DEGREES

CONFERRED ON COMMENCEMENT DAY, 1908

COLLEGE OF LIBERAL ARTS

MASTER OF ARTS

Eva Louise Barr
Eric Temple Bell
Mabel Electa Buland
H. Moreland Cook
Bess Rebecca Wilbur

Edna Tileston Gullixson
Celia Dexter Shelton
Mabel Riley Simpson
Harlan Leo Trumbull

MASTER OF SCIENCE

Mayme E. Lucas

BACHELOR OF ARTS

Mellie Knight Alexander
Nellie Mabel Ames
Lucy Rowena Barnes
 Honors in Philosophy
 (magna cum laude)
Phoebe May Bartlett
Mary Pearl Bennett
Donald Skelton Birkett
Amelia Bliss
John Washburn Campbell
Lucy Campbell
Lydia May Chambers
Charles Florus Coan
Lillian Isabel Day
Katherine DeLand
Curt John Ducasse
 Honors in Philosophy
 (magna cum laude)
Nellie Mae Dunlap
Eunice A. Engeland
Helga Maria Erickson
Annie Louisa Fallis
 Honors in Zoology

Howard Leslie Gillette
Edith Gourlay
Kate Lella Gregg
Rose Emily Grout
Edith May Hammond
 Honors in English Literature
Mary Heyes
Sara Jacobson
Josephine Janette Jamieson
William Morrow Beach Jones
Rose Kahan
 Honors in Latin
 (magna cum laude)
Arthur Thompson Karr
Mary Emily Kay
Florence Kiemle
Bertha Flora Kilgour
Marguerite Emily Kittredge
Thomas Erwin Latimer
 Honors in Political Science
Herbert Henry Lewis
 Honors in History
Brent Albert Lindsay

Florence Evelyn Luby
 Floy Leeuwijn Luzader
 Lela Coler Martin
 Metta Louise McDaniels
 Helen Porter McDonald
 Edith Sidonie Michelson
 Honors in French
 Mrs. Evelyn Miller
 Mayme B. Miller
 May Anastacia Murray
 Ethel Blanche Nelson
 As of the class of 1907
 Gertrude Nefzger
 Gertrude S. Osburn
 Honors in History
 William Quincy Osburn
 Honors in History
 Myrtle Irene Parr
 Honoria Philben
 Arthur Baker Stanley Pope
 Frederick Channing Powell
 Beatrice Prosch
 Ruth Rockfellow
 Ernest Eugene Rothschild
 Frances Maude Sanborn
 Pauline Shirley

David Arthur Staeger
 George East Starr
 Seymour Iver Stone
 Honors in Political Science
 Mekkin Sveinsson
 Josephine Taylor
 William Plummer Thompson
 Honors in Chemistry
 Merle H. Thorpe
 Annie Laurie Toner
 Jenney Lind Trueblood
 Ira L. Ullery
 Joseph Bertram Umpleby
 Genevieve Waite
 Cleo Marie Wakefield
 Gertrude Luithlen Walsh
 Ethel Elizabeth Way
 Honors in Zoology
 Evelyn Dorothy Way
 Honors in Zoology
 Mary Ella Gray Webster
 Ruth West
 Blanche Williams
 Frances A. Yantis
 Conrad William Zimmerman

COLLEGE OF ENGINEERING

BACHELOR OF SCIENCE

In Civil Engineering

John Charles Rathbun
 Honors in Civil Engineering

In Electrical Engineering

Tony Foster Cales	Alexander Thomas Harris
Royal Edward Cox	Edmond Folsom Pugsley
Lemuel Paul Crim	Rupert Parmalee Snoke

In Mechanical Engineering

Henry Richard Dohren	Samuel Doak Lowry
William Cleveland Wilson	

SCHOOL OF MINES

BACHELOR OF SCIENCE

In Mining Engineering

Enock Williams Bagshaw	Frederick Gordon Hurst
Francis Easton Carr	Fred John Sharkey
James Harold Hance	Eugene Ainsworth White
Norman Lucius Wimmier	

SCHOOL OF LAW

BACHELOR OF LAWS

David Cameron Adams	Gordon McGauvran
Frank Miller Allyn	Glenn R. Metsker
Thomas Merle Askren	Hugo Metzler
Benson Dillon Billingham	As of the Class of 1907
Arthur Ray Bowman	William Edward Moultray
Richard Brennesholtz	Frederick Gelwicks Mowers
Arthur B. Comfort	Joseph Myron Murphy
Clifford Dorwin Cunningham	John Edwin Porter
Hugh Edward Donohoe	William Adair Rembert
Edwin Samuel Douglas	George Lucien Spirk
Herbert Price Jones	Leo Teats
Redmond Patrick Judge	Coral Blaine White
Homer Kirby	Fred Gaylord Wills
Henry Knox Luce	Fred Raymond Wright

SCHOOL OF PHARMACY

BACHELOR OF SCIENCE

In Pharmacy

Uriah Fred McCurdy	Lulu May Nash
Mae M. MacLachlan	Godfrey Leonard Alvin Ruehle
Honors in Pharmacy	Guy Livingstone Smith
Alice Maude Sweet	

PHARMACEUTICAL CHEMIST

Marie Edna Dean	Ernest Eugene Rothschild
Robert Preston Hagy	Guy Livingstone Smith
Arnold Lester Lafrenz	Charles Floyd Stafford
Joseph Cook Lovett	As of the Class of 1906
As of the Class of 1907	Richey L. Waugh
John Harold McCaughan	William Porter Whiteside
Lulu May Nash	John Jacob Wintler

CERTIFICATE IN PHARMACY

Earl Irving Gibson

Martin Harry Lachner

William Woodman

NORMAL DIPLOMA

Mellie Alexander

Lela C. Martin

Nellie M. Ames

Helen McDonald

Lucy R. Barnes

Edith S. Michelson

Phoebe Bartlett

Mayme B. Miller

Mary Pearl Bennett

May Murray

Amella Bliss

Gertrude Nefzger

May Chambers

Gertrude S. Osburn

Eunice G. Engeland

Wm. Quincy Osburn

Helga Maria Erickson

Myrtle Irene Parr

Anna Louisa Fallis

Honorina Philben

Howard L. Gillette

Beatrice Prosch

Edith Gourlay

Ruth Rockfellow

Rose Emily Grout

Frances Maude Sanborn

Edith Hammond

David Arthur Staeger

Helen Arlene Hasson

Mekkin Sveinson

Mary Heyes

Jenney Lind Trueblood

Sara Jacobsen

Genevieve Waite

Rose Kahan

Cleo Marie Wakefield

Arthur T. Karr

Gertrude L. Walsh

Marguerite Kittredge

Ethel Elizabeth Way

Thomas Erwin Latimer

Evelyn Dorothy Way

Herbert H. Lewis

Ella Gray Webster

Florence Luby

Ruth West

Floy L. Luzader

Carl Samuel Zook

As of the Class of 1907

REGISTER OF STUDENTS

1908-9

GRADUATES.

NAME	HOME ADDRESS
Barnes, Lucy Rowena.....	Seattle
A. B., University of Washington.	Philosophy.
Bennett, Harry Burtis.....	Seattle
Ph. B., Cornell College.	Political Science.
Broad, Harry Herman.....	McKeesport, Pa.
A. M., Grove City College.	English Literature.
Coan, Charles Florus.....	Seattle
A. B., University of Washington.	History.
Cooper, Elva.....	Seattle
A. M., University of Wisconsin.	Mathematics.
Ducasse, Curt John.....	Seattle
A. B., University of Washington.	Philosophy.
Elmer, Clara M.....	Seattle
B. S., Lake Erie College.	History.
Fee, Lewis Henry.....	Seattle
A. B., University of Michigan.	Physics.
Feegeer, Luther Martin.....	Georgetown
A. B., Earlham College.	German.
Field, Ada Martitia.....	Newman, Ga.
A. B., Guilford College.	Chemistry.
Frazee, Robert Holland.....	Seattle
A. B., University of South Dakota.	Mathematics.
Freyd, Bertha Irene.....	Seattle
A. B., University of Washington.	Journalism.
Glass, Rose.....	Seattle
A. B., University of Washington.	Political Science.
Hacker, Paul Friedrich.....	Lengefeld, Germany
Ph. D., University of Leipzig.	Political Science.
Hammond, Philo Fay.....	Cresco, Iowa
A. B., University of Washington.	Physics.
Hartman, Frank Alexander.....	Seattle
A. B., University of Kansas.	Botany.
Haworth, Eleanor Frothingham.....	Vancouver, B. C.
A. B., Rockford College.	Journalism.
Henninger, Carl.....	Indianapolis, Ind.
A. B., University of Indiana.	German.
A. M., University of Illinois.	
Hubert, Else.....	Seattle
A. B., University of Washington.	German.
Jackson, Alexander Grant.....	Margaretville, N. Y.
A. B., Syracuse University.	Forestry.

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Johnson, Herman M.....	Seattle
B. S., Pomona College.	Forestry.
Kelley, Euna Pearl.....	Lyman
Ph. B., Colorado College.	English Literature.
Kitamura, Yoshitaro.....	Kioto, Japan
Graduate of Doshisha University, Japan.	Education.
Kuentzell, Ella May.....	Seattle
B. S., Bellot College.	German.
Livesey, Esther Elizabeth.....	Seattle
A. B., University of Washington.	Mathematics.
Longwell, Robson.....	Dundee, N. Y.
A. B., Yale University.	Forestry.
Lull, Herbert Galen.....	Seattle
A. B., University of Michigan.	Education.
McCarthy, William George.....	Seattle
A. B., University of Washington.	Philosophy.
McDaniels, Metta Louise.....	Seattle
A. B., University of Washington.	Chemistry.
McLachlan, Margaret Mae.....	Sedro-Woolley
B. S., University of Washington.	Pharmacy.
Michelson, Edith Sidonie.....	Seattle
A. B., University of Washington.	French.
Millican, Alfred Clay.....	Seattle
A. B., University of Washington.	Political Science.
Mizutani, Kiichi.....	Shizuoka, Japan
Graduate of Waseda University, Japan.	Political Science.
Morrison, Ethelda.....	Seattle
B. S., Iowa State College.	Botany.
Newman, Celia Elizabeth.....	Tacoma
A. B., University of Wisconsin.	German.
Niedergesaess, Gertrude Louise.....	Seattle
A. B., University of Washington.	Zoology.
Norton, Charles Alfred.....	Seattle
A. B., University of Washington.	Greek.
O'Meara, Mary Gertrude.....	Seattle
A. B., University of Washington.	Political Science.
Pope, Arthur Baker Stanley.....	Seattle
A. B., University of Washington.	Mathematics.
Quigley, Arthur J.....	Lake Geneva, Wis.
B. S., University of Wisconsin.	Political Science.
Revenaugh, Carl Milhouse.....	Issaquah
A. B., Denison University.	Latin.
Rigg, George Burton.....	Seattle
A. B., Iowa State University.	Botany.
Rinehart, Elizabeth.....	Toledo, Ohio
A. B., Pratt Institute.	Botany.
Robinson, Ephraim Thomas.....	Seattle
A. B., University of Washington.	Botany.
Scatcherd, Eleanor Farley.....	Seattle
A. B., University of Washington.	Latin.

Shirakani, Hideo.....	Okayama, Japan
Graduate of Waseda University, Japan.	Political Science.
Smith, A. Haven.....	Seattle
A. B., Dickinson College.	Physics.
Smith, Eli Victor.....	Montera
Ph. B., Illinois Wesleyan University.	Zoology.
Smith, Phene Louise.....	Lowell
A. B., University of Washington.	Latin.
Spry, Mabel Pratt.....	Seattle
A. B., Iowa Wesleyan University.	German.
Steinke, Martin William.....	Seattle
A. B., Wartburg College.	German.
Sutherland, Catherine Bruce.....	Seattle
A. B., University of Washington.	History.
Whittlesey, Walter Bell.....	Seattle
A. B., University of Washington.	French.

UNDERGRADUATES.

SENIORS.

Adams, Mabel Bryant.....	A. B.....	Seattle
Allen, Anne Bienvenu.....	A. B.....	Painesville, Ohio
Allen, Eva Della.....	A. B.....	Seattle
Allen, Ina Pearl.....	A. B.....	Amity, Oregon
Anderson, Andrew.....	A. B.....	Mt. Vernon
Ashmun, Raymond Nims.....	A. B.....	Hoquiam
Baker, Laurel Gail.....	A. B.....	Cleveland, Ohio
Berge, Clarence Austin.....	A. B.....	Davenport
Best, Doris Walty.....	A. B.....	Everett
Blackman, Helen.....	A. B.....	Everett
Blake, Hazel Almon.....	A. B.....	Bellingham
Breece, Dora Frances.....	A. B.....	Seattle
Brown, Ethel.....	A. B.....	Camas
Brown, Vera Mae.....	A. B.....	Seattle
Buckley, Nellie Augusta.....	A. B.....	Seattle
Burke, Gordon.....	A. B.....	Tacoma
Byrd, Edna Mary.....	A. B.....	Spokane
Campbell, Dora.....	A. B.....	Black River
Caskin, Olaf Emerie Harrison.....	A. B.....	Puyallup
Chamberlin, Joseph Weller.....	A. B.....	Salem, Ore.
Clafin, Frank Neville.....	E. E.....	Lancaster, Ohio
B. S., Case School of Applied Science.		
Cogswell, Caroline Duston.....	A. B.....	Seattle
Collier, Edith Lorne.....	A. B.....	Seattle

F 23
 M 30
 16 F
 17 M

Conner, Irene Russell.....	A. B.....	Seattle
Connors, Caroline Catherine.....	A. B.....	Seattle
Cumbo, George Silas.....	Chem. Eng.....	Waterville
Dalby, Edwin Justus.....	A. B.....	Seattle
Dean, Arthur Blain.....	E. E.....	Everett
Dearborn, Elizabeth.....	A. B.....	Seattle
Denny, F. William.....	A. B.....	Kasson, Minn.
Dewey, Albert Haskin.....	Pharmacy	Seattle
Dewhurst, John Alfred.....	E. E.....	Seattle
Durham, Mabel Lucile.....	A. B.....	Spokane
Egbert, Grace Silva.....	A. B.....	Olympia
Elliott, John Arthur.....	C. E.....	Seattle
A. B., Willamette University.		
Ellis, William Grant.....	E. E.....	Seattle
Enyart, Edna Hope.....	A. B.....	Seattle
Fischer, Adelaide Dorothy.....	A. B.....	Seattle
Flaherty, Benjamin Guy.....	E. E.....	Sedro-Woolley
Freiday, Grace Ward.....	A. B.....	Tacoma
Frein, Bessie Mabel.....	A. B.....	Great Barrington, Mass.
Garvey, Victor Hugo.....	C. E.....	Seattle
Georgeson, Rosemary	A. B.....	Sitka, Alaska
Gleason, Mable E.....	A. B.....	Toppenish
Hadlock, Minnie May.....	A. B.....	Seattle
Hancock, Eugene Ammon.....	A. B.....	Coupeville
Hansen, Bert Alvin.....	E. E.....	Tacoma
Harman, Fred Dean.....	E. E.....	Bellingham
Harsell, Mary Pauline.....	A. B.....	Kearney, Mo.
Hawes, George Raymond.....	C. E.....	Everett
Healey, Fern.....	A. B.....	Tacoma
Henry, Elsie May.....	A. B.....	Seattle
Hughes, Edward Frederick.....	Min. Eng.....	Seattle
Hunt, Clara Alice.....	A. B.....	Bellingham
Hutchinson, Dora.....	Pharmacy	Union, Oregon
Johns, David Pritchard.....	A. B.....	Seattle
Johnson, Ida	A. B.....	Seattle
Johnson, Pearl.....	A. B.....	Seattle
Jones, Anna Rachel.....	A. B.....	Seattle
Kay, Lew Geate.....	A. B.....	Seattle
Keatts, Mattie Susan.....	Pharmacy	Pomeroy
Kirsten, Kurt Friedrich Johannes..	E. E.....	Grossenhain, Germany
Krohn, Albert Frederick.....	A. B.....	Washougal

