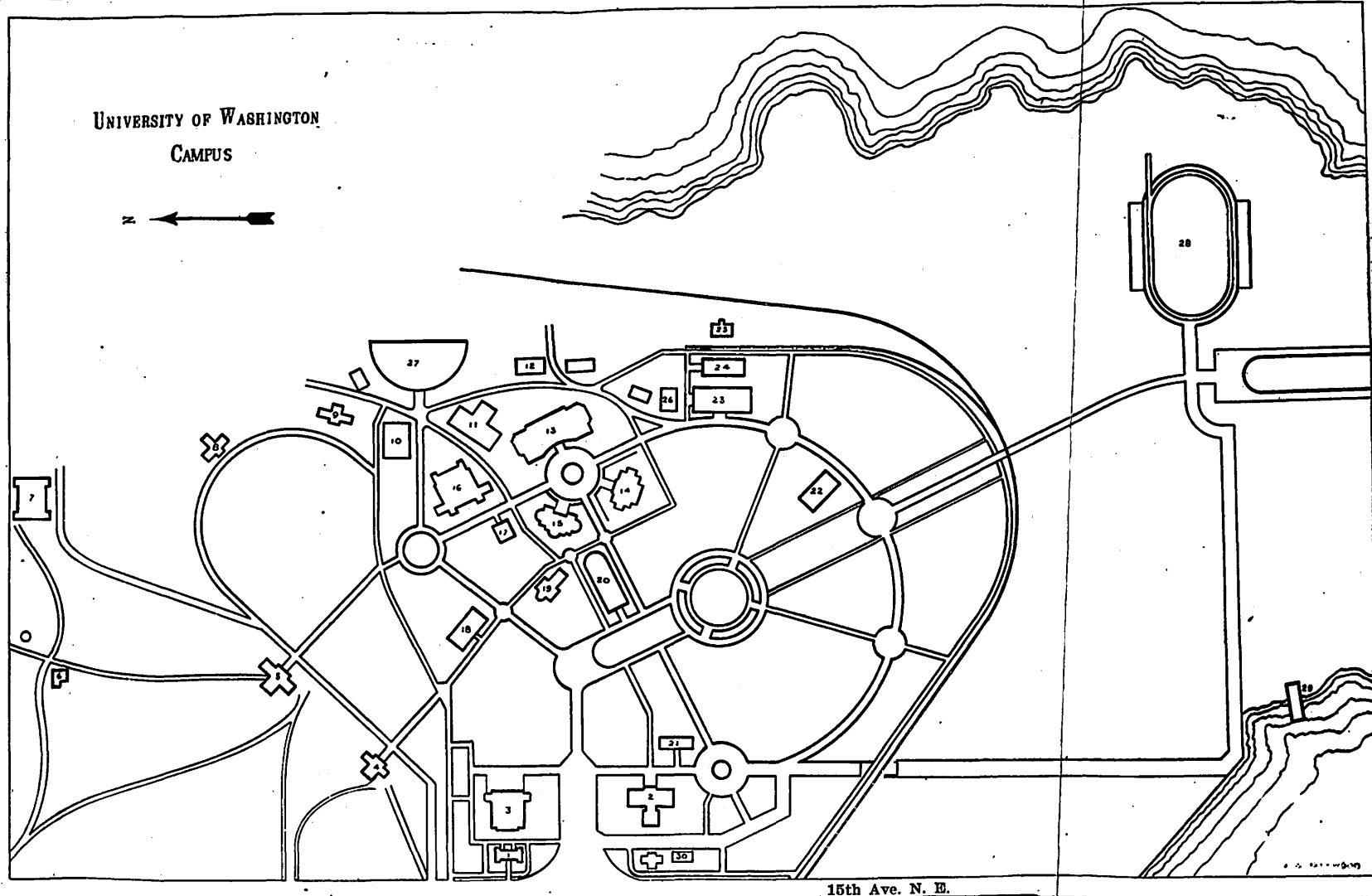


UNIVERSITY OF WASHINGTON
CAMPUS



15th Ave. N. E.

1, Administration; 2, Bagley hall; 3, Auditorium; 4, Science hall; 5, Denny hall; 6, Observatory; 7, Gymnasium; 8, Lewis hall (men's dormitory); 9, Clarke hall (women's dormitory); 10, Men's hall; 11, President's residence; 12, Faculty Men's club; 13, Forestry; 14, Law; 15, Library; 16, Museum; 17, Education; 18, Mine Rescue Station; 19, Mines; 20, Armory; 21, Women's hall; 22, Music Pavilion; 23, Engineering; 24, Shops; 25, Power house; 26, Good Roads; 27, Natural theater; 28, Stadium; 29, boathouse; 30, Music hall.

Scale: 600 feet to 1 inch.

CATALOGUE
For 1909--10 and
ANNOUNCEMENTS
For 1910--11

OF THE

UNIVERSITY OF WASHINGTON



SEATTLE

OLYMPIA, WASH.:
E. L. BOARDMAN, PUBLIC PRINTER
1910

CONTENTS

	<i>Page</i>
CALENDAR FOR 1909-10 AND 1910-11.....	6
BOARD OF REGENTS AND OFFICERS OF ADMINISTRATION.....	8
FACULTY AND OTHER OFFICERS.....	9
COMMITTEES OF THE FACULTY.....	33
GENERAL INFORMATION	35
Historical Sketch	35
Environs	37
Government	37
Endowments and Support.....	37
Bequests	38
Student Expenses	39
Board and Room.....	39
Laboratory Deposits	39
Dean of Women.....	42
Scholarships and Prizes.....	43
University Lectures	51
EQUIPMENT	53
Grounds	53
Buildings	53
Library	56
Museum	58
Laboratories	66
Observatory	81
ADMISSION AND GRADUATION.....	83
Preparation for Admission.....	85
Admission from Accredited Schools.....	94
Accredited Schools	95
Admission to Advanced Undergraduate Standing.....	95
Admission to Graduate Standing.....	96
Admission as Special Students.....	96
Degrees	98
ORGANIZATION OF THE UNIVERSITY.....	101
COLLEGE OF LIBERAL ARTS.....	102
Departments of Instruction.....	112
Astronomy	112
Botany	114
Chemistry	117
Education	123
English Language and Literature.....	127

COLLEGE OF LIBERAL ARTS—*Continued.*

Departments of Instruction—	Page
French	130
Geology	133
German	136
Greek	139
History	142
Home Economics	147
Italian	151
Journalism	151
Latin	155
Mathematics	158
Military Science and Tactics.....	163
Music	164
Oriental History and Literature.....	166
Philosophy	166
Physics	170
Physical Training	174
Political and Social Science.....	178
Rhetoric and Oratory.....	183
Scandinavian Languages	186
Spanish	187
Zoology	188
COLLEGE OF ENGINEERING.....	191
Departments of Instruction.....	207
Chemical Engineering	207
Civil Engineering	207
Electrical Engineering	212
Mechanical Engineering	215
SCHOOL OF FORESTRY.....	220
SCHOOL OF LAW.....	233
SCHOOL OF MINES.....	243
SCHOOL OF PHARMACY.....	261
GRADUATE SCHOOL	274
SUMMER SCHOOL	276
DIRECTORY OF OFFICERS.....	278
DEGREES GRANTED IN 1909.....	286
SCHOLARSHIPS AND PRIZES AWARDED FOR 1910.....	291
REGISTER OF STUDENTS.....	293

UNIVERSITY CALENDAR

1909-1910

Junior day.....	May 6
Campus day.....	May 14
Campus holiday.....	May 16
Decoration day, holiday.....	May 30
Semester examinations close.....	June 10
Baccalaureate Sunday	June 12
President's reception	June 13
Alumni day	June 14
Commencement	June 15

SUMMER SESSION

Registration day.....	June 20
Recitations begin.....	June 21
Session closes.....	July 29

1910-1911

FIRST SEMESTER

Examination for admission.....	Monday, Tuesday, Sept. 19, 20
Registration days.....	Monday, Tuesday, Sept. 19, 20
Recitations begin	Wednesday, Sept. 21
Thanksgiving vacation.....	Nov. 23, 12 m., to Nov. 28, 8:00 a. m.
Christmas vacation.....	Dec. 21, 6 p. m., to Jan. 3, 8:00 a. m.
First semester closes.....	Feb. 3

SECOND SEMESTER

Registration day, entering students.....	Feb. 6
Reregistration days.....	Feb. 7, 8
Recitations begin.....	Feb. 9
Washington's birthday holiday.....	Feb. 22
Campus day.....	Apr. 28
Junior day.....	May 12
Decoration day holiday.....	May 30
Semester examinations close.....	June 9
Baccalaureate Sunday.....	June 11
President's reception.....	June 12
Alumni day.....	June 13
Commencement	June 14

THE BOARD OF REGENTS

HON. F. A. HAZELTINE.....	South Bend
Term Expires, 1911.	
HON. A. L. ROGERS.....	Waterville
Term Expires, 1910.	
HON. A. F. MCEWAN.....	Seattle
Term Expires, 1911.	
HON. JOHN C. HIGGINS.....	Seattle
Term Expires, 1914.	
HON. HOWARD G. COSGROVE.....	Seattle
Term Expires, 1915.	
JOHN A. REA.....	Tacoma
Term Expires, 1916.	

WILLIAM MARKHAM, Secretary of the Board.

OFFICERS OF ADMINISTRATION

<i>President</i>	THOMAS FRANKLIN KANE
Administration Building.	
<i>Dean of the College of Liberal Arts</i>	ARTHUR RAGAN PRIEST
Denny Hall.	
<i>Dean of the College of Engineering</i>	ALMON HOMER FULLER
Engineering Building.	
<i>Dean of the School of Mines</i>	MILNOR ROBERTS
Mines Building.	
<i>Dean of the School of Pharmacy</i>	CHARLES WILLIS JOHNSON
Bagley Hall.	
<i>Dean of the School of Law</i>	JOHN THOMAS CONDON
Law Building.	
<i>Dean of the School of Forestry</i>	FRANCIS GARNER MILLER
Forestry Building.	
<i>Dean of Graduate School</i>	J. ALLEN SMITH
Denny Hall.	
<i>Dean of Women</i>	ISABELLA AUSTIN
Denny Hall.	
<i>Registrar and Secretary of the Faculty</i> ..	HERBERT THOMAS CONDON
Administration Building.	
<i>Librarian</i>	WILLIAM ELMER HENBY
Library Building.	

												SEPTEMBER S. M. T. W. Th. F. S. <div>1 2 3</div> 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30																							
OCTOBER S. M. T. W. Th. F. S. <div>1</div> 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31												NOVEMBER S. M. T. W. Th. F. S. <div>1 2 3 4 5</div> 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30												DECEMBER 1910 S. M. T. W. Th. F. S. <div>1 2 3</div> 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31											
JANUARY 1911 S. M. T. W. Th. F. S. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31												FEBRUARY S. M. T. W. Th. F. S. <div>1 2 3 4</div> 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28												MARCH S. M. T. W. Th. F. S. <div>1 2 3 4</div> 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31											
APRIL S. M. T. W. Th. F. S. <div>1</div> 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30												MAY S. M. T. W. Th. F. S. <div>1 2 3 4 5 6</div> 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31												JUNE S. M. T. W. Th. F. S. <div>1 2 3</div> 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30											

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, 1888-88; 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, and Dean of the Graduate School.*

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

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

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-.

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; University of Leipzig, 1907-08; Professor of Chemistry, Tarkio College, 1895-96; Instructor in Physics, Westminster College, 1896-97; Instructor in Chemistry, Maryland University, 1898-99; Instructor in Chemistry, University of Chicago, (Summer Session) 1902-1903-1904; Professor of Chemistry, University of Washington, 1899-.

* **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 Romance Languages, University of Washington, 1897-1903; Professor of Spanish, 1903-.

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-.

* Absent on leave in Japan, second semester.

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-.

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-.

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, Bangor (Maine) High School, 1893-99; Instructor in Greek and Latin, Worcester Academy, 1899-1901; Assistant Professor of Greek and Latin, University of Washington, 1901-02; Professor of Greek Language and Literature, 1902-.

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-.

*** 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-.

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-.

*Resigned December, 1909.

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

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

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

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

A. B., Williams College, 1892; Ph. D., Johns Hopkins University, 1899; Instructor in Modern Languages, Holbrook Military School (New York), 1892-93; Instructor in French and Greek, Oahu College (Honolulu), 1893-95; Student in Europe and Johns Hopkins University, 1895-99; Fellow in Romanic Languages, Johns Hopkins University, 1898-99; Instructor (1889-1900) and Assistant Professor (1900-03) of Romanic Languages, Leland Stanford, Jr., University; Professor of French, University of Washington, 1903-.

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

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

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

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

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

B. E. E., University of Minnesota, 1896; M. S., 1897; E. E., 1905; Scholar in Physics, University of Minnesota, 1895-1897; Graduate Student, University of Wisconsin, 1898-1900; Ph. D., 1900; Fellow in Physics, University of Wisconsin, 1899-1900; Professor of Physics 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, 1893; Practiced law, member firms of Chase & Lantz, Chase, Proudfit & Lantz, and Proudfit & Lantz, 1896-1905; Lecturer on Medical Law, Hering Medical College, Chicago, 1898-99; Admitted to Bar, United States Supreme Court, 1905; Professor of Law, University of Washington, 1905-.

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

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

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

B. S., 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; Lecturer on Education, Harvard Summer School, 1908; Professor of Pedagogy, University of Washington, 1906-.

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

B. S., University of Wisconsin, 1893; Ph. D., 1904; Graduate of the State Normal School, Milwaukee, Wis., 1889; Principal of High Schools, Montello, Wis., 1889-91; Green Bay, Wis., 1893-04; 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.*

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-.

SAMUEL CHRISTOPHER LANCASTER, *Director of Highway Engineering.*

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-; Director of Highway Engineering, University of Washington, 1907-.

DAVID CONNOLLY HALL, Sc. M., M. D., *Director of Physical Training.*

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

ELMER JAMES MCCAUSTLAND, C. E., M. C. E., *Professor of Municipal 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-; Professorial Lecturer on Oriental Philosophy and Literature, University of Washington, 1909-.

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

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

WILLIAM T. PATTEN, Captain 13th Infantry, U. S. A., *Professor of Military Science and Tactics.*

Graduate of the United States Military Academy, West Point, class of 1899; Graduate of the Infantry and Cavalry School, Fort Leavenworth, Kansas, class of 1905; Professor of Military Science and Tactics, University of Washington, 1909-.

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

LL. B., Kent Law School, Chicago, 1893; LL. B., Lake Forest University, College of Law, 1896; Student, Northwestern University, College of Law, 1891-2; Graduate Student, Lake Forest University, College of Law, 1895-6; Law Clerk with William Jay Manning, Esq., Chicago, 1892-7; Practiced Law as member of the firms of Manning & Cole, and Manning, Cole & Manning, Chamber of Commerce Building, Chicago, 1897-1906; Practiced individually, Borden Block, Chicago, 1906-9; Admitted to Bars, U. S. District and Circuit Courts, Chicago; Professor of Law, University of Washington, 1909-.

DAVID NYVALL, A. B., *Professor of the Scandinavian Languages.*

Graduate, Gålle College, 1882; Grade of Medico, Philosophical Candidate, Upsala, 1884; Student, Carolingian Medical Institute, Stockholm, 1885-1886; Instructor, Chicago Theological Seminary, 1888-1889; President of the Covenant School, in Minneapolis, 1891-1894; in Chicago, 1894-1895; President of Walden College, Kansas, 1905-1907; Lecturer and Editor, Walden Volunteer, Co-editor of Veckobladet, 1907-1909; Member of Swedish Historical Society.

IVAN W. GOODNER, LL. B., *Lecturer in Law.*

LL. B., University of Nebraska, Law School, 1897; Attorney-at-Law, Pierre, South Dakota, 1897-1908; Attorney-at-Law, Seattle, Wash., 1908-; Lecturer in Law, University of Washington, 1910-.

ASSOCIATE PROFESSORS

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. Condron, 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; Assistant Professor, 1904-06; Associate Professor, 1907-.

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, 1907-8; Associate Professor, 1908-.

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, 1904-9; Associate Professor, 1909-.

JAMES EDWARD GOULD, A. M., *Associate 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, 1907-9; Associate Professor, 1909-.

MAYNARD LEE DAGGY, PH. B., *Associate 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, 1904-09; Associate Professor, 1909-.

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

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

HUGO WINKENWERDER, M. F., *Associate Professor of Forestry.*

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

ASSISTANT PROFESSORS

THOMAS KAY SIDEY, PH. D., *Assistant Professor of Latin.*

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, 1903-.

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

A. B., University of Minnesota, 1909; 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.*

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-.

LOREN DOUGLAS MILLMAN, A. B., *Assistant Professor of Rhetoric.*

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.*

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.*

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.*

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-.

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-.

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-.

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

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-.

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

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

EDWARD MCMAHON, A. M., *Assistant Professor of American History.*

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

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

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

LOUIS WIN RAPEER, M. A., *Assistant Professor of Education.*

Normal Diploma, Indiana State Normal School, 1902; B. S., University of Chicago, 1904; M. A., University of Minnesota, 1907; Summer Study, Teachers' College, Columbia University; Teacher in Public Schools, 1897-1900; Principal of High School and Superintendent of Schools, 1903-5; Principal of Elementary School, Minneapolis, Minn., 1905-9; Instructor in Municipal Playgrounds, Minneapolis, Summer 1908; Instructor in School Administration, University of Minnesota, Summer 1909; Assistant Professor of Education, University of Washington, 1909-.

WILLIAM ALFRED MORRIS, PH. D., *Assistant Professor of 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, 1907-10; Assistant Professor, 1910-.

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

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.*

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.*

E. E., University of Minnesota, 1900; Teacher in Public Schools, Minnesota, 1898-96; 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-.

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-.

*** 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-.

SAMUEL THOMAS BEATTIE, *Instructor in Woodwork.*

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

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

E. M., Montana State School of Mines, 1905; Instructor in Surveying, Montana State School of Mines, Summer School, 1905; Mining Engineering and Metallurgical Practice, Sumpter, Oregon, 1905-06; on Geological Survey in Montana, 1906; U. S. Deputy Mineral Surveyor for Montana; Instructor in Surveying and Metallurgy, Montana State School of Mines, 1906-07; Instructor in Mining and Metallurgy, University of Washington, 1907-.

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

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

*Absent from February, 1909, to February, 1910, to act as Spanish interpreter for the Curtis Ethnological Expedition.

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, 1897-09; 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-.

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-.

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-.

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

A. B., Leland Stanford, Jr., University, 1903; A. M., 1905; Assistant in Romanic 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.*

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-.

ROBERT EVSTAFIEFF ROSE, PH. D., *Instructor in Chemistry.*

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

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

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

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

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.*

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-.

PAUL EMIL WEITHAASE, A. M., *Instructor in 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-.

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, Aug., 1908, to Jan., 1909; Instructor in Civil Engineering, University of Washington, Feb., 1909.

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-.

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-.

WALTER BELL WHITTLESEY, A. B., *Instructor in French.*

A. B., University of Washington, 1907; Graduate Assistant in French, University of Washington, 1907-9; Instructor, 1909-.

EDITH SIDONIE MICHELSON, A. B., *Instructor in Spanish.*

A. B., University of Washington, 1908; Graduate Assistant in French and Spanish, 1908-09; Instructor, 1909.

ALBERT HASKIN DEWEY, PH. G., B. S., *University of Washington, 1909, 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, 1908-09; Instructor in Materia Medica, University of Washington, 1909-.

JULIUS ADLER, B. S., (C. E.), *Instructor in Civil Engineering.*

B. S., (C. E.), University of Pennsylvania, 1908; Engineering work with U. S. Office of Public Roads, summer of 1908 and 1909; Instructor in Civil Engineering, University of Pennsylvania, 1908-09; Instructor in Civil Engineering, University of Washington, 1909-.

WILLIAM THOMAS ANDREWS, *Instructor in Forestry.*

Received High School and Normal School Training in Kansas; studied Law at Vancouver, Washington; engaged in Lumber Business in Oregon, 1888-1904; Lumberman, U. S. Forest Service, 1907; Instructor in Forestry, University of Washington, 1909-.

H. BURTIS BENNETT, PH. B., *Instructor in Economics.*

Ph. B., Cornell College, 1901; Graduate Student, Columbia University, School of Political Science, 1901-4; Student, University of Minnesota, Law School, 1904-5; Instructor in Economics, University of Washington, 1910-.

ALLEN FULLER CARPENTER, A. M., *Instructor in Mathematics.*

A. B., Hastings College, 1901; A. M., University of Nebraska, 1909; Instructor in Mathematics, Hastings College, 1901-4; Professor, 1904-09; Instructor in Mathematics, Intercollegiate Summer School, University of Nebraska, 1906-07; Instructor in Mathematics, University of Nebraska, 1908-09; Instructor in Mathematics, University of Washington, 1909-.

CURT JOHN DUCASSE, A. M., *Instructor in Philosophy and Psychology.*

A. B., University of Washington, 1908; A. M., 1909; Undergraduate Assistant in Philosophy, University of Washington, 1907-08; Graduate Assistant, 1908-09; Instructor in Philosophy and Psychology, 1909-.

ROBERT MAX GARRETT, PH. D., *Instructor in English.*

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

LAARS OLAF GRONDAHL, PH. D., *Instructor in Physics.*

B. S., St. Olaf College, 1904; M. S., 1905; Ph. D., Johns Hopkins University, 1908; Student, University of Chicago, Summer Sessions, 1903 and 1909; Instructor in Physics and Chemistry, St. Olaf College, 1904-05; Lecture Assistant in Physics, Johns Hopkins University, 1906-08; Professor of Physics and Mathematics, Spokane College, 1908-09; Instructor in Physics, University of Washington, 1909-.

GEORGE WILLIAM HAUSCHILD, A. B., *Instructor in German.*

A. B., North Western College (Wis.), 1900; Graduate Student, Columbia University, 1901-02; University of Leipzig, 1902-03; Harvard University, 1905-06; Fellow in German, University of Chicago, 1908-09; Professor of Modern Languages, Newberry College, S. C., 1906-07; Instructor in German, State University of Iowa, 1907-08; Instructor in German, The School of Education, University of Chicago, 1908-09; Instructor in German, University of Washington, 1909-.

JOHN C. HERBSMAN, A. B., LL. B., *Instructor in Rhetoric and Oratory.*

A. B., McKendree College, 1901; LL. B., University of Illinois, 1909; Principal of Schools, Summerfield, Ill., 1902-05; Student assistant in Rhetoric, University of Illinois, 1907-09; Instructor in Rhetoric and Oratory, University of Washington, 1909-.

SARAH MATILDA HUMMEL, A. B., *Instructor in charge of the Department of Home Economics.*

Graduate, Illinois State Normal University, 1901; A. B., University of Illinois, 1907; Teacher, Public School, Downs, Illinois, 1901-1903; Normal, Illinois, 1903-1905; Student, University of Illinois, 1905-1907; Instructor in Domestic Science, and Dean of Women, Pendleton Academy, Pendleton, Oregon, 1907-1908; Instructor in Domestic Science, High School, Seattle, Wash., 1908-1909; Instructor in Home Economics, University of Washington, 1909.

FRANK G. KANE, A. B., *Instructor in Journalism.*

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

EDGAR ALLAN LOEW, B. S., E. E., *Instructor in Electrical Engineering.*

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

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

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

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

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

RAYMOND BURNETTE PEASE, A. M., *Instructor in Rhetoric.*

B. A., University of Wisconsin, 1900; M. A., 1904; A. M., Harvard University, 1905; Graduate Student, University of Wisconsin, 1905-06; Teacher of English and Debating, High School, Eau Claire, Wisconsin, 1900-02; Principal High School, Durand, Wisconsin, 1902-04; Professor of English, University of Puget Sound, 1906-09; Instructor in Rhetoric, University of Washington, 1909-.

GEORGE BURTON RIGG, A. M., *Instructor in Botany.*

B. S., University of Iowa, 1896; B. D., 1899; A. M., University of Washington, 1909; Graduate Student, University of Chicago, summers of 1906, 1907; Teacher in High School, Rockwell City, Iowa, 1893-1895; Associate Principal, 1896-98; Teacher of Science, Woodbine Normal School, Woodbine, Iowa, 1898-1907; Teacher in Botany and Zoology, Lincoln High School, Seattle, 1907-09; Instructor in Botany, University of Washington, 1909-.

C. W. WESTER, B. S., *Instructor in Mathematics.*

B. S., University of California, 1908; Graduate Student, University of Oregon, 1908-09; Summer of 1909; Principal Central School, Eugene, Oregon, 1908-09; Instructor in Mathematics, University of Washington, 1909-.

LECTURERS

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

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

A. A. MILLER, B. S., *Lecturer and Consulting Engineer on Electric Railways.*

Electric Engineer, Westinghouse Electric & Manufacturing Co., Seattle, Washington.

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.

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

Dean of Women, University of Washington.

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-.

CARL HENNINGER, A. B., A. M., *Graduate Assistant 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.

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

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

HORACE H. LESTER, A. B., *Graduate Assistant.*

A. B., University of Minnesota, 1906; Science Instructor, Anacortes, Wash., 1906-08; Instructor in Science, Bellingham, Wash., 1908-09; Graduate Assistant in Physics, University of Washington, 1909-.

RAYMOND NIMS ASHMUN, A. B., *Graduate Assistant in Mathematics and Astronomy.*

A. B., University of Washington, 1909.

A. ROGER MERRILL, A. B., *Graduate Assistant in History.*

A. B., Harvard University, 1906; Harvard Law School, 1906-08; Attorney-at-Law, Bangor, Maine, 1908-09; Attorney-at-Law, Seattle, Washington, 1909-; Graduate Assistant in History, University of Washington, 1909-.

HOMER L. BOYD, A. B., *Graduate Assistant in History.*

A. B., University of Colorado, 1908; Graduate Student, University of California, 1908-09; Student of Law, University of Washington, 1909-10; Graduate Assistant in History, University of Washington, 1909-10.

CHARLES ALEXANDRE GUERARD, A. B., O. A., O. I., *Graduate Assistant in French.*

A. B., University of Paris, 1876; Student, 1879-80; Private Classical Coach to French College and Government Schools, 1880-1893; Instructor in English, St. Croix College, Paris, 1893-1903; Professor in the Evening Schools of the Polytechnic Association of Paris, 1880-1907; Graduate Assistant in French, University of Washington, 1909-.

JOHN JACOB WINTLER, PH. C., B. S., *Graduate Assistant in State Food and Drug Analysis.*

Ph. C., University of Washington, 1908; B. S., 1909; Graduate Assistant, 1909-.

LLOYD C. GOFF, A. B., *Laboratory Assistant in Journalism.*

HJALMER L. OSTERUD, A. B., *Graduate Assistant in Zoology.*

A. B., University of Washington, 1909.

UNDERGRADUATE ASSISTANTS

- GROVER C. ADAIR, *Assistant in Economics.*
CHARLES S. BROWN, *Assistant in Physics.*
M. S. BEECHEM, *Assistant in Mechanical Engineering (Mach. Shop).*
ALLAN CUNNINGHAM, *Assistant in Mining.*
WM. COOK, *Assistant in Physical Training.*
HERBERT JUDSON FLAGG, *Assistant in Surveying.*
EDWARD GOLDSMITH, *Assistant in Stock Room (Chemistry).*
JUANITA GNEECHI, *Assistant in Physical Training (Women).*
FRED KIRSTEN, *Assistant in Civil Engineering.*
ELLY LAWATSCHEK, *Assistant in German.*
BENJ. W. MITCHELL, *Assistant in Physiology.*
JOHN R. MONTGOMERY, *Assistant in Stock Room (Pharmacy).*
JOHN MERRITT MCGEE, *Assistant in Stock Room.*
ROY D. PINKERTON, *Assistant in Journalism.*
CARL D. POLLOCK, *Assistant in Surveying.*
GODFREY L. REUHLE, *Assistant in Chemistry.*
J. L. RANDLE, *Assistant in Pharmacy.*
ELMER SHERRILL, *Assistant in Stock Room (Chemistry).*
EDGAR A. STANTON, *Assistant in Economics.*
CHARLES H. WHEELON, *Assistant in Physiology.*
JOHN C. WINTLER, *Assistant in Pharmacy.*

MUSIC STAFF

- CHARLES OSCAR KIMBALL, *Director.*
FREDERICK FLEMING BEALE, *Teacher of Piano and Pipe Organ.*
LUCY K. COLE, *Teacher of Public School Music.*
MORITZ ROSEN, *Teacher of Violin.*
GRACE ZIMMERMAN, *Teacher of Piano.*
MORRIS CHERKOWSKY, *Assistant in Music (Band).*

LIBRARY STAFF

WILLIAM E. HENRY, A. M., *Librarian.*

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

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

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

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

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

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-.

FLORENCE WHITE, REX SCOTT ROUDEBUSH, CARRIE COWGILL, *Student Assistants.*

MUSEUM STAFF

FRANK STEVENS HALL, *Assistant Curator.*

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

ARTHUR P. WOLF, *Assistant in Museum.*

Student, University of Nebraska, 1907-08.

DEAN OF WOMEN

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

A. B., University of Minnesota, 1895; Graduate, State Normal School, Winona, Minnesota, 1897; Minneapolis Public Schools, 1897-99; Critic Teacher, State Normal School, Winona, Minnesota, 1899-1902, 1905-6; Graduate Scholar, Teachers College, Columbia University, 1902-03; Critic Teacher, Speyer School, Teachers College, Columbia University, 1903-05; Critic Teacher, Michigan State Normal College, 1907-08; Supervisor, Primary Grades, Tacoma Public Schools, 1908-9; Dean of Women, University of Washington, 1909-.

OFFICE STAFF

HERBERT THOMAS CONDON, *Registrar.*

ALBERT JACKSON COLLETT, *Assistant Registrar.*

WILLIAM MARKHAM, *Secretary Board of Regents.*

LILLIAN B. GETTY, *Secretary to the President.*

CLARA ELIZABETH HANNA, *Secretary to the Registrar.*

MAX HIPKOE, *Clerk in Business Office.*

PERCIE SIMMONS, *Telephone Assistant.*

BUILDINGS AND GROUNDS

FRANK H. LORD, *Curator of Buildings and Grounds.*

EVERETT O. EASTWOOD, M. E., *Consulting Engineer.*

GEORGE L. MOTTER, *Head Gardener.*

SANDY M. KANE, *Chief Engineer.*

JAMES S. KRAPE, *Carpenter.*

DAVID MCDANIEL, *Head Janitor.*

D. B. LILLY, *Night Watchman.*

OTHER OFFICERS

UNIVERSITY OF WASHINGTON STATION OF THE UNITED STATES
FOREST SERVICE.

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

CONRAD W. ZIMMERMAN, *Engineer in Timber Tests.*

CHEMISTS FOR WASHINGTON DAIRY AND FOOD DEPARTMENT.

CHARLES WILLIS JOHNSON, PH. C., PH. D., *State Food and Drug
Chemist.*

JOHN JACOB WINTLER, PH. C., B. S., *Assistant to State Food and
Drug Chemist.*

COMMITTEES OF THE FACULTY

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

APPOINTMENTS: Professors Sisson, Lull and major professors.

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

ATHLETICS: Professors Roberts, Haggett, Lantz, and Hall.

CATALOGUE: Librarian Henry, Professors Morris and Milliman.

DISCIPLINE: Professors Frein, Eastwood, and Gould.

GRADUATION: Professors Byers, Magnusson, and Lantz.