40 21F
1914

Lazenby, Charles David.....	A. B.....	Angola, Indiana
Lee, Kate Elizabeth.....	A. B.....	Seattle
Lindsay, William Rufus.....	Min. Eng.....	Utsaladdy
Lynn, Eldin Verne.....	A. B.....	Tacoma
McCarney, Margaret.....	A. B.....	Seattle
McGee, John Merritt.....	A. B.....	Seattle
McMaster, Ella Carkner.....	A. B.....	Seattle
McWilliams, Alice Beatrice.....	A. B.....	Seattle
Mackey, Walton Fletcher.....	Min. Eng.....	Seattle
Macleay, Elizabeth Livingstone....	A. B.....	Olympia
Mallory, Charles Earl.....	E. E.....	Tacoma
Meler, Elsie Anna.....	A. B.....	Seattle
Montgomery, Alice Estella.....	A. B.....	Seattle
Montgomery, Ralph Strong.....	A. B.....	Seattle
Morgan, Mabel.....	A. B.....	Waitsburg
Mott, Edna Robb.....	A. B.....	Seattle
Murchison, Alice.....	A. B.....	Seattle
Nelson, Nellie Maud.....	A. B.....	Tacoma
Nelson, Norman C.....	E. E....	Lake DeMay, Alberta
Olds, Dolph Francis.....	A. B.....	Seattle
A. B., McMinnville College.		
Osterud, Hjalmar Lauritz.....	A. B.....	Seattle
Parker, Lela Kathleen.....	A. B.....	Seattle
Partlow, Kenneth Lawrence.....	C. E.....	Olympia
Peters, William Glenn.....	C. E.....	Bellingham
Peterson, Roxy Minnie.....	A. B.....	Dunlap, Iowa
Powers, Myrtle Ruth.....	A. B.....	Everett
Powles, Olive Rachel.....	A. B.....	Seattle
Prosser, William.....	A. B.	Renton
Renken, Louise.....	A. B.....	Wenatchée
Rudberg, Lavina Christine.....	A. B.....	Quincy
Rudio, Roy David.....	A. B.....	Dayton
Scatcherd, Roy.....	Pharmacy	Seattle
Smith, Beulah Faye.....	A. B.....	Seattle
Smith, Laura Amelia.....	A. B.....	Portland, Oregon
Smith, Mary Agnes.....	A. B.....	Seattle
Stead, Maude Alice.....	A. B.....	Seattle
Streator, Gertrude Inez.....	A. B.....	Seattle
Sturley, Ruth Emeline.....	A. B.....	Tacoma
Swem, Nettie May.....	A. B.....	Fravel
Swyney, Hendley Norton.....	E. E.....	Seattle

40 22F
BM

Thomas, Walter Roger.....	E. E.....	Wenatchee
Thompson, Hugh Leslie.....	E. E.....	Seattle
Tillman, Helen Catherine.....	A. B.....	Seattle
Tremper, Abraham Arnold.....	A. B.....	Seattle
Troll, Annie May.....	A. B.....	Seattle
Vernon, Frank Lee.....	Chem. Eng.....	Seattle
Waddington, Earle Cary.....	E. E.....	Seattle
Waugh, Eva Mary.....	A. B.....	Seattle
Waugh, Richey Laughlin.....	Pharmacy	Mt. Vernon
Wells, Chester Gordon.....	C. E.....	Seattle
Wells, Walter Melvin.....	C. E.....	Pueblo, Colo.
Wickwire, Esther Irene.....	A. B.....	Angola, Ind.
Williams, Charlotte Forsyth.....	A. B.....	Olympia
Wilson, Florence Alden.....	A. B.....	Ellensburg
Wintler, John Jacob.....	Pharmacy	Vancouver
Zimmerman, Grace Blanche.....	A. B.....	Seattle

16
JUNIORS.

Allen, Alton Covell.....	A. B.....	Beaverton, Oregon
Allen, Effa Alta.....	A. B.....	Memphis, Mo.
Anderson, Bessie Louise.....	A. B.....	Walla Walla
Anderson, Ruth Fisk.....	A. B.....	Seattle
Ashton, Fred William.....	Chem. Eng.....	Seattle
Atwood, Stanley Freeman.....	A. B.....	Seattle
Barash, Iona.....	A. B.....	Seattle
Bartow, Jeannette.....	A. B.....	Seattle
Bates, Clarence Myers.....	C. E.....	Bellingham
Baumann, Henry Nicholas.....	Min. Eng.....	Seattle
Beery, Earl Jacob.....	E. E.....	Orillia
Black, Lloyd Llewellyn.....	A. B.....	Everett
Bond, Rowena.....	A. B.....	Seattle
Boyles, Page Rolland.....	A. B.....	Seattle
Brace, Blanche.....	A. B.....	Seattle
Brinkley, Joseph Arthur.....	Forestry	Seattle
Brown, Charles S.	A. B.....	Seattle
A. B., Valparaiso College.		
Brown, Edwin James.....	A. B.....	Seattle
Bulkeley, Josephine Mary.....	A. B.....	Seattle
Carlin, Rita Agnes.....	Pharmacy	Spokane
Celleyham, Adeline Hayes.....	A. B.....	Reardon

17^F 20 M

37

Cogswell, Vera Anna.....	A. B.....	Blaine
Colkett, Marian Lombard.....	A. B.....	Seattle
Cook, William Bell.....	A. B.....	Seattle
Corlett, Bertram Edwin.....	Min. Eng.	Seattle
Cowgill, Carrie.....	A. B.....	Seattle
Crismas, Roy Monteith.....	A. B.....	Joliet, Montana
Criswell, Lois.....	A. B.....	Tacoma
Dalgity, Ruby Isabella Livingstone, A. B.....		Seattle
Deva, Satya.....	A. B.....	Lahore, India
Dootson, Charlotte.....	A. B.....	Everett
Douglas, Grace Watson.....	A. B.....	Seattle
Drummond, Nan Marion.....	A. B.....	Tacoma
Dungan, Violet Wilhelmina.....	A. B.....	Seattle
Eisenbeis, Hilda Elizabeth.....	A. B.....	Port Townsend
Ellis, Hubert Ingersoll.....	Min. Eng.	Seattle
Engelhorn, Essie Anna.....	A. B.....	Spokane
Etsell, Ada Sage.....	A. B.....	Seattle
Evans, Winnie.....	A. B.....	Ferndale
Fairbrook, Loyd Flint.....	C. E.....	Yakima
Fenton, Ione Edith.....	A. B.....	Seattle
Fettke, Charles Reinhard.....	Min. Eng.	Tacoma
Ficks, Edna.....	A. B.....	Seattle
Filer, Henry Paul.....	A. B.....	Ellensburg
Fitch, Albert LaVerne.....	A. B.....	Seattle
Funfsinn, Rosa.....	A. B.....	Seattle
Gibbon, Edna Scott.....	A. B.....	Seattle
Gist, Arthur S.....	A. B.....	Seattle
Goddard, Harold.....	A. B.....	Olympia
Goldthwaite, John Shanhan.....	A. B.....	Sigourney, Iowa
Graham, Bessie.....	A. B.....	Spokane
Gray, Grace Leone.....	A. B.....	Seattle
Gruber, Edwin Albert.....	A. B.....	Winlock
Hackshaw, Blanche Lydia.....	A. B.....	Seattle
Hamilton, James Baker.....	C. E.....	Sedro-Woolley
Hartnett, Edmond Emmett.....	A. B.....	Preston, Mo.
Henehan, Martina.....	A. B.....	Seattle
Heuss, Edward Charles.....	Min. Eng.	Seattle
Hibben, Harriett Finglund.....	A. B.....	Seattle
Hipkoe, Max Otto.....	A. B.....	Bellingham
Hopkins, John Arthur.....	C. E.....	Seattle

20F
20M

Hopkins, Raymond Allen.....	E. E.....	Tacoma
Howe, Jubal Washburn.....	C. E.....	Spokane
Howes, Alice.....	A. B.....	Spokane
Hubert, Lulu.....	A. B.....	Seattle
Hunter, Addie May.....	A. B.....	Seattle
Johnson, Dallas D.....	A. B.....	Seattle
Johnson, James Raymond.....	E. E.....	Aberdeen
Johnstone, Annabel Milligan.....	A. B.....	Seattle
Jones, Eleanor.....	A. B.....	Seattle
Jones, Ethel Mary.....	A. B.....	Usk
Jones, Henry Leo.....	A. B.....	Olympia
Jonson, Oscar Fredrick.....	A. B.....	Rockford, Ill.
Kerr, William Zinn.....	A. B.....	Seattle
King, Grace Elizabeth.....	A. B.....	Seattle
Kittredge, Frank Alvah.....	C. E.....	Seattle
Kraus, Fred.....	E. E.....	Portland, Oregon
B. S., Oregon Agricultural College.		
Kramer, Ralph W.....	A. B.....	Wahpeton, N. Dak.
Lail, George Gray.....	E. E.....	Wenatchee
Latham, Ethel Valentine.....	A. B.....	Seattle
LeSourd, Minnie.....	A. B.....	Coupeville
Lohman, Lillian.....	A. B.....	Seattle
Lovegren, Levi Alton.....	C. E.....	Preston
Lovejoy, Leah Caliston.....	A. B.....	Seattle
McDonald, Martin Price.....	C. E.....	Toronto, Canada
McKean, Flobell.....	A. B.....	Walla Walla
MacKinnon, Marion G.	A. B.....	Seattle
Maag, Benjamin Franklin.....	C. E.....	Seattle
A. B., Ohio State University.		
Madison, Lillian.....	A. B.....	Kent
Maltbie, Axia Adelia.....	A. B.....	Wenatchee
Mathieu, Elisabeth Josephine....	A. B.....	Seattle
Mathieu, Mae.....	A. B.....	Seattle
Mattice, Clyde M.	A. B.....	Sedro-Woolley
Mauermann, Olive Maybelle Leone.	A. B.....	Oakville
May, Charles Culbertson.....	C. E.....	Pasadena, Cal.
Moncreiff, Ray.....	C. E.....	Seattle
Mooers, Ben Clayton.....	C. E.....	Seattle
Mueller, Olive Lillie.....	A. B.....	Seattle
Mustard, Harry James.....	Pharmacy	Montesano
Neal, Mable Annora.....	A. B.....	Lewiston, Idaho

MF
52M

Norris, Carleton Howard.....	A. B.....	Manchester, Iowa
Norum, Birger.....	Min. Eng. Troudhjem,	Norway
O'Meara, Margaret Catherine.....	A. B.....	Seattle
Osberg, Rosanna.....	A. B.....	LaConner
Parish, William Frank.....	A. B.....	Seattle
A. B., Valparaiso University.		
Parks, Helena Eleanor.....	A. B.....	Seattle
Patton, Priscilla Irene.....	A. B.....	Bellingham
Paulson, Freda Ruth.....	A. B.....	Portland, Oregon
Peaslee, Emilie Stewart.....	A. B.....	Seattle
Quigley, Mary Black.....	A. B.....	Seattle
Ramsay, Anna.....	Pharmacy	Kent
Raymond, Chester Garnet.....	A. B.....	Bellingham
Renard, Helen Therese.....	A. B.....	Spokane
Rleth, Zita M.....	A. B.....	Kent
Roach, Hannah.....	A. B.....	Seattle
Romine, Carolyn Elizabeth.....	A. B.....	Walla Walla
Ryan, Warren Wood.....	C. E.	Sumner
St. Onge, Arthur J.	A. B.....	Seattle
Salladay, Flora Etta.....	A. B.....	Ellensburg
Schricker, Otilie Ione.....	A. B.....	LaConner
Scott, Emma Gertrude.....	A. B.....	Everett
Searle, Elizabeth Creed.....	A. B.....	Seattle
Shave, Ethel.....	A. B.....	Seattle
Sheerer, Harold Mattison.....	C. E.....	Seattle
Shelton, Edward Kirk.....	E. E.....	Seattle
Simmons, Mary.....	A. B.....	Allegan, Michigan
Simpson, Nina Blanche.....	A. B.....	Kalama
Slater, Doy.....	A. B.....	Ferndale
Smiley, Clara.....	A. B.....	Seattle
Smith, Glen Harry.....	E. E.....	Seattle
Smith, William Durkee.....	C. E.....	Seattle
Spannagel, Erna.....	A. B.....	Spokane
Stahl, Gustav Richard.....	A. B.....	Seattle
Stanford, Edna Belle.....	A. B.....	Olympia
Stanton, Edgar Adolphus.....	A. B.....	Seattle
Statler, Pluma.....	A. B.....	Seattle
Stilwell, Edward Matthewson.....	A. B.....	Seattle
Strandberg, George Robert.....	C. E.....	Seattle
Tegtmeier, Fred.....	C. E.....	Everett
Terrell, Charles Foster.....	E. E.....	Tecumseh, Nebr.

19F
21M

Therkelson, Eric.....	E. E.....	Portage
Thompson, Claude Sims.....	Min. Eng.....	Seattle
Thompson, William Calhoun.....	A. B.....	Seattle
Thompson, William Francis.....	A. B.....	Everett
Tollefson, Arthur Ralph.....	A. B.....	West Salem, Wis.
Truesdell, Archie Merle.....	C. E.....	Vancouver
Truesdell, Inda Nelly.....	A. B.....	Vancouver
Urquhart, Helen Caroline.....	A. B.....	Chehalis
Van Sant, Clara.....	A. B.....	Victoria, B. C.
Wagoner, Louisa Catharine.....	A. B.....	Seattle
Walker, Ruby Grace.....	A. B.....	Columbia City
Washburn, Sanford Comstock.....	A. B.....	Clearlake
Wells, Ernest Frederick.....	A. B.....	Farmington, Mass.
White, Florence.....	A. B.....	Seattle
White, Kate Mae.....	A. B.....	Sedro-Woolley
Whittle, Marguerite Bernice.....	A. B.....	Seattle
Wiggin, Eugene Cyrus.....	E. E.....	Elbe
Williams, Arthur Edward.....	Min. Eng.....	Lille, Alberta
Wills, Alma Josephine.....	A. B.....	Spokane
Wintler, Ella.....	A. B.....	Vancouver
Wyman, Prudence Estelle.....	A. B.....	Olympia
Zimmerman, Conrad William.....	C. E.....	Cumberland, Md.
A. B., University of Washington.		

SOPHOMORES.

Adams, Walter Ray.....	C. E.....	Spokane
Anderson, Clifford Walter.....	C. E.....	Seattle
Anderson, Edward Robert.....	Min. Eng.....	Spokane
Andrews, Dorothy Macomber.....	A. B.....	Seattle
Angevine, Fred Rufus.....	A. B.....	Missoula, Montana
Babcock, Frank Ellarson.....	Min. Eng.....	Everett
Baker, Don Raymond.....	A. B.....	Dayton
Baker, Lela Davis.....	A. B.....	Seattle
Bantz, Burwell.....	C. E.....	San de Fuca
Barker, George Augustus.....	Pharmacy.....	Spokane
Barto, Joseph Abel.....	A. B.....	Seattle
Bash, Clementine.....	Pharmacy.....	Seattle
A. B., University of Washington.		
Bass, Mabel Lena.....	A. B.....	Seattle
Batcheller, Willis Tryon.....	E. E.....	Seattle
Beck, Broussais Coman.....	E. E.....	Seattle

15P
22M

Beebe, Genevieve Emeline.....	A. B.....	Seattle
Benson, Grace.....	C. E.....	Seattle
Bigelow, Bertha Lucille.....	A. B.....	Spokane
Birkett, Fred.....	C. E.....	Seattle
Blair, Nathan Doud.....	E. E.....	Puyallup
Boddy, Ralph.....	A. B.....	Seattle
Bohn, Herman Carl.....	A. B.....	Waverly, Iowa
Boissonnault, Frank.....	E. E.....	Everett
Bolger, May Elizabeth.....	A. B.....	Spokane
Bowers, James Bert.....	A. B.....	Bellingham
Bowman, Hugh Austin.....	A. B.....	Seattle
Brackett, Anson Wendell.....	A. B.....	Kent
Breece, William Lawrence.....	E. E.....	Seattle
Bringhurst, Horace Morton.....	C. E.....	Seattle
Brower, Fred William.....	Min. Eng.....	Spokane
Brown, Arthur Leroy.....	C. E.....	Bellingham
Brown, Artie.....	A. B.....	Arlington
Brown, Charles Earle.....	E. E.....	Bellingham
Brown, Clarence Albert.....	A. B.....	Arlington
Buell, Elsa Lenore.....	A. B.....	Arlington
Bunch, Agnes.....	A. B.....	Seattle
Burkholder, Ethel.....	A. B.....	Seattle
Burleson, William Edward.....	A. B.....	Edmonds
Bushnell, Spencer Gilbert.....	C. E.....	Seattle
Byers, Roy Brun.....	A. B.....	Seattle
Cahill, Fred.....	A. B.....	Dayton
Campbell, Arthur Clinton.....	A. B.....	Chelan
Canton, William Reynolds.....	Min. Eng.....	Waterville
Carey, Elizabeth May.....	A. B.....	Seattle
Carey, Halron John.....	Pharmacy	Seattle
Carr, Ollie G.	A. B.....	Seattle
Chabot, Edward Francis.....	A. B.....	Walla Walla
Chamberlen, Perry Ross.....	A. B.....	Cottage Grove, Ore.
Chandler, William Elmer.....	C. E.....	Spokane
Chase, Marguerite.....	A. B.....	Seattle
Child, Irma.....	A. B.....	Spokane
Chloupek, Edward Harry.....	Forestry ...	Manitowoc, Wis.
Christopher, Willis Clinton.....	C. E.....	Seattle
Church, Edith Estelle.....	A. B.....	Spokane
Clark, Arthur Myron.....	A. B.....	Centralia

12 F
28 M

Clark, Clyde Howard.....	A. B.....	Centralia
Clark, James Francis.....	A. B.....	Coupeville
Clark, Myrta Mai.....	A. B.....	North Yakima
Clark, Pearl.....	A. B.....	Seattle
Clementson, Charles Clifford.....	Pharmacy	Seattle
Clulow, Lillian Josephine.....	A. B.....	Tacoma
Coghlan, William Sebastian.....	A. B.....	Friday Harbor
Cole, Henry Ambrose.....	Min. Eng.....	Lewiston, Idaho
Conner, Elmer A.	C. E.....	Seattle
Cookerly, Grover Cleveland.....	Mech. Eng.....	Walla Walla
Cooper, William Herbert.....	Pharmacy ...	Tillamook, Ore.
Corbett, Margaret Victoria Mor-		
rison.....	A. B.....	Seattle
Corey, Margaret Jessie.....	A. B.....	Seattle
Crim, Edward Owen.....	Mech. Eng.....	Seattle
Crowley, Myrtle Melva.....	A. B.....	Vancouver
Cunningham, Allan.....	Min. Eng.....	Seattle
Curtis, Elizabeth Ridgeway.....	A. B.....	Seattle
Dall, Jeannette MacKenzie.....	A. B.....	Seattle
Damus, Robert.....	A. B.....	Seattle
Damus, Walter.....	C. E.....	Seattle
Darnell, John Monroe.....	Min. Eng.....	Spokane
Davies, Estelle Annie.....	A. B.....	Van Asselt
Davis, Arthur Anderson.....	Mech. Eng.....	Tacoma
DeChesne, Victor Charles.....	Min. Eng.....	Seattle
Delany, Howard Harvey.....	A. B.....	Ellensburg
Denio, Robert John.....	E. E.....	Seattle
Denny, Edward Harold.....	Min. Eng.....	Seattle
Denny, Ruby V.	A. B.....	Seattle
Dixon, Elsa Klore.....	A. B.....	Seattle
Dodd, Emily M.	A. B.....	Bellingham
Drake, Dorothy Ellen.....	A. B.....	Seattle
Drum, Barbara Binks.....	A. B.....	Seattle
Duckering, Bernice Rollett.....	A. B.....	Seattle
Dudley, William Lyle.....	Mech. Eng.....	Seattle
Dunbar, Walter Clifford.....	Min. Eng.....	Grandview
Dunlap, George Isaac.....	E. E.....	LaConner
Eagan, Clarence Biron.....	A. B.....	Seattle
Easter, Roderick Ralph.....	E. E.....	Seattle
Ederer, Pauline Adelaide.....	A. B.....	Seattle
Efaw, Wilma.....	A. B.....	Seattle

16F
24M

Elliott, May.....	A. B.....	Seattle
Erickson, Elsie.....	A. B.....	Seattle
Estep, Josiah Morgan.....	E. E.....	Spokane
Everett, Johnston Richard.....	C. E.....	Custer
Ewart, Carl Adolf.....	Min. Eng.....	Seattle
A. B., Harvard University.		
Fenton, Enid Elizabeth.....	A. B.....	Seattle
Finley, Madge.....	A. B.....	Seattle
Flagg, Herbert Judson.....	C. E.....	Seattle
Floyd, Margaret Sarah.....	A. B.....	Spokane
Ford, Kathryn Mable.....	A. B.....	Port Blakeley
Forster, Abbie Marion.....	A. B.....	Spokane
Fos, Maude Whittier.....	Pharmacy	Seattle
Franklin, Philip Augustus.....	C. E.....	Seattle
Franklin, William Hawley.....	C. E.....	Seattle
Fraser, Alice Sinclair.....	A. B.....	Seattle
Fraser, Eva Florence.....	A. B.....	Seattle
Frater, John Archibald.....	A. B.....	Seattle
Freeman, Wood.....	Chem. Eng.....	Seattle
Frenger, George Herman.....	A. B.....	Troy, Ohio
Fretwell, Martha Folsie.....	A. B.....	Seattle
Fried, Percy Chester.....	E. E.....	Seattle
Fuller, Emilie Stone.....	A. B.....	Seattle
Furry, Mabel Georgine.....	A. B.....	Seattle
Gaines, Bessie Viola.....	A. B.....	North Yakima
Gault, Georgie.....	A. B.....	Seattle
Gehrke, Clarence William.....	C. E.....	Port Angeles
George, Minnizelle.....	A. B.....	Seattle
Gibson, Henry Stanley.....	Pharmacy	Seattle
Gleason, Villeroy.....	Min. Eng.....	Seattle
Godfrey, George Harold.....	A. B.....	Port Townsend
Godfrey, Sabra Augusta.....	A. B.....	Seattle
Godfrey, William B.	C. E.....	Port Townsend
Golden, Ailene.....	A. B.....	Seattle
Gooch, Edward Wyard.....	C. E.....	Bellingham
Goodner, Grace Emily.....	A. B.....	Seattle
Grainger, Clyde.....	A. B.....	Sumner
Gray, Clarence Hubert.....	Mech. Eng.....	Olympia
Green, Theaton Earl.....	Pharmacy	North Yakima
Greenberg, Edith Lois.....	A. B.....	Spokane
Greene, Roy Laird.....	C. E.....	Centralia

17F
23M

Haley, Lucia.....	A. B.....	Seattle
Hall, Cora Mae.....	A. B.....	LaConner
Hallock, George Oakley.....	Min. Eng.....	Seattle
Hammerlund, Arthur Edward.....	Min. Eng.....	Spokane
Hammond, Anne.....	A. B.....	Tacoma
Hankins, M. Lillian.....	A. B.....	Seattle
Hanna, Clare Elizabeth.....	A. B.....	Bellingham
Hapnan, Ethel Elizabeth Miriam..	A. B.....	Seattle
Hanzlik, Edward John.....	Forestry	Chicago, Ill.
Harris, Margaret Dellinger.....	A. B.....	Kelso
Harris, William Herbert.....	A. B.....	Vancouver
Harrison, Joseph Barlow.....	A. B.....	Eastsound
Hartman, Dwight Dryden.....	Mech. Eng.	Seattle
Hartson, Nelson Thomas.....	A. B.....	Spokane
Hastings, Clara.....	A. B.....	Seattle
Hattrem, Agnes Josephine.....	A. B.....	Seattle
Hawley, Neal Christensen.....	Min. Eng.....	Silverton
Heffner, Carrie.....	A. B.....	Snohomish
Henry, Zella Jane.....	A. B.....	Seattle
Herman, William Edmond.....	E. E.....	South Bend
Herthum, Florence Emery.....	A. B.....	Seattle
Hill, Sallie Haddock.....	A. B.....	Port Townsend
*Hollingsworth, George Edward...	A. B.....	Seattle
Hopkins, George Raymond.....	C. E.....	Milton
Howard, Grace Elizabeth.....	A. B.....	Seattle
Howe, Ellen Ford.....	A. B.....	Seattle
Hughes, Edward Seward.....	E. E.....	Bellingham
Hussey, Fred Beebe.....	E. E.....	Auburn
Iffland, Nellie Lucilla.....	A. B.....	Port Townsend
Imado, Jiro.....	A. B..	Hiroshimu-ken, Japan
Irie, Charles Arthur.....	C. E.....	Sumner
Israel, Genevieve.....	A. B.....	Seattle
Jack, Eugene Clarence.....	C. E.....	Seattle
Jackson, Blanche Gertrude.....	A. B.....	Seattle
Jamieson, George.....	A. B.....	Seattle
Jarvis, Bruce Wilber.....	A. B.....	Davenport
Jarvis, Paul.....	E. E.....	Seattle
Jeans, Ethel Jay.....	A. B.....	Maplevalley

*Deceased.

—19

21M
17F

72

Johnson, Anne Ogden.....	A. B.....	Tacoma
Johnson, Frank Melvin.....	C. E.....	Seattle
Johnson, George Wilfred.....	A. B.....	Seattle
Johnson, Julia.....	A. B.....	Aberdeen
Jones, Harry Leo.....	A. B.....	Arlington
Jones, Vera Florence.....	A. B.....	San Francisco, Cal.
Joslin, Effie Rubarda.....	A. B.....	Seattle
Kable, George Wallace.....	C. E.....	Dixon, Ill.
Kanters, Christine R.	A. B.....	Seattle
Karrer, Enoch.....	A. B.....	Roslyn
Karrer, Sebastian.....	A. B.....	Roslyn
Keeler, Otis Edward.....	E. E.....	Seattle
Keenan, Edmund Myers.....	A. B.....	Seattle
Keith, Clarence Benjamin.....	Forestry	Seattle
Kelly, Rose.....	A. B.....	Sioux City, Iowa
Kenny, Kathryn.....	A. B.....	Seattle
Kilty, Irene Mae.....	A. B.....	Seattle
Kiltz, Lillian Viola.....	A. B.....	Vancouver, B. C.
Kindig, Grace Minnie.....	A. B.....	Seattle
Kinne, Elizabeth Pauline.....	A. B.....	Seattle
Kittilsby, Alma Otelie.....	A. B.....	Seattle
Knapton, Mary Alice.....	A. B.....	Alexandria, Minn.
Kumpf, George Washington.....	C. E.....	Seattle
Lagerlof, Percy John.....	C. E.....	Seattle
Latham, Leonie Marie.....	A. B.....	Van Asselt
Leve, Walter Hanson.....	Forestry	Seattle
Levinson, Herman.....	E. E.....	Goldingen, Russia
Levinson, Irving Meyer.....	Pharmacy	Seattle
Lewis, George John.....	A. B.....	Seattle
Lind, Arthur.....	A. B.....	Seattle
Lindley, Kathleen.....	A. B.....	Whittier, Calif.
Lively, John William.....	A. B.....	Seattle
Lockwood, Everett Wellington.....	Min. Eng.....	Waterville
Lovejoy, Bartlett Howard.....	C. E.....	Seattle
Luby, Mabel Agnes.....	A. B.....	Seattle
Lucks, Florence Ethel.....	A. B.....	Seattle
Lynn, Genevieve.....	A. B.....	Seattle
Lyon, Alice May.....	A. B.....	Seattle
McBride, Clarence S.	E. E.....	Spokane
McCullough, Esther.....	A. B.....	Seattle

19F
21M

McDonald, Ralph Baldwin.....	A. B.....	Seattle
McDonald, Robert Thompson.....	A. B.....	Seattle
MacDougall, Georgia Josephine....	A. B.....	Seattle
McGinnis, Minnie Irene.....	A. B.....	Waterville
McKay, Bessie Olive.....	A. B.....	Olympia
McKinley, Robin.....	A. B.....	Spokane
McMurry, Mabel Margaret.....	A. B.....	Seattle
McPhee, John Alexander.....	Min. Eng.....	Spokane
Mackie, Paul Denby.....	C. E.....	Seattle
Madison, Marguerite.....	A. B.....	Kent
Mallette, Gertrude Ethel.....	A. B.....	Spokane
Mann, Elizabeth Tennyson.....	A. B.....	Everett
Mansfield, Austin Gladstone.....	C. E.....	Bellingham
Marion, Arthur Thompson.....	Mech. Eng....	North Yakima
Marsh, Clyde William.....	A. B.....	Seattle
Mason, Dorothy Craik.....	A. B.....	Seattle
Mattson, William Whitlock.....	E. E.....	Portage
Meagher, Walter Wrigley.....	E. E.....	Seattle
Megrath, Violet May.....	A. B.....	Seattle
Melton, Gertrude Lucile.....	A. B.....	Pomeroy
Millican, Charles Wesley.....	A. B.....	Seattle
Mills, George Freeman.....	C. E.....	Seattle
Mitchum, Imogen.....	A. B.....	Harrington
Mohr, George William.....	E. E.....	Spokane
Moody, Adelaide.....	A. B.....	Everett
Moody, Ruth.....	A. B.....	Everett
Morelock, John Earl.....	C. E.....	Seattle
Mowrey, Ruth Alice Mae.....	A. B.....	Pomeroy
Moyer, Leonard M.	E. E.....	Seattle
Mullen, Roger Bonner.....	E. E.....	Lakebay
B. S., Kansas Agricultural College.		
Mumaw, Everett Elliott.....	C. E.....	Everett
Muncaster, Mary Ellen.....	A. B.....	Seattle
Murphy, Martin Francis.....	Forestry	Westfield, Wis.
Myers, Sidney Southern.....	A. B.....	Spokane
Neumann, Rosamond Anna Marie..	A. B.....	Seattle
Newbury, Georgia Maud.....	A. B.....	Seattle
Nisbet, Hazel Bell.....	A. B.....	Seattle
Noble, Ronald Bruce.....	E. E.....	Spokane
Norris, Murney Ellwood.....	C. E.	Burlington
Norris, Ruth Stevens.....	A. B.....	Seattle

192
21 M

O'Brien, Russell Lloyd.....	C. E.....	Olympia
Olson, Albin Oscar.....	A. B.....	Seattle
O'Neal, Arthur Thomas.....	A. B.....	Spokane
Packard, Earl Leroy.....	A. B.....	Tacoma
Paine, George Granville.....	C. E.....	Everett
Parton, Ida Anna.....	A. B.....	Seattle
Patterson, Tom Scofield.....	A. B.....	Seattle
Pease, Eugene Irving.....	E. E.....	Tacoma
Pendleton, Lura Wallace.....	A. B.....	Everett
Perry, Stewart Edwin.....	A. B.....	Puyallup
Phelps, Benjamin Franklin.....	Mech. Eng....	North Yakima
Pinkerton, Roy David.....	A. B.....	Tacoma
Plum, Frank Arents.....	Chem. Eng....	Port Townsend
Pollock, Carl DeForrest.....	C. E.....	Seattle
Powell, Sarah Mathloma.....	A. B.....	Seattle
Prater, James William.....	A. B.....	Ellensburg
Pratt, Eloise Sawyer.....	A. B.....	Prosser
Quigley, Agnes E.	A. B.....	Seattle
Rae, David Edward.....	Min. Eng.....	Walla Walla
Randall, Flora Elsie.....	A. B.....	Seattle
Randell, Ralph Reginald.....	C. E.....	Seattle
Range, Walker.....	C. E.....	Dayton
Rathbun, Vilas Richard.....	C. E.....	Seattle
Reid, Myrtle Margaret.....	A. B.....	Seattle
Reynolds, Florence Lucile.....	A. B.....	Seattle
Rice, Bertha Belle.....	A. B.....	Seattle
Roberts, Charles Loring.....	C. E.....	Eureka, Calif.
Roe, Charles Clarke.....	A. B.....	Seattle
Rogers, Emily Alberta.....	A. B.....	Waterville
Ross, Catherine Isabelle.....	A. B.....	Everett
Ross, Donald W.	Chem. Eng.....	Everett
Ross, Helen Montana.....	A. B.....	Seattle
Ross, Helen Winifred.....	A. B.....	Seattle
Roudebush, Rex Scott.....	A. B.....	Garfield
Roys, Hattie.....	A. B.....	Seattle
Sackett, Margaret Josephine.....	A. B.....	Seattle
Saeman, Marie Caroline.....	A. B.....	Seattle
Schreiber, Louise Pauline.....	A. B.....	Tacoma
Seaton, Edward Arthur.....	A. B.....	Minot, N. Dak.
Sempert, Edward Otto.....	Pharmacy	Grangeville, Idaho