GRADUATE WORK: Professors Smith, Fuller, Frein, Moritz, and Stevens.

HOLIDAYS: Professors Johnson, Sidey, and Weinzirl.

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

LIBRARY: Professors Padelford, Frye, and Moritz.

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

PETITIONS: Professors Moritz, Benham, and More.

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: Professor Thomson, Deans Priest, Condon, Fuller, and Austin.

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 constructed, 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 twelve hundred and seventy. 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 8,000.

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 sup-

port 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	3,500,000 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 legis-

lature. 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.

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.

Since, in the judgment of the University, it is deemed advis-

able that men and women room in different houses and that women room only in houses which furnish a first floor reception room for the entertainment of men callers, all first-year women are required to communicate with the Dean of Women before securing rooms. 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 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, 13 and 14, and two dollars in course 15. 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.

HOME ECONOMICS.—A deposit of two and a half dollars each is required for courses 1 and 2; fifty cents for course 3; two dollars for course 6 and three dollars for course 9.

JOURNALISM.—A deposit of two dollars a semester will be required of all students taking the laboratory course in journalism.

METALLURGY.—In course 1 the deposit is fifteen dollars; in courses 2, 3, 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 authorities are 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 men 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 shows that twenty-three (23%) per cent. of the students enrolled in 1909-10 are entirely self-supporting, while thirty-two (32%) 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.

DEAN OF WOMEN

The Dean of Women is always ready to help or advise any woman student who may need such assistance. She will recommend boarding and lodging places, assist young women to find employment, as far as she is able, correspond with parents or guardians who desire to make inquiry concerning their daughters or wards, and take an interest in all the women's organizations.

SCHOLARSHIPS AND PRIZES

THE JOHN WALTER ACKERSON SCHOLARSHIP

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

ANONYMOUS

A friend of the University has provided a scholarship of one hundred and fifty dollars to be awarded annually to a student of the department of chemistry who is carrying regular college work. The person securing the scholarship is 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.

THE JUDGE ALFRED BATTLE PRIZE

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.

THE 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.

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.

THE E. F. BLAINE PRIZE

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

THE ALDEN J. BLETHEN PRIZES.

Hon. Alden J. Blethen offers annually the sum of one hundred dollars for prizes in declamation. The contests, two in number, 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.

THE JUDGE THOMAS BURKE PRIZES

A scholarship of sixty dollars has been provided through the generosity of Judge Thomas 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.

Judge Burke has also provided two annual prizes of \$30.00 each, for the departments of French and German, to be awarded to the major student in French or German, who at the end of the junior year has done the most satisfactory work in the department. Candidates must, at the time of the award, be carrying a full college course and shall not have spent more than three

years in college work. In the award of these prizes, account will also be taken of the character of work done in other departments.

THE VIVIAN W. CARKEEK PRIZE

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

THE L. J. CORKERY PRIZE

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

THE LORETTA DENNY FELLOWSHIP

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

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 is open only to seniors.

THE FUNK AND WAGNALLS PRIZE

The Funk & Wagnalls Company give annually a prize consisting of a copy of their Standard Dictionary for the best work in Freshman English.

THE JACOB FURTH PRIZE

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.

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THE THOMAS W. LOUGH MEDAL

Mr. Thomas W. Lough, graduate of the School of Pharmacy, class of 1900, offers annually a gold medal for the student doing the best work in the freshman class in pharmacy.

THE REMSBERG GIFT

Mr. and Mrs. Charles E. Remsberg have given \$1,250.00 to the University library for the purchase of Pacific Northwest history materials: \$250 for the year 1910 and \$100 for each of ten years beginning Jan. 1, 1911.

SEATTLE BAR ASSOCIATION

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 in order that he may devote himself to more intensive and more correlated study than the class-room system permits. His work must be in not less than two nor more than four allied subjects; and it must be correlated so that it will bear upon some common field.

THE JOHN L. WILSON PRIZES

Mr. John L. Wilson offers annually two prizes consisting of \$75.00 and \$25.00 respectively for the best papers on problems pertaining to logged-off lands.

 ASSOCIATIONS AND CLUBS

ALUMNI ASSOCIATION

The officers of the Alumni Association for 1909-10 are as follows:

President.....	D. A. Ford, '94
Secretary.....	Caroline E. Horton, '99
Treasurer.....	James E. Gould, '96.

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 five thousand dollars. Besides the general manager, there is appointed a separate manager for a student book store. The book store handles all the text-books, stationery, and supplies at a reduction from the usual prices. The associated student fee of \$5.00 a year entitles the student to a subscription to the University of Washington Daily—the official student paper—free admission to all athletic, debating and oratorical contests given under the auspices of the A. S. U. W., the annual musical concert and to all the voting and other privileges of the association.

CHRISTIAN ASSOCIATIONS

The Young Men's and the Young Women's Christian Associations each have a branch organization among the students. They 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 CLUB

The Chemical Club consists of the advanced students and instructors in the department of chemistry as organized at the beginning of each year. The line of work to be followed during the year is outlined at the opening meeting. It usually consists of papers read and discussed by the members of the club involving the recent advances in chemistry as published in the periodicals. Frequently also visiting chemists are invited to address the club.

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 Sacajawea. The first two are for men, the last two for women. Membership in the clubs is limited in order that frequent practice may be afforded. 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, signing,

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.

FRENCH CLUB

Membership in the French Club is open to both students and instructors. The students are offered in this club an excellent opportunity to practice speaking French under conditions free from all class-room restraint, and to acquire a vocabulary of useful words not usually found in text-books.

During the current year one of the Labiche's comedies has been presented by the members of the club, and many others have been read and discussed. Meetings are held on the second and fourth Tuesdays of every month. Students who have studied French at least two years are invited to attend the meetings.

MATHEMATICAL CLUB

The Junior Mathematical Club meets on the second and fourth Wednesdays 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 five 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.

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 auditorium. 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 1909-1910:

- Oct. 10, 1909. Music by University orchestra.
Annual Address by President Kane.
- Nov. 3, 1909. Address by student leaders.
- Nov. 10, 1909. Address by Mr. Wright Lorimer, of "The Shepherd King" Company.
- Nov. 17, 1909. Violin recital: Herr Moritz Rosen and Master Leopold Rosen.
- Nov. 24, 1909. Annual football rally.
- Dec. 1, 1909. Address by Hon. John Z. White, of Chicago.
- Dec. 8, 1909. Music by University orchestra.
Address by Dr. L. P. Dyott, of Portland.
- Jan. 19, 1910. Music by University orchestra.
Address by Professor Edmond S. Meany.
- Jan. 26, 1910. Address by Miss Theora Carter, of New York.
- Feb. 1, 1910. Student Assembly: Awarding of the University "W" for athletic honors.
- Feb. 16, 1910. Annual Women's Assembly.
Address by Dean Isabella Austin.
- Feb. 23, 1910. Illustrated lecture, by Professor Trevor Kincaid.
- Mar. 2, 1910. Instrumental Quintette under the direction of Mr. Henry Hadley, Conductor of the Seattle Symphony Orchestra.
- Mar. 9, 1910. Address by Mr. E. F. Allen, Forester Western Protection and Conservation Association.
- March 21, 1910. Pres. W. L. Bryan of Indiana University.
- March 30, 1910. Librarian W. E. Henry.
- April 4, 1910. Baron Kikuchi.
- April 13, 1910. Rev. H. C. Mason.

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.

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

DENNY HALL

The Administration building, officially named Denny Hall, 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 recitation rooms it contains the administration offices.

SCIENCE HALL

Science hall is made of red pressed brick with sandstone trimmings. It is three stories in height, with additional space in basement and attic.

AUDITORIUM

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 doorways 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.

BAGLEY HALL

The Chemistry building, Bagley Hall, 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 capitals. Flanking the central motive on either side is a colonnade of pilasters of similar designs. The main cornice is highly ornamented with carved mouldings of rich, but classic character. The construction is of steel frame, concrete floors, and fire proof throughout; three stories high, and is fully furnished and equipped for the department of chemistry.

ENGINEERING BUILDING

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.

LIBRARY BUILDING

The Library building, erected by the Washington State Commission for reception purposes at the Alaska-Yukon-Pacific Exposition, was given to the University at the close of the exposition, and was assigned for library purposes. The building is a two-story structure of brick veneer with concrete foundation, occupying a site 158 by 105 feet, and cost originally \$75,000. The architecture is an American treatment of the modern French type, and both in general style and interior model lends itself most aptly to the purpose of the University library. The imposing reading room on the first floor affords desks for 250 readers, while the various seminars and department offices on the second floor fill a long-felt want at the University.

MINES BUILDING

The Mining building is a two-story pressed brick structure, formerly occupied by the University power plant and machine shops. The interior of the building has been almost completely remodeled, and now contains all of the machinery and apparatus, as well as the offices and lecture rooms of the School of Mines.

FORGE AND FOUNDRY BUILDINGS

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.

OBSERVATORY

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

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

FORESTRY BUILDING

The Forestry building of the Alaska-Yukon-Pacific Exposition reverted 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 upper floor will be suitably divided into laboratories, class-rooms, and offices for the School of Forestry. The forest museum will be installed on the first floor.

MUSEUM BUILDING

The museum is the handsome two-story building erected by the California State Fair Commission for the Alaska-Yukon-Pacific Exposition. The spacious building affords most attractive quarters for the constantly growing collection of museum specimens, which heretofore have been but poorly provided for in various scattered rooms and attics.

POWER PLANT

The power plant has been installed in the new brick building, which is adequately equipped to light and heat all of the buildings on the University campus. The equipment is as follows: Two 250-

horse power boilers; one 200 K. W. direct connected alternating current generator; one 100 K. W. direct connected alternating current generator.

LEWIS HALL AND CLARKE HALL

Lewis Hall, the dormitory for men, and Clarke Hall, the dormitory for women, are three-story brick buildings, each accommodating sixty students. The location of the buildings is such that they command a most inspiring view of the lake and mountains.

OTHER BUILDINGS

A number of buildings erected for exposition purposes during the Alaska-Yukon-Pacific Exposition have been presented to the University and are now occupied as follows: The Oregon State building is the home of the Law School; the Education building is the home of the departments of Education and Journalism; the Good Roads building is used for lectures and laboratories in the work of highway construction; The Philippine building is occupied by the Mines Rescue Training Station; the Oriental building is used as an armory for the cadet battalion; the New York State building for an executive residence; the Hoo Hoo house for a faculty club house; the Arctic Brotherhood building for the Men's Club; the Women's State building for the Women's Club; the Michigan Club building for a residence for the engineer. Several other smaller buildings will find appropriate uses.

LIBRARY

LOCATION

The University library is located in the building formerly known as the Washington State building, erected by the state for the A.-Y.-P. Exposition, and, while not designed for library purposes, it lends itself to such service better than many buildings constructed with that intention, having the chief characteristics of a good library building—adequately heated, lighted, ventilated and unobstructed space.

BOOKS

40,184 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 one 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.

GENERAL READING AND REFERENCE ROOM

On the main floor is the general reading and reference room, with seats for 244 readers at individual tables. Between and in the rear of the wings of this room are shelved thirty thousand volumes, including all the distinctive reference books and the more commonly used books of all classes, including practically all books used by undergraduate students. To this collection all students have unrestricted access.

PERIODICAL READING ROOM

In the corridors of the second floor are seats for sixty readers at tables upon which are more than 200 of the higher class popular and the more scholarly magazines, accessible to all who care to read.

SEMINAR ROOMS

Seminar rooms are provided for the departments of English, German, Greek, Latin, French, history and political science, all of which are supplied with small working collections of advanced works in their respective lines.

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, and such college holidays as the University authorities may request that it be closed. 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 114,836 volumes. This library is administered in the most modern 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.

MUSEUM

HISTORICAL SKETCH

It was several years after the founding of the University of Washington before any attempt was made toward securing any specimens for a museum at this institution. The first collection made was a small ethnological collection consisting of spears, arrows, stone implements, and other Indian material, which was brought together by Dr. A. J. Anderson, president of the University in the late 70's. In 1880, Dr. David Starr Jordan made the first collection of fishes of Puget sound and presented the University with several jars of some of the rarer species, which were added to the museum collection. In 1883 a society known as the Young Naturalists' Society, previously formed, was given permission by the Board of Regents of the University to erect a building on the University campus, and all material then in the possession of the museum was turned over to the society. Besides this a large collection of birds, eggs, shells, crustacea, etc., was

turned over to the society by Prof. O. B. Johnson, of the University, and the collections, added to what they already had, made quite a showing as a museum.

Later when the University moved out to its present location, several collections of ethnological, geological and zoological materials were secured from various sources and placed on exhibition in the Administration building. Prof. O. B. Johnson was appointed curator, which position he held until his retirement in 1897. At the end of the World's Columbian Exposition, held at Chicago in 1893, two carloads of additional material were secured and the museum collections were becoming of some importance. In 1899 the legislature of the State 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 specimens of a scientific or historical character and deposit them in this museum. This has had the tendency to bring many valuable specimens from different parts of the state, and also several loan collections. Very extensive collections were received from the Washington State commissions at the close of the Louisiana Purchase Exposition, held at St. Louis; the Lewis and Clarke Exposition, held at Portland, and of the Alaska-Yukon-Pacific Exposition, held at Seattle. Besides, the museum was very fortunate in receiving some very large exhibits made by the national government, county and other state commissions at the latter fair. In this way some rare and valuable exhibits of the mineral products, fisheries, fruits, grains, forest products, ethnological and educational material of the state and Alaska have been installed. In 1906 the entire collection of the Young Naturalists' Society, which up to that time had been in their quarters on the old University campus down town, was turned over to the University and made quite an addition to the already large collections possessed by the museum. Up to the present time the museum had no regular building to itself, or a regular curator since Prof. Johnson's retirement, and the museum specimens were exhibited in various halls and rooms of the Administration building and of Science Hall, which, owing to the rapid growth of the collection, had become very much crowded. At the end of the Alaska-Yukon-Pacific Exposition, which was held on a portion of the University campus, two buildings of the exposition, viz., the Forestry building and the California building, were designated as museum buildings, and

the former museum material, together with that secured from the exposition, has been moved into them. A curator has been secured, who has entire charge of the museum material, and who is arranging it for exhibition and for study purposes.

The museum proper is housed in what was known as the California building during the exposition. Its architectural style is that of the old Spanish mission. It is an imposing structure, with more than 26,000 square feet of exhibition space, besides space for storage and work rooms, offices and lecture room. The central part of the building is two stories high, with forty foot open gallery on four sides. The skylight is 80 by 80 feet and the building is admirably lighted for exhibition purposes. The mineral and geological exhibits will be on the first floor and the historical and ethnological collections on the second. Facilities will be offered to those wishing to use the museum collections for purposes of study.

The Forestry building, which is the home of the biological museum (which includes botany, zoology and forestry), is archaic Greek in style, 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 and nineteen feet. The entire lower floor will be used for the exhibition of museum specimens and also the side galleries of the second floor, the end of the galleries being reserved for the use of the School of Forestry as class rooms, laboratories, and offices. The Alaska panorama, a composite painting of Alaskan scenery, which was on exhibition in the Alaska building during the exposition, will be exhibited at the southwest corner of the building, and will be one of the most attractive features in the museum.

BOTANY AND FORESTRY COLLECTIONS

Most of the botanical and forestry material is housed in the Forestry building, and 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 of the plant species of the state and many from without the state. Besides there is on exhibition the loan collection known as the

A. S. Fisher collection, consisting of 125 types of Chehalis county flora, and which was on exhibition in the Chehalis county building during the Alaska-Yukon-Pacific Exposition; also the Caroline E. Williams collection of Alaska wild flowers, gathered 150 miles above the Arctic Circle, which attracted so much attention in the Alaska building during the recent exposition; (2) a collection of mosses, the largest in the Northwest; (3) an exhibit of the fruits and nuts from the horticultural sections of the state, which are exhibited in large glass jars, properly labeled and neatly arranged; (4) cabinets of grains and grasses on the straw from the agricultural districts of the state and of Alaska; (5) a comprehensive display of timber of various kinds, showing the logs just as they leave the forest, besides sections and cross-sections of big timbers. Various kinds of woods in a finished condition are also displayed, and there are many samples showing flooring, paneling, ceiling work and other uses to which wood is put in decorating the interior of residence and office buildings. There is also a display of tested timbers of all sizes, such as tested bridge stringers and wagon axles, end compression tests, cross-breaking tests, etc., of different western woods, which are of special value for use in the School of Forestry. Mention must be made of the very complete series of Philippine woods purchased at the end of the Lewis and Clarke Exposition.

GEOLOGY COLLECTION

The geological exhibit collection will be arranged on the main floor, and central portion of the museum building, occupying a space of about 6,400 square feet. The museum received from the Alaska-Yukon-Pacific Exposition the greater part of the exhibits of ores and minerals made in the Alaska and Mines buildings, making the mineral collection one of the largest in the West. The collections are as follows: (1) The large collection of Alaska ores and minerals will be arranged topographically to illustrate the resources of the different regions in Alaska; (2) the collection of minerals and ores from the Northwest, especially from the state of Washington, is very extensive and complete; (3) one of the most valuable individual collections is the mineral collection known as the John R. Baker collection, consisting of more than a thousand specimens from different parts of the world and mostly crystalline in form; (4) a very complete series of minerals, ores and geological specimens of Japan, which were received at the end of

the Alaska-Yukon-Pacific Exposition; (5) the museum possesses a very large economic collection of clay and clay products, like brick, tile, terra cotta, pottery, etc., building and ornamental stones and marbles, coal and coke, and other useful minerals and rocks, with their products; (6) a general collection of palaeontological specimens from the fossiliferous formation of the state, among which are a number of newly-described type specimens; (7) a college collection of palaeontology from the Ward Natural Science establishment, representing the characteristic invertebrate forms from the Palaeozoic and Mesozoic eras; (2) an extensive collection of maps, models and mounted photographs illustrative of the mining operations in Alaska.

The museum has a large collection of duplicate ores and minerals for exchange purposes, and would be glad to open up an exchange with other institutions having exchange material.

ETHNOLOGY COLLECTION

The entire gallery on the second floor of the museum building is given up to the historical and ethnological collections, the latter said to be one of the best and largest on the Pacific coast. It contains extensive collections pertaining to the history and ethnology of the Northwest; also collections from Alaska and the Philippine Islands. Constant additions are being made to the museum in the way of gifts and purchases, and the different expositions held at Chicago, St. Louis, Portland and Seattle have been particularly helpful to the museum, from which the following collections have been secured:

The entire collection of ethnological materials made by the state of Washington for the World's Columbian Exposition, 1893, was saved and placed in this museum.

The Stewart collection of more than 20,000 specimens was purchased at the end of the Lewis and Clarke Centennial Exposition in 1905, and is now installed in the museum. This collection consists of various Indian weapons, pestles, stone axes, baskets, and other implements illustrative of the life of the Indians along the lower Columbia river, and was accumulated by the late Dr. R. E. Stewart during his lifetime. The collection is of great historic value and affords a fine opportunity for study to the student interested in the ethnological history of the Northwest.

The Philippine collection was also purchased at the end of the Lewis and Clarke Centennial Exposition for the University, and

is of considerable 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. Most of the articles in this collection were collected among the Tagals, who have been in contact with Spanish civilization for several centuries, and are the progressive inhabitants of Luzon. They occupy the coast and fertile interior lands, many of their tools and utensils being represented by various fish traps, baskets, nets, knives for cutting grass, bolos, digging sticks, traps, winnowing and storage baskets, agricultural implements, etc.; also examples of weaving and rope manufacture, besides forestry specimens, leaf tobacco and grains.

The Emmons collection of ethnological material from South-eastern Alaska is undoubtedly one of the most valuable collections possessed by any museum from that portion of Alaska, and is all catalogued and scientifically arranged. It shows well the life of the Tlingit people before they had been influenced by their contact with the white man. Their skill in wood carving is very great, as is shown by examples of various dishes, platters, bowls, boxes and chests, decorated with carving in round or low relief, the designs being derived from the copious mythology of their tribes. Beautifully carved spoons from the horn of the Rocky mountain goat are inlaid with shells and show a skill hardly imaginable in an uncivilized people. The ceremonial costumes are varied and consist of head-dress masks, neck and breast ornaments, skirt and breast ornaments, blankets, rattles and ceremonial batons. Their domestic life is represented by articles of the household, men's and women's working tools, and hunting and fishing implements. Some of the finest examples of basketry in North America are found in this collection. The forms are varied and the patterns are derived from natural objects. This collection consists of about 1,800 specimens, and was secured for the museum at the end of the Alaska-Yukon-Pacific Exposition, where it was on exhibition in the Alaska building.

The museum received as a loan from the United States government the collection of over 200 bronze medals, duplicates of those given by Congress for acts of heroism and valor. These medals were exhibited by the treasury department at the Alaska-Yukon-Pacific Exposition. Besides, a collection of photographs illustrative of life at West Point military academy, which was

exhibited by the war department, also came to the museum at the end of the exposition. These collections will be placed in the historical department, which is already represented by a great many relics of historical interest from the Northwest, and of Alaska.

ZOOLOGY COLLECTION

The zoological specimens will be on exhibition in the Forestry building, and when this collection is classified and arranged, it will afford an excellent opportunity for the study of the fauna of the state. The nucleus of many other 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 Museum of Natural History 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. The latter collection contains specimens from all over the world, and includes a nearly complete series of mollusca indigenous of the Puget sound region. There have also been received the valuable and varied collections of the Young Naturalists' Society, of Seattle. This contains, besides a fine series of shells, invertebrates and fishes, the large orinthological collection of Prof. O. B. Johnson. The birds of the collection have been identified by Miss Adelaide G. Pollock. The series has been greatly extended through the generosity of Dr. Clinton C. Cook, who has loaned a fine collection of Passerine forms to the museum.

A fine collection of mounted birds and mammals from Kitsap county, Washington, which was on exhibition in the Forestry building during the exposition, was donated to the museum and forms a very important part of the exhibit series. Additional specimens from the same county will be added from time to time to fill out the series.

At the end of the Lewis and Clarke Centennial Exposition, a very large number of mollusca and fishes were turned over to the museum by the state commission; also a fine series of Alaska fishes, which were on exhibition in the Alaska building during the Alaska-Yukon-Pacific Exposition. The number of classified specimens is being constantly enlarged, and the museum has received extensive collections from the Bermuda Islands and the Atlantic coast through the efforts of Prof. Trevor Kincaid of

the University. Large collections are being received from the marine station at Friday Harbor on Puget sound, and the museum will not only possess a fine exhibit series, but will also have duplicate material for study and exchange purposes.

EDUCATION COLLECTION

Large portions of the educational exhibits on exhibition in the Educational and California buildings, and all of the Alaska and Japanese exhibits were turned over to the museum at the end of the the Alaska-Yukon-Pacific Exposition. These exhibits consist of over 6,000 specimens of the work done in the kindergarten and primary grades and the grammar and high school. It is planned that the museum shall offer special facilities to the school teachers of the state in showing some of the best examples of school work and what the latest methods in teaching have developed. Included in the specimens from Alaska are many examples of art and industrial work which will be especially valuable illustrations of these up-to-date methods, and are hard to excel anywhere. There are about forty cabinets of the work done by the various grades in all departments of school curriculum which will be on exhibition or easy of access to those especially interested along these lines. The museum was very fortunate in securing the industrial exhibit made by the Los Angeles Polytechnic School, which attracted so much attention in the California building during the exposition, and it may be considered as one of the best examples in industrial training for boys. There are also specimens of sewing and needlework done by pupils from the lower grades up through the high school.

Besides the above named material, there are extensive commercial exhibits, which will be of considerable interest to the public and will be used in class work of the University. The museum has an excellent lecture room, adapted for stereopticon lectures, and it is the plan of the museum management to arrange for a series of lectures, some time in the future, illustrative of the different collections of the museum.

The museum will be glad to receive, either as gifts or loans, such specimens or collections as may be of historical or scientific interest; and it will properly care for them. Communications regarding any phase of museum work should be addressed to F. S. Hall, Curator, State Museum, University of Washington, Seattle, Wash.

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 LABORATORIES

The botanical and bacteriological laboratories are on the third floor of Science Hall. They occupy about 5,000 feet of floor space divided as follows: Three offices; three large laboratories of about 1,200 square feet each, one for bacteriology, two for botany; three small laboratories of about 500 square feet each, one for small classes and advanced work, one for taxonomic and field work, one for a media-room for bacteriology; one dark room; one private laboratory; two locker rooms; one recitation room; a large lecture room on the second floor is used in common with zoology. An attic on the fourth floor is used as a store room. On the fourth floor are also the cases containing the herbarium.

The laboratories are fitted with the apparatus and conveniences usual for the work.

CHEMISTRY LABORATORIES

The new chemistry laboratory, Bagley Hall, is a three-story concrete and steel structure, fire proof, with concrete floors and exterior of pressed brick. It consists of a main building, 168x61 feet, with an annex 64x64 feet. The annex consists of two floors, one of which is occupied by a lecture room capable of seating 450 students. This room is equipped with a lecture table, hoods, exhibition cabinets and projective lantern and all the apparatus needed for a modern lecture course in experimental chemistry. The lower floor consists of an assaying and industrial laboratory, which will be equipped with hundredth-unit models of industrial plants. It will also contain a shop with work benches, wooden and steel lathes, etc. There is also a large lavatory furnished in marble throughout. A large well-lighted room is devoted to the departmental library, managed as a branch of the University general library.

The main portion of the building is provided with three lecture rooms on the third floor. One of these is so equipped that it may be used for a microscopic laboratory in connection with the lectures on materia medica and pharmacognosy. There are

also several offices for members of the teaching staff and six private laboratories. A series of three stock rooms, connected by elevators and internal stairways, occupy the center of the building. These stock rooms contain a large stock of the most modern apparatus and supplies needed for the work which is carried on. One of these rooms, immediately behind the main lecture room, is subdivided and thus furnishes a preparation room for the lecturer's demonstrations.

The laboratories for the students are twelve in number and are assigned as follows:

Three laboratories are devoted to general chemistry; each is designed to accommodate 72 students working at one time and is so constructed that twice that number can be accommodated in sections. These laboratories are supplemented by two large weighing rooms, equipped with good balances. One laboratory is devoted to the purpose of the department of domestic science; one laboratory, capable of accommodating at a single time 66 students, is assigned to the work in qualitative analysis; a similar laboratory is assigned to the work in physiological chemistry; a small laboratory with convenient supplementary equipment is devoted to the work of the examination of food and drugs for the state inspector; one large laboratory with a convenient and beautifully lighted weighing room is devoted to the work of quantitative analysis; one large laboratory is also devoted to the work in industrial chemistry, and in connection with this laboratory a room for permanent apparatus is provided. The laboratory assigned to physical and electro chemistry is at present divided into two portions, one portion of which is used by the U. S. government for water analysis in connection with the state survey. The work in pharmacy is cared for by means of a large laboratory for pharmacy and a prescription room equipped with all the apparatus ordinarily to be found in the most up-to-date drug establishments. Besides these main laboratories, a large dark room is provided for the work of photo-chemistry.

All of the laboratories throughout the building are equipped with hoods, with forced drafts, water, gas, distilled water, air under pressure and where most needed with hydrogen sulphide and steam. All the hoods, floors and sinks are made of Alberene stone; all table tops and shelvings are made of fir, finished with aniline black acid proof paint. All of the plumbing in the building is exposed and is painted with acid proof paint.

UNIVERSITY OF WASHINGTON
ENGINEERING LABORATORIES

CIVIL ENGINEERING

HYDRAULIC. 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 and 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. Steam gaugings 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, different gauges, test pressure gauges, mercury pressure gauge, hook gauge, 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, an impact testing machine, designed by the United States Forest Service, and constructed in the University shops. 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. Power saws and a planer are available for preparing timber specimens.

CEMENT. The equipment for testing hydraulic cement is complete for all the ordinary tests as specified by the American So-

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

ROAD. The road laboratory is equipped for testing materials used in the construction of roads. The machines for the abrasion and toughness tests are of the standard designs adopted by the American Society for testing materials; other machines are similar to those used by the office of public roads, of the U. S. department of agriculture, and all tests for determining the value of road materials are conducted as specified by that office.

SURVEYING. The equipment consists of one theodolite, with horizontal circle reading to ten seconds; thirteen engineer's transits; seven levels; and four plane tables together with the necessary compasses, sextants, pocket transits, aneroid barometers, hand levels, chains, rods, etc., for all ordinary plane and topographic surveying.

ELECTRICAL ENGINEERING

The laboratories and lecture rooms are in the south half of the Engineering building, and the equipment may be outlined as follows:

The dynamo laboratory is on the first floor and has a floor space of eighty by one hundred and ten feet. Twenty-six direct current and fourteen alternating current generators and motors are distributed over this room, and wired so as to be readily used for experimental purposes. The machines are of modern design and represent the Westinghouse, General Electric, Bullock, Fort Wayne, and Western Electric manufacture.

The direct current dynamos are wound for one hundred and ten and five hundred volts and of sizes from one to seventy-five kilowatts, with a total rated capacity of two hundred and ninety-five kilowatts. The alternating current machines are single phase, two phase, and three phase, at one hundred and ten and eleven hundred volts, from two up to sixty kilowatts, with a total rated capacity of two hundred and two kilowatts. This includes single phase, two phase, and three phase generators, induction motors with squirrel cage and wound motors, rotary converter, syn-

chronous and repulsion motors. Most of the machines are of five kilowatts capacity, as this size has been found suitable for experimental purposes.

The laboratory is wired so as to separate the dynamos into ten groups, each having a separate switchboard and shaft. These switchboards are so wired that ten pairs of students can work on separate experiments without interfering with each other. A distributing switchboard of twelve panels supplies current to the several section boards. The direct current is distributed at one hundred and ten and five hundred volts, and the alternating, three phase, at ninety, one hundred, one hundred and twenty, one hundred and fifty, two hundred and twenty, two hundred and forty volts. Single phase, from separate generator, is available at one hundred and ten and eleven hundred volts. A storage battery switchboard is also in this room, and receives current from one hundred and thirty storage cells located in the basement. The cells have a normal discharge rating of fifteen amperes for eight hours. By means of knife switches the cells can be arranged in any combination from series to parallel, and by plug connections sent to any section board in the laboratory.

On the first floor are also located five smaller rooms, each about twenty-five by thirty feet, that open directly into the dynamo laboratory. These rooms are used for: (a) instrument making and repairing, (b) grinding room and shop, (c) instrument and stock room, (d) telephone laboratory, (e) electrolysis and special thesis problems.

Besides the storage battery there is a store room and three separate dark rooms for laboratory work in photometry in the basement. A Mathew's photometer is in one of these rooms, and in the other two bench photometers will be placed for work on incandescent and arc lamps.

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 switchboard voltmeters; eight switch-board ammeters; eight integrating wattmeters; four Bristol recording volt and ammeters.

The power house is used as a commercial laboratory both for operating and testing purposes, and contains the following electrical equipment: (a) a Westinghouse, two-hundred kilowatt, twenty-three-hundred volt, sixty cycle, alternator, direct connected to a reciprocating engine; (b) a Westinghouse, one hundred-kilowatt, twenty-three-hundred volt, sixty cycle, alternator, direct connected to a reciprocating engine; (c) a marble switch-board with modern instruments and appliances.