16 F
24M

Severs, Florence.....	A. B.....	Cove, Oregon
Shadinger, Gail Braddock.....	E. E.....	Snohomish
Shearer, Grace Dora.....	A. B.....	Sprague
Sheldon, Inez Kendall.....	A. B.....	Seattle
Shuey, Mabel.....	A. B.....	Seattle
Sims, Ethel.....	A. B.....	Seattle
Sivyer, Bert Lucas.....	E. E.....	Spokane
Skans, William Samuel.....	Chem. Eng..	Portland, Oregon
Skirls, Ethel.....	A. B.....	Seattle
Skone, Robert Conrad.....	E. E.....	Seattle
Smail, Lloyd Leroy.....	A. B.....	Tacoma
Smith, Corwin Day.....	Chem. Eng.....	Seattle
Smith, Elsie Pearl.....	A. B.....	Seattle
Smith, George Milan.....	Min. Eng....	Portland, Oregon
Somerville, Irene Claire.....	A. B.....	Butte, Montana
Soule, John Arthur.....	A. B.....	Kent
Stevenson, Sarah Elizabeth.....	A. B.....	Seattle
Stewart, Harold B.	A. B.....	Seattle
Stoll, Walter William.....	A. B.....	Seattle
Summersett, John.....	Mech. Eng.....	Chehalis
Sutton, Fred H.	A. B.....	Cashmere
Sutton, Mary Catherine.....	A. B.....	Seattle
Sutton, Nettie Mae.....	A. B.....	Cashmere
Sutton, Sarah Patience.....	A. B.....	Seattle
Suzuki, William K.	E. E.....	Seattle
Swarva, George Lewis.....	Min. Eng.....	South Park
Sweet, William Dean.....	A. B.....	Blaine
Taylor, Irene Eglantine.....	A. B.....	Bellingham
Thomas, Clarence Lafayette.....	A. B.....	Seattle
Thompson, Paul Bursell.....	C. E.....	Spokane
Tibbals, Henry Curtis.....	C. E.....	Port Townsend
Tollefson, Elven Tinus.....	Chem. Eng....	Jackson, Minn.
A. B., University of Minnesota.		
Townsend, Elizabeth Elouise.....	A. B.....	Seattle
Treen, Lewis Angevine.....	Forestry	Seattle
Trueblood, Donald Vaughn.....	A. B.....	Kirkland
Ullin, Anna M.	A. B.....	Seattle
Van Hoesen, Frank Hayes.....	C. E.....	Tacoma
Vinton, Edward L.	C. E.....	Portland, Oregon
Wagoner, Lyman Fisher.....	A. B.....	Seattle
Wallace, Hazel.....	A. B.....	Missoula, Montana

Wanamaker, Gladys Leah.....	Pharmacy	Seattle
Wanamaker, Lemuel Avar.....	C. E.....	Coupeville
Waters, Grace Darling.....	A. B.....	Waterville
Weatherford, Claire Belle.....	A. B.....	Dayton
Wernecke, Chauncey.....	C. E.....	Seattle
West, Ethel Mary.....	A. B.....	Seattle
Whaley, Myrtle Mae.....	A. B.....	Chelan
Wheat, Laura Regina.....	A. B.....	Seattle
Whims, Floyd James.....	E. E.....	Seattle
Whitham, Ruth Ellen.....	A. B.....	Olympia
Whitney, Glenn Thornton.....	A. B.....	Seattle
Whittlesey, Cedric Fauntleroy....	Pharmacy	Seattle
Wilkie, Linda.....	A. B.....	Spokane
Wilkinson, Bernard Walker.....	E. E.....	North Yakima
Will, Cameron George.....	E. E.....	Seattle
Will, Julia Enid.....	A. B.....	Seattle
Williams, Bertha Krogoll.....	A. B.....	Olympia
Williams, Charles Harvey.....	C. E.....	Centralia
Williams, Jane.....	A. B.....	Seattle
Williams, Lewis Daniel.....	C. E.....	Ilwaco
Williams, Marie Bertha.....	A. B.....	Olympia
Williams, Warner E.	A. B.....	Seattle
Wisner, Raymond Rex.....	E. E.....	Seattle
Wold, Sylvia Edgerton.....	A. B.....	Seattle
Woodin, Mark Stevens.....	C. E.....	Seattle
Woodnutt, Lloyd Hale.....	A. B.....	Seattle
Wyckoff, Halsey P.	C. E.....	Seattle
Wyckoff, Hulet Judson.....	E. E.....	Seattle
Yerden, Edwin Lorenzo.....	C. E.....	Seattle
Young, Grace Mae.....	A. B.....	Aberdeen
Young, Thomas.....	Pharmacy ..	Post Falls, Idaho

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FRESHMEN.

Adams, Alfred Charles.....	C. E.....	Bellingham
- Albitz, Alice Blanche.....	A. B.....	Seattle
Allen, Lillian.....	A. B.....	Tacoma
Allmond, Adelaide Laura.....	A. B.....	Seattle
- Almack, Lois Velenthol Lee.....	A. B.....	Seattle
Anderson, Arthur George.....	A. B.....	Spokane
- Anderson, Clarence.....	A. B.....	Hoquiam

185
20M

Anderson, Edwin Charles.....	C. E.....	Seattle
Anderson, Juanita Amelia Lenor..	C. E.....	Unga, Alaska
Andrews, Elsie.....	A. B.....	Newberg, Oregon
Argo, Clarence Smith.....	A. B.....	Spokane
Arment, Florence Lynde.....	A. B.....	Seattle
Armstrong, James Chester.....	A. B.....	Seattle
Armstrong, Robert William.....	A. B.....	Seattle
Armstrong, Vernon Dudley.....	E. E.....	Seattle
Aronson, Juliet Hortense.....	A. B.....	Seattle
Ash, Jessie May.....	A. B.....	San Diego, Calif.
Ashen, Alexander James.....	A. B.....	Seattle
Awoki, Monroe Tetsuji.....	Min. Eng.....	Seattle
Baisden, Leo Bernard.....	A. B.....	Seattle
Balch, Anna Cordelia.....	A. B.....	Seattle
Baldrige, Ethel Leona.....	A. B.....	Seattle
Ballard, Dean Dayton.....	Forestry	Seattle
Barber, Mary Mabel.....	A. B.....	Seattle
Barton, Jay Lloyd.....	E. E.....	Wenatchee
Bass, Emma Alice.....	A. B.....	Red Oak, Iowa
Bates, Roy Edwin.....	Min. Eng.....	LaConner
Batts, Bertha.....	A. B.....	Seattle
Baumgartner, Earl.....	A. B.....	Nome, Alaska
Baxter, Ethel L.....	A. B.....	Alexandria, Ind.
Beam, Carl Eugene.....	C. E.....	North Yakima
Bean, Ellis Hay.....	Mech. Eng.....	Seattle
Barash, Arnold Jay.....	E. E.....	Seattle
Bede, Mabel Elrena.....	A. B.....	Seattle
Beebe, Eugene Harrison.....	Forestry	Seattle
Bell, Roy Clark.....	Min. Eng.....	Seattle
Belshaw, Vida Hazel.....	A. B.....	Spokane
Benson, Charles G.....	Min. Eng.....	Brooklyn, Iowa
Ph. B., Iowa College.		
Bevington, Edna Anna.....	A. B.....	Seattle
Biegert, Freda.....	A. B.....	Seattle
Biggs, Katherine.....	A. B.....	Seattle
Bisson, Francis.....	Min. Eng.....	South Prairie
Blackman, Ben.....	E. E.....	Everett
Blair, Homer Orrin.....	E. E.....	Tacoma
Bleuler, Frank Ernest.....	C. E.....	Seattle
Bliss, James Bernard.....	E. E.....	Seattle
Bloom, Verda Nell.....	A. B.....	Seattle

185
22M

Bond, Clarke.....	A. B.....	Seattle
Bonney, Parker Samuel.....	Forestry	Bellingham
Borrill Marjorie.....	A. B.....	Seattle
Bourne, Sadie Hester.....	A. B.....	Anacortes
Bowen, Hiram.....	E. E.....	Raymond
Bowers, John Elmer L.....	Forestry	Spokane
Bowles, Jesse Charles.....	A. B.....	Seattle
Bowman, Claire.....	E. E.....	Seattle
Boyle, Elsie May.....	A. B.....	Prosser
Brennesholtz, Birdie.....	A. B.....	Waterville
Bridgman, Ethan Allan.....	A. B.....	Seattle
Brill, Geneva Virginia.....	A. B.....	Seattle
Brokaw, James Franklin.....	A. B.....	Tacoma
Brown, Warren Oretto.....	A. B.....	Seattle
Browne, Ethel May.....	A. B.....	Seattle
Budden, Agnes May.....	A. B.....	Seattle
Bullard, L. Ivan.....	Mech. Eng.....	Menlo
Burke, Harry Edward.....	Forestry	Seattle
Burke, Stanley.....	C. E.....	Vancouver, B. C.
Burnett, David Carton.....	Min. Eng.....	Seattle
Burnett, Mollie.....	A. B.....	Seattle
Burns, Edgar Floyd.....	A. B.....	Spokane
Buschmann, Trygve Wedege.....	A. B.....	Seattle
Buwalda, Paul Peter.....	C. E.....	North Yakima
Caldwell, Cathryn Polly.....	Pharmacy	Seattle
Calderhead, Samuel John.....	A. B.....	Seattle
Camp, Gratia Baillie.....	A. B.....	Seattle
Campbell, Alvin Raymond.....	C. E.....	Astoria, Oregon
Campbell, Arthur Eugene.....	A. B.....	Richmond Beach
Campbell, Edwin London.....	C. E.....	Seattle
Campbell, John.....	Mech. Eng.....	Black River
Canright, Jesse Tuthill.....	C. E.....	St. Johns, Oregon
Carlson, Samuel.....	C. E.....	Hoquiam
Carr, Delbert Earl.....	Min. Eng.....	Everett
Carrier, Elizabeth.....	A. B.....	Seattle
Carse, J. Maxwell.....	Mech. Eng.....	Bellingham
Carter, Lee Jefferson.....	A. B.....	Tacoma
Cartwright, Rena.....	A. B.....	Seattle
Case, Rowena Belle.....	A. B.....	North Yakima
Case, Roy Gehlial.....	Min. Eng.....	Seattle

125
28M

34

-Casey, William West.....	A. B.....	Juneau, Alaska
-Caskey, Eva.....	A. B.....	Seattle
Catlin, Claude.....	Mech. Eng.....	Ellensburg
Charles, Fannie Grace.....	A. B.....	Puyallup
Child, Laura Theo.....	A. B.....	Spokane
-Christesen, Ruth Anna.....	A. B.....	Seattle
-Churchill, Frederick Arthur.....	A. B.....	Seattle
Clark, Charles Walter.....	Forestry	Kirkland
Clark, Elizabeth Freeman.....	A. B.....	Spokane
Clark, Gladys Baxter.....	A. B.....	Seattle
-Clarke, Ernest Goodliffe.....	Forestry	Tacoma
-Clayton, Lawrence Edgar.....	C. E.....	Seattle
-Cleaves, Harold Edwin.....	Chem. Eng.....	Dunlap
Clifford, Raymond Woollen.....	A. B.....	Tacoma
Cochran, Ralph Campbell.....	A. B.....	Snohomish
Cogswell, Louis Harold.....	Min. Eng.....	Seattle
-Colby, Arza G.....	C. E.....	Seattle
Colsky, Lena Gertrude.....	A. B.....	Seattle
-Conklin, Mabelle.....	A. B.....	Aberdeen
Conner, Ray Bradford.....	Pharmacy	Everett
-Conner, Zelda Marie.....	A. B.....	Seattle
-Corbitt, Hugh Blake.....	Chem. Eng.....	Klona
-Corlett, Ruth Ernestine.....	A. B.....	Seattle
-Costello, Cyril.....	A. B.....	Seattle
-Costner, Wyllie Rose.....	A. B.....	Seattle
-Courtney, Alice Marie.....	A. B.....	Seattle
-Coyle, William Jennings.....	Forestry	Seattle
-Cragg, Robert John.....	A. B.....	Juneau, Alaska
Cramer, Martin John.....	C. E.....	Milwaukee, Wis.
Criswell, Clare.....	A. B.....	Tacoma
-Crites, Gertrude.....	A. B.....	Bellingham
Currey, Mauryce Louise.....	A. B.....	Olympia
-Cushman, Arthur Wilhelm.....	A. B.....	Tacoma
Dalby, Minnie Amy.....	A. B.....	Seattle
Dalquest, Emma Christine.....	A. B.....	Everett
Daniels, Ethel Agnes.....	A. B.....	Seattle
Darrin, Marc de Lepine.....	C. E.....	Bellingham
Daubney, Lucy Adelaide.....	A. B.....	Centralia
Davies, Myvanwy.....	A. B.....	Seattle
Dean, Clara Theresa.....	A. B.....	Seattle

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21M

Deering, Tam.....	A. B.....	Snohomish
✓ Denney, Robert Grant.....	A. B.....	Everett
Derry, Faye Gertrude.....	Pharmacy	Seattle
Dickinson, Lillian.....	A. B.....	Seattle
✓ Diether, Louis Meyer.....	Min. Eng....	Lewiston, Idaho
Diven, Florence Eugenia.....	A. B.....	Seattle
✓ Donaway, Alice May.....	A. B.....	Tacoma
✓ Dorman, Hugh Bardue.....	E. E.....	Wenatchee
✓ Douglas, Clifford.....	A. B.....	Walla Walla
Doust, Horace Tyner.....	Pharmacy	North Yakima
Dow, Edna.....	A. B.....	Chehalis
Dowd, Van M.....	A. B.....	Tacoma
Drake, Francis Lawrence.....	Chem. Eng.....	Seattle
✓ Dunlap, Clarence.....	Min. Eng.....	LaConner
✓ Dunnivant, Barbara Lucile.....	A. B.....	Seattle
Duryea, Kenneth DeVore.....	A. B.....	Seattle
Eakins, Maxwell Rone.....	C. E.....	Gary, S. Dak.
✓ Easton, Erving Hamilton.....	A. B.....	Bellingham
Eberle, Winfield Richard.....	A. B.....	Vancouver
Eernisse, James Guy.....	Mech. Eng.....	Vashon
✓ Elliott, Clarence.....	A. B.....	Seattle
✓ Elliott, Jean Sutherland.....	A. B.....	Seattle
Ellis, Leila Phoebe.....	A. B.....	Seattle
✓ Ellis, Russell DePuy.....	A. B.....	Seattle
Enes, Max Truman.....	A. B.....	Seattle
✓ Eshelman, Wallace Clair.....	Chem. Eng.....	Seattle
✓ Estes, Hazel Pinckney.....	A. B.....	Walla Walla
Ettelson, Sadie.....	A. B.....	Sprague
✓ Evans, Donald Hampton.....	Min. Eng.....	Seattle
✓ Farley, Berkey Eugene.....	Pharmacy	Seattle
Felt, Julia Irene.....	A. B.....	Seattle
✓ Ferguson, Paul.....	Mech. Eng.....	Seattle
✓ Fisher, Harry Clifford.....	A. B.....	Tacoma
✓ Fleming, Florence.....	A. B.....	Lewiston, Idaho
Fletcher, Gladys Matilda.....	A. B.....	Seattle
Flint, Charles Oliver.....	A. B.....	Port Townsend
✓ Flint, Max Townsend.....	A. B.....	Port Townsend
Forbes, Grace Annabel.....	A. B.....	Asotin
Frater, Helen Dean.....	A. B.....	Seattle
✓ Fryckman, Martin Nathaniel.....	A. B.....	Seattle

17F
23M

67

Fukagawa, Keech.....	E. E.....	Poyama, Japan
Furbush, Edwin Chase.....	C. E.....	Seattle
Gannon, Anna.....	A. B.....	Seattle
Garcken, Paul Harold.....	Min. Eng.....	Seattle
Gartrell, Wesley A.....	C. E.....	Tacoma
George, Kathleen Alan.....	A. B.....	Portland, Oregon
Gillespy, Carolyn N.....	A. B.....	Seattle
Gilluly, Frank.....	Pharmacy	Seattle
Gleason, Timothy Daniel.....	Min. Eng.....	Montesano
Godfrey, John Edward.....	C. E.....	Port Townsend
Goldsmith, Edward Denham.....	Chem. Eng.....	Puyallup
Goucher, William Hubbel.....	Min. Eng.....	Seattle
Gowen, Vincent Herbert.....	A. B.....	Seattle
Grace, Clarence Milo.....	A. B.....	Chillicothe, Mo.
Gragg, Mortimer Ross.....	Forestry	Monterey, Calif
Gran, Olga.....	A. B.....	Buckley
Grass, Enola Josephine.....	A. B.....	Trinidad, Colo.
Graves, Emma Arthur.....	A. B.....	Spokane
Graves, Helen Unity.....	A. B.....	Spokane
Graves, Marion Kellogg.....	A. B.....	Seattle
Greene, Norman Edward.....	C. E.....	Aberdeen
Griffin, Arthur.....	A. B.....	Seattle
Grimm, Warren Ort.....	A. B.....	Centralia
Grover, Benjamin Clifford.....	E. E.....	Ursa, Ill.
Grover, Huston.....	C. E.....	Seattle
Gustafson, Robert Raymond.....	Forestry	Seattle
Hadley, Homer More.....	C. E.....	Seattle
Hadley, Inez Lavalette.....	A. B.....	Olympia
Hadley, Katharine.....	A. B.....	Olympia
Haley, Robert Murkland.....	A. B.....	Seattle
Hall, Charles Leroy.....	Chem. Eng....	Port Townsend
Hamilton, Fred Ellis.....	A. B.....	Wenatchee
Hamley, Lester Henry.....	A. B.....	Pendleton, Oregon
Hanford, Frank Wait.....	Min. Eng.....	Seattle
Hanford, William Brown.....	E. E.....	Seattle
Hankins, Ferne.....	A. B.....	Seattle
Hanson, Ethel Alberta.....	A. B.....	Seattle
Hargreaves, William James.....	E. E.....	Seattle
Harkins, Marjorie.....	A. B.....	Seattle
Hameling, Henry.....	Forestry	Vashon

13F
27M

Harris, Audra.....	A. B.....	Chelan
Harris, Marjorie.....	A. B.....	Seattle
Hashiguchi, Jihel.....	A. B.....	Obi, Japan
Hausmann, Clemens.....	C. E.....	Everett
Hawley, Don Milligan.....	Mech. Eng.....	Silverton
Hawley, Louise Adela.....	A. B.....	Seattle
Haworth, Frances Alice.....	A. B.....	Vancouver, B. C.
Haworth, James Porter.....	Min. Eng....	Vancouver, B. C.
Hayes, Gladys Nelle.....	A. B.....	Seattle
Haynes, John Broadus.....	A. B.....	Seattle
Hedlund, David Arthur.....	Forestry	Spokane
Henderson, Helen Herschel.....	A. B.....	Seattle
Hensley, John Jackson.....	A. B.....	Seattle
Heston, LaRhue Margaret.....	A. B.....	Seattle
Hergert, Otis Boutwell.....	A. B.....	Seattle
Hewit, Clara Adell.....	A. B.....	Spokane
Hickingbottom, Fred Hubertus.....	A. B.....	Seattle
Hillen, Andrew Reuben.....	A. B.....	Auburn
Hill, William Lair.....	C. E.....	Seattle
Hilton, Edmund Wilbur.....	A. B.....	Seattle
Hiveley, Mary Margaret.....	A. B.....	Seattle
Hoffman, Frank Joyce.....	A. B.....	Barneston
Holeman, Beulah Jane.....	A. B.....	Puyallup
Hollingsworth, Myrtle.....	A. B.....	Seattle
Hooper, Walter R.....	A. B.....	Walla Walla
Hoover, Glenn Edwin.....	A. B.....	Hoquiam
Houghton, Gordon.....	C. E.....	Seattle
Houlahan, Annie Eileen.....	A. B.....	Seattle
Howell, Mary Bradner.....	A. B.....	Seattle
Hughes, Charles D. T.....	A. B.....	Blaine
Hughes, Ethel Gertrude.....	A. B.....	Seattle
Hunt, Hubert Nathan.....	C. E.....	Bellingham
Hunter, Lila Alice.....	A. B.....	Seattle
Hunter, Stella Thetta.....	A. B.....	Island City, Ore.
Husby, Peter.....	A. B.....	Stanwood
Hyde, Thomas.....	A. B.....	Seattle
Iffland, Kathryn Margaret.....	A. B.....	Port Townsend
Isham, Mary.....	A. B.....	Caldwell, Idaho
Jarvis, Melville Bouton.....	A. B.....	Davenport
Jensen, Scott.....	Mech. Eng.....	Spokane

18F
22M

Johnson, Carl Edmund.....	E. E.....	Seattle
Johnson, Guy Jonas.....	Min. Eng.....	Spokane
Johnson, Josephine.....	Pharmacy	Seattle
Johnstone, Mary Lucile.....	A. B.....	Seattle
Johnson, Thomas M.....	Pharmacy	Seattle
Joiner, Winnie Davis.....	A. B.....	Seattle
Jones, Martin Luther.....	E. E.....	Seattle
Judson, Ruth Sarah.....	A. B.....	Seattle
Karlstrom, Ossian Leonard.....	A. B.....	Des Moines, Iowa
Karrer, Clara Barton.....	A. B.....	Roslyn
Kay, Norah Katherine.....	A. B.....	Aberdeen
Kaylor, Paul Porter.....	E. E.....	Bellingham
Keefe, Otto John.....	C. E.....	Seattle
Keesling, Nelle.....	A. B.....	Tacoma
Kellogg, Anna Bancroft.....	A. B.	Puyallup
Kellogg, June.....	A. B.....	Seattle
Kelly, Caroline Eliza.....	A. B.....	Seattle
Kenyon, Clyde Elisha.....	A. B.....	Seattle
Keyes, Ruth Mary.....	A. B.....	Seattle
Kiddel, Netta Maria.....	A. B.....	Island City, Ore.
Kiesler, Blanchè.....	A. B.....	Seattle
King, Forest.....	Min. Eng.....	Seattle
King, George Hildebrand.....	E. E.....	Seattle
Kinne, Verle Elma.....	A. B.....	Seattle
Knapp, James Russell Dutton.....	E. E.....	Aberdeen
Knox, Wanda Christina.....	A. B.....	Centralia
Koch, Katherine.....	A. B.....	Red Oak, Iowa
Koenig, James Victor.....	A. B.....	Seattle
Konarski, Sigmund.....	C. E.....	Warsaw, Russia
Kuga, Kohel.....	E. E.....	Tokio, Japan
Kyes, Kenneth Asel.....	Forestry	Seattle
LaBrant, Grace.....	A. B.....	Seattle
Lacey, Allen M.....	A. B.....	Colfax
Laden, Ruth Elizabeth.....	A. B.....	Seattle
Lamping, Anna Florence.....	A. B.....	Seattle
Larsen, Louis Karl.....	Forestry	Tacoma
Lawrence, Edna Belle.....	A. B.....	Seattle
Leasure, Daphna Evelyn.....	A. B.....	Seattle
Lee, George Olin.....	C. E.....	Maltby
Levinson, Montie.....	A. B.....	Seattle

20F
20M

Lewis, Clinton Robert.....	Min. Eng.....	Port Blakeley
Lewis, Florence.....	A. B.....	Seattle
Lewis, Harold Herbert.....	Min. Eng.....	Seattle
Lewis, Isaac Iver.....	Chem. Eng.....	Seattle
Lewis, Sol Harris.....	A. B.....	Seattle
Lincoln, Rolland Wayne.....	Mech. Eng.....	Seattle
Lind, Algodt.....	A. B.....	Seattle
Lipscomb, Roy Spencer.....	E. E.....	Seattle
Livingstone, Carl Dorman.....	Min. Eng.....	Youngstown
Loose, Julia Etta.....	A. B.....	Seattle
Loring, Mildred West.....	A. B.....	Seattle
Losee, Mary.....	A. B.....	Seattle
Lovejoy, Winnifred.....	A. B.....	Seattle
McCabe, Evert.....	A. B.....	Seattle
McClain, Alva J.....	A. B.....	Sunnyside
McCleary, Perry Louis.....	C. E.....	Centralia
McComb, Fred A.....	E. E.....	Seattle
McConnell, Fred J.....	Forestry	Seattle
McCormack, Mabel Agnes.....	A. B.....	Golden, B. C.
McDonald, Allan.....	E. E.....	Philipsburg, Mont.
McDonald, James Michael.....	Min. Eng.....	Guysboro, N. S.
MacInnis, Arthur Elver.....	Min. Eng.....	Seattle
McIntosh, Laurence Robert.....	Mech. Eng.....	Tumwater
McKenzie, Norman.....	A. B.....	Seattle
McKinley, David Alexander.....	Min. Eng.....	Spokane
McKnight, Verres Morton.....	A. B.....	Seattle
McLean, Bernice.....	A. B.....	Mt. Vernon
McLeod, John Calvin.....	C. E.....	Bellingham
McMaster, Jessie.....	A. B.....	Seattle
McMullen, Sydney Louis.....	A. B.....	Seattle
McNamara, William.....	C. E.....	Seattle
MacNaughton, Corabel.....	A. B.....	Seattle
McRae, Duncan Wendell.....	Min. Eng.....	Tacoma
Mackey, Florence Graham.....	A. B.....	Seattle
Mackey, Russell Anderson.....	Min. Eng.....	Seattle
Mackie, Gladys Lyall.....	A. B.....	Seattle
Macready, Jean.....	A. B.....	Tacoma
Magnussen, Toralf.....	A. B.....	Redmond
Maltbie, Theodora Edna Alice.....	A. B.....	Wenatchee
Maney, Richard Sylvester.....	A. B.....	Seattle

13F
22M

Mann, Anna Viola.....	A. B.....	Olympia
Marshall, John Egbert.....	A. B.....	Deming
Marshall, Rachel Eugenia.....	A. B.....	Seattle
Martin, Clare Louise.....	A. B.....	North Yakima
Martin, George Hamilton.....	Forestry	Spokane
Maryott, Sara Louise.....	A. B.....	Seattle
Mason, Elizabeth.....	A. B.....	Seattle
Mathieu, Irene.....	A. B.....	Seattle
Matthews, Edith Eliza.....	A. B.....	Waterville
Mattice, Cornelia.....	A. B.....	Sedro-Woolley
Meany, George Edward.....	Min. Eng.....	Colfax
Meece, James Charles.....	E. E.....	Seattle
Meenach, Harrison William.....	C. E.....	Seattle
Merrill, Harold Dexter.....	Mech. Eng.....	Seattle
Merrill, Harold Winthrop.....	Pharmacy	Seattle
Messinger, Gertrude Evelyn.....	A. B.....	Seattle
Metzger, Bertha Florence.....	A. B.....	Seattle
Miller, Laura Adelia.....	A. B.....	Brighton
Miller, Thomas.....	C. E.....	Seattle
Million, Ten.....	C. E.....	Seattle
Mitchell, Benjamin Williams.....	Pharmacy	Everett
Mitchell, Marie.....	A. B.....	Glengary, Idaho
Mobeck, Agnes Myrtle.....	A. B.....	Seattle
Moberg, Alger Andrew.....	A. B.....	Mt. Vernon
Molin, Louis Alexander.....	A. B.....	Everett
Moncreiff, Arthur.....	E. E.....	Seattle
Montgomery, Igerna.....	A. B.....	Seattle
Montgomery, John Raymond.....	A. B.....	Bellingham
Moody, Ruth Anna.....	A. B.....	Seattle
Moore, Clara.....	A. B.....	Seattle
Moore, Florence Harrison.....	A. B.....	Seattle
Morgan, Joseph George Gregory....	A. B.....	Seattle
Morris, Benjamin Graham.....	A. B.....	Lewiston, Idaho
Morse, Mabel Verne.....	A. B.....	Puyallup
Mucklestone, Melville.....	Forestry	Yacolt
Mullen, Charles George.....	Forestry	Seattle
Muncaster, Marjorie.....	A. B.....	Seattle
Murphy, Thomas Francis.....	Chem. Eng.....	Montevideo, Minn.
Murray, Welwood.....	A. B.....	Seattle
Muto, Saburo.....	E. E.....	Tokio, Japan

19F
21M

Myer, Edmund John.....	A. B.....	Seattle
Neander, Joseph Evie.....	A. B.....	Underwood, N. Dak.
Nelson, Arthur Emil Laurence.....	A. B.....	Seattle
Nelson, Chester Herman.....	Mech. Eng.....	LaConner
Nelson, Morris Ludwig.....	Mech. Eng.....	LaConner
Nelson, Wendell Monroe.....	E. E.....	Waco, Nebr.
Neville, Blanche Amanda.....	A. B.....	Seattle
Newberry, Arthur Percival.....	E. E.....	Coupeville
Newlands, Eloise Katharine.....	A. B.....	Seattle
Noble, Claude Stratton.....	E. E.....	Seattle
Norris, Emma Hazel.....	A. B.....	Tacoma
O'Donnell, Gretchen Marion.....	A. B.....	Seattle
Oliver, James Allen.....	Min. Eng.....	Colfax
O'Loughlin, Carl Leonard.....	A. B.....	LaConner
Ort, Chester Walden.....	C. E.....	Centralia
Osborne, Leslie Blaine.....	Min. Eng.....	Spokane
Osborne, Sumner.....	C. E.....	Seattle
Ottestad, Justin Walter.....	Forestry	Blaine
Palmer, Emmett Nathan.....	C. E.....	Seattle
Palmer, George.....	E. E.....	Ellensburg
Palmer, Leslie Loren.....	Min. Eng.....	Seattle
Park, Lical.....	A. B.....	Seattle
Parker, Kathleen Endora.....	A. B.....	Seattle
Parr, Russell Clifton.....	Min. Eng.....	Davenport
Parsons, John Purl.....	C. E.....	Seattle
Partlow, Beulah Agnes.....	A. B.....	Olympia
Pendleton, Ross Louis.....	Forestry	Everett
Peters, Francis William.....	E. E.....	Seattle
Peterson, Wade A.....	A. B.....	Bellevue
Petley, Edith Louise.....	A. B.....	Seattle
Phillip, Frank Joseph.....	A. B.....	Tacoma
Phillips, Joseph Renton.....	Forestry	Seattle
Phillips, Vetabel.....	Pharmacy	Fresno, Calif.
Pierce, Ahira Edwin.....	E. E.....	Seattle
Polson, Ollie Hinckley.....	C. E.....	Seattle
Potter, Edith Louise.....	A. B.....	Seattle
Prescott, Carol Alberta.....	A. B.....	Seattle
Preston, Therese Martha.....	A. B.....	Seattle
Price, John Chauncey.....	A. B.....	Orchards
Pullen, Royal.....	E. E.....	Youngstown