MECHANICAL ENGINEERING

The mechanical engineering laboratory is conveniently located on the first floor of the Engineering building, adjoining the civil and electrical laboratories. There are available for indicating and testing one two-hundred-and-sixty horse-power engine, and one one-hundred-and-sixty horse-power engine. For experimental purposes there is a thirty horse-power engine, a one-hundred horse-power engine, a one-hundred-and-ten horse-power engine, of the simple type; a one-hundred horse-power cross-compound engine and a thirty-five horse-power Corliss engine, all of 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 two-stage air compressor, a three-inch centrifugal pump, a surface condenser and jet 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 two tubulous 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 a locomotive and train air brake outfit, belt testing and oil testing machines, dynamometers, and fuel calorimeters for solid, liquid, and gaseous fuels.

A suction gas producer plant affords opportunity for testing gas producing fuels.

The basement below the first floor provides 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, sharper, 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, a brass melting furnace, core oven, moulding machines, riddles, shakers, clinder mill, rattler, gas furnace and a traveling crane.

The new shop building furnishes adequate quarters for the wood shop, machine shop, forge shop, and foundry.

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

Fourteen wood-working lathes have been added to an equal number now in the wood shop. Eight new engine lathes have been added to the machine shop equipment. The forge shop is supplied with nineteen down draft forges of the latest design, and one blacksmiths' forge.

LIBRARY

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.

FORESTRY LABORATORIES.

The general laboratories in forestry occupy a floor space 36 by 52 feet. The room is supplied with gas and water and is well lighted by ten windows and two large skylights. The north half of the room is provided with spacious laboratory tables, which will accommodate forty-six persons for work in dendrology and wood technology; the south half, which occupies the space directly under the skylights, has been equipped with 16 standard draughting tables for work in mensuration and surveying.

The equipment for undergraduate work in dendrology and wood technology includes Bausch and Lomb compound microscopes, each equipped with two objectives and two eye-pieces; one Leitz stand equipped for work in oil emersion; one Leitz microtome for wood sectioning; section cutters, dissecting instruments, and a complete equipment of glassware, chemicals, a drying oven, a water-bath and other paraphernalia for carrying out the technical work of the laboratory.

An additional laboratory for advanced students and for research work in wood technology and the utilization of minor forest products is in preparation. It will probably be ready this fall.

As yet a special field laboratory for work in mensuration has not been provided, because the camps about Seattle which can be reached from the University in from one to two hours have afforded very ample opportunity for practice in all the phases of the subject. The equipment for field work includes six Barlow's cruising compasses, 18 Scribner's log scales, 6 scale rules illustrating other makes, 1 K. & E. pocket barograph, 6 hypsometers and clinometers each illustrative of a special form of construction, and calipers, steam analysis rules, angle mirrors, axes, etc., in quantities to meet all the present requirements of the school.

For the work in lumbering, wood preservation, and the manufacture and utilization of forest products, Seattle and the outlying districts offer most excellent opportunities for object lessons and study. Several large sawmills of modern equipment are located within the University district; also tanneries, charcoal burners, wood-pulp and excelsior mills, wood distillation plants, two of the largest wood-preserving plants in the country, and many other industries utilizing minor forest products are within easy reach of the University.

A plant for the preservation treatment of timber by the open

tank process will be installed during the summer as a part of the regular laboratory equipment of the school.

GEOLOGY LABORATORIES

The geology laboratories, six in number, are in Science hall, four on the first floor, and two occupying the well-lighted basement rooms at the southwest end of the building.

The largest room, fifty by sixty feet, formerly the geological museum, has been fitted up as a laboratory for general geology, physiography and meteorology. It is supplied at present with eight large tables, at which forty-eight students can work at one time. The laboratory is equipped with working collections of minerals and rocks for each table; forty sets of eighty-five topographic maps for physiographic studies; several complete sets of the United States Geological Survey folios and duplicate sets (thirty of each) of a number of the folios for individual study of structural geology. It is also well provided with relief maps, photographs and lantern slides, illustrating the geology and geography of different parts of the United States, and especially of Washington.

A seismograph has been installed in the laboratory for assistance in the study of earthquake phenomena. It is one of the Bosch-Omori type, and is very sensitive, recording distant earthquakes of small intensity.

For the study of meteorology, the department is equipped with the usual weather bureau instruments, barograph, mercurial and aneroid barometers, thermograph, maximum and minimum thermometers, anemometer and tipping-bucket rain-gauge with self-recording apparatus, situated in the laboratory; also numerous charts and maps necessary for the work. Daily records are kept for comparison with other stations.

One of the basement rooms is to be used as a laboratory for map modeling and erosion work in connection with the courses in physiography and general geology. The other room is fitted with lathes, diamond saw, and grinding plates run by electric motor for preparation of rock slides for petrographic study. The room is supplied with a tile-top table, fitted with gas, for mounting slides.

The petrographical laboratory is on the main floor, adjoining the mineralogy laboratory. It is supplied with a working collection, consisting of a large variety of rock specimens and sets of

thin sections of numerous rocks for microscopic examination. There are four petrographical microscopes, with all accessories. Leading from this laboratory is a large dark room well arranged for photographic work.

The mineralogy laboratory, 38 by 45 feet, is situated in the east wing on the first floor of Science Hall. It has been especially designed for mineralogy, and is supplied with eight tables made with tile tops and provided with gas fixtures. These tables accommodate sixty-four students at one time. There are several cabinets filled with collections of minerals for descriptive and determinative work, collections of natural crystals and wood models.

The palaeontology collections are situated in the mineralogy laboratory, and consists of a general palaeontological collection, both of animals and plants from the fossiliferous formation of the state, and the college collection of palaeontology from the Ward Natural Science Establishment, representing all the characteristic invertebrate forms from the Palaeozoic, Mesozoic, and Coenozoic eras.

The other laboratory, adjoining the mineralogy laboratory, formerly used for physiography, is used for the Washington Geological Survey and research library and laboratory. The government reports and geological magazines are kept here, where they can be easily referred to by the students in connection with their other laboratory work.

The department lecture room is on the first floor of Science Hall; has a seating capacity of one hundred and is equipped with models, maps, photographs, and lantern slides, with a lantern and screen for use in class work.

PHARMACY AND MATERIA MEDICA LABORATORIES

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

rooms in other parts of the building. Students in pharmacy, botany, physiology and bacteriology have well equipped laboratories in Science Hall.

PHYSICS LABORATORIES

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

The laboratories are supplied with apparatus from the best American and European makers. Among the more important pieces of apparatus may be mentioned: (1) standard balances, cathemometer, a mercury air pump and a large Gery air pump, and a Geneva Society straight-line dividing engine, with microscopes, so it may be used as a comparator; (2) standard and electrically driven forks, Helmholtz resonators and a double siren, wave motion models and Reed's Lissajous figure apparatus; (3) Boy's radio-micrometer, Dulong and Petit's absolute coefficient of expansion apparatus, Berthelot's heat of vaporization, a Waterman calorimeter and a Callendar Mechanical Equivalent of heat machine; (4) a spectro-goniometer, six spectroscopes, a triple field polarimeter, a Kohlrausch refractometer, a Fresnel's optical bench complete, Rowland plane and concave gratings, a Teiss auto-collimating spectrometer, an Abbe refractometer, and an Abbe-Pulfrich interferometer; (5) Kelvin composite balance, a Leeds and Northrup potentiometer, Wolff standard resistances, Weston voltmeters and ammeter, Kohlrausch bridge, standard condensers, standard inductances, a storage battery of 65 cells and one of 300 cells for voltage work; (6) Lummer-Brodhun photometer with standard carbon and tungsten lamps.

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*, *Widemann's Annalen* and *Beiblätter*, *Journal de Physique*, *Nature*, *Science*.

BUREAU OF TESTING

The bureau is equipping itself as rapidly as possible to meet the demand for a bureau where scientific instruments may be accurately calibrated and tested. The standards of the bureau will

be calibrated by our National Bureau of Standards at Washington, D. C.

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

PSYCHOLOGY LABORATORY

The psychology 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 LABORATORIES

The 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, class rooms, collections, metallurgical laboratories, mining and ore-dressing equipment of the department of mining and metallurgy are located in this building. 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 mining and ore-dressing machinery occupies the rear wing of the building. Ores are stored in the basement, which is occupied also by the sump tanks. Lots of ores to be used in mill tests are elevated by an Otis elevator to bins in a tower 60 feet in height. Below the bins are a grizzly, jaw-breaker, Taylor wall feeder, Cornish sampling rolls, samplers, trommels and shaking screens. Milling ore is fed to a Challenge feeder, leading to an Allis-Chalmers three-stamp battery. The pulp may be passed over amalgamated plates of both plain and silvered copper, through an Everett placer gold saver or through a Pierce amalgamator, thence through mercury traps. A single Harz jig with three compartments, and a Richards pulsating jig with four compartments follow the trommel.

The set of classifiers consists of a Richards pulsating classifier, Richards vortex classifier, tubular classifiers, and Browne hydro-metric sizer. Unwatering devices also are provided. The concentrators in use are a Frue vanner, Wilfley, New Standard, revolving slime table, Wilfley slimer and Overstrom table.

When making test runs, Richard-Locke automatic feeders are used to furnish a constant stream of ore to any desired piece of apparatus. Cement-making materials, road materials, paving blocks, and various artificial products are tested in an Abbe tube mill and Trojan mills. The heavy machinery rests on concrete foundations. The shafting is in two groups, driven by separate motors. Three tanks standing at different levels 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, forge Jeffrey coal drill, Ingersoll-Sergeant A-35 air drill, Wood air drill, air compressor, receiver, piping, mine fan, pump, hydraulic motor, full-size Trenton Iron Co.'s wire rope tramway in working order, and various devices in use about a mine.

Numerous exhibits of sets of ores from various mining districts, handsome single specimens of building stones, rock salt, coals and ores, and exhibits of mining equipment were donated to the School of Mines by exhibitors at the Alaska-Yukon-Pacific

Exposition. Among these may be mentioned the large model of the Renton mine, presented by the Seattle Electric Co.; the American Spiral Pipe Works exhibit, the Alundum exhibit, and the full series of iron ores, maps and photographs presented by the Oliver Iron Mining Co.

METALLURGY

The metallurgical furnaces occupy the east side of the School of Mines building. Four double-muffle coal-fired furnaces of the usual smelter size, six pot furnaces, two gas muffles, several gasoline muffle and combustion furnaces, a kiln for clay and brick testing, a retorting furnace, a coke oven, and the usual tools and appliances.

The desks, balance rooms, private laboratories, stock room, sampling room, and cyanide plant are located in the main building. The balance room is equipped with a Keller button balance, sensitive to one two-hundredth of a milligram, a Heusser Bros. button balance of equal sensitiveness; Oertling, Ainsworth, and Becker button balances; two Thompson analytical balances; one Thompson button balance, sensitive to one two-hundredth of a milligram, and having multiple-rider attachment, and one Ainsworth No. 28 analytical balance. 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 1,200 to 2,000 degrees centigrade are measured by an optical pyrometer after Wanner, while ordinary muffle heats are taken by electric and other forms of pyrometer.

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 a large iron sampling floor are provided.

The second floor is reserved for class rooms, 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. Over four hundred stereopticon views of machinery, mines, plants, and mining districts are available for class room and special lectures. In

addition to the University library, the library of the School of Mines contains practically all of the standard texts and reference books, besides a large collection of trade catalogues carefully filed, and complete sets of the transactions of the American Institute of Mining Engineers, the proceedings of the Institution of Mining and Metallurgy, 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: Engineering and Mining Journal, Mining World, Mines and Minerals, Mining and Scientific Press, Northwest Mining Journal, Mining Exchange, Mining Science, Northwest Mining News, Mines and Methods, Salt Lake Mining Review, School of Mines Quarterly, and Western Chemist and Metallurgist.

UNITED STATES COAL MINE RESCUE TRAINING STATION

The United States Coal Mine Rescue Training Station, operated in connection with the School of Mines, occupies the building erected by the United States government at the A.-Y.-P. Exposition for the Philippine exhibit. This building was remodeled by the coal mine operators of Washington at a cost of \$2,000 to fit it for its present use. It measures 50 by 140 feet and is 30 feet high. The office of the local director representing the technological branch of the United States Geological Survey occupies the southwestern corner; next to this are the library and workshop. The "smokeroom," fitted with track and car, overcast airway, doghole, and smudge floors, is the largest of its kind in the country, measuring 25 by 50 feet. The miners' change room is fitted with shower baths and roomy lockers.

Several sets of the Draeger oxygen apparatus are kept on hand for practice as well as for use in mine rescue work.

ZOOLOGY LABORATORIES

The department of zoology, which occupies the greater portion of the second floor in Science Hall, includes four laboratories.

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

The laboratory for histology and embryology adjoins the above and is provided with an incubator, paraffine bath, microtomes, and the reagents required for carrying on work along these lines. A dark room connected with this laboratory offers facilities for making microphotographs and lantern slides.

The physiological laboratory is in the northern wing of Science hall, and is designed to accommodate students in both elementary and experimental physiology.

The entomological laboratory is arranged to contain the extensive collections of insects derived for the most part from the Pacific coast. Special facilities are offered for the study of the classification and biology of the insect fauna of the state.

The zoological laboratory is amply supplied with material 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.

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.

OBSERVATORY

The observatory is housed in a substantial sandstone structure, occupying the highest point on the University campus. It consists of a dome for the equatorial instruments, 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 eyepiece, a filar position micrometer, and a set of six eyepieces of magnifying power varying from fifty to five hundred diameters.

A Bamberg universal combined prismatic transit and zenith telescope of three-inch aperture is mounted in the transit room

together with a Riefler astronomical precision pendulum clock, type B.

For the laboratory work there is a Bond sidereal chronometer (No. 1024), one standard time clock, one sidereal clock, three sextants and artificial horizons, twelve 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.

In addition to the general library, the observatory receives all the publications of Harvard College observatory, the U. S. Naval observatory, the U. S. Coast and Geodetic Survey, and the Lowell observatory.

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 AND GRADUATION

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

Agriculture, 1 or $\frac{1}{2}$ unit.
Astronomy, $\frac{1}{2}$ unit.
†Bookkeeping, $\frac{1}{2}$ unit.
Botany, $\frac{1}{2}$ or 1 unit.
Chemistry, 1 unit.
†Commercial Arithmetic, $\frac{1}{2}$ unit.
†Commercial Law, $\frac{1}{2}$ unit.
Drawing, $\frac{1}{2}$ or 1 unit.
Economics, $\frac{1}{2}$ unit.
†Economic Geography, $\frac{1}{2}$ unit.
French, 1, 2 or 3 units.
*Geology, $\frac{1}{2}$ or 1 unit.
German, 1, 2, 3 or 4 units.
Greek, 1, 2, 3 or 4 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.
†Shopwork and Mechanical Drawing, not more than $2\frac{1}{2}$ units.
†Domestic Science and Drawing, not more than $2\frac{1}{2}$ units.

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

† The aggregate amount presented in the following subjects, viz: Bookkeeping, Commercial Arithmetic, Commercial Law, Economic Geography, Manual Arts, and Domestic Science, may not exceed 3 units.

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 subjects 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 for any of the other groups.

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

COLLEGE OF ENGINEERING AND SCHOOL OF MINES

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

NOTE. For the present, graduates from schools unable to offer chemistry, may present a unit of biology.

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.

PREPARATION FOR ADMISSION

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.

PREPARATION IN 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.

PREPARATION IN 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, Bergen's Essentials of Botany, Stevens' Introduction to Botany, Ferye and Riggs' Laboratory Exercises in Botany.

PREPARATION IN CHEMISTRY

One unit of chemistry for admission is equivalent to one year's work in the high school. This work must include laboratory work, and the student must offer satisfactory evidence of a reasonable amount of work done and approved personally by the instructor in the high school. The text-books recommended are Newell's Descriptive Chemistry, Brownlee and Others, Hessler and Smith's, and McPherson and Henderson.

PREPARATION IN DRAWING

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

PREPARATION IN 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 1909-11 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 *Færie 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.

PREPARATION IN 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. Dicta-

tion 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.

PREPARATION IN 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 200 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.

PREPARATION IN 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 con-

structions, 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 II.

PREPARATION IN HISTORY AND GOVERNMENT

Preparatory schools are recommended to rely upon the suggestions of the committee of seven of the National Education 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, Myers' Ancient History (revised edition), Morey's Outline of Ancient History, Goodspeed's History of the Ancient World, 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, Myers' Medieval and Modern History (revised edition), and West's 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, Cheyney's Short History of England, Ferry's History of England for Schools, and Cornan and Kendall's History of England. 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), and Ashley's Federal Government are recommended as texts.

PREPARATION IN 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. Throughout the course, the main object should be accuracy of knowledge of forms and syntax, accuracy of translation into idiomatic English, and the ability to translate at sight. Attention should also be given to pronounciation and reading aloud and to the consideration of Latin words as roots of English words. By years, the work should be apportioned as follows:

First. Thorough work with any of the Beginner's Books in Latin.

Second. Caesar, Bellum Gallicum, Books I-IV, or selections from Caesar equivalent in amount to those books, together with work in prose composition based upon the Latin read equivalent, in amount, to one period a week throughout the year. Selections from other prose writers, such as Nepos, may be read as a substitute for not more than two books of Caesar, or an equivalent amount may be read in any of the Second Year Latin books. The student should acquire a ready knowledge of the common uses of the cases and the modes, and should gain an intelligent comprehension of the authors read.

Third. Six of Cicero's Orations, with prose work, based upon Cicero, one period a week throughout the year. The orations recommended are the four In Catilinam, De Lege Manilia, and Pro Archia, but Sallust's Catline may be substituted for the De Lege Manilia and one other. The student should be familiar with the life and times of Cicero, the subject of Roman oratory, Roman institutions, particularly the courts and public officials. When the work of this year is completed, he should be able to translate an average passage of Caesar or Cicero at sight.

Fourth. Vergil, Aeneid, Books I-IV, together with practice in the reading of Latin hexameter verse and attention to mythology and the history and purpose involved in the poem. An equivalent amount of Ovid may be offered for three books of Vergil.

PREPARATION IN 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.

PREPARATION IN 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' and Tarr's Physical Geography are examples of good texts.

PREPARATION IN 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.

PREPARATION IN PHYSIOLOGY

Study of the elements of the mechanics, the physics and the chemistry of the living body, as outlined in Peabody's Martins Briefer Physiology. The text-book should be accompanied by experiments, dissection of animals and organs, and a certain amount of study of the tissues with the compound microscope.

PREPARATION IN 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 ACCREDITED SCHOOLS

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 course of study and 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.

LIST OF ACCREDITED SCHOOLS

PUBLIC HIGH SCHOOLS

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

Graduates of approved normal schools shall be excused from prescribed subjects for which they have completed a fair equivalent in the normal schools; such excuse to be granted by the dean of the college on recommendation of the major professor.

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 may enroll for special courses of study, on giving satisfactory evidence of their preparation to pursue the particular courses which they desire to elect. The dean of each department concerned will pass upon the eligibility of the applicant for special standing.

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.

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 sent to his dean, who assigns him to a class officer, who assists the student in arranging his schedule of studies.

A penalty of \$1.00 is imposed for registration later than the second day of the semester, and no student will be allowed to register after the first week of the semester without qualifying by the aid of an approved tutor.

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.

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

All men students in their freshmen and sophomore years are required to take three hours per week in the Department of Military Science and Tactics. Eight credits in Military Science are required of all men for a degree.

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

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 of the first semester, while those for the second semester are held 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, the School of Mines, and the School of Forestry, 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 three years are required. The courses leading to the 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 Forestry, bachelor of science in forestry (B. S. F.), and master of science in forestry (M. S. F.); 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 may be conferred upon a student who, upon recommendation of the honors committee and upon vote of the faculty, may be declared worthy of unusual distinction.

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

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

THE UNIVERSITY NORMAL DIPLOMAS

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

I. *The Five-Year Diploma*, valid in all public schools in the state for a period of five years from date of issue, is granted on the following conditions:

1. Attainment of a bachelor's degree equivalent to that of the College of Liberal Arts of the University of Washington. In order to receive the normal diploma and the bachelor's degree, the candidate must present 132 hours instead of 128.

2. Completion of at least 12 hours in the Department of Education, including Course II (History of Education, 4 hours) and the following courses: 1, 3, 6, 7 and 8.

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.	
*F.....	Failed.	Half credit.
		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, 100—96; S, 96—80; P, 80—70; C, 70—60; F, 60—0.

See grading system for this year in next year's cat.

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.

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

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 OCTAVIUS 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.

CHARLES O. KIMBALL, Director of Music.

HERBERT H. GOWEN, Professorial Lecturer on Oriental History,
Literature and Institutions.

OLIVER H. RICHARDSON, Ph. D., Professor of European History.

WILLIAM T. PATTEN, Professor of Military Science and Tactics.

FRANK B. COOPER, A. B., Lecturer on Education.

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

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.

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

JOHN WEINZIBL, Ph. D., Associate Professor of Bacteriology.

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

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 Psy-
chology.

FRANK MARION MORRISON, A. B., Assistant Professor of Mathe-
matics.

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.

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

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

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

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

LOUIS RAPEER, A. M., Assistant Professor of Education.

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

WILLIAM ALFRED MORRIS, Ph. D., Assistant Professor of European
History.

INSTRUCTORS

- IDA K. GREENLEE, A. B., Instructor in English.
HENRY LOUIS BRAKEL, A. M., Instructor in Physics.
CHARLES MONROE STRONG, A. M., Instructor in Spanish.
WILLIAM THEODORE DARBY, A. M., Instructor in English Literature.
HARVEY BRUCE DENSMORE, A. B., Instructor in Greek.
GEORGE IRVING GAVETT, B. S., Instructor in Mathematics.
JOEL MARCUS JOHANSON, A. B., Instructor in German.
WILLIAM VERNON LOVITT, Ph. M., Instructor in Mathematics.
STANLEY SMITH, A. M., Instructor in French.
CHARLES EDWIN WEAVER, Ph. D., Instructor in Geology.
HANS JACOB HOFF, Ph. D., Instructor in German.
PAUL EMIL WEITHAASE, A. M., Instructor in German.
HOMER P. EARLE, A. B., Instructor in Spanish.
GEORGE B. RIGG, A. M., Instructor in Botany.
ROBERT E. ROSE, Ph. D., Instructor in Chemistry.
MAX GARRETT, Ph. D., Instructor in English Literature.
WALTER B. WHITTLESEY, A. M., Instructor in French.
CURT JOHN DUCASSE, A. M., Instructor in Philosophy and Psychology.
LARS O. GRONDAHL, Ph. D., Instructor in Physics.
EDITH MICHELSON, A. B., Instructor in Spanish.
FRANK G. KANE, A. B., Instructor in Journalism.
RAYMOND B. PEASE, A. M., Instructor in Rhetoric.
JOHN C. HERBSMAN, A. B., LL. B., Instructor in Rhetoric.
JESSIE B. MERRICK, B. S., Instructor in Physical Training.
SARAH M. HUMMELL, A. B., Instructor in Home Economics.
ALLEN CARPENTER, A. M., Instructor in Mathematics.
CHARLES W. WESTER, A. B., Instructor in Mathematics.
GEORGE W. HAUSCHILD, A. B., Instructor in German.
THOMAS S. BELL, A. B., Lecturer in International Law.
JOHN C. DUNNING, Ph. D., Instructor in Economics.
H. BURTIS BENNETT, A. B., Instructor in Economics.
LUCY K. COLE, Instructor in Public School Music.

GRADUATE ASSISTANTS

ELVA COOPER, A. M., Graduate Assistant in Mathematics.
CARL HENNINGER, A. M., Graduate Assistant in German.
MARTIN W. STEINKE, A. B., Graduate Assistant in German.
HORACE H. LESTER, A. B., Graduate Assistant in Physics.
FRED ASHMUN, A. B., Graduate Assistant in Mathematics.
A. ROGER MERRILL, A. B., Graduate Assistant in History.
HOMER L. BOYD, A. B., Graduate Assistant in History.
HJALMAR L. OSTERUD, Graduate Assistant in Zoology.
CHARLES A. GUERARD, Graduate Assistant in French.
LLOYD C. GOFF, A. B., Laboratory Assistant in Journalism.
JOHN MERRITT MCGEE, Assistant in Chemistry.
GODFREY L. RUEHLE, Assistant in Chemistry.

UNDERGRADUATE ASSISTANTS

GROVER C. ADAIR, Assistant in Economics.
CHARLES S. BROWN, Assistant in Physics.
WILLIAM B. COOK, Assistant in Physical Training.
JUANITA GNEECHI, Assistant in Physical Training.
EDWARD GOLDSMITH, Assistant in Chemistry.
ELLY LAWATSCHEK, Assistant in German.
JOHN R. MONTGOMERY, Assistant in Chemistry.
EDGAR A. STANTON, Assistant in Economics.
CHARLES H. WHEELON, Assistant in Geology.
ROY D. PINKERTON, Assistant in Journalism.
DOROTHY DRAKE, Assistant in Chemistry.
ELMER SHERRILL, Assistant in Chemistry.

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:

	<i>Credits.</i> ✓
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, Greek, History.	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 Mathematics	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> Latin 8 Greek 8 English 8 Mathematics 4 History 4 Physical training. 2	<i>Freshman.</i> Foreign language. 16 English 8 Mathematics 4 History 4 Physical training. 2	<i>Freshman.</i> Foreign language. 8 English 8 Mathematics 4 History 4 Science 8 Physical training. 2	<i>Freshman.</i> Foreign language. 8 English 8 Mathematics 4 Science 8 Physical training. 2	<i>*Freshman.</i> English 8 History or Foreign language. 8 Mathematics 8 Science or Elective 8
<i>Sophomore.</i> Latin 8 Greek 8 English literature. 8 Science 8 Physical training. 2	<i>Sophomore.</i> Foreign language. 8 English literature. 8 Political economy. 4 Philosophy 8 Physical training. 2	<i>Sophomore.</i> Foreign language. 8 English literature. 8 Philosophy 8 Political economy. 4 Physical training. 2 Elective 4	<i>Sophomore.</i> Foreign language. 8 English literature. 8 History 4 Political economy. 4 Science 8 Physical training. 2	<i>Sophomore.</i> Foreign language. 8 Mathematics 8 Physics 8 Elective or English literature. 8
<i>Junior.</i> Philosophy 8 Political economy. 4 Major Minor Elective	<i>Junior.</i> Science 8 Major Minor Elective	<i>Junior.</i> Major Minor Elective	<i>Junior.</i> Philosophy 8 Major Minor	<i>Junior.</i> Philosophy 8 Political economy or Elective 4 Foreign language or Elective 4 Physics 8 Mechanics and Spherical astro'my 8
<i>Senior.</i> Major Elective	<i>Senior.</i> Major Elective	<i>Senior.</i> Major Minor Elective	<i>Senior.</i> Major Minor Elective	<i>Senior.</i> Major Minor 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 1909-10), 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 PHARMACY

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

SCHOOL OF ENGINEERING

Mechanical drawing, 4 credits	}	Total amount allowed, twelve credits.
Descriptive geometry, 4 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:

Freshman.

English	4
Mathematics	4
Chemistry	8
German or French.....	8
Botany	8
Physical training.....	2

Sophomore.

English literature.....	8
German or French.....	8
Organic chemistry.....	8
Zoology	8
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.

COMBINED SIX-YEAR ARTS AND LAW COURSE

This combined course allows the student with a good record to complete the A. B. and LL. B in six years. It is open only to those students who have maintained a uniformly good record for scholarship during the first three years of Liberal Arts work. At the end of three years these students, provided they have earned ninety or more credits, including all of the required work, together with major and minor, may for the fourth year register in the law school for the first year's work in law. They must, however, earn in the College of Liberal Arts additional credits sufficient to make the total of Liberal Arts credits amount to ninety-six. Twenty-four credits in the first year law work may apply toward the A. B. degree, thus making 128 credits required for this degree.

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

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

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

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

DEPARTMENTS OF INSTRUCTION

ASTRONOMY

ROBERT EDOUARD MORITZ, *Professor*;
JAMES EDWARD GOULD, *Associate Professor*;
GEORGE IRVING GAVETT, *Instructor*.

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.

COURSES PRIMARILY FOR UNDERGRADUATES

1, 2. GENERAL ASTRONOMY. *Two or four hours.* Lectures and recitations, laboratory and observation. The six-inch telescope in the observatory will be used for illustrative purposes. The lectures will include the fundamental facts, principles and laws of the planetary and stellar universe; may be taken either in the freshman or sophomore year, preferably in the latter. The lectures and recitations may be taken as a two-hour course. The laboratory work will consist of 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. The laboratory work must be accompanied by the lecture course. The lectures and laboratory work combined make a four-hour course, which may be chosen as the required science in the College of Liberal Arts. Moulton's *Introduction to Astronomy*. Associate Professor GOULD.

1a. ELEMENTARY THEORETICAL AND DESCRIPTIVE ASTRONOMY. *First semester. Four hours.* Lectures and recitations. Emphasis is laid on the mathematical treatment of principles and laws. Solution of illustrative problems. Methods of determining time, latitude, longitude and azimuth. Offered primarily for upper class students and students majoring in mathematics, physics and

chemistry. Prerequisite: Must be accompanied or preceded by mathematics 2. Cannot be taken for credit if student has credit in astronomy 1, 2. Associate Professor GOULD.

COURSES FOR UNDERGRADUATES AND GRADUATES

3, 4. ENGINEERING ASTRONOMY. *First semester. Two hours.* Spherical trigonometry and applications to astronomy. Theory and use of sextant and theodolite.

Second semester. A study of such fundamental facts and principles as relate to the various methods of determining azimuth, latitude and time. Actual determination of azimuth, latitude and longitude by means of the sextant and theodolite. Prerequisites: Mathematics 4, or 4b. Mr. GAVETT.

5. LEAST SQUARES. *First semester. Two hours.* 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. Prerequisites: Mathematics 4, or 4b. Mr. GAVETT.

6. ELEMENTS OF GEODESY. *Second semester. Two hours.* General study of the figure of the earth and of the methods and instruments used in precise surveys over large areas. Field work. Prerequisites: Civil engineering 3c, astronomy 5, preceded or accompanied by astronomy 3, 4. Mr. GAVETT.

7. SPHERICAL ASTRONOMY. *First semester. Four hours.* Introduction of spherical trigonometry. Co-ordinates on the celestial sphere and their transformations. The motion of the earth; precession and nutation. Eclipses and occultations. Prerequisite: Mathematics 2. Associate Professor GOULD.

8. ANALYTICAL MECHANICS. *Second semester. Four hours.* Mathematical treatment of the laws of force and motion. Prerequisites: Mathematics 4 or 4b. Associate Professor GOULD.

9, 10. PRACTICAL ASTRONOMY. *Two hours.* Precise determination of time, latitude, longitude and azimuth, by means of the fixed transit. Observation and computation of results. Correc-

tion to observations, parallax, refraction, aberration, etc. Theory of the instrument. Use of star catalogue. Prerequisites: Astronomy 1a, or 2, 5, and 7, and mathematics 4 or 4b.

Associate Professor GOULD.

11, 12. THEORETICAL ASTRONOMY. *Two hours.* The elements of celestial mechanics. The problems of two and three bodies. Computation of cometary and planetary orbits. Variations and perturbations. Prerequisites: Astronomy 1a, or 2, 5, 7, and 8.

Associate Professor GOULD.

BOTANY

THEODORE CHRISTIAN FRYE, *Professor;*

JOHN WEINZIRL, *Assistant Professor of Bacteriology;*

GEORGE BURTON RIGG, *Instructor in Botany.*

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. ELEMENTARY BOTANY. *First semester. Four hours.* A study of the leaves, stems, roots and seeds of the flowering plants with a view to their structure and physiology. This course is for those who do not offer botany for entrance. Those who offer a half year enter either course 1 or 2, depending upon the nature of their preparation. No prerequisite. Seniors will take courses 3, 4, or 5, 6, or 9, 10. Associate Professor WEINZIRL and Mr. Rigg.