10F
30M

61

Quale, Arthur Norman.....	C. E.....	Seattle
Rabel, Victor Edward.....	Min. Eng.....	Seattle
Radford, Marion Alma.....	A. B.....	Seattle
Ramseyer, Walter Chapin.....	C. E.....	Lynden
Redington, Marian Clarke.....	A. B.....	Tacoma
Reeves, Zelma.....	A. B.....	Wenatchee
Reiley, Margaret.....	A. B.....	Seattle
Reynolds, Arnold Charles.....	C. E.....	Seattle
Richards, Fred Jerome.....	Mech. Eng.....	Hamilton
Richardson, Mary Louise.....	A. B.....	Olympia
Ridgway, Hubert Ralph.....	Pharmacy	Seattle
Roberson, Rex.....	A. B.....	Seattle
Roberts, Franklin George.....	Mech. Eng.....	Seattle
Roberts, Mary Christiana.....	A. B.....	Seattle
Robertson, Katharine.....	A. B.....	Seattle
Robinson, Elizabeth Langley.....	A. B.....	Seattle
Rockwood, Alfred Loveday.....	A. B.....	Pacific Grove, Cal.
Roeder, Ethel Aryeness.....	A. B.....	Bellingham
Rogers, Foy O.....	E. E.....	Centralia
Rogerson, Alma Margaret.....	A. B.....	Bradford, Pa.
Röse, Albert Chatellier.....	C. E.....	Philadelphia, Pa.
Rosenkrans, Elizabeth.....	A. B.....	Oconomowoc, Wis.
Rost, Leo Clarence.....	Mech. Eng.....	Valley Jct., Ia.
Rowe, Hazel Mary.....	A. B.....	Seattle
Russell, Edgar.....	C. E.....	Seattle
Sallberg, Millicent Charlotte.....	A. B.....	Quincy
Saunders, Dorothy Channing.....	A. B.....	Seattle
Sauter, Ruth Marie.....	A. B.....	Seattle
Sawyer, Lura Jessie.....	A. B.....	Yesler
Sceva, Paul H.....	Min. Eng.....	Tacoma
Scheble, Harry Elsworth.....	A. B.....	Wenatchee
Schiveley, Annie Cunningham.....	A. B.....	Olympia
Schneider, Rebecca.....	A. B.....	Seattle
Schoenfeld, William.....	Forestry	Seattle
Schroeder, Lucile Elinor.....	A. B.....	Seattle
Schumacher, Wilhelmina.....	A. B.....	Everett
Schwartz, Walter Augusta.....	C. E.....	Tacoma
Scott, Rudolph Bowman.....	Min. Eng.....	Spokane
Sears, Carlton Irving.....	Pharmacy	Centralia

195
21M

Semmen, Florence Inez.....	A. B.....	Aberdeen
Severyns, Andrew.....	A. B.....	Prosser
Severyns, William Bartholomew.....	A. B.....	Prosser
Sexton, Kate.....	A. B.....	Spokane
Shafer, Guy.....	Pharmacy	Sedro-Woolley
Shave, Samuel Richard.....	E. E.....	Seattle
Shaver, Helen Virginia.....	A. B.....	Tacoma
Shaw, Ernest Thornton.....	A. B.....	Tacoma
Shelton, Alice Margaret.....	A. B.....	Seattle
Shelton, Milton.....	C. E.....	Seattle
Sherrick, Johnson.....	A. B.....	Edmonds
Shore, Walter William.....	A. B.....	Spokane
Short, Fay Charlotte.....	A. B.....	Seattle
Shotwell, Lyman Ray.....	A. B.....	Wenatchee
Shotwell, Roger Ward.....	C. E.....	East Orange, N. J.
Sieler, Herbert Henry.....	A. B.....	Spokane
Siemons, Frank.....	Mech. Eng.....	Bellingham
Silkworth, Don Carlos.....	E. E.....	Arleta, Oregon
Simison, Donald Schreiner.....	A. B.....	Seattle
Simonds, William Adams.....	A. B.....	Bothell
Skelton, Jessie Lee.....	A. B.....	Seattle
Smith, Beatrice Evelyn.....	A. B.....	Spokane
Smith, Bonna Ethlyn.....	A. B.....	Bellingham
Smith, Roxy Margaret.....	A. B.....	Spokane
Smith, Roy Elmer.....	C. E.....	Pocatello, Idaho
Smith, Susie Luella.....	A. B.....	Seattle
Smith, Warren.....	C. E.....	LaConner
Smith, Warren.....	E. E.....	Berlin
Snyder, Ruby Wellborn.....	A. B.....	Seattle
Spannagel, Edna Genevieve.....	A. B.....	Spokane
Sparling, Mary Helen.....	A. B.....	Seattle
Spencer, Walter James.....	A. B.....	Tacoma
Spenger, Fred Jacob.....	Min. Eng.....	Bellingham
Sprengle, Enid Amelia.....	A. B.....	Seattle
Spurck, William.....	A. B.....	Seattle
Stahl, Eleanor Elizabeth.....	A. B.....	Seattle
Stahlhut, Vernie Irene.....	A. B.....	Sunnyside
Steele, Harriet Effie.....	A. B.....	Spencer, W. Va.
Stephens, Ewing William.....	A. B.....	Spokane
Stevens, Robert Wetzler.....	A. B.....	Seattle

16P
24M

Stevenson, Frances Phillips.....	A. B.....	Seattle
Stewart, Harold Humphrey.....	A. B.....	Richmond Beach
Stewart, Neva Gracia.....	A. B.....	Spokane
Stewart, Roy.....	A. B.....	Seattle
Stiley, Joseph Francis.....	C. E.....	Elizabeth, N. J.
Storch, Bess.....	Pharmacy	Seattle
Strandberg, Edwin Leonard.....	C. E.....	Seattle
Stuen, Ole.....	E. E.....	Stuen, Norway
Sturgis, James Hartman.....	A. B.....	Pendleton, Ore.
Stuth, Albert Edward.....	C. E.....	Olympia
Sugg, Elmer Lee.....	A. B.....	Vancouver
Swartwood, Charles Clifford.....	C. E.....	Centralia
Swartz, Albert William.....	Mech. Eng....	Granite Falls
Swartz, Leo.....	Mech. Eng....	Granite Falls
Talcott, Viretta.....	A. B.....	Olympia
Tamura, Teijiro.....	A. B.....	Shiga, Japan
Tanner, Bertrand Myron.....	C. E.....	Idaho Falls, Idaho
Taylor, Howard Holbrook.....	A. B.....	Seattle
Taylor, Leonard Gibson.....	A. B.....	Monohon
Thayer, Keisling William.....	Forestry	Bellingham
Thbmason, Eric Burdette.....	E. E.....	Seattle
Thomason, Errol Llewellyn.....	Min. Eng.....	Seattle
Thompson, Albert C.....	Pharmacy	Tacoma
Thompson, Florence Edna.....	A. B.....	Ritzville
Thompson, Peter.....	Pharmacy	Seattle
Thompson, Vera Elizabeth.....	A. B.....	Seattle
Thurmond, Viola Alice.....	A. B.....	Seattle
Tibbits, Edna M.....	A. B.....	Seattle
Tolman, Crittenden Coe.....	Min. Eng.....	Eastland
Tomlinson, Paul C.....	A. B.....	Wenatchee
Tooker, Verna McClanathan.....	A. B.....	Everett
Töttery, Satoshi.....	C. E.....	Okayama, Japan
Towsley, Edith Edna.....	A. B.....	Seattle
Trapp, Opal Flata.....	A. B.....	Seattle
Trotter, Erwin Cecil.....	E. E.....	Winchester
Truesdell, Gladys Evadna.....	A. B.....	Vancouver
Tupper, Myron Weldon.....	A. B.....	Snohomish
Turner, Ira Robert.....	A. B.....	Spokane
Van Kuran, Herbert George.....	E. E.....	Seattle
Veldee, Conrad.....	Mech. Eng.....	Bremerton

16 F
30 MA

(28 M. 12 F)

Votaw, Clifford Henry.....	Forestry	Tacoma
Waite, Clement F.....	C. E.....	Vancouver
Walsh, Elsa.....	A. B.....	Seattle
Wand, Walter Andrew.....	A. B.....	Seattle
Warner, Chester Steward.....	A. B.....	Seattle
Warner, Ellis Edwin.....	A. B.....	Sultan
Warren, Anna P.....	A. B.....	Seattle
Watanuki, Toyoharu	E. E.....	Fuknoka, Japan
Watrous, John Herbert.....	A. B.....	Seattle
Waugh, James Ruggles.....	A. B.....	Seattle
Wayland, George Hall.....	Mech. Eng.....	Seattle
Weatherwax, Lea Albert.....	C. E.....	Seattle
Webb, Herbert Collins.....	A. B.....	Seattle
Weber, Richard Bruno.....	C. E.....	Chicago, Ill.
Welts, Robin Victor.....	A. B.....	Mt. Vernon
Wenrich, Wright.....	A. B.....	Lawrence, Kansas
West, Mabel Claire.....	A. B.....	Seattle
West, Ruth.....	Pharmacy	Seattle
A. B., University of Washington.		
Westervelt, Margaret.....	A. B.....	Seattle
Westover, Ralph.....	Min. Eng.....	Seattle
Wheeler, George.....	Pharmacy	Seattle
Wheelon, Charles Homer.....	A. B.....	Seattle
White, Chris.....	C. E.....	Anacortes
- White, Richard Furbush.....	Forestry	Seattle
- Whitmore, James Lester.....	A. B.....	Buckley
Whitson, Mae Elizabeth.....	A. B.....	Davenport, Iowa
Wight, Ada Laughlin.....	A. B.....	Seattle
Wilcox, Hazel Vivien.....	A. B.....	Seattle
Wiles, Clifford Lowman.....	C. E.....	Seattle
- Williams, Eloise Barnhart.....	A. B.....	Norman, Okla.
Williams, Lawrence Johnson.....	C. E.....	Seattle
Williams, Snow Elder.....	Min. Eng.....	Seattle
Williams, Walter J. X.....	C. E.....	Seattle
Willis, Ora Pinckney.....	A. B.....	Pomeroy
- Willson, Catharine N.....	A. B.....	Seattle
Wilson, Charles Melville.....	E. E.....	Seattle
Wingate, Alma Martha.....	A. B.....	Krupp
- Wingfield, Wallace Lee.....	A. B.....	Seattle
Winquest, Arthur Franklin.....	A. B.....	Seattle
Witteman, Ida Rachel.....	A. B.....	Seattle

145
26NA
2

Woodnutt, Hannah M.....	A. B.....	Seattle
Wooster, Harry Wildman.....	C. E.....	Low Gap
Wright, Newell Livingston.....	Forestry	Bellingham
Yaw, Lora B.....	A. B.....	Seattle
Yee, Lee Yade.....	A. B.....	Walla Walla
Yerkes, Beulah.....	A. B.....	Seattle
Yoshihito, Nakao.....	A. B.....	Seattle
Young, Avi Zetta.....	A. B.....	Burton
Yozo, Nakamoto.....	A. B.....	Ogawa, Japan

22

UNCLASSIFIED.

Adair, Ninon Gertrude.....	A. B.....	Seattle
Anderson, Pearle Elma.....	A. B.....	Spokane
Applegate, Florence Barbara.....	A. B.....	Seattle
Ayres, Jessie Cameron.....	A. B.....	Seattle
Baeder, Louis.....	A. B.....	Seattle
Bailey, Nellie Lee.....	Pharmacy	Seattle
Bains, Umrao Singt.....	E. E.....	Mahilpue, India
Banner, Abram.....	Min. Eng.....	Olympia
Barto, Edith.....	A. B.....	Seattle
Batts, Etha.....	A. B.....	Seattle
Benson, Pearle Merrill.....	Pharmacy	St. Paul, Minn.
Bourne, Florence.....	A. B.....	Seattle
Bowers, Margaret.....	A. B.....	Bellingham
Brown, Burton Augustus.....	Pharmacy	Seattle
Brown, J. Arthur Copeland.....	A. B.....	Chicago, Ill.
Burch, Lita May.....	A. B.....	Spokane
Burns, Lillian Winslow.....	A. B.....	Seattle
Burt, Nellie Louise.....	A. B.....	Seattle
Caffrey, Marie.....	A. B.....	Seattle
Campbell, John Edward.....	A. B.....	Walled Lake, Mich.
Canney, Mabel Edith Cowles.....	A. B.....	Seattle
Cartwright, Clarence E.....	E. E.....	Seattle
Chapin, Madeline	A. B.....	Denver, Colo.
Cheesman, Harvey Rollin.....	Forestry	Los Angeles
Churchill, Ella Marie.....	A. B.....	Seattle
Churton, Edward Daniel Long....	Min. Eng.....	Coquitlam, B. C.
Clark, Frank B.....	E. E.....	Seattle
Coe, Helen Burwell.....	A. B.....	Langley
Cole, Richard Valentine.....	A. B.....	Manson, Iowa

19F
19M

Cooper, William Wallace.....	Min. Eng.....	Seattle
Couillard, Harry Joseph.....	Min. Eng.....	Seattle
Crane, Halcyon Caulk.....	A. B.....	Seattle
Crow, Jean Margaret.....	A. B.....	Seattle
Crow, Nora Dear.....	A. B.....	Seattle
Das, Bishan.....	E. E.....	Noormahal, India
Davidson, Philip A.....	A. B.....	Ellensburg
Dean, Dorothy.....	A. B.....	Seattle
De Lartigue, Adele Alice.....	A. B.....	Riverton
Derham, Harry Michael.....	C. E.....	Clarkston
Doren, John Edward.....	E. E.....	San Francisco, Cal.
Draper, Foster Washington.....	A. B.....	Elberton
Ducasse, Nesta.....	A. B.....	Seattle
Dunmore, Clair Nichols.....	Pharmacy	Seattle
Easterday, Forrest.....	C. E.....	Tacoma
Ellis, Leland Vinton.....	Pharmacy	Chehalis
Emshoff, Henry James.....	A. B.....	Avoca, Nebr.
Ewart, Samuel.....	Pharmacy	Ashcroft, B. C.
Freire, Thomaz da Silva.....	Forestry .....	.....
	.....	Rio de Janeiro, Brazil
Garland, Francis Marion.....	A. B.....	Bremerton
Gibbons, William Harry.....	Forestry	Brownsville, Pa.
Gilkey, Arthur.....	Min. Eng...	Oconto Falls, Wis.
Grant, Elsie May.....	A. B.....	Seattle
Graves, Ethel Florence.....	A. B.....	Spokane
Gregg, George Roy.....	A. B.....	Seattle
Hamilton, Adelaide Keady.....	A. B.....	Seattle
Hamline, Besse.....	A. B.....	Seattle
Hammer, George.....	Forestry	Sedro-Woolley
Hancock, Viola Elizabeth.....	A. B.....	Huntington, Oregon
Harding, Helen J.	A. B.....	Saginaw, Mich.
Harvey, Harrison Eaton.....	Min. Eng.....	Seattle
Haynes, LaVerne Ross.....	C. E.....	Galesburg, Ill.
Hayes, Leslie William.....	A. B.....	Felton, Calif.
Henry, Sylvia Allen.....	A. B.....	Seattle
Higbee, Helen Grace.....	A. B.....	Seattle
Hill, Ole Ingebrigt.....	Min. Eng.	Trondhjem, Norway
Hindman, Frances Edith.....	Pharmacy	Durkee, Oregon
Hollis, Elsie Bertha.....	A. B.....	Seattle
Houghton, Edna Manning.....	A. B.....	Seattle

16F
23M

Hyslop, Logan Douglas.....	A. B.....	Spokane
Ingersoll, Edna Ione.....	A. B.....	Seattle
Itter, Elizabeth Ellen.....	A. B.....	Seattle
Jerdee, Inger Carolina.....	A. B.....	Spokane
Jobst, Frances.....	A. B.....	Seattle
Johnson, Andrew Edward.....	A. B.....	Heber, Utah
Jones, Christopher William.....	Min. Eng....	Vancouver, B. C.
Jones, Munroe Franklin.....	Min. Eng....	Seattle
Keene, Margaret H.....	A. B.....	Seattle
Kellogg, Lucien Theron.....	A. B.....	Wenatchee
Kempinsky, Harold Aubry.....	Pharmacy	Buckley
Kennedy, Raymond Berry.....	E. E.....	Asotin
Kerkow, Roy Robinson.....	Pharmacy	Seattle
Kerr, Fred Howard.....	Min. Eng....	Seattle
Ketcham, Florence.....	Pharmacy	Seattle
Kimball, Clare E.....	A. B.....	Seattle
Kuhn, Elsie Mae.....	A. B.....	Indianapolis, Ind.
Lane, Jean Parminter.....	A. B.....	Seattle
Lawatschek, Elly Wilhelmina.....	A. B.....	Seattle
Levin, David.....	Pharmacy ..	Philadelphia, Pa.
Lillyblade, Edward.....	E. E.....	Seattle
Lingren, William Henry.....	E. E.....	Marshfield, Oregon
Linn, Harriette Alice.....	A. B.....	Seattle
Longshore, Isaac Holcomb.....	A. B.....	Payson, Oklahoma
Lounsbury, Louise Desilla Wagner.....	A. B.....	Seattle
Lovejoy, Margaret.....	A. B.....	Seattle
Ludwig, Fred Andrew.....	Pharmacy	Tacoma
*McClelland, John Cavette.....	Min. Eng....	Seattle
McCluskey, Joseph Albert.....	Pharmacy	Seattle
McKay, William Osborn.....	Min. Eng....	Seattle
McKibben, Vinton Moore.....	Forestry	Seattle
McShane, Elaine Alice.....	A. B.....	Berkeley, Calif.
Mackie, Ransom Andrew.....	A. B.....	Colton
Magill, Ina Gertrude.....	A. B.....	Seattle
Mallett, Alice Ruth.....	A. B.....	Ontario, Oregon
Marlatt, Adin Eben.....	C. E.....	Seattle
Mason, Estella May.....	A. B.....	Seattle
Mazoomdar, Tarak Charan.....	E. E.....	Calcutta, India
Meenach, Maude Lucile.....	A. B.....	Seattle

*Deceased.