2. ELEMENTARY BOTANY. *Second semester. Four hours.* (Continuation of course 1). A study of types of plants from the lowest to the highest types of flowers. Elementary plant analysis. Open to students entering the second semester. Students may enter this without course 1. No prerequisite.

Associate Professor WEINZIRL and Mr. Rigg.

3, 4. ELEMENTARY AND HYGIENIC BACTERIOLOGY. *Four hours.* Methods of growing and studying bacteria, their form, structure,

physiology and distribution, and the common disease-producing organisms are considered in a general way to serve as a basis for the hygienic work. Special consideration is given to bacteria in relation to food and water supply, sewage and garbage disposal, home and disinfection, etc. No prerequisite. Intended especially for freshmen and sophomores. May count as year of required sciences.

Associate Professor WEINZIRL.

4a. **HYGIENIC BACTERIOLOGY.** *Second semester.* This course is identical with course 4 above except that no laboratory work is required, and cannot count as required science. No prerequisite.

Associate Professor WEINZIRL.

5, 6. **CRYPTOGAMIC BOTANY.** *Four hours.* The study of 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 algae, fungi and bryophytes. The ferns and flowering plants are considered chiefly as to their reproduction. Prerequisites: Botany 1 and 2; or zoology 1 and 2; or senior standing.

Professor FRYE.

7, 8. **GENERAL AND MEDICAL BACTERIOLOGY.** *Four hours.* Methods of growing and studying, and the structure, functions and distribution of the bacteria are studied during the first semester. The second semester is given entirely to the consideration of the disease bacteria and their study in the laboratory. Prerequisites: Chemistry 1 year, botany or zoology 1 year. Primarily for juniors, seniors and graduates.

Associate Professor WEINZIRL.

9, 10. **FIELD BOTANY.** *Two or four hours.* The mid-week lecture will be on the factors of ecology, the Saturday lecture on the plants collected. During the fall and spring every other Saturday will be spent in the field collecting plants, with a view to recognizing them at sight. A mid-week laboratory period is for the care of plants collected. During the winter months the laboratory work is plant analysis, and takes the place of field trips. Teachers may enter for the Saturday trips only and earn two credits per semester. Those taking the mid-week work also earn four credits. Prerequisites: Botany 1, 2, or 1 year of high school botany; for teachers or seniors, none.

Professor FRYE.

11. BACTERIOLOGICAL ANALYSIS AND DIAGNOSIS. *First semester. Two or four hours.* Part of the time is devoted to the technical analysis, and the remainder to specific diagnosis of disease bacteria. Part of the work may be done in the public and private laboratories in Seattle. Prerequisite: One year of bacteriology. Associate Professor WEINZIRL.

12. BACTERIOLOGICAL PROBLEMS. *Second semester. Two or four hours.* A laboratory course taking up such problems as the individual student may desire and the facilities of the laboratory permit. Prerequisite: One year of bacteriology. Associate Professor WEINZIRL.

13. PHARMACY BOTANY. *First semester. Four hours.* Structure of leaves, stems, roots, seeds, flowers and fruits. Variations in the forms of medicinal plants so far as possible. No prerequisite. Mr. Rigg.

14. PHARMACY BOTANY AND POWDERED DRUGS. *Second semester. Four hours.* The first two months are a continuation of course 13. The last two months are devoted to the histological elements in drugs, and their recognition in the powdered form. Prerequisite: Botany 13 or its equivalent. Mr. Rigg.

15. FOREST PATHOLOGY. *First semester. Four hours.* A study of the structure of woody stems; the use of the tissues to the plant, their origin. The common diseases of forest trees. Prerequisite: Courses 5 and 6. Professor FRYE.

16. PLANT PHYSIOLOGY. *Second semester. Four hours.* The manner in which gases, water and salts get into plants; how the plants form food from them; how they are digested and used by the plants; the resulting growth and movement in plants. Prerequisite: 1 and 2; the student should also have had a course in chemistry. Professor FRYE.

17. FIBRES. *First semester. Four hours.* The history of fibres; their origin; processes of manufacture; uses; recognition. Prerequisite: Experience in using a compound microscope. Not open to freshmen. Mr. Rigg.

18. FOODS. *Second semester. Four hours.* The processes in the manufacture of foods. Food adulterants. A microscopical study of the structure of foods derived from plants. Prerequisite: Experience in using a compound microscope. Mr. Rigg.

19. PLANT HISTOLOGY. *First semester. Four hours.* 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. Prerequisite: Courses 5 and 6.

Professor FRYE.

20. IMMUNOLOGY. *Second semester. One hour.* A consideration of the various classes of immunity and the methods of their production. Theories of immunity. Immuno-therapy in the specific infectious diseases. Prerequisite: A course in bacteriology.

Associate Professor WEINZIRL.

21. GENERAL BACTERIOLOGY FOR ENGINEERS. *Second semester. Two hours.* A general course covering the cultivation and study of common forms of bacteria, the distribution of bacteria in nature, and the application of the knowledge to water supplies, sewage disposal, etc. Intended for senior engineers. Time to be arranged.

Associate Professor WEINZIRL.

CHEMISTRY

HORACE G. BYERS, *Professor;*

HENRY KREITZER BENSON, *Associate Professor;*

IRWIN WALTER BRANDEL, *Assistant Professor;*

WILLIAM MAURICE DEHN, *Assistant Professor;*

ROBERT E. ROSE, *Instructor.*

CHARLES W. JOHNSON, *Dean of the School of Pharmacy.*

The instruction in this department is designed to satisfy, as far as possible, the requirements of those students who desire to study chemistry as a means of culture and as a necessary complement of a liberal education. It is also realized that the subject is eminently practical, hence it is the desire of those in charge so to guide the student that he may fit himself for work in those lines in which chemistry has become an applied science.

Courses 1, 2, 1a, 2a, 1b, 2b, 1c, 2c, are primarily intended for freshmen.

Courses 3, 4, 8, 8b, 9, 12, 13, 14, are primarily intended for sophomores.

Courses 11, 15, 22, 23, 24, 25, are both graduate and undergraduate courses.

Course 26 is wholly graduate work in spirit.

All other courses are elective at different stages according to the preparation of the student.

1, 2. GENERAL CHEMISTRY. *Four hours.* 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.

Professor BYERS, Instructors and Assistants.

1a, 2a. GENERAL CHEMISTRY. *Four hours.* 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, Dr. ROSE and Assistants.

1b. GENERAL CHEMISTRY. *Second semester. Four hours.* To meet the need 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.

2b. GENERAL CHEMISTRY. *First semester. Four hours.* Continuation of 1b of second semester. Assistant Professor DEHN.

1c, 2c. GENERAL CHEMISTRY. *Four hours.* A course in inorganic chemistry for students of domestic science. This course consists of two lectures and six laboratory hours per week. General chemistry will be taken up in the lectures during the first semester and analytical during the second semester. The laboratory work will consist in part of qualitative and quantitative analysis. This course will be open only to students registering from the department of domestic science. Text-books to be selected. Dr. ROSE.

1d. PROSPECTOR'S COURSE. *Four hours.* 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.

3, 4. ORGANIC CHEMISTRY. *Four hours.* A lecture course on the chemistry of the compounds of carbon. Laboratory work on the preparation and testing of representative compounds. Bernthsen-Sudborough's text is used as a reference book in connection with the lectures and Sudborough-James's laboratory manual is used as a laboratory guide.

Assistant Professor BRANDEL.

4c. ORGANIC CHEMISTRY. *First semester. Four hours.* For the year 1910-11 the second semester of organic chemistry, corresponding to chemistry 4, will be given in the first semester.

Assistant Professor BRANDEL.

5, 6. ADVANCED ORGANIC CHEMISTRY. *Four hours.* In this course a special study will be made of the following: The chemistry of volatile oils; the chemistry of dyestuffs; the chemistry of alkaloids, and the chemistry of sugars. One semester will be devoted to each subject, so that a subject will be repeated only once in two years. For the first semester of 1910-11, the chemistry of volatile oils will be taken up. Special laboratory work can be arranged. Prerequisite: 4 and 6.

Assistant Professor BRANDEL.

7. PLANT CHEMISTRY. *Second semester. Two hours.* A study of the chemical reactions taking place in the living plant organism, the production, resorption and assimilation of plant physiological importance. Special laboratory work can be arranged. Prerequisite: 4.

Assistant Professor BRANDEL.

8. ADVANCED QUALITATIVE ANALYSIS. *First semester. Four hours.* 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.

8b. ELEMENTARY QUALITATIVE ANALYSIS. *First semester. Four hours.* 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 BRANDEL.

8b. **ELEMENTARY QUALITATIVE ANALYSIS.** *Second semester. Four hours.* This course is a repetition of 5b of first semester, for pharmacy students. Assistant Professor DEHN.

9. **QUANTITATIVE ANALYSIS.** *Each semester. Four hours.* Gravimetric and volumetric analysis. Olsen's Quantitative Analysis. Twelve laboratory hours and one recitation per week. Professor JOHNSON.

10. **FATS AND OILS.** *First semester. Four hours.* 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.

11. **FOOD ANALYSIS.** *Second semester. Four hours.* 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.

12. **INDUSTRIAL CHEMISTRY.** *First semester. Three hours.* A course designed for civil engineers. It takes up the study of the chemistry of the materials of engineering, such as cement, building stones, wood preservation, paints, explosives, paving materials, clay products, structural steel and sanitary water. Two lectures and one laboratory afternoon. Prerequisite: Qualitative analysis.

Associate Professor BENSON.

13. **INDUSTRIAL CHEMISTRY.** *First semester. Three hours.* A course designed for mechanical and electrical engineers. It deals with the chemistry of materials of engineering such as explosive mixtures, oils, lubricants, fuels, boiler water, insulating materials, alloys and the commercial forms of iron. Two lectures and one laboratory period. Prerequisite: Qualitative analysis.

Associate Professor BENSON.

14. **CHEMICAL TECHNOLOGY.** *Second semester. Four hours.* Required of chemical engineers and elective for students who have had quantitative chemistry. A course dealing with a detailed

study of the industries of the Northwest and intended to acquaint the student with the materials and processes employed in these industries. Three lectures and one laboratory period per week.

Associate Professor BENSON.

15. **WATER ANALYSIS.** *First semester. Four hours.* A course consisting of one lecture and twelve hours laboratory work per week will be given in the analysis of water for both industrial and sanitary purposes.

Professor BYERS.

16. **GAS AND FUEL ANALYSIS.** *Second semester. Four hours.* Required of chemical engineers and elective for students with prerequisite. The lectures deal with the properties of the natural fuels and the preparation of artificial fuels. The laboratory work deals with the testing of fuels and a study of fuel specifications and the analysis of flue gases and commercial gases. Two lectures and two laboratory periods per week. Prerequisite: Quantitative chemistry.

Associate Professor BENSON.

17. **SOILS AND FERTILIZERS.** *Second semester. Two hours.* A lecture course dealing with the soils of Washington and the methods of soil enrichment. It aims to present the fundamental ideas necessary for field identification and classification and a discussion of the elements of fertility. Prerequisite: General chemistry.

Associate Professor BENSON.

18. **ROAD OILS AND TAR.** *Second semester. Two hours.* A course offered as a civil engineering option for students in highway engineering. One period of four hours' work is given over to the study of the composition and properties of road-binding materials. One hour is used for lecture and three hours for laboratory tests to determine whether the materials conform to specifications.

Associate Professor BENSON.

19. **URINARY ANALYSIS.** *Second semester. Two hours.* Laboratory work only. Practical methods of analysis of normal and pathological urines. This course is designed especially for students entering upon the study of medicine.

Assistant Professor DEHN.

20, 21. **PHYSIOLOGICAL CHEMISTRY.** *Four hours.* A course designed for medical, chemical and general science students. Chemical composition of foods, tissues, secretions and excretions, their

physiological and pathological changes, with special attention to the composition and chemical analysis of blood, milk, and urine.

Assistant Professor DEHN.

20a. **PHYSIOLOGICAL CHEMISTRY.** *Second semester. Four hours.* Essentially the same course as 20 above, but designed especially for students in pharmacy. Assistant Professor DEHN.

22. **PHYSICAL CHEMISTRY.** *First semester. Four hours.* An elementary lecture course dealing with fundamental theories of chemistry based upon physical measurements. The laboratory work consists of measurements of density, molecular weights, thermal effects, reaction, velocity and a short research problem. Three lectures and one laboratory period per week. Prerequisites: Quantitative chemistry and college physics.

Associate Professor BENSON.

23. **ELECTRO CHEMISTRY.** *Second semester. Four hours.* 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.

24. **INORGANIC PREPARATIONS.** *Second semester.* Methods of preparation of important inorganic compounds. Designed to illustrate special chemical principles. Twelve laboratory hours per week. Prerequisite: 6.

Professor BYERS.

25. **PHOTO CHEMISTRY.** *First semester. Three hours.* A study of the effect of light on various chemicals and chemical reactions, including the chemistry of photography. Special laboratory work in the applications of photo-chemistry will be arranged. Prerequisite: 2 and 4. Assistant Professor BRANDEL.

26. **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.

EDUCATION

EDWARD OCTAVIUS SISSON, *Professor;*

HERBERT GALEN LULL, *Associate Professor;*

LOUIS WIN RAPEER, *Assistant Professor;*

FRANK B. COOPER, *Superintendent of Seattle Public Schools,*
Lecturer on School Administration;

DEAN ISABELLA AUSTIN, *Lecturer on Primary Education;*

LUOY K. COLE, *Special Instructor in School Music.*

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; philosophy 1 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 University Normal Diploma, p. 98.

SUBJECTS

NOTE.—All courses are open to seniors and graduates; all except 6, 7, 8, 10, 13, 14, and 20 are open to juniors.

1. PRINCIPLES OF EDUCATION. *Both semesters. Four hours.* 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 tasks 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. *Each semester. Four hours.* 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.

Assistant Professor RAPEER.

3, 4. OBSERVATION AND TEACHING. *Four hours.* 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 primarily for those who have not had experience in teaching.

Associate Professor LULL.

6. THE HIGH SCHOOL. *Second semester.* 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.

7, 8. EDUCATIONAL PSYCHOLOGY. *Two hours.* In this course those psychological elements which have direct application to teaching problems will be studied. In connection with the work in this course each student will be assigned some practical pedagogical problem. Some of the problems studied in 1909-10 were:

The essentials of good text-books.

Instruction in civics and present-day social problems.

Instruction in American biography.

Study of children's grades in different branches, as throwing light upon the doctrine of formal discipline.

Methods of using the dictionary in teaching spelling.

How far drill for accuracy and speed in the addition of numbers may result in permanent acquisition.

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

Associate Professor LULL.

10. SCHOOL ADMINISTRATION. *Second Semester. One hour.* 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.* 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.

Assistant Professor RAPEER.

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. *Second semester. Two hours.* 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. *Two hours.* 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.

Assistant Professor RAPEER.

17. THE ELEMENTARY SCHOOL. *First semester. Four hours*

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.

Assistant Professor RAPEER.

18. THE PRIMARY SCHOOL. *Each semester. One hour. Lectures, discussions and visits to schools.* Dean AUSTIN.

19. SCHOOL MUSIC. *Each semester. Two hours.*

Miss COLE.

20. EDUCATIONAL SEMINARY. *Each semester. Two hours.* The work of the seminary in 1910-11 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 instruction, discussions by eminent authorities, and various papers. For senior and graduate students who have had at least four hours in education.

Professor Sisson.

During the year 1909-10 the department has conducted a course of weekly lectures for teachers at the Central School, and a special class in Principles of Education for teachers in the Educational Department of the Seattle Young Men's Christian Association. Similar courses will be carried on in 1910-11 if desired. Announcement will be made early in the autumn.

ENGLISH LANGUAGE AND LITERATURE

FREDERICK MORGAN PADELFORD, *Professor*;
ALLEN ROGERS BENHAM, *Assistant Professor*;
LOREN DOUGLAS MILLIMAN, *Assistant Professor*;
VERNON LOUIS PARRINGTON, *Assistant Professor*;
IDA KATHERINE GREENLEE, *Instructor*;
WILLIAM THEODORE DARBY, *Instructor*;
ROBERT MAX GARRETT, *Instructor*;
RAYMOND BURNETTE PEASE, *Instructor*;
JOEL MARCUS JOHANSON, *Instructor*.

SUBJECTS

1, 2. HISTORY OF ENGLISH LITERATURE. *Year course. Four hours.* The development of the literature will be studied, and representative selections will be read and discussed. Elementary. Professor PADELFORD, Assistant Professor BENHAM, Mr. DARBY, Mr. PEASE and Mr. JOHANSON.

3. THE GEORGIAN POETS. *First semester. Four hours.* A critical study of the nature and romantic movements, as illustrated in the poetry of Keats, Byron, Shelly, and Wordsworth. Open only to women. Prerequisite, 2. Intermediate.

Professor PADELFORD.

4. THE VICTORIAN POETS. *Second semester. Four hours.* 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. Open only to women. Prerequisite, 2. Intermediate.

Professor PADELFORD.

5, 6. PRINCIPLES OF LITERARY CRITICISM. *Four hours.* 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. Graduate.

Professor PADELFORD.

7, 8. SOCIAL IDEALS IN ENGLISH LITERATURE. *Year course. Four hours.* A study of model commonwealths, and of such other literature as illustrates the evolution of English social and economic ideals. Attention will be given to the influences, both native and foreign, prompting this social literature. Intermediate.

Assistant Professor BENHAM.

9, 10. COLLEGE ENTRANCE REQUIREMENTS. *Year course. Two hours.* 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 and the entrance requirements are critically studied. Advanced. Required of department candidates for the normal diploma. MISS GREENLEE.

11, 12. OLD AND MIDDLE ENGLISH. *Four hours.* 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. Advanced. This course, or course 17, 18, is required of department candidates for the normal diploma and of all other students who desire the department's recommendation for teaching English. DR. GARRETT.

13. CHAUCER AND HIS CONTEMPORARIES. *First semester. Four hours.* Readings in Chaucer, Langland, Gower, and the Pearl. Advanced. ASSISTANT PROFESSOR BENHAM.

14. MILTON AND PURITANISM. *Second semester. Four hours.* A consideration of the historical, theological, and philosophical influences co-operating in Puritan England, 1608-1674. The study will center about the life and work of Milton. Advanced. ASSISTANT PROFESSOR BENHAM.

15, 16. HISTORY OF ENGLISH LITERATURE. *Year course. Two hours.* An advanced course in the history of the literature, designed especially for those students who wish to teach. Required of department candidates for the normal diploma. Advanced. DR. GARRETT.

17, 18. HISTORICAL ENGLISH GRAMMAR. *Year course. Two hours.* An historical account of English as a spoken and written language, its vocabulary, inflection, and usage. Designed for those intending to teach English. (See note to course 11, 12.) Advanced. ASSISTANT PROFESSOR BENHAM.

19, 20. **WORLD'S GREAT CLASSICS.** *Four hours.* A study of some of the world's masterpieces, such as the *Odyssey*, the *Divine Comedy*, *Faust*, etc. Open to men only. Intermediate.

Mr. JOHANSON.

21. **EARLY ENGLISH LITERATURE.** *Second semester. Two hours.* A wider study of texts than is afforded by course 11, which is prerequisite. Advanced.

Assistant Professor BENHAM.

22. **LITERATURE OF THE SEVENTEENTH CENTURY.** *First semester. Four hours.* A study of the Jacobean, Puritan, and Restoration movements. Open to men only. Intermediate.

Mr. DARBY.

23. **LITERATURE OF THE EIGHTEENTH CENTURY.** *Second semester. Four hours.* A study of the classical school and the subsequent romantic school of the eighteenth century. Open to men only. Intermediate.

Mr. DARBY.

24. **SHAKESPEARE.** *First semester. Four hours.* Reading of all the plays. Advanced.

Mr. DARBY.

25. **DEVELOPMENT OF THE ENGLISH DRAMA.** *Second semester. Four hours.* A historical 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. Advanced.

Mr. DARBY.

26. **AMERICAN LITERATURE.** *First semester. Four hours.* 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 nineteenth century letters, and upon the Knickerbocker school. Lectures, reports from assigned readings, and a thesis. Advanced.

Assistant Professor PARRINGTON.

27. **AMERICAN LITERATURE.** *Second semester. Four hours.* 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. Advanced.

Assistant Professor PARRINGTON.

28, 29. **ENGLISH NOVEL.** *Two hours.* A study of the evolution of the English novel, and of the novel as a literary type. Intermediate.

Assistant Professor MILLIMAN.

FRENCH

PIERRE JOSEPH FREIN, *Professor*;
OTTO PATZER, *Assistant Professor*;
STANLEY ASTREDO SMITH, *Instructor*;
WALTER BELL WHITTLESEY, *Instructor*;
CHARLES A. GUERARD, *Graduate Assistant*.

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

FOR UNDERGRADUATES

1, 2. **FIRST YEAR.** *Four hours.* 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. Training in phonetics. No credit if offered for entrance.

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

1. **FIRST YEAR.** *Second semester. Four hours.* 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.

2, 3. **ADVANCED FIRST YEAR.** *First semester. Four hours.* 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.

4. **READING AND SYNTAX.** *First semester. Four hours.* For students who have studied French three semesters in the University, or four semesters in the high school. This course completes two full years of French. Those wishing to continue the work may enter courses 6 and 8.
Mr. WHITTLESEY.

3, 4. **READING AND SYNTAX.** *Four hours.* 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 1909-10 were About, *Le Roi des Montagnes*; Balzac, *Eugenie Graudet*; Hugo, *Ruy Blas*; Daudet, *Tartarin de Tarascon*; Rostand, *Cyrano de Bergerac*. No credit is offered for entrance. Prerequisite, 2.

Assistant Professor PATZER and Mr. SMITH.

5, 6. **COMPOSITION AND CONVERSATION.** *Four hours.* 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.** *Four hours.* Section A, three hours per week of reading and one hour of composition. (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. 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, *Le Cid*, Horace, *Polyeucte*; Moliere, *Le Bourgeois Gentilhomme*, *Les Precieuses Ridicules*, *Le Tartuffe*; Racine, *Andromaque*, *Athalie*; Boileau, *L'Art Poetique*; La Fontaine, *Fables*. Prerequisite, 4 or an equivalent.

Assistant Professor PATZER.

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

Mr. SMITH.

FOR UNDERGRADUATES AND GRADUATES

11. **THE FRENCH DRAMA.** *First semester. Four hours.* The aim of this course is two-fold: to acquaint the student with the best French dramatic literature since the Pléiade, 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 be given in 1910-11).

12. HISTORY OF THE FRENCH LITERATURE OF THE NINETEENTH CENTURY. *Second semester. Four hours.* 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 be given in 1910-11).

13. LYRIC POETRY. *First semester. Four hours.* 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 not be given in 1910-11).

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

(Given in alternate years with course 12; it will not be given in 1910-11).

15. TEACHERS' COURSE. *Second semester. Two hours.* Study of phonetics, and review of grammar from the teacher's standpoint. Discussion of books, magazines, and courses of study.

Professor FREIN.

FOR GRADUATES

16, 17. OLD FRENCH READING. *Four hours.* 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. *Four hours.* This course is open to graduates in French, 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.

20, 21. FRENCH HISTORICAL GRAMMAR. Lectures on Old French phonology and morphology.
Professor FREIN.

GEOLOGY

HENRY LANDES, *Professor*;
EDWIN J. SAUNDERS, *Assistant Professor*;
CHARLES EDWIN WEAVER, *Instructor*;
GEORGE NELSON SALISBURY, *Lecturer in Meteorology*.

PRIMARILY FOR UNDERCLASSMEN

1, 2. GENERAL GEOLOGY. *Four hours.* A year's course (three recitations and one laboratory period per week). Course 1 treats of the fundamental principles of dynamic geology; course 2, structural and historical geology. These courses may be taken consecutively as a full year's course, or separately as semester courses. Occasional field trips on Saturdays.

Professor LANDES and Assistant Professor SAUNDERS.

1a. GENERAL GEOLOGY. *First semester. Four hours.* A semester's course for engineering students. Lectures, recitations and laboratory work.
Professor LANDES.

1b. GENERAL GEOLOGY. *First semester. Four hours.* A semester's course for forestry students. Lectures, recitations, and laboratory work.
Professor LANDES.

3. CLIMATOLOGY. *First semester. Four hours.* Three recitations and one laboratory period a week. A general consideration of the different climatic elements of the atmosphere; origin and movement of storms, methods of forecasting weather, and practical work in making weather maps and using meteorological instruments. Distribution of rainfall and climate in different parts of the world especially in the United States.

Assistant Professor SAUNDERS and Mr. SALISBURY.

4. **PHYSIOGRAPHY.** *Second semester. Four hours.* A study of the surface features of the earth with special reference to their origin, development, classification, and relation to geologic structure. A brief study of the common minerals and rocks and the principles of oceanography. Instruction and practice in the use of topographic maps and in making relief maps.

Assistant Professor SAUNDERS.

N. B.—It is recommended that those preparing to teach in the high schools take courses 3 and 4 instead of 1 and 2.

5. **MINERALOGY.** *Second semester. Four hours.* Two laboratory periods. Descriptive and determinative mineralogy. Practice in the determination of unlabeled minerals by means of their physical properties and by blow-pipe analysis. Dr. WEAVER.

FOR UPPERCLASSMEN AND GRADUATES

6. **OPTICAL CRYSTALLOGRAPHY.** *First semester. Four hours.* 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.* 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. Two hours.* 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.** *Second semester. Four hours.* 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. Four hours.* 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; building and ornamental stones; minor mineral products of use in the arts and of commercial importance. Prerequisites: 1, 2, 5, and 9.

Professor LANDES.

11, 12. **PALAEONTOLOGY.** *Four hours.* 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.** *Second semester. Two hours.* 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.* 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.** Credits and time to be arranged for arts students. One hour or eight days in second semester for mining engineers. Instruction and practice in methods of field observation, mapping and interpretation of results. A study of special problems presented by the structural, physiographic and petrographic conditions in the Puget sound basin with occasional extended excursions. Prerequisites: 1 and 2, 1a, or 4 and 5.

Professors LANDES, SAUNDERS, and Dr. WEAVER.

PRIMARILY FOR GRADUATES

17, 18. **ADVANCED PETROGRAPHY.** *Two hours.* Detailed laboratory and field investigation of the petrography of special areas in Western Washington, and the preparation of a report on the same. Discussion of current literature. Prerequisites: 1, 2, 5, 8, 9.

Dr. WEAVER.

19, 20. **ADVANCED PALEONTOLOGY.** *Two hours.* Investigation of some stratigraphic area and its fossil fauna, or the biological study of some group of invertebrate fossils associated with a section of Western Washington. Discussion of current literature pertaining to stratigraphy and paleontology. Prerequisites: 1, 2, 11, 12. Dr. WEAVER.

21, 22. **RESEARCH WORK.** *Credit and hours to be arranged.* Investigation of special problems in geology, physiography, meteorology, petrography, and paleontology. Courses arranged by permission. Professors LANDES, SAUNDERS, WEAVER.

SPECIAL SHORT COURSES

A. **FORESTRY GEOLOGY.** A course of twenty lectures on general geology given in January, February, and March, to the students in the short course in 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;*

JOEL MARCUS JOHANSON, *Instructor;*

HANS J. HOFF, *Instructor;*

PAUL E. WEITHAASE, *Instructor;*

GEORGE WILLIAM HAUSCHILD, *Instructor;*

CARL HENNINGER and MARTIN STEINKE, *Graduate Assistants;*

ELLY LAWATSCHEK, *Student Assistant.*

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, and wish to prepare themselves as teachers of the language. 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.

FOR UNDERGRADUATES

1, 2. **FIRST YEAR.** *Four hours.* Pronunciation, grammar and easy readings with practice in speaking and writing. For beginners.

Mr. WEITHAASE, Mr. HAUSCHILD, Mr. STEINKE and Mr. HENNINGER.

1a. **FIRST YEAR.** *Second semester. Four hours.* Course 1 repeated.

Miss LAWATSCHKE.

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

Mr. HENNINGER.

3, 4. **SECOND YEAR.** *Four hours.* 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.

Dr. HOFF, Mr. WEITHAASE, Mr. JOHANSON and Mr. HAUSCHILD.

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

Mr. JOHANSON.

5. **SCHILLER.** *First semester. Four hours.* 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. Dr. HOFF, Mr. WEITHAASE and Mr. HAUSCHILD.

6. **GOETHE.** *Second semester. Four hours.* Introductory study of his life and selected works. Egmont, Hermann und Dorothea, Iphigénie and Goetz von Berlichingen.

Dr. HOFF, Mr. WEITHAASE and Mr. HAUSCHILD.

7, 8. **MODERN GERMAN DRAMAS.** *Two hours.* Selections from Grillparzer, Hebbel, Sudermann and Hauptmann. A rapid reading course. (Omitted in 1910-11).

Mr. JOHANSON.

9, 10. **MODERN GERMAN NOVELS.** *Two hours.* Selections from Freytag, Scheffel, Hauff, Ludwig and Sudermann. A rapid reading course.

Mr. JOHANSON.

11, 12. **SCIENTIFIC GERMAN.** *Two hours.* A rapid reading course for students specializing in general sciences.

Mr. JOHANSON.

13, 14. **GERMAN CONVERSATION, COMPOSITION AND SYNTAX.** *Four hours.*

Dr. HOFF and Mr. HAUSCHILD.

FOR UNDERGRADUATES AND GRADUATES

15. GERMAN LYRICS AND BALLADS. *First semester. Four hours.* Reading and interpretation of the best and most characteristic German lyrics and ballads of Goethe, Schiller, Heine, Uhland, Geibel, and others. Von Klenze's *Deutsche Gedichte*.

Professor MEISNEST.

16. HISTORY OF GERMAN LITERATURE. *Second semester. Four hours.* Selected readings, reports and lectures. A general survey for students specializing in German. Thomas's *German Anthology*, and Thomas's *History of German Literature*.

Professor MEISNEST.

17. LESSING. *First semester. Four hours.* 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. Four hours.* Reading, interpretation and discussion of parts I and II, with collateral reading in Faust literature.

Professor MEISNEST.

19, 20. TEACHER'S COURSE. *Two hours.* 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 textbooks and course of study for high schools, observation and teaching.

Professor MEISNEST.

FOR GRADUATES

(All graduate courses are conducted in German).

21, 22. STORM AND STRESS PERIOD. *Two hours.* A study of the principal tendencies and characteristics of the Storm and Stress period in German literature as revealed in the writings selected from Lessing, Herder, Goethe, Schiller, Klinger, Leisewitz, Lenz, Wagner and Maler Mueller; the interrelations of English and German literature during the eighteenth century. Assigned readings, reports and lectures.

Professor MEISNEST.

23, 24. ROMANTIC SCHOOL. *Two hours.* A study of the origin, principal tendencies and characteristics of the early romantic movement in German literature and its relations to the Storm and Stress period. The principal writers studied are

Goethe, Jean Paul, A. W. Schlegel, Friedrich Schlegel, Novalis, Tieck, Brentano and Arnim. Assigned readings, reports and lectures. (Omitted in 1910-11). Professor MEISNEST.

25, 26. MIDDLE HIGH GERMAN. *Two hours.* Grammar and selected readings. Nibelungenlied, Kudrun, Walther von der Vogelweide. Dr. HOFF.

27. OLD HIGH GERMAN. *First semester. Two hours.* Grammar and selected readings. (Omitted in 1910-11). Dr. HOFF.

28. GOTHIC. *Second semester. Two hours.* Grammar and selected readings. (Omitted in 1910-11). 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. Four hours.* No credit allowed if offered for entrance. Primarily for freshmen. Professor HAGGETT and Mr. DENSMORE.

2. XENOPHON. *Second semester. Four hours.* Xenophon's Anabasis, with exercises in writing Greek. No credit allowed if offered for entrance. Prerequisite, 1. Professor HAGGETT and Mr. DENSMORE.

3. HOMER AND LYRIC POETRY. *First semester. Four hours.* Selections from Homer's Odyssey; followed by selections from the elegaic, iambic, and melic poets. Prerequisite, 2. Open also to freshmen who present Greek for entrance. Professor HAGGETT.

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

Professor HAGGETT.

5. DRAMATIC POETRY. *First semester. Four hours.* 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. Four hours.* One play of Aeschylus and one of Aristophanes. Prerequisite, 5.

Professor HAGGETT.

7. PHILOSOPHY. *First semester. Two hours.* 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.* 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.* 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.* 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.* (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.* 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.

15. GREEK PHILOSOPHY. *First semester. Two hours.* Time to be arranged. Selections from Plato's Republic, with lectures and collateral reading on Platonism. For graduate students.
Professor HAGGETT.

16. GREEK ORATORY. *Second semester. Two hours.* Time to be arranged. Selections from Demosthenes, with study of his life and time. For graduate students. Professor HAGGETT.

17. ADVANCED READING COURSE. *First semester.* Rapid reading of the entire work (or a considerable portion) of some one author, or extensive work in some one department of Greek literature. This course is designed to give a comprehensive knowledge of a particular author or period of Greek literature, and is supplemented by topical reading and thesis work on the author or period selected. For graduate students. Professor HAGGETT.

18. ADVANCED READING COURSE. *Second semester.* Continuation of course 17. For graduate students. Professor HAGGETT.

HISTORY

EDMOND STEPHEN MEANY, *Professor*;
OLIVER HUNTINGTON RICHARDSON, *Professor*;
EDWARD McMAHON, *Assistant Professor*;
WILLIAM ALFRED MORRIS, *Assistant Professor*;
ALANSON ROGER MERRILL and HOMER L. BOYD, *Graduate Assistants*.

Effort is made to give the students a survey of the field of history, as broad as possible without detracting from thoroughness of study. Stress is laid upon the use of books which will prove of permanent interest and profit, and upon frequent reference to historical sources, whenever available. Students are also trained in methods of historical research, receiving practice in the collection and use of materials for local history, as well as in the preparation of theses in the broader fields. The courses are divided into groups, according to the order in which they should be studied and according to comparative difficulty of substance and method. Courses 1 and 2 afford a general survey of the political, economic and social development of the principal European peoples from the fourth to the end of the nineteenth century. They furnish, singly or collectively, the foundation for all the more advanced courses in the history of Continental Europe, except for Greece and Rome.

PRELIMINARY COURSES

OPEN TO FRESHMEN

1. MEDIEVAL HISTORY. *Each semester. Four hours.* A study of the history, civilization and principal institutions of Western Europe from the later Roman Empire to the Italian Renaissance. Attention is paid to the share contributed by each of the principal European peoples to the general stock of civilization. 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 in the same field, in which case the history requirement may be otherwise satisfied by direction of the class adviser.

Assistant Professor MORRIS and Assistants.

2. **MODERN EUROPE.** *Each semester. Four hours.* The historical development of Europe from the Renaissance to the last quarter of the nineteenth century is studied from the continental point of view. Introductory to later courses. Prerequisite, 1.

Assistant Professor MORRIS.

INTERMEDIATE COURSES

NOT OPEN TO FRESHMEN

3, 4. **ENGLISH POLITICAL HISTORY.** *Four hours.* A study of the political, social and intellectual development of the English people from the Saxon conquest to the end of the nineteenth century. The history of institutions is not studied in detail; but care is taken to point out the political conditions which influenced the growth of the constitution. Economic developments receive attention. Prerequisite, 1.

Professor RICHARDSON.

5. **GREECE.** *First semester. Two hours.* 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 1910-11 see course 11, department of Greek.

Mr. DENSMORE.

6. **ROME.** *Second semester. Two hours.* 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 1910-11 see course 12, department of Latin.

Mr. DENSMORE.

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

Assistant Professor McMAHON.

9, 10. **MAKERS OF THE NATION.** *Two hours.* Lectures on the lives of Washington, Franklin, Jefferson, Jackson, Clay, Webster, Lincoln, Grant, Lee, and others, with relation to the historic development of their times.

Professor MEANY.

ADVANCED COURSES

FOR JUNIORS AND SENIORS

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

11. **ENGLISH CONSTITUTIONAL HISTORY.** *First semester. Four hours.* The development of the principal legal and governmental institutions of the English people is traced from the Anglo-Saxon period to the present time. This course is of special value to those who intend to study law, but the interest of the general student is also kept in view. Open to juniors and seniors who have taken or are taking 3, 4, and to law students with consent of the instructor. Assistant Professor MORRIS.

12. **FRANCE TO 1515.** *Second semester. Two hours.* A study of the political and institutional development of France to the close of the middle ages, including the fusion of Roman and Teutonic elements in society, the empire of Charlemagne, the principal institutions of the feudal period, medieval theories of royal power, the constitutional developments of the Hundred Years' War, the territorial consolidation of France and the establishment of royal absolutism. A reading knowledge of easy French such as can ordinarily be gained from the second year's work is desirable. Prerequisite, 1. Assistant Professor MORRIS.

13, 14. **THE RENAISSANCE AND REFORMATION.** *Two hours.* In this course the Renaissance and Reformation will be treated primarily as intellectual movements and considered in their relations to the intellectual development of Europe. The Reformation is treated in its relations to all the larger problems of modern history. Prerequisite, 2. Professor RICHARDSON.

15, 16. **PRUSSIA AND NORTHERN EUROPE.** *Two hours.* This course deals with Sweden as a Great Power, its rise, progress and decline; the rise of Russia and Prussia; the Partition of Poland; and the beginnings of the Eastern Question. Special attention is paid to the history of Brandenburg-Prussia from the time of its rapid economic, political and military development under the Great Elector and Frederick William I to its acquisition of world-power under Frederick the Great. Constitutional and economic topics receive due attention. Prerequisite, 2.

Professor RICHARDSON.

17. **THE FRENCH REVOLUTION AND NAPOLEONIC ERA.** *First semester. Four hours.* Among the principal topics considered are the following: the material conditions out of which, in France, the Revolution emerged, and the nature of the ideals which inspired it; contemporary conditions in the European states system which facilitated the extension of the Revolution over Europe; the epoch of International Wars, with especial reference to the territorial redistribution of Europe, the beginnings of modern liberalism, and the career of Napoleon. Due attention is paid throughout to notable personalities as well as to notable events. Prerequisite, 2. Professor RICHARDSON.

18. **EUROPE SINCE 1814.** *Second semester. Four hours.* Mainly political, introductory to European politics of the present time. The course deals with the fundamental principles and policies of the Era of Reaction under Metternich and the subsequent triumph of liberalism. Attention is given to Russia, Greece and the Eastern Question from the time of Napoleon's downfall to 1870; but the chief emphasis is laid upon the establishment of constitutional government and national unity in Germany, Italy and the other states of Western Europe, and upon the careers of great leaders, notably Bismarck and Cavour. Prerequisite, 2.

Professor RICHARDSON.

19. **MEDIEVAL CIVILIZATION.** *Second semester. Two hours.* 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. (Given in alternate years with course 12. It will not be given in 1910-11). Assistant Professor MORRIS.

20, 21. **NORTHWESTERN HISTORY.** *Two hours.* From the earliest voyages to the settlement and organization of the territories. Lectures. Theses on assigned topics. Professor MEANY.

22. **SPAIN IN AMERICA.** *First semester. Four hours.* 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.

23. **DEVELOPMENT OF THE PACIFIC.** *Second semester. Four hours.* 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.

24, 25. HISTORY OF AMERICAN DIPLOMACY. *Two hours.* 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.

26, 27. ECONOMIC AND SOCIAL HISTORY OF THE AMERICAN COLONIES. *Four hours.* 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.

Assistant Professor McMAHON.

28. HISTORY OF THE UNITED STATES, 1783-1828. *First semester. Four hours.* 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.

Assistant Professor McMAHON.

29. HISTORY OF THE UNITED STATES, 1828-1860. *First semester. Four hours.* A continuation of course 28, 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.

Assistant Professor McMAHON.

30. CIVIL WAR AND RECONSTRUCTION. *Second semester. Four hours.* 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. (Omitted 1910-11).

Assistant Professor McMAHON.

31. METHODS OF TEACHING HISTORY. *Second semester. Two hours.* A course with special 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.

Assistant Professor McMAHON.

GRADUATE COURSES

32, 33. **ENGLAND UNDER THE TUDORS.** *Two hours.* A graduate course which lays more stress upon the constitutional than upon the political side of the subject. Special attention is given to the legislation of Henry VII and to constitutional developments under Henry VIII and Elizabeth. Emphasis is placed upon methods of historical research and criticism. (This course will not be given in 1910-11).
Professor RICHARDSON.

34, 35. **SEMINARY IN AMERICAN HISTORY.** *Two hours.* One evening a week. This course is primarily for graduates or other advanced students who may be admitted by permission of the professor, and will follow the seminary plan of instruction.
Assistant Professor McMAHON.

HOME ECONOMICS

SARAH MATILDA HUMMEL, *Instructor in charge of Department.*

The department of home economics offers a number of courses which have a definite relation to the affairs of the home.

Most of these courses are given in the department of home economics, which aims (1) to give a liberal education upon the basis of pure and applied science; (2) to provide an opportunity for a scientific study of the problems of the home.

The courses are planned to meet the needs of three classes of students:

1. Those students who specialize in other lines of work, but desire a knowledge of the general principles and facts of home economics as a part of a liberal education.

2. Those students who desire to make a detailed study of home economics in relation to the arts and sciences which are fundamental in the management of the home.

3. Those students who wish to teach home economics or some of its phases, as domestic science.

The courses in the related subjects, as art, and the physical, biological and social sciences are given in the different departments of the College of Liberal Arts.

TERMS OF ADMISSION

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

HOME ECONOMICS

With the exception of courses 8, 11 and 12, candidates for the degree of bachelor of arts are allowed to elect from the course in home economics studies to an amount not to exceed the equivalent of twenty-four unit-hours.

FOR UNDERGRADUATES

1. **SELECTION AND PREPARATION OF FOOD.** *Second semester. Three hours.* The nature and use of food, its chemical composition and the changes effected by heat, cold or fermentation. Some of the processes of the manufacture of foods are considered, as well as the combination of different kinds. Lectures and laboratory work. Prerequisites: Entrance credit in physics, chemistry 1.
Miss HUMMEL.

2. **ECONOMIC USES OF FOOD.** *First semester. Three hours.* This course is a continuation of course 1. Emphasis is put upon the economic side of the food question. Studies of state and national pure-food laws and a relative study of time-saving devices in preparation of food for consumption are included in this course. Lectures and laboratory work. Prerequisite, home economics 1.
Miss HUMMEL.

3. **TEXTILES.** *First semester. Two hours.* Evolution of the textile industries. A microscopical study of the various fibres, dyeing processes and tests given in judging cloth and in the application of the principles of selection of color and design in costume.
Miss HUMMEL.

4. **HOME ARCHITECTURE AND SANITATION.** *First semester. Two hours..* The situation, surroundings and construction of the house; the hygiene of the home, heating, lighting, ventilation, water supply and drainage. Lectures on house planning, with exercise in making skeleton plans, and on sanitary plumbing and fixtures and internal drainage. A practical architect will give lectures in this course.
Miss HUMMEL.

5. HOME DECORATION. *Second semester. Two hours.* A continuation of course 4. A study of house furnishings, their color, design, suitability for purpose and cost. The theory of color and its application in home decoration. Working out economic problems in house furnishing. Prerequisites: Art and design and home economics 3, and 4. Miss HUMMEL.

6. DIETETICS. *First semester. Four hours.* A study of the principles of diet; the relation of food to health, standard dietaries, construction of dietaries and diet in disease. The principles of home nursing and preparation of food for the sick are given at the close of the other work. Lectures, recitation and laboratory work are combined. Prerequisites: Home economics 1, 2, and physiology 7. Miss HUMMEL.

7. HOUSEHOLD MANAGEMENT. *Second semester. Three hours.* This course deals with the organization of the household; expenditure of income; care of the house and family, including the chemistry of cleaning metals, wood, fabrics, and other essentials of a well-ordered home. Lectures and laboratory work. Prerequisites: Home economics 2, 3, 5, 6, and economics 1. Miss HUMMEL.

8. DRESS. *Each semester. One hour.* In this course economics, hygiene, design and color are all considered in their relation to dress. In the laboratory work each student selects material, plans, cuts, fits and finishes a set of garments. The course also gives a knowledge of the various stitches used in hand sewing. Art and design should be taken with this course.

9. FOOD AND NUTRITION. *First semester. Four hours.* A further study of food principles. Opportunity is given for original work in investigating the problems of food and nutrition. The problems may be physiological, chemical or bacteriological. Prerequisites: Bacteriology 7, organic or food analysis, physiology 7, and courses in home economics 1, 2 and 6. Miss HUMMEL.

10. HISTORY OF HOME ECONOMICS. *First semester. One hour.* This course deals with the growth and development of home economics. It includes the work in different types of institutions. Open to juniors and seniors. Miss HUMMEL.

11. NORMAL COURSE. *Second semester. Two hours.* This course is intended for the students who prepare to teach. Courses

of study are examined and practice given in making them. Some practice is given in presenting and criticising lesson plans. Open to seniors.

Miss HUMMEL.

12. SEMINARY. *Second semester. Two hours.* A study of different phases of home economics and individual problems in some one of these phases. Open to seniors only. Course 12 not given in 1910-11.

TEACHERS' COURSE IN HOME ECONOMICS

Prescribed subjects required for the degree of Bachelor of Science in Home Economics.

FRESHMAN YEAR			
<i>First Semester—</i>		<i>Second Semester—</i>	
	Hours		Hours
Rhetoric, 1.....	4	Rhetoric, 2.....	4
General chemistry, 1d.....	4	Chemistry, 2d, qualitative and quantitative analysis	4
Home economics, 3.....	2	Botany or zoology.....	4
Home economics, 4.....	2	Home economics, 1.....	3
Home economics, 8.....	1	Home economics, 8.....	1
History, 1.....	4		
	<hr/> 17		<hr/> 16
SOPHOMORE YEAR			
	Hours		Hours
Chemistry, 3, organic.....	4	Economics, 1.....	4
Physiology, 7.....	4	Chemistry	4
Home economics, 2.....	3	Physics of the home.....	4
Art and design.....	1	Home economics, 5.....	2
Electives	4	Art and design.....	1
	<hr/> 16		<hr/> 15
JUNIOR YEAR			
	Hours		Hours
Psychology	4	Education, 1.....	4
Bacteriology, 7.....	4	Home economics, 7.....	3
Home economics, 6.....	4	Electives	8
Electives	4		
	<hr/> 16		<hr/> 15
SENIOR YEAR			
	Hours		Hours
English literature, 1.....	4	English literature, 2.....	4
Sociology, 3.....	4	Education, 2.....	4
Home economics, 9.....	4	Elements of ethics.....	4
Home economics, 10.....	1	Home economics, 11.....	2
Electives	2	Electives	1
	<hr/> 15		<hr/> 15

Students having had two years of high school sewing will receive no credit in home economics 8. Students will elect in the

Department of Education those subjects necessary to obtain the normal diploma. Students must have a reading knowledge of German or French. Suggestive electives: Botany 17, bacteriology 9a, and economics.

ITALIAN

PIERRE JOSEPH FREIN, *Professor*;

STANLEY SMITH, *Instructor*.

SUBJECTS

1, 2. **ELEMENTARY.** *Four hours.* 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.* Selections from Dante's *La Divina Commedia*. Open only to those who have completed Italian 1, 2. Professor FREIN.

JOURNALISM

MERLE THORPE, *Assistant Professor*;

FRANK G. KANE, *Instructor*;

LLOYD C. GOFF, *Laboratory Assistant*;

ROY D. PINKERTON, *Student 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 has outlined the student's four years work so that each subject may lend itself to the purpose of the department. Special stress is laid on the study of social and economic problems, political history, and English literature. The department itself endeavors to teach the student to express his ideas in clear-cut, virile English, and to develop any original style he may possess.

Practical journalism is studied, following as closely as possible the work in a newspaper office. The department has in-

stalled a laboratory, in which a six-column four-page daily paper is published. For this a 12,000-word daily telegraph service has been secured from the United Press Association. Classes are 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 is published, containing interesting and instructive feature stories. In short, the department's idea of an ideal newspaper is worked out. In addition to the daily, students have opportunity of working on the *Washingtonian*, the literary monthly, and the *Alumnus*.

Metropolitan papers are 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 are 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 have 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 two years ago, the department has had an extraordinary growth, ninety-two students now registering for the four years' course, and thirty more taking incidental courses. 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

3, 4. **ADVANCED COMPOSITION.** *Four hours.* Special properties of style—tone, color, atmosphere, suggestion, etc.; accessories of

narration, local color, characters, dialogue; law and technique of the drama. Study of representative essays on style, Newman, Pater, DeQuincy, Harrison, Stevenson, Spencer, Lewes. Intensive studies of prose writers; with daily themes. Mr. KANE.

ADVANCED COURSES

7. THE NEWSPAPER OFFICE. *First semester. Four hours.* Organization of the newspaper; functions of the different departmental heads; copy-reading and head-writing; make-up. Lectures, study of leading dailies, required reading, writing of news stories, writing of heads, and tests on make-up. Mr. KANE.

8. THE NEWSPAPER. *Second semester. Four hours.* Students will gather and write university news. Practical work in writing "human interest" 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 edition; newspaper photography and cartooning; law of libel and copy-right; tainted news; political and advertising; the circulation department; the advertising department; fake stories; how local news is collected; 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. Mr. KANE.

9, 10. THE SHORT STORY. *Four hours.* 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. *Four hours.* Study and writing of editorials; lectures on the place of the newspaper in political history, the economy of the daily paper, policies of newspapers, and a comparative study of the same story in several large dailies. Assistant Professor THORPE.

19, 20. LABORATORY. *Three hours. Five times a week.* Students are instructed in faces and value of type through actual work in composing room; taught to set type, make up and lock forms, design ads, estimate costs, judge quantities of paper, inks, etc., and appreciate color schemes in press work. This class

works on the mechanical end of the University of Washington Daily, the Alumnus, the Washingtonian, and other publications from the press of the Department of Journalism. With weekly lectures on history and development of the art of printing.

Mr. Goff.

SUGGESTED COURSE IN JOURNALISM

FRESHMAN YEAR			
First Semester—		Second Semester—	
	Hours		Hours
Rhetoric, 1.....	4	Rhetoric, 2	4
Language, modern	4	Language, modern	4
History, 1	4	Trigonometry	4
Science	4	Science	4
Physical training	2	Physical training	2
	<u>18</u>		<u>18</u>
SOPHOMORE YEAR			
	Hours		Hours
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
	<u>18</u>		<u>18</u>
JUNIOR YEAR			
	Hours		Hours
Journalism, 7	4	Journalism, 8	4
Journalism, 19	3	Philosophy, 2 or 4.....	4
Philosophy, 1 or 3.....	4	Law, criminal, or	
Law, elementary	2	Law, torts	2
Elective—		Elective—	
History		History	
English literature, 7		English literature, 8	
Political science, 3 or 15		Political science, 4 or 16	
	<u>15</u>		<u>10</u>
SENIOR YEAR			
	Hours		Hours
Journalism, 9, or		Journalism, 10, or	
Journalism, 11	4	Journalism, 12	4
Electives	14	Electives	12
	<u>18</u>		<u>16</u>

LATIN

DAVID THOMSON, *Professor*;
THOMAS KAY SIDEX, *Assistant Professor*;
HARVEY BRUCE DENSMORE, *Instructor*.

The college courses outlined below are planned for students who have already had four years 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 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.

PRELIMINARY COURSES

These do not count toward the major of twenty-four hours.

A. CICERO. *First semester. Four hours.* Orations, with exercises in syntax and prose composition. Mr. DENSMORE.

B. CICERO. *Second semester. Four hours.* Orations. Course A continued. Mr. DENSMORE.

C. VERGIL. *First semester. Four hours.* Aeneid, books I-III, with exercises in syntax and practice in the reading of Latin hexameters. Mr. DENSMORE.

D. VERGIL. *Second semester. Four hours.* Aeneid, books IV-VI. A continuation of course C. Mr. DENSMORE.

COLLEGE COURSES

1. CICERO. *First semester. Four hours.* De Senectute; TACITUS; Agricola with exercises in prose composition and sight translation. Primarily for freshmen.

Professor THOMSON and Assistant Professor SIDEY.

2. LIVY. *Second semester. Four hours.* 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 SIDEY.

3. CATULLUS. *First semester. Four hours.* (Simpson's Selections); HORACE: Odes and Epodes. Prerequisites, 1 and 2. Primarily for sophomores.

Assistant Professor SIDEY.

4. PLAUTUS. *Second semester. Four hours.* Captivi and Trinummus. TERENCE: Andria and Adelphi. Primarily for sophomores.

Assistant Professor SIDEY.

FOR JUNIORS, SENIORS AND GRADUATES

5. CICERO. *First semester. Four hours.* Letters (Abbott's Selections); HORACE: Epistles. Prerequisites, 3 and 4. Not given in 1910-11.

Professor THOMSON.

6. PLINY. *Second semester. Four hours.* Letters (Westcott's Selections); SENECA: Epistolæ Morales. (Selections.) Not given in 1910-11.

Professor THOMSON.

5a. ROMAN SATIRE. *First semester. Four hours.* Selected satires of HORACE, JUVENAL and PERSIUS, with lectures and collateral reading on the development of satire among the Romans.

Professor THOMSON.

6a. TACITUS. *Second semester. Four hours.* Annals, Books I, IV-VI; SUETONIUS, Tiberius; VELLEIUS PATERCULUS, Book II. A study of the character and reign of Tiberius and the characteristics of "Silver" Latin.

Professor THOMSON.

7. CAESAR. *First semester. Two hours.* Bellum Gallicum, Books V-VII and selected portions of Bellum Civile; SUETONIUS: Life of Julius Caesar. Prerequisites, 5 and 6, or may be taken along with these.

Assistant Professor SIDEY.

8. **SALLUST.** *Second semester. Two hours.* Catiline; VERGIL: Selections from the Bucolics and the Georgics; Ancient Lives of Vergil. A continuation of course 7.

Assistant Professor SIDEX.

9. **TEACHERS' COURSE.** *First semester. Two hours.* 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.

Assistant Professor SIDEX.

10. **TEACHERS' COURSE.** *Second semester. Two hours.* A continuation of course 9. 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.

FOR GRADUATES

13. **ROMAN PHILOSOPHY.** *First semester. Two hours.* LUCRETIVS: De Rerum Natura, selected books; CICERO: De Finibus, Books I, II.

Professor THOMSON.

14. **ROMAN PHILOSOPHY.** *Second semester. Two hours.* CICERO: Tusculan Disputations, Books I, IV, V; De Officiis.

15. **MARTIAL.** *First semester. Two hours.* Post's Selections.

Professor THOMSON.

16. **ELEGIAC POETRY.** *Second semester. Two hours.* Selections from TIBULLUS, PROPERTIUS and OVID.

Professor THOMSON.

OPEN TO ALL STUDENTS

11. **ROMAN ANTIQUITIES.** *Second semester. Two hours.* Lectures on such topics as the Roman name, the family, education, trades, professions, amusements, amphitheatres, aqueducts and public roads, illustrated by slides, photographs and cuts, whenever possible.

Mr. DENSMORE.

12. **ROMAN HISTORY.** *Second semester. Two hours.* 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. Mr. DENSMORE.

17. **HISTORY OF ROMAN LITERATURE.** *First semester. Four hours.* Mackail's Latin Literature, supplemented by lectures and collateral reading. Illustrative selections from English versions of the more important authors. Assistant Professor SIDEX.

MATHEMATICS

ROBERT EDOUARD MORITZ, *Professor;*

JAMES EDWARD GOULD, *Associate Professor;*

FRANK MARION MORRISON, *Assistant Professor;*

GEORGE IRVING GAVETT, WILLIAM VERNON LOVITT, ALLEN CARPENTER,

CHARLES WILLIAM WESTER, *Instructors;*

FRED RAYMOND ASHMUM, ELVA COOPER, *Graduate Assistants.*

SUGGESTION AS TO CHOICE OF COURSES

Mathematics may be studied for several distinct purposes; the courses which a student takes should be selected with reference to his particular purpose. Under each of the four headings below, the courses best adapted to certain ends are enumerated in the order in which they should be taken.

(A) Mathematics as a science for its own sake. Courses 1, 2, A, B, 3, 4, 5, 6, 7, 8, and as many of the following courses as possible.

(B) Mathematics as an instrument in the other arts and sciences. Courses 1a, 2a, A, B, 3a, 3b, 4a, 7, 8.

(C) Mathematics as a special field for high school teachers. Courses 1, 2, A, B, 3, 4, 5, 6, 9, 10.

(D) Mathematics as a means to culture for those students who can devote but one year to the subject. Courses 1b, 2b.

COURSES

I. FOR UNDERGRADUATES

A, B. **SOLID GEOMETRY.** *Two hours.* The usual theorems and constructions, with exercises and applications to mensuration. Required to be taken during the first year by all students in the College of Engineering, the School of Forestry, and the School

of Mines who do not offer solid geometry for admission. Must be taken during the first or second year by students who expect to make mathematics their major study. Wentworth's Solid Geometry. Mr. WEBSTER.

1. PLANE TRIGONOMETRY. *Both semesters. Four hours.* Solution of right and oblique triangles; functions of the general angle; functions of two or more angles; solution of trigonometric equations; tracing of trigonometric curves, trigonometric treatment of complex quantities; trigonometric series; hyperbolic functions.

This course will satisfy the Liberal Arts requirement in mathematics if completed during the freshman or sophomore year. Students who have not completed their mathematics before the beginning of the junior year, will be required to take courses 1c and 2c for their required work.

Students who expect to take course 2 the second semester should register in the section which meets at 11:00. Prerequisites: All entrance requirements in mathematics.

Assistant Professor MORRISON, and Messrs. LOVITT, CARPENTER, WESTER, and Assistants.

2. ANALYTICAL GEOMETRY. *Second semester. Four hours.* For Liberal Arts students. Cartesian co-ordinates; polar co-ordinates; the straight line; the conic sections treated analytically; the general equation of the second degree; higher plane curves in both Cartesian and polar co-ordinates; the straight line in space; the plane; the sphere, the cylinder and the cone; the quadratic surfaces; the general equation of the second degree in three variables. Prerequisites, 1. Mr. LOVITT.

1c. TRIGONOMETRY AND ALGEBRA. *Both semesters. Four hours.* Primarily for students in the College of Engineering, the School of Forestry and the School of Mines. Solution of right and oblique triangles; the general angle and its functions; solution of trigonometric equations; tracing of trigonometric curves; trigonometric series. Supplementary work in algebra equivalent to one hour per week throughout the semester.

Assistant Professor MORRISON, and Messrs. GAVETT, LOVITT, CARPENTER and Assistants.

2a. ANALYTICAL GEOMETRY AND ALGEBRA. *Both semesters. Four hours.* Primarily for students in the College of Engineering,

the School of Forestry and the School of Mines. Cartesian and polar co-ordinates; the straight line and the conic sections treated analytically; higher plane curves. Supplementary work in algebra equivalent to one hour per week throughout the semester. Nichol's Analytical Geometry.

Assistant Professor MORRISON, and Messrs. LOVITT, WEBSTER, GAVETT and Assistants.

1c, 2c. SURVEY OF MODERN MATHEMATICS. *Four hours.* Primarily for students of philosophy and science who can devote but eight hours to the subject. Required of students who have not removed their college requirement in mathematics before their junior year.

A brief study of the more important mathematical concepts and methods, with illustrations. The trigonometric functions; the use of tables illustrated in the solution of the right triangle; graphic methods; the conception and use of co-ordinates; loci and their equations; systems of curves and families of surfaces; the mathematical infinite and infinitesimals; differential coefficients and their meaning; integration as the inverse of differentiation; infinite series; definite integrals; transcendentals; imaginaries; the concept of higher dimensions; hyperspace; non-euclidean geometries; systems of postulates; modern mathematical concepts. No credit will be given for 1c alone. Eight hours credit will be given on the completion of 2c. Professor MORITZ.

3, 4. CALCULUS. *Four hours.* For students in the College of Liberal Arts. An elementary course, covering the fundamental principles and their applications both of the differential and integral calculus. Designed to meet the first needs of students of astronomy and physics. Osborne's Differential and Integral Calculus.

Assistant Professor MORRISON.

3a. ADVANCED ANALYTICS. *Both semesters. Two hours.* For students in the College of Engineering and the School of Mines. The general equation of the second degree; the straight line and the plane in space; the sphere, the cylinder and the cone; the quadratic surfaces. Nichol's Analytical Geometry. Prerequisite, 2a.

MESSRS. GAVETT, WEBSTER and CARPENTER.

3b, 4b. CALCULUS FOR ENGINEERS. *Four hours.* A first course in calculus with special reference to the needs of engineering students. Open only to students who are also taking 3a. Prerequisite, 2a.

MESSRS. GAVETT, LOVITT, WEBSTER, CARPENTER.

FOR GRADUATES AND UPPER CLASSMEN

5, 6. **ADVANCED CALCULUS.** *Four hours.* Partial and total differentiation; change of variable; orthogonal transformation; elimination; partial integration; line, space and surface integrals; Green's theorem; parametric derivation; curve tracing; definite integrals; gamma and beta functions; elliptic integrals; applications to the theory of probabilities of the calculus of variations. Prerequisite, 3, 4. Professor MORITZ.

7. **DIFFERENTIAL EQUATIONS.** *First semester. Two hours.* Especially designed for students doing their major work in physics. An elementary study of ordinary and partial differential equations, with special reference to mathematical physics. Prerequisites, 4 or 4b. Associate Professor GOULD.

8. **FOURIER'S SERIES AND SPHERICAL HARMONICS.** *Second semester. Two hours.* Especially designed for students doing their major work in physics. Fourier's and allied series with special reference to mathematical physics. Prerequisite, 4 or 4b. Associate Professor GOULD.

9. **SPHERICAL TRIGONOMETRY.** *First semester. Two hours.* The elements of spherical trigonometry with applications to astronomy. Theory and use of the sextant and theodolite. Same as astronomy 3. Prerequisite, 4 or 4b. Mr. GAVETT.

9a. **LEAST SQUARES.** *First semester. Two hours.* For students of science and engineering. A study of the best methods for the adjustment of observations, and the determination of probable errors, with numerous applications to actual problems. Prerequisite, 4 or 4b. Mr. GAVETT.

10. **TEACHERS' COURSE.** *Second semester. Four hours.* Designed for and required of major students in mathematics who are applicants for the normal certificate. A brief study of the history of elementary mathematics with special reference to the pedagogy of mathematics. *Cajory's History of Mathematics, Young's Pedagogy of Mathematics.* Mr. CARPENTER.