165
23 M

Merrifield, Edgar Eugene.....	Mech. Eng.	Monango, N. Dak.
Meyer, Charles.....	E. E.	Seattle
Mohr, Rosella Laura.....	A. B.	Spokane
Molloy, James Francis.....	Pharmacy	Seattle
Moore, Edward William.....	Pharmacy	Spokane
Moore, Lewis Finley.....	Pharmacy	Bellingham
Moores, Bertha.....	A. B.	Portland, Oregon
Murphy, Edward C.....	Min. Eng.	Kane, Ill.
Murphy, Jessie A.....	A. B.	Seattle
Nyler, David Thomas.....	A. B.	Seattle
Nelson, George Walter.....	Min. Eng.	Tacoma
Norton, Em Louise.....	A. B.	Seattle
Olson, William David.....	E. E.	Elma
Parker, Russell.....	A. B.	Chicago, Ill.
Patterson, Ella Mathilde.....	A. B.	Seattle
Patterson, Idelle Ava.....	A. B.	Seattle
Paulson, Chester Randall.....	Forestry	Spokane
Pedroni, Victor.....	Mech. Eng.	Seattle
Price, Pearl Margaret.....	A. B.	Seattle
Randles, J. Lawrence.....	Pharmacy	Friday Harbor
Randolph, Milton Fitz.....	Pharmacy	Seattle
Renfro, Alice.....	A. B.	Seattle
Renfro, Lilburn Woods.....	A. B.	Seattle
Richardson, Lewis Averill.....	Mech. Eng.	Seattle
Ricketts, Gertrude Ruth.....	A. B.	Seattle
Ross, Harry Hamilton.....	Pharmacy	Seattle
Russell, Lillian Blanche.....	A. B.	Seattle
Sherman, Nabhi Ram.....	Mech. Eng.	Luethiana, India
Siegel, Harry.....	A. B.	Seattle
Smith, Jay Alton.....	Forestry	Seattle
Smith, Percy Charles.....	A. B.	San Jose, Calif.
Sneed, Robert Campbell.....	C. E.	Sedalia, Mo.
Sparks, Leslie Clay.....	Mech. Eng.	Vancouver
Starkey, Genevieve Isabell.....	Pharmacy	Northport
Staup, Minnie Grant.....	A. B.	Seattle
Storey, Eugenia Claire.....	A. B.	Montesano
Stuff, Josephine Eleanor.....	A. B.	Seattle
Terry, Roberta Lee.....	A. B.	Seattle
Thompson, Herbert Allen.....	A. B.	Pendleton, Oregon
Thompson, Iona Lola.....	A. B.	Montera
Trevor, Harry Ramon.....	C. E.	Tacoma

14F
26M

Vachon, Ellsworth V.....	A. B.....	Seattle
Verma, Behari Lall.....	E. E.....	Posi, India
Wanamaker, Herman Thomas.....	Pharmacy	Coupeville
Whaley, Ralph Seth.....	C. E.....	Seattle
White, Kathryn.....	A. B.....	Seattle
White, Mary Hazel.....	A. B.....	Olympia
Willard, Ida Estella.....	A. B.....	Seattle
Williams, William Henry Garfield..	Forestry	Port Blakeley
Wilson, Alfred Peter.....	A. B.....	Oakville
Wilson, Anna B.....	A. B.....	Oakville
Wolford, Ada.....	A. B.....	Grass Valley, Calif.
Wood, Helen Viola.....	A. B.....	Fairbanks, Alaska
Woodcock, Pansy Freeman.....	A. B.....	Seattle
Woolsey, Frances.....	A. B.....	Seattle
Wuttkey, Edward Christian.....	C. E.....	Norwich, Conn.
Yamane, Masuo.....	A. B.....	Toltori, Japan
Zimmerman, Charles E.....	Pharmacy	Seattle

SATURDAY SPECIAL TEACHERS' COURSE.

Balley, Winona.....	A. B.....	Seattle
Bellis, James Stanley.....	A. B.....	Seattle
Blesen, Anne W.....	A. B.....	Seattle
Bigelow, Alida J.....	A. B.....	Seattle
Blough, Allie.....	A. B.....	Seattle
Brown, Isobel A.....	A. B.....	Seattle
Burton, Jennie Lind.....	A. B.....	Seattle
Culmer, Myrtle Asbury.....	A. B.....	Seattle
Dill, S. Almina.....	A. B.....	Seattle
Forrester, William.....	A. B.....	Redmond
Herring, John P.....	A. B.....	Seattle
Herring, Mary Burdick.....	A. B.....	Seattle
Hoy, Mary.....	A. B.....	Seattle
Lothrop, Daniel J.....	A. B.....	Seattle
Oakley, June.....	A. B.....	Seattle
Oakley, Mary.....	A. B.....	Seattle
O'Meara, Josephine Augusta.....	A. B.....	Seattle
Raymond, Rena B.....	A. B.....	Seattle
Regan, Frances M.....	A. B.....	Seattle
Rouse, Louise Elizabeth.....	A. B.....	Seattle
Simmons, Elma.....	A. B.....	Seattle
Swiney, Edna Colgan.....	A. B.....	Seattle

22 F
17 M

15

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LAW SCHOOL

SENIORS.

NAME.	HOME ADDRESS.
Albers, Otto Johnson.....	Chehalis
Allen, Edward Weber.....	Oshkosh, Wis.
Clark, Irving Marshall.....	Seattle
A. B., Yale University.	
Cunningham, Ardys Branham.....	Lamaine
A. B., University of Washington.	
Dootson, James William.....	Everett
A. B., University of Washington.	
Eddy, Earnest.....	Kings Valley, Ore.
A. B., Oregon Agricultural College.	
Erford, John Fields Roy.....	Colfax
A. B., University of Washington.	
Evans, DeWitt Morris.....	Tacoma
B. L., University of California.	
Foster, Ralph Herbert.....	Manquoketa, Iowa
A. B., Hamline University.	
Funk, Blanche Elizabeth.....	Seattle
A. B., Wirttenberg College.	
Good, Melvin Stuart.....	Berkeley, Calif.
Hadley, Clyde Musgrave.....	Olympia
A. B., Leland Stanford Jr. University.	
Kowalsky, Alexander Theodore.....	Milwaukee, Wis.
A. B., Marquette University.	
Korstad, Fred.....	Seattle
Kulzer, Albert J.....	Valley
A. B., Gonzaga College.	
Loewe, Adolf.....	Seattle
Loewe, Walter George.....	Seattle
McLane, Arthur C.....	Locke
A. B., State University of Iowa.	
Metcalf, James Vernon.....	Seattle
Needham, Delos J.....	Lewiston, Idaho
A. B., University of Washington.	
Norris, John Herbert.....	Keystone
Ostrom, Arthur William.....	Seattle
Padden, Stanley Joseph.....	Seattle
A. B., Gonzaga College.	
Parker, William Edmund.....	Seattle
A. B., University of Washington.	
Pinkham, Star Thomas.....	Seattle
Stinson, James Archibald.....	Weiser, Idaho
Ph. B., Cornell College.	

25 M
1 R

Thomason, Otto Monroe.....	Entiat
Whitfield, Jay Anesly.....	Lakebay
A. B., University of Washington.	
Winn, Grover Cleveland.....	Juneau, Alaska
Worthington, Alfred Grissom.....	Kingston
Zednick, Victor Hugo.....	Seattle
A. B., University of Washington.	

JUNIORS.

Bagshaw, Enoch Williams.....	Seattle
B. S., University of Washington.	
Bates, William Charles.....	Vancouver
Bauer, John Henry.....	Walla Walla
A. M., Columbia University.	
Benson, Carl Godfrey.....	Seattle
A. B., Gustavus Adolphus College.	
Bowe, George Donald.....	Waseca, Minn.
Brock, Frank Victor.....	Seattle
A. M., State University of Iowa.	
Brown, Browder D.....	Tacoma
A. B., University of Puget Sound.	
Buckles, George Russell.....	Troy, Iowa
B. P., Drake University.	
Burnett, Milton.....	Vancouver
Caruzzi, Cyrus.....	Venice, Italy
Chittenden, Ralph Guild.....	Seattle
Codd, Ambrose William.....	Spokane
A. B., Gonzaga College.	
Codd, Joseph Walter.....	Spokane
A. B., Gonzaga College.	
Cogswell, Daniel Burgess.....	Seattle
Crollard, Frederick Michael.....	Wenatchee
Davis, Irving Richard.....	Maynard, Iowa
Ph. B., Iowa College.	
Deane, Charles Henry.....	Seattle
Desmond, Grover Edward.....	Seattle
Dickey, Harold Hurst.....	Manchester, N. H.
A. B., New Hampshire College.	
Dorr, Frederick William.....	Seattle
Durham, Kenneth Paul.....	Spokane
Everly, Myra L.....	Goldthwaite, Texas
M. S., Knox College.	
Foss, Wedell.....	Tacoma
Fretwell, Franklin McGee.....	Seattle
Garretson, Max.....	Tacoma

29M
15

Gibbon, Herbert A.....	Seattle
Gilbreath, James Alvin.....	Dayton
A. M., Whitman College.	
Gordon, John William.....	Tacoma
Hemphill, James Wylie.....	Seattle
Hess, Emory Earl.....	Seattle
A. B., Wabash College.	
Hurwitz, Abraham.....	Seattle
Inouye, Daniel Y.....	Tokyo, Japan
Inouye, John N.....	Tokyo, Japan
Jaeger, Nelda.....	Tacoma
Johnstone, Walter Lewis.....	Seattle
King, Cleo Preston.....	Seattle
Knapp, Ralph Read.....	Seattle
Krueger, Phillip.....	Albion
Lawrence, Samuel B.....	Forest Grove, Ore.
A. B., Pacific University.	
Lebeck, Frank.....	Wenatchee
McElwain, Penrose Lee.....	Seattle
A. M., University of Washington.	
McEwen, John R.....	Goldendale
MacKay, Robert Ronald.....	Philadelphia, Pa.
B. S., University of Pennsylvania.	
MacKinnon, Charles Malcolm.....	Seattle
Ph. G., University of Washington.	
McPhee, Ronald George.....	Spokane
Manibo, Jose A.....	Manila, P. I.
March, John Gordon.....	Tacoma
Miller, Joseph Edison.....	Garfield
Niswonger, Clement.....	Fortson
A. B., Pacific College.	
Packard, Augustus Henry.....	Seattle
Palmer, Erven Harold.....	Manquoeta, Iowa
Parker, Clarence Goulding.....	St. Louis, Mo.
Reser, Byron Elmo.....	Walla Walla
Rogers, Harold Mark.....	Seattle
Sigworth, Jay H.....	Franklin Pa.
Starr, George East.....	Chelan
A. B., University of Washington.	
St. John, James Irving.....	Snohomish
Stone, Seymour Iver.....	Olympia
A. B., University of Washington.	
Tammany, Patrick Michael.....	Seattle
Tateishi, Jisaemon.....	Japan

361
65

Teats, Ralph.....	Tacoma
Thompson, Everett Voorhees.....	Olympia
Totten, Joseph Phelps.....	Seattle
Waugh, Elmer Ambrose.....	Spokane
Williams, Lewie	Wenatchee
Willis, James Hart.....	Plains, Montana
Wolfe, Edward Clarence.....	Dayton, Ohio
Zettler, Hyman.....	South Park

UNCLASSIFIED.

NAME.	HOME ADDRESS.
✓ Albritton, William Claude.....	Warrior, Ala.
✓ Allen, Herman.....	Seattle
✓ Allen, Pliny Lee.....	Seattle
Baker, Virgil O. <i>W.K.</i>	Seattle
Barry, Francis Thomas <i>W.</i>	Salem, Mass.
Biggle, Lester Arthur <i>W.</i>	Tacoma
Bolen, William Henry.....	Providence, R. I.
✓ Brogan, Edward Irving.....	Seattle
✓ Brown, Reese Bowen.....	Oakesdale
✓ Buck, Corrill Goodnoe.....	Seattle
✓ Connors, Jack Arthur.....	Seattle
✓ Cooley, Herbert DeLos.....	Everett
Corkery, Glen Sibley <i>W.</i>	Spokane
✓ Danson, Robert W.....	Spokane
✓ Davis, Brisbon	Seattle
✓ DeLong, Leonard J.....	Seattle
✓ Fellows, Hubbard Fremont.....	Plankinton, S. Dak.
✓ Floyd, Clarence Dell.....	Greenville, Ill.
Frenger, Edgar S. <i>W.K.</i>	Lynchburg, Ohio
✓ Glover, John Squire Stott.....	Seattle
✓ Hall, Robert Gilbert.....	Bellingham
✓ Harris, Arthur Merton.....	Chicago, Ill.
✓ Hawkins, Benjamin H.....	Seattle
✓ Heidinger, William Ernest.....	Fairfield, Ill.
✓ Henderson, James Harry.....	Fennville, Mich.
✓ Herr, Emil Gottlieb.....	Buffalo, N. Y.
✓ Howe, John Pardee.....	Seattle
✓ Johnson, Andrew Peter.....	Seattle
✓ Lewis, Devillo.....	Seattle
✓ Lindley, William Fisher.....	Seattle

38 M
04

✓ Lufsky, Arthur J. W.....	Seattle
✓ Lynch, Reginald T.....	New York, N. Y.
✓ McAleer, Charles.....	Seattle
✓ McDowell, Carl W.....	Orrville, Ohio
✓ McKee, Alexander John.....	Bathurst, Australia
Magnusson, Axel Theodore.....	Harris, Minn.
Milice, Charles.....	Seattle
✓ Miller, Harold Bertrum.....	South Bend
✓ Miller, Herbert Rheinhart.....	Seattle
✓ Murphy, Patrick Leo.....	Seattle
✓ Neal, Fred Tucker.....	Davenport
— Niehong, Ng.....	San Ning, China
Olsan, Gustaf Axel.....	Seattle
Partymueller, Maurice.....	Seattle
Raymond, Charles Baron Whitney.....	Seattle
Raymond, Mabel Dora.....	Seattle
Rutledge, Louis A.....	Seattle
Sennott, Edward Henry.....	Seattle
Shea, John Henry.....	Seattle
Simpson, Andrew.....	Seattle
Sinnett, Ernest Charles.....	Georgetown
Smith, Arthur Jay.....	Evanston, Ill.
Sperry, Edward J.....	Seattle
Stokke, George.....	Seattle
Sullivan, John Joseph.....	Worcester, Mass.
Sutherland, George John Alexander.....	Bellingham
Thomason, Audrey Agatha.....	Entiat
Turner, Charles Austin.....	Seattle
Warrington, Francis Miron.....	Seattle
Welbon, John Leonard.....	Almira
Wilson, Katheryn.....	Seattle
Wiseman, Adolph H.....	Seattle
Witzke, William Gus.....	Seattle

AIM
3

2 women

SHORT COURSES

FORESTERS.