FOR GRADUATE STUDENTS

11. **PROJECTIVE GEOMETRY.** *First semester. Four hours.* A study of geometric properties by section and projection. The in-

harmonic ratios, involution, the theorems of Pascal, Brianchon and Desargues, projective theory of polar curves and lines, etc. (Not given in 1910-11). Assistant Professor MORRISON.

12. MODERN ANALYTIC GEOMETRY. *Second semester. Four hours.* Trilinear co-ordinates, method of abridged notation, reciprocal polars, harmonic properties of conics, invariants and covariants of conics. (Not given in 1910-11).

Assistant Professor MORRISON.

13. THEORY OF FUNCTIONS OF THE COMPLEX VARIABLE. *First semester. Four hours.* The theories of Cauchy, Weierstrass and Riemann; conformal representation, integrability, etc.

Assistant Professor MORRISON.

14. ELLIPTIC FUNCTIONS. *Second semester. Four hours.* Elliptic functions in Weierstrass notation, with applications to geometry and physics.

Assistant Professor MORRISON.

15. THEORY OF EQUATIONS. *First semester. Four hours.* Theory of equations, including the Galois Theory; Cauchy Theory of Equations. (Not given in 1910-11). Professor MORITZ.

16. INVARIANT THEORY. *Second semester. Four hours.* Based on Elliott's Algebra of Quantics, with reference readings. (Not given in 1910-11). Professor MORITZ.

17, 18. HIGHER ALGEBRA. *Four hours.* Based on Chrystal's Higher Algebra, with reference readings. Professor MORITZ.

19. MATHEMATICS JOURNAL AND RESEARCH CLUB. Meets on the first and third Tuesday evenings of each month in room 2, 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.

20. JUNIOR MATHEMATICS CLUB. Meets on the second Wednesday of each month in room 2, 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 SCIENCE AND TACTICS

W. T. PATTEN, *Captain 13th Infantry, U. S. A., Commandant.*

A course of two years in military training is required by law. All able-bodied male students (except those from foreign countries, not intending to become naturalized) must take the course which by regulation of the University covers the freshman and sophomore years.

A student who has received, prior to entering the University of Washington, military training equivalent to that required in this University may, at the discretion of the commandant of cadets, be given credit for such training, provided that he furnish the commandant proper credentials from an accredited military school, the organized militia, the army, the navy, or the marine corps.

No student will be excused from military training except by written authority of the commandant of cadets, nor will a student be excused from any drill or instruction without such authority.

All male students of the freshman and sophomore classes will report to the commandant of cadets as soon as they have registered.

The organization is designated the University of Washington Cadets.

The uniform consists of gray blouse, trousers and cap, with white gloves. Each cadet is required to provide himself with a uniform of the prescribed pattern. This uniform will cost about \$16.00. To insure uniformity and a reasonable price, arrangements are made with a reputable military tailoring establishment for the furnishing of uniforms. Cadets are required to purchase uniforms from the tailor selected. A deposit of about \$10 is required at the time measurement is taken; the remainder when the uniform is delivered.

Three hours a week are devoted to military training, for which two credits each semester are given. The course will include theoretical and practical instruction in the following subjects:

- a. Infantry drill regulations,
- b. Small arms firing regulations,
- c. Field service regulations.
- d. Manual of guard duty.

MUSIC

CHARLES OSCAR KIMBALL, *Director of Music*;
FREDERIC FLEMING BEALE, *Teacher of Piano and Pipe Organ*;
GRACE BLANCHE ZIMMERMAN, *Teacher of Piano*;
MORITZ ROSEN, *Teacher of Violin*;
MORRIS WALDEMAR CHERKOWSKY, *Assistant in Music (band)*;
LUCY K. COLE, *Teacher of Public School Music*.

HISTORY OF MUSIC. Lectures, collateral reading, papers, and tests. A general survey of musical history and the lives of the great composers, ranging from the music of primitive and savage peoples to the music of the present day. Its value lies in a general broadening of understanding concerning musical art, in tracing the development of music, in exhibiting the personality and genius of great composers and leaders, in providing a rational ground for appreciation, criticism and practical procedure, and in showing how music is connected with literature and the other fine arts, and with the advance of social life in general. For these reasons it appeals not only to the musician, but to all cultivated persons alike. A knowledge of this subject is an important part of a liberal education.

First semester. Two hours. Primitive music, music of the ancient cultured nations. Music of ancient Greece and Italy. Medieval music. Gregorian modes. The minstrels and troubadours. Minnesinger and Meistersinger. The Contrapuntal Schools. Development of monophony. Palestrina. Music in the Protestant churches. The opera and oratorio. Bach, Handel, and Gluck. Perfection of the sonata form. Haydn and Mozart. Transition to the Romantic style. Beethoven, Schubert and Weber.

Second semester. Two hours. The great 19th century romanticists, Mendelssohn, Schumann, Chopin, Berlioz, and Listz. Nineteenth century opera, Rossini and Meyerbeer. Richard Wagner and his music dramas. Nineteenth century music in Germany, Bohemia, the northern countries, France, Italy and England. Pianists and violinists. Modern music and musicians.

APPRECIATION OF MUSIC. *Second semester only. One hour.* Analytical study of great compositions from the point of view of

the listener. A course for students who wish to learn to understand music without necessarily being performers, and who have sufficient musical knowledge to profit by the course. The lectures are musically illustrated throughout. Advanced lectures are also given on the programs of important public concerts given at the University and in the city.

HARMONY. Private or class lessons under the supervision of the director, not to exceed two credits a semester.

PRACTICAL PERFORMANCE. Advanced work on piano, pipe organ, 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 hours each week for the study of serious choral works, two credits for each year's work, on recommendation of the director. A public performance of two or more works will be given each year by the chorus and orchestra. The singers of the chorus are selected by examination.

UNIVERSITY ORCHESTRA. Two hours each week for the study of standard works, including compositions for chorus and orchestra. This course is an advanced training for students who play orchestral instruments sufficiently well to intelligently study and perform the music taken at rehearsals and in public performance. The members of the orchestra are selected by examination.

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.

SUBJECTS

1. *First semester. Three hours.* China, Japan and Korea, their history, literature and religious systems. Special study of Oriental problems from the leading newspapers of the East.

2. *Second semester. Three hours.* European conquests in Asia. The French, Portuguese, Dutch and English in the East Indies. The government and administration of British India. Russian conquests in Central Asia.

3. *First semester. Three hours.* The literature of Persia from the Arabian conquest to the present time.

4. *Second semester. Three hours.* The primitive civilization of the Euphrates and Nile valleys, their history, religions, literatures and monuments.

PHILOSOPHY

WILLIAM SAVEBY, *Professor*;
HERMAN CAMPBELL STEVENS, *Assistant Professor*;
CURT JOHN DUCASSE, *Instructor.*

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

FOR UNDERGRADUATES ONLY

1. **ELEMENTS OF PSYCHOLOGY.** *First semester. Four hours.* 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. Four hours.* One discussion 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 discussions. Professor SAVERY.

3. **ELEMENTS OF LOGIC.** *First semester. Four hours.* 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: Creighton's *Logic*. Lectures and recitations. Professor SAVERY.

4. **INTRODUCTION TO PHILOSOPHY.** *Second semester. Four hours.* 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. Assistant Professor STEVENS.

FOR UPPERCLASSMEN AND GRADUATES

5, 6. **HISTORY OF PHILOSOPHY.** *Four hours.* The aim in this course is both historical and constructive. Text: Weber's *His-*

tory of Philosophy. Readings in the philosophies studied. Lectures and recitations. No prerequisites in philosophy.

Mr. DUCASSE.

7. PRAGMATISM AND IDEALISM. *First semester. Four hours.* A study of the meaning and tests of truth with special reference to the pragmatic theories, followed by the application of the results of this study to the formation of a tenable theory of the universe. An account of the idealistic tradition from Berkeley to William James. This course is both critical and constructive. Lectures and discussions. Prerequisite: One year in philosophy.

Professor SAVERY.

8. IDEALISM AND PESSIMISM. *Second semester. Four hours.* An interpretation of the results of the physical and mental sciences in the light of the philosophical construction in course 7, followed by an account of the basis of morality and the problem of optimism and pessimism. Courses 7 and 8 make a complete course in metaphysics. Prerequisite, 7. Professor SAVERY.

9, 10. PHILOSOPHY IN THE NINETEENTH CENTURY ENGLISH POETS. *Two hours.* The following poets will be discussed: Wordsworth, Shelley, Emerson, Browning, Tennyson, Fitzgerald's Omar Khayyam, James Thomson, Matthew Arnold, Swinburne and Whitman. Some attention will also be given to Carlyle and Ruskin. A study will be made of their philosophical and ethical ideas and attitudes, including among the former their conceptions of the Universe, Evolution, the nature and destiny of Man and the highest human Good. Lectures, with reading and discussion of selected writings. Professor SAVERY.

11. ESTHETICS. *First semester. Two hours.* A study of the meaning of beauty and of its typical forms in Nature and Art. An account of the origin and principles governing the development of the fine arts, poetry and music. Discussion of the place in life of the enjoyment of beauty, and of the opposing views of "Art for art's sake" and the social theories of art of Ruskin, Morris and Tolstoi. Lectures and discussions. Professor SAVERY.

12. THE PHILOSOPHY OF SCHOPENHAUER. *Second semester. Three hours.* Schopenhauer's World as 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.

Mr. DUCASSE.

13, 14. **PRINCIPLES OF PSYCHOLOGY.** *Three hours.* 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.

16. **EXPERIMENTAL PSYCHOLOGY.** *Second semester.* One, two, or three hours, according to the amount of laboratory work done. 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.

PRIMARILY FOR GRADUATES

17, 18. **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.

19, 20. **SEMINARY IN PHILOSOPHY.** Not offered in 1910-11.

Professor SAVERY.

PHYSICS

FREDERICK A. OSBORN, *Professor*;
HENRY LOUIS BRAKEL, *Instructor*;
LARS OLAF GRONDAHL, *Instructor*;
HORACE H. LESTER, *Graduate Assistant*.

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, and eight hours from the other undergraduate courses.

2. Students who major in physics or are preparing to teach it, are advised to elect freshman mathematics and chemistry and begin their work in physics the sophomore year.

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 students.

SUBJECTS

(a) FOR STUDENTS IN COLLEGE OF LIBERAL ARTS

PRIMARILY FOR FRESHMEN AND SOPHOMORES

1. MECHANICS AND SOUND. *First semester. Four hours.* Three class periods and one two-hour laboratory period.

Professor OSBORN.

2. LIGHT, HEAT AND ELECTRICITY. *Second semester. Four hours.* Three class periods and one two-hour laboratory period.

Professor OSBORN.

NOTE.—Course 2 will also be given as a year course in 1910-11.

PRIMARILY FOR JUNIORS AND SENIORS

3. ELECTRICITY. *First semester. Four hours.* For 1910-11, see Physics 3a. Mr. BRAKEL.

4. ELECTRICITY. *Second semester. Four hours.* For 1910-11, see Physics 5a. Mr. BRAKEL.

5. **HEAT.** *First semester. Four hours.* The course consists of three lectures and recitations and one three-hour laboratory period. The lectures and assigned reading are planned with a view to familiarizing the student with the more important aspects of the subject, both experimental and theoretical. The laboratory work lays stress on the calibration, use, and practical handling of temperature-measuring instruments, the use of calorimetric methods, the determination of the coefficients of expansion and the mechanical equivalent of heat. Prerequisite, 2.

Dr. GRONDAHL.

6. **VIBRATORY PHENOMENA AND SOUND.** *First semester. Four hours.* 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.

7. **LIGHT.** *Second semester. Four hours.* 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 investigation, such as the spectrometer, the refractometer, the polarimeter, gratings, plane and concave, and the interferometer. Prerequisites, 2 and calculus.

Professor OSBORN.

8. **HISTORY OF PHYSICS.** *First semester. Two hours.* Prerequisites: Sixteen hours of physics and special permission.

Professor OSBORN.

9. **TEACHERS' PHYSICS.** *Second semester. Two hours.* This is a lecture course and seminar combined. Prerequisite: Sixteen hours of physics. Professor OSBORN.

NOTE.—By special permission students may elect direct and alternating current courses in the department of electrical engineering.

PRIMARILY FOR GRADUATE STUDENTS

12. **ELECTRO-CHEMISTRY AND THEORIES OF E. M. F. OF CELLS.** *First semester. Four hours.* Two class periods and one four-hour laboratory period. The class work discusses the general electrochemical 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: 3, 4, and eight hours of chemistry. Mr. BRAKEL.

13. **KINETIC THEORY OF GASES AND THERMO-DYNAMICS.** *Second semester. Two hours.* An introduction to the mathematical discussion of these subjects with applications. Lectures, assigned reading, and recitations. Prerequisite: Twenty hours of physics, including 5 and calculus. Dr. GRONDAHL.

14. **HIGH-TEMPERATURE THERMOMETRY.** *Second semester. One hour.* A continuation of the laboratory work of 5, special stress being laid on the calibration and use of thermo-elements, resistance thermometers and other pyrometers. Prerequisite, 5. Dr. GRONDAHL.

15. **LIGHT.** *First semester.* This course offers advanced laboratory work in light. A more extended use and application of the instruments of course 7. To students who show special fitness opportunity is given to do some research. The amount of credit is arranged with the individual student. Prerequisite, 7. Professor OSBORN.

16. **PHYSICS COLLOQUIUM.** *Both semesters. One hour.* Open only to graduate students, and major students on special permission. Professor OSBORN, Mr. BRAKEL and Dr. GRONDAHL.

(b) FOR STUDENTS IN APPLIED SCIENCE

1a. MECHANICS AND WAVE MOTION. *First semester. Four hours.* This course must be accompanied by 1b.

Professor OSBORN, Mr. BRAKEL and Dr. GRONDAHL.

1b. PHYSICS MEASUREMENT. *First semester. Two hours. One four-hour laboratory period.*

Mr. BRAKEL, Dr. GRONDAHL and Assistants.

1a. MECHANICS AND WAVE MOTION. *Second semester. Four hours.*

Mr. BRAKEL.

1b. PHYSICS MEASUREMENTS. *Second semester. Two hours.*
A repetition of 1b.

Mr. BRAKEL and Assistant.

2a. LIGHT, HEAT, ELECTRICITY. *Second semester. Four hours.*
This course must be accompanied by 2b.

Professor OSBORN, Mr. BRAKEL and Dr. GRONDAHL.

2b. PHYSICS MEASUREMENTS. *Second semester. One hour.*
One three-hour laboratory period.

Mr. BRAKEL, Dr. GRONDAHL and Assistants.

2a. LIGHT, HEAT, ELECTRICITY. *First semester. Four hours.*
A repetition of 2a.

Mr. BRAKEL.

2b. PHYSICS MEASUREMENTS. *First semester. One hour.*
A repetition of 2b.

Mr. BRAKEL and Assistant.

1c. MECHANICS, SOUND. *First semester. Four hours.* An abridgment of 1a, designed for students in pharmacy, forestry and medicine. Three class periods and one three-hour laboratory period.

Dr. GRONDAHL.

2c. LIGHT, HEAT, ELECTRICITY. *Second semester. Four hours.* An abridgment of 2a, designed for students in pharmacy, forestry and medicine. Three class periods and one three-hour laboratory period.

Dr. GRONDAHL.

3a. ELECTRICAL MEASUREMENTS. *First semester. Four hours.* Two class periods and 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. *First semester. Two hours.* One class period and one three-hour laboratory period. An abridgment of course 3a, designed for mechanical engineering students, with emphasis on the theory, construction and use of electrical measuring instruments. Prerequisite, 2a.

Mr. BRAKEL.

5a. ELECTRICAL MEASUREMENTS. *Second semester.* One three-hour laboratory period. A continuation of 3a, the measurement of capacity and inductance. Prerequisite, 3a.

Mr. BRAKEL.

6a. PHYSICS OF THE HOME. *Second semester. Four hours.* Two class periods and two two-hour laboratory periods. A course for students in domestic science.

Professor OSBORN.

PHYSICAL TRAINING

DAVID CONNOLLY HALL, *Director;*

JESSIE B. MERRICK, *Director for Women;*

JUANITA GNECCHI, *Instructor;*

WILLIAM B. COOK, *Student Assistant.*

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.

COURSES PRESCRIBED FOR FRESHMEN

MEN

1, 2. *Three hours. Two credits.* Introductory course with light apparatus, including dumb-bells, Indian clubs, wands and tactics. Designed especially for students who may be found physically unfit for military training.

Director HALL and Assistant.

WOMEN

1, 2. *Three hours. Two credits.* Introductory course, including free-hand work and light gymnastics, fancy steps, folk dancing and games.

Miss MERRICK and Miss GNECCHI.

COURSES PRESCRIBED FOR SOPHOMORES

MEN

3, 4. *Three hours. Two credits.* Gymnastics, beginners' course with heavy apparatus, including horse, parallel bars, horizontal bars, tumbling, fencing, and wrestling.

WOMEN

3, 4. *Three hours. Two credits.* Advanced work with light apparatus and æsthetic dancing.

ADVANCED COURSES OPEN TO JUNIORS AND SENIORS

5, 6. *Two hours.* A study of the various methods and systems of physical training; their application and adaptability to different ages and conditions. Prerequisites: 1, 2, 3, 4; zoology 7, 8.

Director HALL, Miss MERRICK, and Assistants.

7, 8. *Two hours.* A continuation of courses 5 and 6. Especial emphasis is laid on the organization of the gymnasium and practice in conducting classes. Prerequisites: 5 and 6, zoology 3 and 4.

Director HALL, Miss MERRICK, and Assistants.

9. *HYGIENE. First semester. Two hours.* A study of the forces that make for or against the perfect health of the individual, embodying care of the various organs and their functions; food, shelter and clothing in relation to health. The action and effects of alcohol and narcotics. Preventable and demoralizing diseases.

Director HALL.

10. **PHYSICAL EXAMINATIONS.** *First semester. Two hours.* Detection of physical abnormalities, especially of the thoracic organs. Prerequisites, courses 1-4 inclusive.

Director HALL.

11. **ANTHROPOMETRY.** *First semester. Two hours.* Methods of charting the body, the diagnostic value of measurements, laws of human proportions, determination of the average and most common dimensions. Prerequisites: Courses 1-4 inclusive.

Miss MERRICK.

12. **CORRECTIVE GYMNASTICS AND PRESCRIPTION OF EXERCISE.** *Second semester. Two hours.* Cause of a symmetrical development and its correction by gymnastic methods. Therapeutic application of active and passive movement. The technique and scope of massage. Prerequisites, zoology 3, 4, 7, 8.

Director HALL.

13. **HISTORY OF PHYSICAL TRAINING.** *Second semester. Two hours.* Its importance in Greek and Roman life. Modern development; scope and influence on present-day life. Prerequisites, 1-4 inclusive.

Miss MERRICK.

14. **PUBLIC PARKS AND PLAYGROUNDS.** *First semester. Two hours.* Their equipment, management, and organization. Instruction and entertainment of children. Games and folk dances. Prerequisites, 1-4 inclusive.

Miss MERRICK.

15. **EMERGENCIES.** *Second semester. Two hours.* First aid to the injured, especially accidents that may arise on athletic fields, on public playgrounds, or in the gymnasium. A practical course covering the treatment of many common minor ailments. Prerequisites, 1-4 inclusive.

Director HALL.

16. **PHYSIOLOGY OF BODILY EXERCISE.** *First semester. Two hours.* A study of the physiological problems of breathlessness, fatigue, recuperation, etc. Bodily training for special activities. Prerequisites, 1-4 inclusive.

Director HALL.

17, 18. *Two hours.* A course designed especially for teachers who may wish to conduct classes in physical training in conjunction with other school courses. Prerequisites, 1-4 inclusive.

Director HALL, Miss MERRICK, and Assistants.

19. **ADVANCED GYMNASIIC EXERCISES.** Including fancy exercises with balls, hoops and singlesticks; fancy club swinging; æsthetic and folk dancing. No credit. Prerequisites, 1, 2, 3, 4.

MISS MERRICK.

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 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.

Gymnasium suits for both men and women may be obtained from the University co-operative book store for a reasonable price.

POLITICAL AND SOCIAL SCIENCE.

J. ALLEN SMITH, *Professor*;
VANDERVEER CUSTIS, *Assistant Professor*;
H. BURTIS BENNETT, *Instructor*.

Course 1 is prescribed for all students in the College of Liberal Arts, the College of Engineering, the School of Mines, and the School of Forestry. There are a few courses in this department for which it is not a prerequisite; but even these can be taken with greater advantage if preceded by course 1. It is recommended that it be taken in the sophomore year; and only in exceptional cases should it be taken later than the junior year. Freshman will not be admitted except by special consent of the instructor.

The 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.

Additional courses specially designed for students who expect to engage in business may be announced later. In that event, some changes in the courses as here announced may be necessary.

FOR UNDERGRADUATES.

1. THE ELEMENTS OF ECONOMICS. *Both semesters. Four hours.* 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, and Assistants.

2. ECONOMIC PROBLEMS. *Second semester. Four hours.* This may be regarded as a continuation of course 1. It is a discussion of the important present day problems, such as the national regulation of railways, trusts and telegraph lines, the control of public utility corporations in cities, the labor question, the conservation of natural resources, etc. This course is designed primarily for students who do not intend to major in the department. Prerequisite, 1.

Professor SMITH.

DEPARTMENT OF POLITICAL AND SOCIAL SCIENCE.

SUPPLEMENTARY ANNOUNCEMENT.

COURSE 3—PRINCIPLES OF SOCIOLOGY. *First semester. Four hours.* Will be given by Professor Beach instead of by Assistant Professor Custis.

COURSE 4—SOCIAL PROBLEMS. *Second semester. Four hours.* Will be given by Professor Beach instead of by Assistant Professor Custis.

COURSE 5—NATURAL RESOURCES. *Changed from a two-hour to a four-hour course.*

COURSE 9—THE ECONOMIC HISTORY OF THE UNITED STATES. *Given the second semester instead of the first. The number of the course is changed from 9 to 32. Four hours.* Given by Professor Beach instead of by Mr. Bennett.

COURSE 10—PUBLIC FINANCE AND TAXATION. *Second semester. Four hours.* Announced as omitted in 1910-11. Will be given by Assistant Professor Custis.

COURSE 11—TRANSPORTATION. *First semester. Four hours.* Will be given by Assistant Professor Custis. This course

is substituted for Course 16, which is announced as omitted for 1910-11. Prerequisite, 1.

COURSE 27—DOMESTIC MARKET. *Changed from a two-hour to a four-hour course.*

COURSE 29—SOCIAL AMELIORATION. *First semester. Four hours.* A study of the attempt of society, under the present industrial system, to effect improvement in the life of the less fortunate classes. The position of these groups and the possibility of betterment through legislation or private effort forms the subject of the course. Some description of present conditions is given, but the student's attention is directed mainly to the discovery of causes and remedies. Prerequisite, Course 3. Professor BEACH.

COURSE 30—SOCIAL PSYCHOLOGY. *Second semester. Four hours.* A study of the mental organization of society, and its reaction upon the mind of the individual. The growth and nature of custom and convention, and the formation of public opinion, are the more important topics discussed. Prerequisites, Courses 1 and 3. It is also desirable that the student should have had Philosophy 1. Professor BEACH.

COURSE 31—THE DEVELOPMENT OF INDUSTRIAL SOCIETY. *First semester. Four hours.* This course traces the economic life of Europe as seen particularly in the history of England since the eleventh century. The more important stages of industry are described, with especial emphasis upon the industrial revolution and its consequences for the laboring classes. A knowledge of the main facts of English history is assumed. Prerequisite, Course 1. Professor BEACH.

FOR UNDERGRADUATES AND GRADUATES

3. **PRINCIPLES OF SOCIOLOGY.** *First semester. Four hours.* 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. Four hours.* 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. **NATURAL RESOURCES—DEVELOPMENT AND CONSERVATION.** *First semester. Two hours.* Use and abuse of national assets. Materials of industry are studied in connection with the collections in the University Museum. Materials in the raw state and in successive stages of manufacture. Economic significance of great national projects. Desert reclamation. Forest and mineral conservation. Water power regulation. River and harbor improvement. Inter-oceanic and inter-lake canals. To be preceded or accompanied by economics 1. Mr. BENNETT.

6. **TRADE AND TRANSPORTATION ROUTES.** *Second semester. Two hours.* Survey of the great channels of trade, domestic and international. Industrial conditions that give rise to the principal traffic movements. Character of trade as affected by a nation's wealth and its distribution, social customs, density of population, etc. Trade relations of the principal commercial nations. Trade with the tropics. Water vs. land routes. Shifting routes; the grain trade. Distribution of specific wares. Prerequisite, 1.

Mr. BENNETT.

7. **PRINCIPLES OF ECONOMICS.** *First semester. Four hours.* 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. Four hours.* 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. Four hours.* 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.

Mr. BENNETT.

10. **PUBLIC FINANCE AND TAXATION.** *Second semester. Four hours.* 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. (Not given 1910-11).

Assistant Professor CUSTIS.

12. **HISTORY OF COMMERCE AND COMMERCIAL POLICIES.** *Second semester. Four hours.* 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, and the history of its merchant marine. Prerequisite, 1.

Mr. BENNETT.

13. **MODERN TARIFF SYSTEMS.** *Second semester. Two hours.* Conventional tariffs of Europe. Preferential tariffs of the British Empire. Reciprocity. Maximum and minimum systems. Revenue tariffs. Agrarian protection. Industrial protection. Commercial treaties. Surtaxes. Import duties and excise taxes. Tariff and trusts. Colonial tariffs. Bounties and subsidies. Tariff reform in England. Tariff revision in the United States. Prerequisite, 1.

Mr. BENNETT.

14. **ECONOMICS OF INSURANCE.** *First semester. Two hours.* Principles and social importance of insurance. Fire and marine. Life, health and accident. Employer's liability insurance. Fidelity and surety companies. Workingmen's insurance against unemployment, sickness and old age. Taxation and legal regulation of insurance companies. Examination of sample contracts of the various kinds of insurance. Prerequisite, 1. Mr. BENNETT.

15. **MONEY AND BANKING.** *First semester. Four hours.* 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. Four hours.* 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. (Not given 1910-11). Professor SMITH.

17. **LABOR.** *First semester. Two hours.* 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.* 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.** *Four hours.* 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 receive attention during the second semester. This course should be preceded or accompanied by 1. Professor SMITH.

24. **PUBLIC INTERNATIONAL LAW.** *Second semester. Two hours.* The history and development of public international law with special reference to American diplomacy. Mr. BELL.

25. **THE GROWTH OF CITIES.** *First semester. Two hours.* Economic basis of the location and growth of the modern city. Commercial centers. Land and water transportation facilities. Manufacturing centers. Proximity to sources of power. Accessibility of raw materials of industry. Wealth of tributary regions. Effect of topography. Supply of capital and labor. Real estate values. Booms and panics. Transportation rates and city growth; differentials and terminal rates. City rivalries and inter-dependence. Municipal activities, improvement, ownership and operation. Prerequisite, 1. Mr. BENNETT.

26. **THE TRADE OF THE PACIFIC.** *Second semester. Two hours.* Detailed study of trade and trade possibilities of regions bordering on the Pacific ocean. Commercial opportunities in the Orient. Chinese "Open-Door" problem. Manchurian situation. Commercial policy of Japan. The Alaska trade. Market openings in Latin America. America's competitors for the Pacific trade. New transcontinental railway routes and the Panama canal. Prerequisite, 1. Mr. BENNETT.

27. **THE DOMESTIC MARKET.** *First semester. Two hours.* Organization of business for the marketing of goods. Wholesale and retail trade. Commission houses. Agencies. Department stores. Mail-order business. Public markets. Co-operative marketing. Stock and produce exchanges. Mercantile agencies. Advertising. Trade associations. Prerequisite, 1. Mr. BENNETT.

28. **THE FOREIGN MARKET.** *Second semester. Two hours.* Methods of developing foreign markets and of marketing wares in foreign countries. Commercial policies. Chamber of commerce. Consular service. Sample houses. Commercial museums. Expositions. Ships and subsidies. Trade colonies. Export prices. Adaptation to foreign markets. Marketing in specific countries. Prerequisite, 1. Mr. BENNETT.

FOR GRADUATES

21, 22. **SEMINARY IN POLITICAL THEORIES.** *Two hours.* This course, though designed primarily for graduate students, is open to undergraduates who have sufficient preparation in economics, history, and government. Professor SMITH.

RHETORIC AND ORATORY

ARTHUR RAGAN PRIEST, *Professor*;

MAYNARD LEE DAGGY, *Associate Professor*;

LOREN DOUGLAS MILLIMAN, VERNON LOUIS PARRINGTON, and

MERLE THORPE, *Assistant Professors*;

IDA KATHERINE GREENLEE, ROBERT MAX GARRETT, RAYMOND BUR-

NETTE PEASE, JOHN C. HERBSMAN, FRANK G. KANE,

Instructors.

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. *Each semester. Four hours. Daily and fortnightly themes, together with a study of the principles of rhetoric. Text: Milliman's Manual of English Prose Composition. 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.*

Assistant Professors MILLIMAN, PARRINGTON, and THORPE, and
Instructors PEASE, HERBSMAN, GARRETT, and KANE.

2. ENGLISH COMPOSITION. *Second semester. Four hours. Open to all students who have completed course 1. Thirteen sections. Daily and fortnightly themes, with private conferences. Specified readings from modern English prose. Required of freshmen in the College of Liberal Arts.*

Assistant Professors MILLIMAN, PARRINGTON, and THORPE, and
Instructors PEASE, HERBSMAN, GARRETT, and KANE.

1a. ENGLISH COMPOSITION. *Each semester. Four hours. This course is designed so to 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 for private consultation on his theme work. Required of all freshmen in the College of Engineering and the School of Mines.*

MISS GREENLEE, MR. PEASE, DR. GARRETT, and INSTRUCTOR.

3. **EIGHTEENTH CENTURY ENGLISH PROSE.** *First semester. Four hours.* A critical study of the prose of the Augustan wits. The earlier part of the semester will be devoted to sketching the tendencies of seventeenth century prose; the style of Swift, Defoe and Addison will be studied carefully; and the later developments of prose in the works of Goldsmith, Johnson and Burke will be treated more briefly. Abundant practice in composition based upon the models read. Prerequisite, rhetoric 2.

Assistant Professor PARRINGTON.

4. **NINETEENTH CENTURY ENGLISH PROSE.** *Second semester. Four hours.* A continuation of course 3, dealing primarily with the prose of the Victorian essayists, together with some account of present-day tendencies in English and American prose. Abundant practice in composition based upon the models read.

Assistant Professor PARRINGTON.

Courses 3 and 4 are continuous, nevertheless with the consent of the instructor either may be taken independently of the other. In so far as possible the work in composition will be adapted to the needs of the individual students.

5. **ESSAY AND ORATION.** *First semester. Two hours.* This course comprises a study of the essay and the oration as types of advanced composition. Weekly themes with conferences. Prerequisite, 2.

Associate Professor DAGGY.

6. **FORMS OF PUBLIC DISCOURSE.** *Second semester. Two hours.* 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.

Associate Professor DAGGY.

9. **ADVANCED ARGUMENTATION.** *First semester. Three hours.* Practice in briefing selected masterpieces of argumentation. Each student will also present original briefs. Practice in argumentative composition. Text: Pattee's Practical Argumentation. Prerequisite, 2.

Professor PRIEST.

10. **DEBATING.** *Second semester. Three hours.* Practice in preparation and delivery of debates. Prerequisites, 2, 9, and 13.

Professor PRIEST.

13. **ORAL EXPRESSION.** *Both semesters. Four hours.* 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.

Associate Professor DAGGY and Mr. HERBSMAN.

14. **PRACTICAL PUBLIC SPEAKING.** *Each semester. Two hours.* A practical study of the principles of public speaking and literary interpretation.

Associate Professor DAGGY.

15. **DRAMATIC READING.** *First semester. Two hours.* 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.

Mr. HERBSMAN.

16. **DRAMATIC READING.** *Second semester. Two hours.* A continuation of course 15. The contemporary dramas are read, and selected scenes are presented by members of the class. Prerequisite, 15.

Mr. HERBSMAN.

17. **ENGLISH ORATORY.** *First semester. Four hours.* 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 Eliot, Wentworth, Walpole, Chatham, Burke, Mansfield, Fox, Pitt, Cobden, Bright, and Gladstone are read and analyzed.

Associate Professor DAGGY.

18. **AMERICAN ORATORY.** *Second semester. Four hours.* A critical study of the orations of Otis, Henry, Hamilton, Webster, Calhoun, Phillips, Beecher, Lincoln, and other representative orators.

Associate Professor DAGGY.

SCANDINAVIAN LANGUAGES

DAVID NYVALL, *Professor.*

1, 2. SWEDISH LANGUAGE. *Four hours.* Including orthography, etymology, and syntax. Text-book: Henri Fort's *Elementary Swedish Grammar*. Readers: Selma Lagerlöf's *En herrgårdssägen*, Helena Nyblom's "Det ringer", Tegner's *Fritjofs saga*, Runeberg's *Fänrik Stals Sägner*. Course open to all.

3, 4. NORWEGIAN LANGUAGE. *Four hours.* Including orthography, etymology, and syntax. Text-book: Julius E. Olson's *Grammar*. Readers: Björnson's *Synnöve Solbakken*, Björnson's *En glad gut*, Oehlenschläger's *Hakon Jarl hiin Rige*, Oehlenschläger's *Aladdin*, Holberg's *Erasmus Montanus*. Course open to all.

5, 6. HISTORY OF NORWEGIAN AND DANISH LITERATURE. *Three hours.* Text-book: S. W. Hofgaard's *Norsk Litteraturhistorie*. Reference books: Jaeger's *Den norske Litteraturens historie*, Hansen's *Danske Litteraturens historie*. Course open to students who have completed course 4.

7, 8. HISTORY OF SWEDISH LITERATURE. *Three hours.* Text-book: Karl Warburg's *Svensk Litteraturhistoria*. Reference books: Schück's and Warburg's *Illustrerad Litteraturhistoria*, John Mortensen's "Fran Aftonbladet till Röda Rummet". Course open to students who have completed courses 1 and 2.

9, 10. OLD NORSE GRAMMAR. *Two hours.* Text-book: Henry Sweet's *Icelandic Primer*. Course open to students who have completed courses 2 or 4.

SPANISH

CAROLINE HAVEN OBER, *Professor*;
CHARLES MUNBO STRONG, HOMER P. EARLE, and EDITH S.
MICHELSON, *Instructors*.

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.

SUBJECTS

1, 2. **ELEMENTARY.** *Four hours.* 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. STRONG, Mr. EARLE, and Miss MICHELSON.

1a. **ELEMENTARY.** *Second semester. Four hours.* The same work as in course 1, offered for the benefit of students entering the University at this time. Mr. STRONG and Mr. EARLE.

2a. **ELEMENTARY.** *First semester. Four hours.* Continuation of course 1a. Mr. EARLE.

3a. **PRACTICAL.** *Second semester. Four hours.* Continuation of 2a. Mr. STRONG.

3, 4. **PRACTICAL.** *Four hours.* 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. STRONG.

5, 6. **LITERARY.** *Four hours.* Knapp's Spanish Readings. Spanish poetry. Ford's Spanish Anthology. Essays written on literary subjects. Prerequisite, 2 or 2a. Mr. EARLE.

7, 8. **ADVANCED.** *Three hours.* 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.* Study of the Spanish novel beginning with the "Novela Picaresca," having its origin in Spain, and including the "Novela de Costumbres," the his-

torical 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.* Prerequisite, 4 or 6. Professor OBER.

13, 14. DON QUIJOTE. *Two hours.* Open only to advanced students. Professor OBER.

15, 16. ADVANCED PROSE COMPOSITION. *One hour.* Prerequisite, 4 or 6. Mr. EARLE.

17, 18. TEACHERS' COURSE. *Two hours.* 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. 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.** *Four hours.* 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.

1a. **ELEMENTARY ZOOLOGY.** *Second semester. Four hours.* Designed to meet the needs of students entering the University at the beginning of the second semester. An introduction to the principles of zoology based upon the study of a limited number of types. Professor KINCAID.

3, 4. **VERTEBRATE ANATOMY.** *Four hours.* 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. Four hours.* 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. Four hours.* 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. Four hours.* 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. Four hours.* 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. **VERTEBRATE ECOLOGY.** *Second semester. Two hours.* A study of the classification, habits and relationships of the higher animals, more particularly the birds and mammals. One lecture and three hours of laboratory or field work per week. Prerequisite, 1 or 1a. Assistant Professor HOWARD.

10. **FOREST ZOOLOGY.** *First semester. Three hours.* 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. Two hours.* 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. Two hours.* 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. Two hours.* 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.* Designed to meet the needs of students who expect to teach zoology in the high schools of the state. Professor KINCAID.

15, 16. **MUSEUM AND FIELD WORK.** The collection and identification of the animal forms in the local fauna, including field work and systematic investigations upon the collections contained in the State Museum. Prerequisite, 4. Professor KINCAID.

17, 18. **RESEARCH.** 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.*

HORACE G. 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, Director of Highway Engineering.

ELMER JAMES MCCAUSTLAND, C. E., Professor of Civil Engineering.

CHARLES CHURCH MORE, C. E., Associate Professor of Civil Engineering.

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

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

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

CHARLES W. HARRIS, C. E., Instructor in Civil Engineering.

SAMUEL THOMAS BEATTIE, Instructor in Woodwork.

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.

EDGAR ALLEN LOEW, B. S., Instructor in Electrical Engineering.

JOHN WILLIAM MILLER, B. S., Instructor in Civil Engineering.

JULIUS ADLER, B. S., Instructor in Civil Engineering.

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 HARRISBERGER, Lecturer and Consulting Electrical Engineer on Power Transmission.

ALVIN A. MILLER, B. S. in E. E., Lecturer and Consulting Electrical Engineer on Electric Railways.

HERBERT JUDSON FLAGG, Assistant in Surveying.

CARL DEFOREST POLLOCK, Assistant in Surveying.

KURT FRIEDRICH KIRSTEN, B. S., Assistant in Engineering Drawing.

COURSES OF STUDY

The College of Engineering offers two four-year courses in each of the departments of chemical, civil, electrical, and mechanical engineering. One of these courses in each department is essentially the same as has been offered in the past and leads to the degree of bachelor of science in the respective branches of engineering, as B. S. in civil engineering. The other course has been added to meet the need, which has been recognized alike by the engineering public, the faculty, and many of the students, for a broader foundation of general training than is possible in the regular four-year technical courses. This course in any department leads to the degree of bachelor of science (B. S.), and is followed by a year of graduate work which, under the University regulations for advanced degrees, leads to the degree of master of science in the respective lines, as M. S. in civil engineering.

Thus in five years it will be possible to cover all of the subjects in a regular engineering course and, in addition, include nearly a year's work in general training, and a certain amount of advanced engineering work, which should insure greater efficiency in all of the work as well as to broaden the general education.

LOCAL OPPORTUNITIES

The required work is supplemented in all departments by lectures by prominent engineers, and occasional inspection tours among the varied engineering interests in and around the city of Seattle. Students are strongly advised to devote their vacations to surveying, draughting, work in factories, 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. 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 been able to secure vacation work with surveying parties, in draughting rooms, and in power plants and factories.

WATER POWER

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 splendid opportunity for hydraulic and electrical engineers to develop this power and to distribute 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 engineering 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.

HIGHWAYS

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 in 1908 and the First Annual Congress of Road Builders held in Seattle in 1909, called particular attention to this need throughout the world. The University of Washington is endeavoring to supply the demand in this state, by offering an opportunity for civil engineering students to specialize in this subject during the senior and graduate years.

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 present two years. Four large rock-crushing plants are under construction 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.

LABORATORIES

For a description of the laboratories of the College of Engineering, as well as the other University laboratories used by engineering students, see page 68.

The requirements for admission to the freshman class of the courses leading to the degree of bachelor of science are:

English	4
Algebra	1½
Plane geometry	½
Physics	1
A foreign language.....	2
U. S. history and civics.....	1
Elective	4
Total.....	15

The requirements for admission to the freshman class of the courses leading to the degree B. S. in chemical engineering, B. S. in civil engineering, B. S. in electrical engineering, and B. S. in mechanical engineering are:

English	4
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
Chemistry	1
A foreign language.....	2
U. S. history and civics.....	1
Mechanical drawing	½
Elective	2½
Total.....	15

For more specific information concerning the preparation necessary to meet the above requirements and list of electives, see page 84 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 two years in all courses will be repeated each semester. Additional subjects will be repeated as occasion demands. This makes it possible for a student to enter in either September or February, with the assurance of securing work in its regular sequence.

SEMINAR

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 systematic 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 candidate for an engineering degree. 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 degrees of bachelor of science (B.S.) and bachelor of science in civil engineering (B.S. in C.E.), bachelor of science in electrical engineering (B.S. in E.E.), bachelor of science in mechanical engineering (B.S. in M.E.), and bachelor of science in chemical engineering (B.S. in Ch.E.), respectively, as indicated on the following pages.

DEGREE WITH HONOR

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 degree of master of science in civil engineering (M. S. in C. E.), master of science in electrical engineering (M. S. in E. E.), master of science in mechanical engineering (M. S. in M. E.), and master of science in chemical engineering (M. S. in Ch. E.), respectively, will be conferred upon those who complete the year of graduate work following the respective course leading to the degree of bachelor of science and maintain a grade of S or H (see p. 99), in all subjects, pass a formal examination open to all members of the faculty, and submit a satisfactory thesis.

The professional degrees, civil engineer (C. E.), electrical engineer (E. E.), and mechanical engineer (M. E.), will be conferred in two years on graduates of this institution holding the degree (M. S.) and in three years on those with (B. S.) in their respective lines, if they give evidence of having been engaged continuously in acceptable engineering work and if they present satisfactory theses.

COURSE IN CHEMICAL ENGINEERING

Leading to the degree of Bachelor of Science in Chemical Engineering.

FRESHMAN YEAR

<i>First Semester—</i>		<i>Second Semester—</i>	
	Hours		Hours
Plane trigonometry and higher algebra, 1a.....	4	Analytic geometry, 2a.....	4
Chemistry, 1a	4	Chemistry, 2a	4
Engineering drawing, 3.....	4	Engineering drawing, 4.....	4
English, 1a	4	Surveying, 20	4
Shop, 1a	2	Shop, 4a	2
Military drill	2	Military drill	2
	<u>16+4</u>		<u>16+4</u>

SOPHOMORE YEAR

	Hours		Hours
Calculus, 3b	4	Calculus, 4b	4
Physics, 1a, 1b.....	6	Physics, 2a, 2b.....	5
Qualitative chemistry, 8.....	2	Quantitative chemistry, 9....	4
Elements of steam engin., 6..	2	Machine design, 5a.....	3
Shop, 3a	2	Shop, 4a	2
Military drill	2	Military drill	2
	<u>16+4</u>		<u>16+4</u>

JUNIOR YEAR

	Hours		Hours
Mechanics, 41	5	Hydraulics, 50	4
Calculus, 5a	2	Organic chemistry, 4.....	4
Organic chemistry, 3.....	4	Mineralogy, 5	4
Electrical engineering, 5.....	4	Chemical technology, 14.....	4
Experimental engineering, 13a	2		<u>16</u>
	<u>17</u>		

SENIOR YEAR

	Hours		Hours
Metallurgy, 1	4	Gas and Fuel analysis, 16...	4
Physical chemistry, 22.....	4	Electro chemistry, 23.....	4
Water analysis, 15.....	4	Thesis	4
Elective	4	Elective	4
	<u>16</u>		<u>16</u>

COLLEGE OF ENGINEERING

199

COURSE IN CHEMICAL ENGINEERING

Leading to the degree of Bachelor of Science.

First Semester—

Second Semester—

FRESHMAN YEAR

Hours	Hours
Plane trigonometry and higher algebra, 1a..... 4	Analytic geometry, 2a..... 4
Modern language 4	Modern language 4
Chemistry, 1 4	Chemistry, 2 4
English, 1a 4	Surveying, 20 4
Engineering drawing, 1..... 1	Engineering drawing, 2..... 1
Drill 2	Drill 2
<u>17+2</u>	<u>17+2</u>

SOPHOMORE YEAR

Hours	Hours
Calculus, 3b 4	Calculus, 4b 4
Modern language 4	Modern language 4
Chemistry, 8b 4	Physics, 1a, 1b..... 6
Engineering drawing, 3..... 4	Engineering drawing, 4..... 2
Shop 2	Shop 2
Military drill 2	Military drill 2
<u>16+4</u>	<u>16+4</u>

JUNIOR YEAR

Hours	Hours
Physics, 2a, 2b..... 5	Mechanics, 41 5
Calculus, 5a 2	Mineralogy, 5 4
Organic chemistry, 3..... 4	Organic chemistry, 4..... 4
El. of steam engineering, 6.. 2	Machine design, 5a..... 3
Quantitative chemistry, 9.... 4	
<u>17</u>	<u>16</u>

SENIOR YEAR

Hours	Hours
Hydraulics, 50 4	Chemical technology, 14..... 4
Water analysis, 15..... 4	Bacteriology, 8 4
Metallurgy, 1 4	Electrical engineering, 5..... 4
Bacteriology, 7 4	Gas and fuel, 10..... 4
<u>16</u>	<u>16</u>

GRADUATE YEAR

(Supplementary work to the above.)

Leading to the degree of Master of Science in Chemical Engineering.

Hours	Hours
Physical chemistry, 22..... 4	Electro chemistry, 23..... 4
Experimental engineering, 13a 2	Sanitary engineering 3
Thesis 4	Thesis 3
Elective 6	Elective 6
<u>16</u>	<u>16</u>

COURSE IN CIVIL ENGINEERING

Leading to the degree of Bachelor of Science in Civil Engineering.

*First Semester—**Second Semester—*

FRESHMAN YEAR

Hours		Hours	
Plane trigonometry and higher algebra, 1a.....	4	Analytic geometry, 2a.....	4
Chemistry, 1a	4	Chemistry, 2a	4
Engineering drawing, 3.....	4	Engineering drawing, 4.....	4
English, 1a	4	Surveying, 20	4
Shop, 1a	2	Shop, 1b	2
Military drill	2	Military drill	2
	<u>16+4</u>		<u>16+4</u>

SOPHOMORE YEAR

Hours		Hours	
Calculus, 3b	4	Calculus, 4b	4
Physics, 1a	6	Physics, 2a	5
Surveying, 21	3	Surveying, 22	3
Industrial chemistry, 8.....	3	Geology, 1a	4
Engineering drawing, 7.....	1	Engineering drawing, 8.....	1
Military drill	2	Military drill.....	2
	<u>17+2</u>		<u>17+2</u>

JUNIOR YEAR

Hours		Hours	
Calculus, 5a	2	Hydraulics, 50	4
Mechanics, 41	5	Mechanics, 42	4
Railroads, 31	4	Railroads, 32	4
Electrical engineering, 5.....	4	Masonry, 45	5
Highways, 70	2		
	<u>17</u>		<u>17</u>

SENIOR YEAR

Hours		Hours	
Bridges, 61	4	Bridges, 62	3
Water supply and irrigation, 55	3	Sanitary engineering, 56....	3
Hydraulic power, 51.....	3	Contracts and specifications, 80	2
Structural materials, 65.....	3	Thesis	3
Options	4	Options	6
	<u>17</u>		<u>17</u>

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, 26	2
		Elective (restricted)	2

GROUP 2.

	Hours		Hours
Highway location, 71.....	2	Highway construction, 74.....	1
Highway construction, 73.....	2	Highway economics, 76.....	2
Highway metals, 75.....	1	Parks and boulevards, 78.....	2
		Chemistry 18 (road oils and tars)	1

GROUP 3.

	Hours		Hours
Mechanics, 43	2	Mechanics, 44	2
Bridges, 63	2	Bridges, 64	2
		Elective (restricted)	2

GROUP 4.

	Hours		Hours
Water supply and irrigation design, 57	2	Sanitary engineering design, 58	2
Chemistry of water.....	2	Bacteriology, 9a	2
		Elective (restricted)	2

COURSE IN CIVIL ENGINEERING

Leading to the degree of Bachelor of Science.

FRESHMAN YEAR			
First Semester—	Hours	Second Semester—	Hours
Plane trigonometry and higher algebra, 1a.....	4	Analytic geometry, 2a.....	4
Modern language	4	Modern language	4
Chemistry, 1	4	Chemistry, 2	4
English, 1a	4	Surveying, 20	4
Engineering drawing, 1.....	1	Engineering drawing, 2.....	1
Military drill	2	Military drill	2
	<u>17+2</u>		<u>17+2</u>

SOPHOMORE YEAR			
Hours		Hours	
Calculus, 3b	4	Calculus, 4b	4
Chemistry, 8b	4	Physics, 1a, 1b.....	6
Modern language	4	Modern language	4
Engineering drawing, 5.....	4	Engineering drawing, 6.....	2
Shop, 1a	2	Shop	2
Military drill	2	Military drill	2
	<u>16+4</u>		<u>16+4</u>

JUNIOR YEAR			
Hours		Hours	
Calculus, 5a	2	Mechanics, 41	5
Physics, 2a, 2b.....	5	Electrical engineering, 5.....	4
Surveying, 21	3	Surveying, 22	3
Industrial chemistry	3	Highways, 70	2
Machine design, 5a.....	3	Machine design, 5b.....	2
	<u>16</u>		<u>16</u>

SENIOR YEAR			
Hours		Hours	
Mechanics, 42	4	Hydraulics, 50	4
Railroads, 31	4	Railroads, 32	4
Political science, 1.....	4	Masonry, 45	5
Geology, 1a	4	Elective	4
	<u>16</u>		<u>17</u>

GRADUATE YEAR

Leading to the degree of Master of Science in Civil Engineering.

Hours		Hours	
Bridges, 61	4	Bridges, 62	3
Water supply and irrigation, 55	3	Sanitary engineering, 56.....	3
Hydraulic power, 51.....	3	Contracts and specifications, 80	2
Structural materials, 65.....	3	Thesis	3
Optional	4	Optional	6
	<u>17</u>		<u>17</u>

COURSE IN ELECTRICAL ENGINEERING

Leading to the degree of Bachelor of Science in Electrical Engineering.

FRESHMAN YEAR

<i>First Semester—</i>		<i>Second Semester—</i>	
	Hours		Hours
Plane trigonometry and higher algebra, 1a.....	4	Analytic geometry, 2a.....	4
Chemistry, 1a	4	Chemistry, 2a	4
Engineering drawing, 3.....	4	Engineering drawing, 4.....	4
English, 1a	4	Surveying, 20	4
Shop, 1a	2	Shop, 1b	2
Military drill	2	Military drill	2
	<u>16+4</u>		<u>16+4</u>

SOPHOMORE YEAR

	Hours		Hours
Calculus, 3b	4	Calculus, 4b	4
Physics, 1a, 1b.....	6	Physics, 2a, 2b.....	5
Machine design, 5a.....	3	Machine design, 5b.....	2
Industrial chemistry, 15.....	3	Mechanism, 10	2
Shop, 2a	2	Political science, 1a.....	4
Military drill	2	Shop, 2b	2
	<u>16+4</u>	Military drill	2
			<u>17+4</u>

JUNIOR YEAR

	Hours		Hours
Calculus, 5a	2	Mechanics, 42	4
Mechanics, 41	5	Electrical engineering, 2, 3...	7
Electrical engineering, 1.....	4	Hydraulics, 50	4
Electrical measurements, 4...	4	Experimental engineering, 13a	2
El. St. engineering, 6.....	2		<u>17</u>
	<u>17</u>		

SENIOR YEAR

	Hours		Hours
Alternating currents, 21, 22..	8	Alternating currents, 23, 24..	6
Electric railways, 44, or		Central stations, 46.....	2
Telephones, 31	2	Power transmission, 48.....	2
Dynamo design, 36.....	2	Thesis	4
Steam turbines, 26.....	2	Elective	2
Hydraulic design, 53.....	2		<u>16</u>
	<u>16</u>		

COURSE IN ELECTRICAL ENGINEERING

Leading to the degree of Bachelor of Science.

FRESHMAN YEAR

<i>First Semester—</i>		<i>Second Semester—</i>	
	Hours		Hours
Plane trigonometry and higher algebra, 1a.....	4	Analytic geometry, 2a.....	4
Foreign language	4	Foreign language	4
Chemistry, 1	4	Chemistry, 1a	4
English, 1a	4	Surveying, 20	4
Engineering drawing, 1.....	1	Engineering drawing, 2.....	1
Military drill	2	Military drill	2
	<hr/> 17+2		<hr/> 17+2

SOPHOMORE YEAR

	Hours		Hours
Calculus, 3b	4	Calculus, 4b	4
Foreign language	4	Foreign language	4
Chemistry, 2a	4	Physics, 1a, 1b.....	6
Engineering drawing, 5.....	4	Engineering drawing, 6.....	2
Shop, 1a	2	Shop, 2a	2
Military drill	2	Military drill	2
	<hr/> 16+4		<hr/> 16+4

JUNIOR YEAR

	Hours		Hours
Calculus, 5a	2	Mechanics, 41	5
Physics, 2a, 2b.....	5	Electrical engineering, 1.....	4
Political science, 1a.....	4	Electrical measurements, 4... 4	
Machine design, 5a.....	3	Machine design, 5b.....	2
Industrial chemistry, 15.....	3	Mechanism, 10	2
Shop, 3a	2	Shop, 4a	2
	<hr/> 17+2		<hr/> 17+2

SENIOR YEAR

	Hours		Hours
Mechanics, 42	4	Alternating currents, 21, 22.. 8	
Electrical engineering, 2, 3... 7		Telephones, 32, or meters, 41. 2	
Hydraulics, 50	4	Thermodynamics, 11	2
Experimental engineering, 13a 2		Hydraulic motors, 53.....	2
	<hr/> 17	Elective	2
			<hr/> 16

GRADUATE YEAR

Leading to the degree of Master of Science in Electrical Engineering.

	Hours		Hours
Alternating currents, 23, 24.. 6		Alternating currents, 51..... 4	
Electric railways, 44..... 2		Power transmission, 48..... 2	
Dynamo design, 36..... 2		Central stations, 46..... 2	
Steam turbines, 26..... 2		Thesis	4
Structural materials, 65..... 2		Elective	4
Elective	2		<hr/> 16
	<hr/> 16		

COURSE IN MECHANICAL ENGINEERING

Leading to the degree of Bachelor of Science in Mechanical Engineering.

FRESHMAN YEAR

<i>First Semester—</i>		<i>Second Semester—</i>	
	Hours		Hours
Plane trigonometry and higher algebra, 1a.....	4	Analytic geometry, 2a.....	4
Chemistry, 1a	4	Chemistry, 2a	4
Engineering drawing, 3.....	4	Engineering drawing, 4.....	4
English, 1a	4	Surveying, 20	4
Shop, 1a	2	Shop, 1b	2
Military drill	2	Military drill	2
	<u>16+4</u>		<u>16+4</u>

SOPHOMORE YEAR

	Hours		Hours
Calculus, 3b	4	Calculus, 4b	4
Physics, 1a	6	Physics, 2a	5
Machine design, 5a.....	3	Machine design, 5b.....	2
Industrial chemistry	3	Mechanism, 10	4
Shop, 2a	2	Shop, 2b	2
Military drill	2	Military drill	2
	<u>16+4</u>		<u>17+4</u>

JUNIOR YEAR

	Hours		Hours
Calculus, 5a	2	Mechanics, 42	4
Mechanics, 41	5	Electrical engineering, 2.....	4
Electrical engineering, 1.....	4	Hydraulics, 50	4
El. steam engineering, 6.....	2	Engines and boilers, 7a.....	2
Experimental engineering, 13a	3	Valve gears, 8.....	2
Shop, 3a	2	Shop, 3b	2
	<u>16+2</u>		<u>16+2</u>

SENIOR YEAR

	Hours		Hours
Hydraulic design, 53.....	2	Gas engine, 15.....	2
Machine design, 5c.....	2	Machine design, 5d.....	2
Engine and boiler design.....	2	Heating and ventilating, 1b..	2
Steam turbines, 26.....	2	Power plants, 25.....	2
Thermodynamics, 11	2	Experimental engineering, 13c	2
Structural materials, 10a....	2	Elective	2
Experimental engineering, 13b	3	Thesis	4
Business law	1		<u>16</u>
	<u>16</u>		

COURSE IN MECHANICAL ENGINEERING

Leading to the degree of Bachelor of Science.

FRESHMAN YEAR

<i>First Semester—</i>		<i>Second Semester—</i>	
	Hours		Hours
Plane trigonometry and higher algebra, 1a.....	4	Analytic geometry, 2a.....	4
Foreign language	4	Foreign language	4
Chemistry, 1	4	Chemistry, 1a	4
English, 1a	4	Surveying, 20	4
Engineering drawing, 1.....	1	Engineering drawing, 2.....	1
Military drill	2	Military drill	2
	17+2		17+2

SOPHOMORE YEAR

	Hours		Hours
Calculus, 3b	4	Calculus, 4b	4
Foreign language	4	Foreign language	4
Chemistry, 2a	4	Physics, 1a, 1b.....	6
Engineering drawing, 5.....	4	Engineering drawing, 6.....	2
Shop, 1a	2	Shop, 2a	2
Military drill	2	Military drill	2
	16+4		16+4

JUNIOR YEAR

	Hours		Hours
Calculus, 5a	2	Mechanics, 41	5
Physics, 2a, 2b.....	5	Electrical engineering, 1.....	4
Political science, 1a.....	4	Machine design, 5b.....	2
Machine design, 5a.....	3	Mechanism, 10	2
Industrial chemistry, 15.....	3	Steam engineering, 6.....	2
Shop, 2a	2	Elective	2
	17+2	Shop, 2b	2
			17+2

SENIOR YEAR

	Hours		Hours
Mechanics, 42	4	Hydraulic motors, 53.....	2
Electrical engineering, 3.....	4	Thermodynamics, 11	2
Hydraulics, 50	4	Valve gears, 8.....	2
Experimental engineering, 13a	3	Engine and boilers, 7b.....	2
Engine and boilers, 7a.....	2	Electric railways, 44.....	2
Shop, 3a	2	Machine design, 5c.....	2
	17+2	Experimental engineering, 13b	3
		Shop, 3b	2
			15+2

GRADUATE YEAR

Leading to the degree of Master of Science in Mechanical Engineering.

	Hours		Hours
Alternating currents, 21, 22..	8	Heating and ventilating, 16..	2
Machine design, 5d.....	2	Power plants, 25.....	2
Steam turbines, 26.....	2	Gas engines, 15.....	2
Experimental engineering, 13c	2	Reg. mechanical Engin., 20..	2
Structural materials, 10a....	2	Graphic statics, 12.....	2
Commercial law	1	Elective	2
	17	Thesis	4
			16

DEPARTMENTS OF INSTRUCTION

CHEMICAL ENGINEERING

HORACE G. BYERS, *Professor*;
HENRY KRETTZER BENSON, *Associate Professor*;
IRVIN WALTER BRANDEL, *Assistant Professor*;
WILLIAM MAURICE DEHN, *Assistant Professor*;
ROBERT E. ROSE, *Instructor*;

CHARLES W. JOHNSON, *Professor and Dean of the
School of Pharmacy.*

SUBJECTS

The courses in chemical engineering are the following numbered courses in department of chemistry in the College of Liberal Arts: 1, 2, 1a, 2a, 2b, 1b, 3, 4, 8, 8b, 9, 12, 13, 14, 15, 16, 17, 18, 22 23.

CIVIL ENGINEERING

ALMON HOMER FULLER, *Professor*;
SAMUEL CHRISTOPHER LANCASTER, *Professor*;
ELMER JAMES MCCAUSTLAND, *Professor*;
CHARLES CHURCH MORE, *Associate Professor*;
CHARLES W. HARRIS, *Instructor*;
HAROLD ALLEN THOMAS, *Instructor*;
JOHN WILLIAM MILLER, *Instructor*;
JULIUS ADLER, *Instructor*;
CHARLES EVAN FOWLER, *Lecturer.*

SUBJECTS

1, 2. ENGINEERING DRAWING. *One hour.* Linear drawing, including exercises in irregular curves and section lining; Roman and Gothic capital letters; a system of freehand lettering for working drawings. Prerequisite, plane geometry. Mr. HARRIS.

3. ENGINEERING DRAWING. *Each semester.* 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 freehand alphabet for working drawings. Prerequisites, plane and solid geometry.

Mr. HARRIS, Professor McCAUSTLAND, Mr. THOMAS.

4. ENGINEERING DRAWING. *Each semester.* Continuation of 3. 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.

5. ENGINEERING DRAWING. Orthographic projection supplemented by principles of descriptive geometry to and including intersections and development of surfaces. Prerequisites: Drawing 2 and mathematics 2. (Not offered in 1910-11).

6. ENGINEERING DRAWING. Continuation of drawing 5. Problems and tracings. Prerequisites, 5 or 4. (Not offered in 1910-11).

7, 8. ENGINEERING DRAWING. *One hour.* Working drawings, including tracings of timber, masonry, and steel structures. Prerequisite, 4.

Mr. THOMAS.

20. PLANE SURVEYING. *Each 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.

Mr. THOMAS and Assistants.

21. CITY AND MINE SURVEYING. *Each semester. Three hours.* 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, 20.

Mr. MILLER.

22. TOPOGRAPHIC SURVEYING. *Each semester. Three hours.* Colored topography; base line measurements; transit triangulation; plane table, stadia and hydrographic surveys; maps. Prerequisite, 21.

Mr. MILLER.

23. **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, and instruction in the use and adjustment of instruments. Methods used in the United States public land surveys. Platting of notes and calculation of areas.

Mr. THOMAS.

24. **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 23.

Mr. THOMAS.

31. **RAILROAD LOCATION.** *First semester.* 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, earthwork computations and estimates. Prerequisite, 22.

Mr. MILLER.

32. **RAILROAD ECONOMICS.** *Second semester.* Continuation of 31. Study of the conditions controlling the economic relation of location, construction and maintenance. Details of construction.

Mr. MILLER.

41, 42. **MECHANICS.** *41 each semester, five hours. 42 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, and Mr. ADLER.

43, 44. **ADVANCED MECHANICS.** *Two hours.* 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, 42 and 45.

Associate Professor MORE.

45. **MASONRY CONSTRUCTION.** *Second semester. Five hours.* 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 6 or 8, preceded or accompanied by mechanics 42. Associate Professor MORE.

50. **HYDRAULICS.** *Second semester.* 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 42.

Mr. HARRIS.

51. **HYDRAULIC POWER.** *First semester. Three hours.* 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, 50.