Allen, James.....	Bellingham
Allison, Walter W.....	Ukiah, Oregon
Anderson, Hugh Vernon.....	Grants Pass, Oregon
Arentson, Carl B.....	Dickey, Idaho
Brown, Warren H.....	Arlington
Brunke, Elmer R.....	Wallace, Idaho
Calvig, Frank L.....	Grants Pass, Oregon
Congleton, Charles.....	Prineville, Oregon
Curtis, Frazier.....	Boston, Mass.
Deviney, Charlie Henry.....	Jackson, Wyoming
DeWitt, Jesse Porter.....	Grants Pass, Oregon
Douglas, Richard Wellesley.....	Seattle
Fisher, John Isaac.....	Dudley, Idaho
Graham, Joe A.....	Sisters, Oregon
Gray, Frank E.....	Boise, Idaho
Green, Otto T.....	Asotin
Gribble, John Elias.....	Medford, Oregon
Guthrie, Hugh M.....	Grants Pass, Oregon
Hansen, Fred.....	Sisson, Calif.
Hoveland, Bernald Wilhelm.....	Bellingham
Ireland, Asher.....	Olalla, Oregon
Jones, Harold Thomas.....	Bellingham
Jones, John L.....	Bellingham
Lewis, Charles A.....	Seattle
Lewis, Charlie.....	Grants Pass, Oregon
Lewis, Melvin M.....	Grants Pass, Oregon
McKechnie, Joseph Lloyd.....	Port Angeles
McMaster, Edward Judson.....	Seattle
Patton, Benjamin S.....	Gap Mills, W. Va.
Pearson, Carroll L.....	Burns, Oregon
Phillips, Charles Kirke.....	Olympia
Schurr, John Marshall.....	Seattle
Smith, Andrew R.....	Lynden
Steele, James Wesly.....	Anaconda, Montana
Stiles, William Paul.....	Port Orchard
Tungate, Ira.....	Jacksonville, Oregon

37M
64

Van Campen, Alden J.....	Olean, New York
Wallis, Francis.....	Emmett, Idaho
Whitney, Horace Glen.....	Tacoma
Williams, Edgar Eugene.....	Waterville

MINERS

Beck, Andrew.....	Nome, Alaska
Irwin, George Elmer.....	Vancouver, B. C.
Johanson, Broi.....	Nome, Alaska
Jones, Zachariah.....	Seattle
Julien, William.....	Seattle
Lindsley, Edward Newell.....	Seattle
Lovejoy, Frank Edward.....	Seattle
Nelson, Francis Frankland.....	Seattle
Patterson, John Foreman.....	Seattle
Pickard, T. Dwight.....	Alaska
Schreibner, William.....	Seattle
Smith, William R.,.....	Seattle
Stewart, John A.....	Tacoma
Wilson, George Stead.....	Seattle
Wilson, John A.....	Nome, Alaska

19M
6F

[Handwritten signature]

X. C. G. E.

SUMMER SCHOOL OF 1908

Alexander, Mellie Knight.....	Seattle
Annis, Ruby.....	Hoquiam —
Arms, Jessie Louise.....	Seattle
Baker, Grace D.....	Puyallup
Bardon, Peter J.....	Everett —
Batts, Bertha.....	Seattle —
Berger, John W.	Wenatchee
Berkman, Edith G.....	Tacoma
Black, Cynthia S.....	Aberdeen
Black, Mary A.....	Seattle
Bliss, Jeanette.....	Seattle
Bowles, Elihu.....	Mt. Vernon
Boyd, Grace.....	Hastings, Nebr.
Boyles, Page R.....	Seattle
Bradley, Clara.....	Spokane
Brayton, Fannie E.....	LaCrosse, Wis. —
Breece, Dora Frances.....	Seattle
Brown, Charles S.....	Seattle
Buchanan, Victor... ..	Seattle
Buckley, Nellie A.....	Seattle
Burns, Omar Allen.....	Seattle —
Buwalda, John P.....	North Yakima —
Carrington, Herbert D.....	Tacoma
Case, Rowena Belle.....	North Yakima
Clark, Myrta Mai.....	North Yakima
Coan, Charles Florus.....	Seattle
Coleman, William Gaylord.....	Walla Walla
Collier, Edith L.....	Seattle
Collins, Helen H.....	Kirkland
Cook, Raymond Edward.....	Chelan
Corbet, Margaret Morrison.....	Seattle
Corson, Jennie Perley.....	Seattle
Craven, Inez Helena Barringer.....	Seattle
Crofton, Henrietta.....	Seattle
Crollard, Frederick Michael.....	Wenatchee
Crosno, May F.....	Drain, Oregon

Curtis, Florence Freeland.....	Seattle
Dalgity, Ruby I. L.....	Seattle
Davis, Margaret.....	Spokane
Deane, Charles H.....	Seattle
Dewey, Albert H.....	Seattle
Drummond, Annie M.....	Tacoma
Drummond, Elizabeth MacEachin.....	Tacoma
Eadie, William.....	Ellensburg
Edward, Lola E.....	Port Townsend
Eldridge, W. W.....	Victoria, B. C.
Ellefson, Elven T.....	Jackson, Minn.
Elliott, Hiram W.....	Clarkeston
Erickson, Esther Ulrica.....	Seattle
Estee, Lulu M.....	Gibson City, Illinois
Ewart, Abbie Viola.....	Seattle
Falk, Louise Henriette.....	Davenport, Iowa
Fallis, Annie L.....	Seattle
Field, Ada M.....	Newman, Ga.
Finnegan, Agnes G.....	Spokane
Fischer, Edith Mabel.....	Castana, Iowa
Forsyth, William H.....	Seattle
Freaser, Marie B.....	Helena, Montana
French, Albert N.....	Lynden
French, Mrs. Albert N.....	Lynden
Frits, Julia J.....	Friday Harbor
Frye, Else.....	Seattle
Fryer, Alice.....	Seattle
Garretson, Henry H.....	Tacoma
Geenan, Mabel E.....	Lothrop, Mont.
Graham, Thomas Archibald.....	Sandpoint, Idaho
Grant, Elsie.....	Seattle
Grant, Teresa.....	Seattle
Grout, Rose Emily.....	Seattle
Grindrod, Iona.....	Roslyn
Hancock, Eugene Ammon.....	Coupeville
Hanson, Mathea.....	Seattle
Harris, Mrs. Charles P.....	Seattle
Hartnett, Edmond E.....	Kirkland
Hattrem, Agnes.....	Seattle
Hawkins, Benjamin H.....	Seattle

Hawley, Louise Adela.....	Seattle
Heathcote, Olive Kathleen.....	Edmonton, Canada
Hedman, Thure F.....	Coeur d'Alene, Idaho
Henry, Elsie M.....	Seattle
Herring, John Peabody.....	Seattle
Heyes, Mary	Seattle
Hicks, Mabel V.....	Edmonton, Canada
Hooper, Kitty Elizabeth.....	Johnson
Hurwitz, Abraham.....	Seattle
Irvine, Helen E.....	Seattle
Iverson, Anna.....	Stanwood
Jewell, Susan Grace.....	Iowa City, Iowa
Johnson, Dallas D.....	Seattle
Johnson, Nellie.....	Kensett, Iowa
Joubert, F. F.....	Friday Harbor
Joyce, Mabel.....	Seattle
Kahan, Rose	Seattle
Kane, Maude C.....	Spokane
Karrer, Anna M.....	Roslyn
Karrer, Matilda W.....	Roslyn
Kenny, Kathryn.....	Seattle
Kibbe, Alice Lovina.....	Elma
Kincaid, Audrie.....	Seattle
Kinzie, Elbert Gabriel.....	Poulsbo
Kittredge, Marguerite E.....	Seattle
Knapp, Lebbeus J.....	Seattle
Knapp, Ralph R.....	Seattle
Kohlstaedt, Samuel B.....	Wilbur
Krohn, Albert F.....	Washougal
Kumar, G. D.....	Devashiram, India
Laird, Allie Luella.....	LaConner
Landis, Letta.....	Valparaiso, Indiana
Lawatschek, Elly.....	Seattle
Lee, Herbert.....	Wallace, Idaho
Lee, May T.....	Wallace, Idaho
Lee, Peter W.....	Everett
Lee, William.....	Walla Walla
Lentz, Katherine.....	Centralia
Liddell, Grace I.....	Tacoma
Lindsay, Brent A.....	Burton

Lively, John W.....	Seattle
Longwell, Frances B.....	Cle Elum
Lowe, M. Alora.....	Humiston, Iowa
Lutz, Donald Haswell.....	Seattle
Lyon, Caleb M.....	Hoquiam
McCarney, Margaret.....	Seattle
McCollins, Clara.....	Seattle
McConaughy, Marion.....	Kalama
McDonald, Eva Elizabeth.....	Bellingham
McDonnell, Edward L.....	Hoquiam
Mallett, Alice.....	Ontario, Oregon
Martin, Cedric.....	Puyallup
Merrick, Annie Grace.....	Austin, Minn.
Miller, Alle.....	North Yakima
Moodie, William Leslie.....	Bellingham
Moore, Adelaide Marguerite.....	Seattle
Neill, Frank W.....	Seattle
Nettleton, Daisy D.....	Peru, Nebraska
Newbury, Georgia.....	Seattle
Nicholas, Zella.....	Seattle
Nichols, Walter R.....	Bellingham
Northcraft, Elizabeth.....	Olalla, Oregon
Northcraft, Lettie.....	Olalla, Oregon
Oakley, June.....	Seattle
Oakley, Mary.....	Seattle
Oliphant, John Christian.....	Seattle
Olson, Gustaf A.....	Seattle
Osterud, Hjalmar L.....	Seattle
Palmer, Jane.....	Spokane
Parr, Mrytle L.....	Seattle
Pederson, Olga.....	Port Madison
Pence, Ada O.....	Bellingham
Perley, Mary Elizabeth.....	Fargo, N. Dak.
Peterson, Roxy M.....	Dunlap, Iowa
Phillips, Joseph Renton.....	Seattle
Pinkerton, Roy David.....	Tacoma
Pinkham, Star Thomas.....	Seattle
Platt, Naomi Edna.....	Centralia
Priest, Jessie N.....	Park City, Utah
Prosser, William.....	Renton

Pugsley, Harriot M.....	Seattle
Randall, Bertha A.....	Hermiston, Ore.
Redenbaugh, William A.....	Seattle
Reed, David C.....	North Yakima
Regan, Mary F.....	Seattle
Revenaugh, Carl M.....	Issaquah
Richardson, William Francis.....	Seattle
Reith, Zita M.....	Kent
Rigg, George Benton.....	Seattle
Roberts, Nellie Louise.....	Port Angeles
Robertson, Ralph A.....	Juneau, Alaska
Robinson, Ephriam T.....	Seattle
Robinson, Leigh E.....	Palouse
Rohrabacher, L. Elena.....	Seattle
Ross, Helen.....	Seattle
Rothgeb, Edna.....	Addison, Ohio
Rudberg, Lavina C.....	Quincy
St. Onge, Arthur J.....	Seattle
Sallberg, Millicent C.....	Quincy
Samson, Helen J.....	Spokane
Sawyer, Irene Maude.....	Seattle
Scholes, Stella.....	Tacoma
Schroeder, Edna A.....	Deer Lodge, Montana
Scott, Myrtle I.....	Connell
Shaffer, Leila Frances.....	Tacoma
Shave, Ethel.....	Seattle
Shepard, Anna Lucile.....	Iowa City, Iowa
Sheriff, Bernice.....	Seattle
Seigel, Harry.....	Seattle
Seigler, Lillian A.....	Seattle
Simmons, Elma.....	Seattle
Simmons, Mary.....	Seattle
Simpson, Mabel Riley.....	Tacoma
Smith, Coral Anna.....	Sioux City, Iowa
Smith, Elsie Pearl.....	Seattle
Smith, Grace E.....	Moscow, Idaho
Smith, Percy Charles.....	Seattle
Smith, Sylvia S.....	Moscow, Idaho
Smythe, Phi.....	Bellingham
Sprague, Otto.....	Snohomish

Stahlhut, Vernie I.....	Sunnyside
Stanwood, Susan A.....	Iowa City, Iowa
Staup, Minnie G.....	Seattle
Steinke, Martin.....	Seattle
Stevens, Loleta.....	Ellensburg
Stoddard, Grace.....	Missoula, Montana
Strahberger, Mary L.....	Seattle
Streator, Gertrude Inez.....	Seattle
Strout, Rena Elizabeth.....	Tacoma
Sutherland, Catherine.....	Seattle
Sutherland, Esther H.....	Seattle
Swafford, Lila V.....	Salem, Oregon
Swedberg, Anna M.....	Seattle
Talbot, Nellie M.....	Seattle
Thompson, Ada May.....	Tacoma
Tillman, Helen C.....	Seattle
Tomlinson, Grace E.....	Kirkland
Townsend, Sophia E.....	Salem, Oregon
Tucker, Frank E.....	Burlington
Ullery, Ira Lee.....	Port Angeles
Verma, Behari Lall.....	Pasi, India
Victor, Elvera.....	Portland, Oregon
Ware, Elsie.....	Port Angeles
Waterbury, Mabel.....	Dayton, Iowa
Wagh, Eva Mary.....	Seattle
Way, Evelyn Dorothy.....	Seattle
White, Florence.....	Seattle
White, Kate M.....	Sedro-Woolley
Whitfield, George M.....	Aberdeen
Whitfield, Jay A.....	Vaughn
Whittier, Irma.....	Georgetown
Widmer, Margaret M.....	Seattle
Wilson, Florence Alden.....	Ellensburg
Wilson, Ida May.....	Spokane
Winchell, Vinnie Ream.....	Dunlap
Wold, Sylvia E.....	Tacoma
Woodnutt, Lloyd Hale.....	Seattle
Worcester, Eleanor S.....	Spokane
Wright, Mabelle.....	Chelan

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BY SCHOOLS

Graduate School.....	53
College of Liberal Arts.....	881
College of Engineering.....	318
Chemical Engineering.....	17
Civil Engineering.....	151
Electrical Engineering.....	114
Mechanical Engineering.....	36
School of Forestry.....	41
School of Law.....	162
School of Mines.....	85
School of Pharmacy.....	62
Foresters' Short Course (Three months' course).....	40
Miners' Short Course (Three months' course).....	15
Saturday Special Teachers' Courses.....	22
Total	1679

BY CLASSES

Graduate Students.....	53
Seniors	150
Juniors	230
Sophomores	365
Freshmen	575
Unclassified Liberal Arts. (Age requirement, over 19 years).....	96
Unclassified Engineering and Mining " ".....	40
Unclassified Forestry..... " ".....	8
Unclassified Pharmacy..... " ".....	22
Unclassified Law (Sophomore standing requisite for regular law classification).....	63
Short Course Foresters.....	40
Short Course Miners.....	15
Saturday Special Teachers'.....	22
Total	1679
Summer School of 1908.....	235
Total for the year.....	1914
Deduct Summer Students now attending University.....	68
Net total for the year.....	1846

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