Mr. HARRIS.

53. **HYDRAULIC MOTORS.** *First semester. One hour.* Development and theory of water wheels and turbine pumps; design of a reaction turbine. Prerequisite, 50.

Mr. HARRIS.

55. **WATER SUPPLY AND IRRIGATION.** *First semester. Three hours.* This course includes a study of the principal engineering operations necessary to secure suitable water supplies for cities and towns. Some of the features considered are, sources of supply, flow of streams, impounding and storage reservoirs, conduits and pipe lines, standpipes, and the distributing system. Standards of purity for potable waters. Drafting-room work weekly. Prerequisite, 50.

Professor McCaustland.

56. **SANITARY ENGINEERING.** *Second semester. Three hours.* A study of the design and construction of sewerage systems, both combined and separate. The disposal of organic wastes. Treatment of sewage to secure non-putrescible effluents. Drafting-room work weekly. Prerequisite, 55.

Professor McCaustland.

57. **WATER SUPPLY AND IRRIGATION DESIGN.** *First semester.* Supplementary to course 55, with special problems in design. Purification of water. Sedimentation basins and filters. Design of diversion weirs, canals, flumes and drops

Professor McCaustland.

58. **SANITARY ENGINEERING DESIGN.** *Second semester. Two hours.* Supplementary to course 56, with special problems in

design. Treatment of sewage. Precipitation and septic tanks. Contact and percolating filters. Trickling filters and hydrolytic tanks.
Professor McCAUSTLAND.

61, 62. BRIDGES. Stresses, design and deflection of simple trusses with parallel and with non-parallel chords. Algebraic and graphic methods. Complete detail drawing of a portion of some structure. Estimates of cost. Prerequisites, 42 and 45.

Professor FULLER.

63. HIGHER STRUCTURES. *Two hours.* Theory and design of drawbridges, cantilever and suspension bridges, metallic and reinforced concrete arches. Must be preceded or accompanied by 61, 62.

Professor FULLER.

65. STRUCTURAL MATERIALS. *First semester. Three hours.* A study of the physical properties of wood, iron, steel, stone, brick, cement, concrete, etc. Lectures and laboratory work. Prerequisite, 42.

Professor FULLER and Mr. ADLER.

70. HIGHWAYS. *Second semester. Two hours.* A series of illustrated lectures, and recitations, constituting a general survey of highway location, construction and maintenance, with particular reference to American road-building problems.

Director LANCASTER and Mr. ADLER.

71. HIGHWAY LOCATION. *First semester. Two hours.* 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 paper location. Prerequisites, 42 and 45.

Director LANCASTER and Mr. ADLER.

73. HIGHWAY CONSTRUCTION. *First semester. Two hours.* A detailed study of rural highway construction from the standpoint 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; current American practice as represented by various state highway commissions.

Director LANCASTER and Mr. ADLER.

74. HIGHWAY CONSTRUCTION. *Second semester. Two hours.* A study of city streets and pavements, and of the manufacture and testing of the various materials used therein. Mr ADLER.

75. **HIGHWAY METALS.** *First semester. One hour.* A study of the proper selection of materials for use in metalling the surface of roads to meet the varying conditions of traffic. Laboratory work; all standard tests for highway metals. Mr. ADLER.

76. **HIGHWAY ECONOMICS.** *Second semester. Two hours.* The economic justification for improved highways; a study of the laws of American states dealing with revenues for construction, supervision and maintenance of highways.

Director LANCASTER and Mr. ADLER.

78. **PARKS AND BOULEVARDS.** *Second semester. Two hours.* 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.

Director LANCASTER.

80. **CONTRACTS AND SPECIFICATIONS.** *Two hours. Second semester.* Lectures on the law of contracts and a study of engineering specifications.

Professor CONDON and Mr. FOWLER.

ELECTRICAL ENGINEERING

CARL EDWARD MAGNUSSON, *Professor;*

FRANK E. JOHNSON, EDGAR A. LOEW, *Instructors;*

JAMES D. ROSS, JOHN HARISBERGER, ALVIN A. MILLER, *Lecturers;*

FREDERICK K. KIRSTEN, *Assistant.*

FOR UNDERGRADUATES

1. **ELECTRICAL ENGINEERING.** *Each semester. Four hours.* Theory of the magnetic circuit; construction, operation, and the characteristics of direct generators and motors. The theory is illustrated and supplemented by a large number of quantitative problems from commercial machines.

Mr. LOEW, Mr. KIRSTEN.

2. **ELECTRICAL ENGINEERING.** *Each semester. Three hours.* Continuation of course 1, and including storage batteries and the principles of photometry.

Mr LOEW.

3. **DYNAMO LABORATORY.** *Each semester. Four hours.* Experimental work on direct current dynamo machinery and stor-

age batteries. Commercial photometry. Must be taken in connection with course 2. Mr. LOEW, Mr. KIRSTEN.

4. ELECTRICAL MEASUREMENTS.—*Each semester. Four hours.* Prerequisite, physics 1a and 2a. Mr. BRAKEL.

5. ELECTRICAL ENGINEERING. *Each semester. Four hours.* This course deals with the more important industrial applications of electricity, and is arranged to meet the needs of students in civil and chemical engineering.

Mr. JOHNSON, Mr. LOEW, Mr. KIRSTEN.

6. ELECTRICAL ENGINEERING. *Second semester. Three hours.* This course deals with the application of electricity to mining and is arranged for students in mining engineering.

Mr. KIRSTEN.

7. ELECTRICAL ENGINEERING. *Second semester. Four hours.* This course is planned for students in mechanical engineering who have completed course 1. The work covers the more important features of direct current dynamos and also includes a brief outline of alternating current theory and some experiments with alternating current machinery.

Mr. LOEW.

15. ALTERNATING CURRENTS. *Second semester. Two hours.* An introduction to alternating currents theory and practice, with laboratory work on alternating current machinery. Elective for students who have completed course 5. Professor MAGNUSSON.

FOR GRADUATES AND UNDERGRADUATES

21. ALTERNATING CURRENTS. *First semester. Four hours.* The theory of the generation of single phase and polyphase currents, the use of the complex quantity, and the calculation and behavior of alternating current apparatus and transmission lines.

Professor MAGNUSSON.

22. ALTERNATING CURRENTS LABORATORY. *First semester. Four hours.* Experimental work on alternating current machinery. To be taken with course 11.

Professor MAGNUSSON.

23. ALTERNATING CURRENTS. *Second semester. Four hours.* The theory of the single phase and polyphase induction motor, synchronous motor, and rotary converter. The effect of these motors on transmission lines and systems. Distortion of wave shape and the effects of higher harmonics.

Professor MAGNUSSON.

24. **ALTERNATING CURRENTS. LABORATORY.** *Second semester. Two hours.* A continuation of course 22 with tests on large commercial machines. Professor MAGNUSSON.

31. **TELEPHONES.** *First semester. Two hours.* Theory, construction, and operation of telephone and telephone systems. General station practice. Mr. JOHNSON.

32. **TELEPHONES AND TELEGRAPHS.** *Second semester. Two hours.* Details of automatic and manual switchboards. Testing and locating of faults. Multiplex and wireless telegraphy. Railway signal systems. Mr. JOHNSON.

36. **DYNAMO DESIGN.** *Each semester. Two hours.* Complete design of one direct current generator or motor. Mr. LOEW.

37. **DESIGN OF ELECTRICAL APPARATUS.** *Second semester. Two hours.* Design of switchboards, transformers, alternating generators or motors. Mr. LOEW.

41. **METERS.** *Second semester. Two hours.* Detail study of different types of electrical meters and the problems arising in the measurements of electrical energy for various commercial requirements. Mr. JOHNSON.

44. **ELECTRIC RAILWAYS.** *First semester. Two hours.* Electrical equipment and rolling stock; roadbed; construction, and operation of direct current, single phase and polyphase systems. Professor MAGNUSSON, Mr. MILLER.

46. **CENTRAL STATIONS AND ELECTRIC LIGHTING.** *Second semester. Two hours.* Location, design, and operation of electric central stations. Electric lighting systems. Mr. JOHNSON, Mr. ROSS.

48. **POWER TRANSMISSION.** *Second semester. Two hours.* Location, design, and operation of electric power transmission systems. Mr. LOEW, Mr. HARRISBERGER.

FOR GRADUATES

51. **ALTERNATING CURRENTS.** *Second semester. Four hours.* Transient electrical phenomena and alternating current commutator motors. Prerequisites: Courses 21, 22, 23, 24. Professor MAGNUSSON.

MECHANICAL ENGINEERING

EVERETT OWEN EASTWOOD, *Professor*;

GEORGE SAMUEL WILSON, *Assistant Professor*;

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 callipers. 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.* 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.

Assistant Professor WILSON.

5b. ELEMENTS OF MACHINE DESIGN. *Each semester. Two hours.* 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.

Assistant Professor WILSON.

5c. DESIGN OF SPECIAL MACHINERY. *First semester. Two hours.* 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.

Assistant Professor WILSON.

5d. ADVANCED MACHINE DESIGN. *Second semester. Two hours.* Special problems in the design of machine tools, and auto-

matic machinery are given, suited to the abilities and inclination toward specialization of the students. Prerequisites, 5c, 10, and mechanics 5b.

Assistant Professor WILSON.

5f. **ELEMENTS OF MACHINE DESIGN.** *Each semester. One hour.* First five weeks. For students taking mining engineering, an abridgement of 5a.

Assistant Professor WILSON.

6. **ELEMENTS OF STEAM ENGINEERING.** *Each semester. Two hours.* 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.** *First semester. Two hours.* 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.** *Second semester. Two hours.* A study of the theory of the design and its application. One complete problem will be assigned for solution 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.** *First semester. Two hours.* A course in the theory and practice of designing the various kinds of valve gears for steam engines. Prerequisite, 6 or 7a.

Assistant Professor WILSON.

10. **MECHANISM.** *First semester. Two hours.* 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.

Assistant Professor WILSON.

11. **THERMODYNAMICS.** *First semester. Two hours.* 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 refriger-

ating 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. *First semester. Three hours.* 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. *First semester. Two hours.* 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.

Assistant Professor WILSON.

13b. EXPERIMENTAL ENGINEERING. *First semester. Two hours.* 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.

Assistant Professor WILSON.

13c. EXPERIMENTAL ENGINEERING. *Second semester. Two hours.* 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 Assistant Professor WILSON.

15. GAS ENGINES. *Second semester. Two hours.* 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.

Assistant Professor WILSON.

16. HEATING AND VENTILATING. *Second semester. Two hours.* 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.** *First or second semester. Two hours.* Mechanical engineering as related to the machinery and maintenance of railways.

Assistant Professor WILSON.

25. **POWER PLANTS.** *Second semester. Two hours.* A study of the design of power plants involving their location, buildings, prime movers, power transmission, etc. Professor EASTWOOD.

26. **STEAM TURBINES.** *First semester. Two hours.* The theory, construction and design of steam turbines.

Professor EASTWOOD.

30. **NAVAL ARCHITECTURE.** *First semester. Two hours.* 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.

SCHOOL OF FORESTRY

FACULTY

FRANK G. MILLER, Professor of Forestry, *Dean*;
HUGO A. WINKENWERDER, M. F., Associate Professor of Forestry;
WILLIAM T. ANDREWS, Instructor in Forestry;
OLIVER P. M. GOSS, C. E., Instructor in Timber Physics;
_____, Instructor in Forestry.

SPECIAL LECTURERS

C. S. CHAPMAN, District Forester, United States Forest Service,
Lecturer on Forest Administration.
GEORGE H. CECIL, Assistant District Forester, U. S. Forest Service,
Lecturer on Forest Administration.
W. E. HERRING, District Engineer, District 6, U. S. Forest Service,
Lecturer on Forest Engineering.
W. F. STALEY, Law Office, District 6, U. S. Forest Service, Lec-
turer on Forest Law.
HOWARD K. O'BRIEN, Assistant District Forester, District 6, U. S.
Forest Service, Lecturer on Grazing.
CHARLES H. FLOBY, Assistant District Forester, U. S. Forest Ser-
vice, Lecturer on Forest Organization.
F. E. AMES, Assistant District Forester, U. S. Forest Service,
Lecturer on Timber Sales.
BURT P. KIRKLAND, Supervisor, Snoqualmie National Forest, Lec-
turer on Timber Sales and Silvics.
A. H. COUSINS, Fiscal Agent, District 6, U. S. Forest Service,
Lecturer on Fiscal Regulations.
J. B. KNAPP, Assistant District Forester, District 6, U. S. Forest
Service, Lecturer on Forest Products.
S. W. MCCLURE, Inspector, Bureau Animal Industry, U. S. Depart-
ment of Agriculture, Lecturer on Animal Husbandry.
C. H. SCHULTZ, D. V. M., Lecturer on Veterinary Science.
J. T. JARDINE, Grazing Expert, U. S. Department of Agriculture,
Lecturer on Plant Ecology.

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 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. Students 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.

GENERAL FORESTRY

ADMISSION

The requirements for admission to the freshmen class of the School of Forestry are:

	<i>Credits.</i>
English	4
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
U. S. history and civics.....	1
Botany	1
Foreign language	2
Elective	3
Total.....	15

For more specific information concerning the preparation necessary to meet the above requirements and for list of electives, see page 84 and following.

Students may be admitted:

- (1) By presenting a certificate of graduation from an accredited school (for list see page 95) covering the above subjects.
- (2) By passing a satisfactory examination in the above subjects.

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 auxiliary sciences, language, mathematics, surveying, political economy, and elementary law are provided as a foundation for the technical courses in forestry.

FRESHMAN YEAR

First Semester—		Second Semester—	
	Hours		Hours
Rhetoric, 1	4	Rhetoric, 2	4
Botany, 5 (Crypt. Bot.)	4	Botany, 6 (Crypt. Bot.)	4
Mathematics, 1a	4	Political economy, 1	4
Forestry, 1 (Gen'l For.)	4	Forestry, 2 (Dendrology)	4
Drill	2	Forestry, 2a (Camping and Packing)	1
	<hr/> 16+2	Drill	2
			<hr/> 17+2

SOPHOMORE YEAR

	Hours		Hours
Civil engineering, 23 (Forest Surveying)	4	Civil engineering, 24 (Forest Surveying)	4
Chemistry, 1	4	Chemistry, 2	4
Forestry, 3 (Silviculture)	4	Forestry, 4 (Silviculture)	4
Geology, 3 (Climatology)	4	Geology (Forest Geology)	4
Drill	2	Drill	2
	<hr/> 16+2		<hr/> 16+2

JUNIOR YEAR

	Hours		Hours
Physics, 1c	4	Physics, 2c	4
Zoology, 10 (Forest Zoology) ..	3	Zoology, 11 (Forest En- tomology)	3
Botany, 15 (For. Pathology) ..	4	Botany, 16 (Plant Physiology) ..	4
Forestry, 5 (Mensuration)	3	Forestry, 6 (Mensuration)	3
Elementary law (S.O.S.)	2	Forestry, 8 (Forest Eco- nomics)	2
Mech. Eng., 6 (Elements of Steam Engineering)	2	Forestry, 10 (History and Policy)	2
	<hr/> 18		<hr/> 18

SENIOR YEAR

	Hours		Hours
Forestry, 11 (Management) ..	3	Forestry, 12 (Management) ..	4
Forestry, 13 (For. Utilization) ..	3	Forestry, 14 (Mensuration) ..	2
Forestry, 15 (Adv. Dendrology) ..	3	Forestry, 16 (Nat'l For. Admin.)	2
Forestry, 17 (Wood Tech.) ..	3	Forestry, 18 (Wood Pres- ervation)	2
Forestry, 19 (Lumbering)	2	Forestry, 20 (Lumbering)	6
Forestry, 21 (Timber Physics) ..	3	Forest law	1
	<hr/> 17		<hr/> 17

Course 1, General Forestry; 8, Forest Economics, and 22, Teachers' Course are open to students in other departments. Certain other courses may be elected by students from other departments on permission of the instructor in charge.

SUBJECTS

1. **GENERAL FORESTRY.** *Four hours.* An introductory course for those who wish a general view of the subject. The scope and needs of forestry, its growth in the United States, and the importance of federal and state forests are considered. The laboratory work will include the special morphology of the organs of woody plants and identification of native trees by means of bud and twig characters. Open to students in other departments either as a three- or four-hour course.

Professor MILLER, Associate Professor WINKENWERDER.

2. **DENDROLOGY.** *Four hours.* The principles of nomenclature and classification; the natural orders, artificial keys, the significance of orders, families, genera and species; the principles of geographic distribution; dispersions and migrations; floral areas of North America; identification and distribution of the timber trees of North America; the silvical characters of trees.

Associate Professor WINKENWERDER.

2a. **CAMPING AND PACKING.** *Second semester. One hour.* Selection of camp site; pitching camp; camp equipment; what to wear; camp rations, and camp cooking; breaking camp and moving; pack transportation by man, animal, boat, vehicle; camp sanitation; life in camp. Demonstrations. This course includes a half dozen lectures on first aid to the injured.

Mr. ANDREWS, Dr. HALL.

3, 4. **SILVICULTURE.** *Four hours.* 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 reviewed; seed collecting; nursery practice; transplanting.

Professor MILLER.

5, 6. **FOREST MENSURATION.** *Three hours.* The construction and use of log scales; methods of determining the contents of logs, of individual trees, and of the whole forest; timber estimating and cruising; methods of studying growth; the construction and use of volume and yield tables.

Associate Professor WINKENWERDER, Mr. ANDREWS.

8. **FOREST ECONOMICS.** *Second semester. Two hours.* The forest as a natural resource; the forest compared with other natural resources; history of the conservation movement; the

special relation of forests to this movement; the relation of forests to climate, soil erosion, irrigation, water-power, navigation, grazing, public health, industry and labor; forest taxation, and tariff on timber. Open to students in other departments.

Associate Professor WINKENWERDER.

10. **FOREST HISTORY AND POLICY.** *Second semester. Two hours.* Forest policy of the United States; forestry in the states and our island possessions; the rise of forestry abroad.

Professor MILLER.

11, 12. **FOREST MANAGEMENT.** *First semester. Three hours. Second semester. Four hours.* Economic management of forest lands; consideration of the normal forest; forest valuation; forest finance; regulation of the yield; working plans; forest administration; forest management on national forests. In the second half of the second semester the work is transferred to the field.

Professor MILLER, Mr. ANDREWS.

13. **FOREST UTILIZATION.** *First semester. Three hours.* Methods of the harvesting and the manufacture of secondary forest products; forest herbage. The chief commercial products of foreign forests. Statistics of production; regions of forest production; the markets and the chief centers of distribution. The utilization of waste in relation to the forest and to the wood-working plant; the influence of inventions and improved machinery. Classroom work supplemented by visits to industries using secondary forest products. Associate Professor WINKENWERDER.

14. **FOREST MENSURATION.** *Second semester. Two hours.* This course will be given in the field the second half of the semester in connection with the field work in lumbering and forest management. It supplements and enlarges upon the work of timber estimating and mapping as given in courses 5 and 6.

Mr. ANDREWS.

15. **ADVANCED DENDROLOGY.** *First semester.* This course will take up a review of course 2, with an enlargement of the scope with reference to the number of species learned.

Associate Professor WINKENWERDER.

16. **NATIONAL FOREST ADMINISTRATION.** *Second semester. Two hours.* Objects of forest administration; regulations and in-

structions 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. Special Lecturers.

17. WOOD TECHNOLOGY. *First semester. Three hours.* Wood structure; color, grain, odor, hardness, specific gravity, conductivity; relation of wood to water; the distribution of water in wood; green wood compared with seasoned wood; hygroscopicity, warping and shrinking; mechanical properties, such as strength, durability, combustibility, and adaptability for use as building material; defects in wood in relation to mechanical qualities and commercial value; identification, classification, and uses of the chief commercial woods. Associate Professor WINKENWERDER.

18. WOOD PRESERVATION. *Second semester. Two hours.* The decay of timber; the prevention of decay; seasoning; application of external coatings; carbonization; injection processes; open- and full-cell treatments; pressure and non-pressure processes. The treatment of special products; specifications for treatment in use by various corporations; cost and efficiency of the different methods of treatment; the strength of treated timbers. Classroom work supplemented by visits to dry kilns and to wood-treating plants. Prerequisite: One year of chemistry.

Associate Professor WINKENWERDER.

19, 20. LUMBERING. *First semester. Two hours. Second semester. Six hours.* This course includes methods of logging and transportation in the principal lumber regions of the United States; lumbering in the Northwest is given special emphasis; the manufacture, seasoning, and grading of lumber; cost and equipment of a logging and milling plant; 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 of logging plants. During the last half of the second semester the work is carried on in the field. Mr. ANDREWS.

21. TIMBER PHYSICS. *First semester. Three hours.* 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.

Mr. Goss.

22. **TEACHER'S COURSE.** *Second semester. One hour.* This course is given to meet the requirements of teachers in public schools offering agriculture (includes forestry) for entrance. Education in forestry in the public schools of Europe, and of America; the relation of forests and forestry to agriculture; forest influences; the farm wood lot; the life history of the individual tree and of the forest; enemies of the forest; identification, distribution, and silvical requirements of the more common trees of Washington; classification of forest lands. Three afternoons in the field are required in addition to the lectures. Open to students in other departments.

Associate Professor WINKENWERDER.

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
National forest administration	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 thirty-two hours of technical forestry and the requisite training in the auxiliary sciences, mathematics, and language.

SPECIAL SHORT COURSES

I. RANGER COURSE

The United States forest service co-operates with the School of Forestry in offering a special two-year course of twelve weeks each, planned for forest rangers and guards desiring to increase their efficiency, or for those who wish to fit themselves for such work.

The session for 1911 opens Tuesday, January 3, and closes Friday, March 24. 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 20 years old and show ability to carry the work with profit to themselves. Admission to classes is without examination. A statement showing all courses satisfactorily completed will be issued to each student at close of the session.

The expenses are approximately as follows: Deposit, \$2.00; 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.

First Year—

1. Silviculture
2. Forest mensuration
3. Forest surveying
4. Forest law
5. National forest administration
6. English composition (elective)
7. First aid to injured
8. Diseases of trees

Second Year—

9. Silviculture
10. Forest mensuration
11. Forest surveying
12. Lumbering
13. Forest management
14. Geology (elective)

ELECTIVE—First or Second Year

15. Botany
16. Veterinary science
17. Animal husbandry

II. LUMBERMAN'S COURSE

This course is offered for the benefit of timber cruisers, logging superintendents, woodland owners and others who wish to acquire a knowledge of the general principles of forestry, and methods by which timber lands are handled to insure continu-

ous crops. The terms of admission are the same as those for admission to the Ranger Course. For expenses, see statement for Ranger Course. The session for 1911 opens January 4 and closes March 24. In the enumeration of the subjects of this course, the numbers correspond to those designating the subjects in the Ranger Course. This course includes:

- | | |
|-------------------------|------------------------|
| 1. Silviculture. | 8. Diseases of trees |
| 2. Forest mesuration | 12. Lumbering |
| 3. Forest surveying | 13. Forest management |
| 7. First aid to injured | 14. Geology (elective) |

1. **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.

Professor MILLER, Mr. KIRKLAND.

2. **FOREST MEASUREMENTS.** (1) *Scaling.* Principles and comparison of log rules; actual demonstrations in the woods, covering instruction in allowance for defect; transportation of timber measures, board measure, shingle bolts, cord measure, etc. Log grading; scale records.

Mr. ANDREWS.

(2) **ESTIMATING, MAPPING AND REPORTS.** (a) Methods in common use in the Northwest demonstrated in the woods; how to tell defect and allow for it in estimate; grading of standing timber; variation of methods according to different standards of merchantability and kinds of products, such as saw logs, railroad ties, shingle bolts, and mining timbers.

Mr. ANDREWS.

(b) The construction and use of height measures; contents of felled and standing trees; use of volume tables.

Associate Professor WINKENWERDER.

3. 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. THOMAS.

4. 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.

Mr. STALEY.

5. 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. CHAPMAN, CECIL, HERRING, O'BRIEN, FLORY, COUSINS, KNAPP.

6. **ENGLISH COMPOSITION.** This course is designed to assist the student in the preparation of written reports. Weekly themes are assigned, and these are corrected by the instructor, and returned to the student. The theme work is supplemented by class-room instruction.

[Instructor.]

7. **FIRST AID TO THE INJURED.** This course consists of six to eight lectures on what to do in case of accidents, and the use of simple remedies. Demonstrations. Director HALL.

8. **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 principles underlying the treatment of diseased trees. Professor FAYE.

9. **SILVICULTURE.** This is a continuation of course 1, in which forest ecology, the forest as a whole, forest regions and forest types are especially emphasized; additional work in methods of cutting and reproducing the forest; practice work in the field in writing forest descriptions. Professor MILLER.

10. **FOREST MEASUREMENTS.** (1) Advanced work in cruising, topographical mapping and reports. Reports will include detailed forest descriptions, stumpage values, log grades, detailed cost and management of operations; additional practice in log scaling. Mr. ANDREWS.

(2) The construction of volume tables; valuation surveys by means of the volume curve and the arbitrary group methods; methods of determining mean and periodic annual growth in height and diameter. Each part of the work is demonstrated by actual field practice. Associate Professor WINKENWERDER.

11. **FOREST SURVEYING.** (1) Engineer's level: adjustment and use in laying out roads, trails, etc.

(2) Transit: adjustment and use in running out land lines, road or railroad lines, meridian with north star or sun, and in map work with stadia. Triangulation.

(3) Plane table: use in making maps on large and small scales. Study of U. S. government methods.

(4) U. S. government land surveys: complete study of Manual for U. S. Land Surveyors. Mr. THOMAS.

12. **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. Mr. ANDREWS.

13. **FOREST MANAGEMENT.** Principles 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.

14. **GEOLOGY.** 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.

Professor LANDES.

15. **BOTANY.** A study of roots, stems and leaves, and their modifications. Flowers, fruits and seeds. How plants are named, and how to find the names. Range plants will be used as far as practicable in the laboratory work. This course will be supplemented by a series of eighteen to twenty-four lectures on forage grasses, and plants poisonous and injurious to animal life, value of different ranges for different classes of stock, and the effect of over-grazing.

Professor FRYE, Mr. JARDINE.

16. **VETERINARY SCIENCE.** This course is designed to give such instruction as meets the needs of stockmen in handling common diseases of animals or performing simple surgical operations. The minor ailments met with every few days are given special attention, and specific directions given as to treatment.

Dr. SCHULTZ.

17. **ANIMAL HUSBANDRY.** This course is calculated to assist the men in acquiring a practical knowledge of the stock business. Feeds and feeding, breeding, care and management of live stock are considered.

Dr. McCLURE.

THE SCHOOL OF LAW

ACADEMIC YEAR 1910-11

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.

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

IVAN W. GOODNER, 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.

———— SHAMEL, Lecturer in Mining 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.

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.

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

For admission to the Law School students must either pass an examination based on a course amounting to fifteen high school units, or present high school credits for fifteen units from an accredited high school. Of these fifteen units, eight and one-half are specifically named and six and one-half are elective. A detailed statement of the requirements for admission to the freshman class of the College of Liberal Arts of the University of Washington, which will be taken to satisfy the high school requirements for entrance to the Law School, will be found at page 84 of this catalogue. And in addition to the above, the students must satisfactorily complete thirty-four hours in the College of Liberal Arts, four hours of which must be physical training, or pass an examination based on an equivalent amount of college work of equal standing.

ADVANCED STANDING

If, in addition to satisfying the 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 two years' credit will be allowed for such work. The right is reserved to refuse advance credit in law in whole or in part, save upon examination. Candidates for advanced standing must spend at least one full college year in this school.

SPECIAL STUDENTS

No person will be admitted as a special student in law unless he is twenty years of age and his general education is such as to entitle him to take the state bar examination, viz., the equivalent of 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.

COMBINED COURSE IN COLLEGE OF LIBERAL ARTS AND
SCHOOL OF LAW

This combined course allows the student with a good record to complete the A. B. and LL. B. in six years. It is open only to those students who have maintained a uniformly good record for scholarship during the first three years of Liberal Arts work.

The student is enrolled in the College of Liberal Arts during the first three years. If at the end of three years he has a uniformly good record for scholarship and has earned ninety or more credits, including all the required work and major and minor, he

may for the fourth year register in the Law School for the first year's work in law and must earn in the College of Liberal Arts additional credits sufficient to make his total of Liberal Arts credits amount to ninety-six, and earn in the Law School at least twenty-four credits in the first year law work, to apply on his A. B. degree, thus making his one hundred twenty credits required for the A. B. degree.

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

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

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

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

THESIS

It is the desire of the faculty to encourage original investigation and research by the students. Each candidate for a degree is required to prepare and deposit with the Dean of the School of Law, before the beginning of the spring term of his senior year, a thesis of not less than thirty folios in length, upon some legal topic selected by the student and approved by the faculty. The student will be examined by the faculty upon this thesis. It must be printed or typewritten, and securely bound, and is to be kept permanently in the Library of the Law School.

CARKEEK PRIZE FOR THESIS UPON WASHINGTON LAW

Mr. Vivian M. Carkeek, of the Seattle bar, a graduate of this law school, class of '01 (the first class to graduate from this law school) offers an annual prize of twenty-five dollars for the best thesis submitted by members of the senior class, candidates for the degree of Bachelor of Laws, upon a subject of Washington Law, or upon a subject of peculiar interest to Washington lawyers, the subject to be selected by the dean of the Law School.

EVENING 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.

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 seven 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 at another law school may count that work towards graduation, subject to the restrictions heretofore stated.

EXAMINATION

The members of each class are examined daily throughout the year in their studies, and may be subjected to written exam-

inations at any time in the discretion of the faculty without notice. At the end of each semester the members of each class are subject to written examinations on the courses during the year and their promotion is dependent on successfully passing such examination.

To receive the degree of Bachelor of Laws it is necessary to pass satisfactory examinations in the entire course of three years. Students who pass these examinations with distinguished excellence will receive the degree of Bachelor of Laws *cum laude*.

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.

FEEES

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 39 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.

DATES OF REGISTRATION AND EXAMINATION

REGISTRATION. Monday and Tuesday, Sept. 19 and 20, 1910.

EXAMINATION. For entrance to Law School, Monday, Sept. 19, 1910, and for advanced standing in law, Tuesday, Sept. 20, 1910.

COURSE OF STUDY

FIRST YEAR

JURISPRUDENCE, GENERAL PRINCIPALS OF. *Two hours per week.*
First semester. Text-book: Pollock's First Book of Jurisprudence.
Professor CONDON.

CONTRACTS. *Each semester. Three hours.* Text-book: Keener's Cases on Contracts.
Professor LANTZ.

TORTS. *Each semester. Two hours.* Text-book: Ames and Smith's Cases on Torts. Two volumes and supplement. New edition. Mr. RICE.

PROPERTY. *Each semester. Two hours.* Text-book: Gray's Cases on Property, volumes I and II. Professor COLE.

AGENCY. *First semester. Two hours.* Text-book: Mechem's Cases on Agency supplemented by a selection of Washington cases. Mr. GOODNER.

PERSONS. *Second semester. Two hours.* Text-book: Woodruff's Cases on Domestic Relations and the Law of Persons, supplemented by a selection of Washington cases.

Professor LANTZ.

PLEADING. *Each semester. Two hours.* Text-book: Ames' 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. *First semester. Two hours.* Text-book: Mikell's Cases on Criminal Law, supplemented by the new Washington Criminal Code and cases. Mr. BEECHLER.

EQUITY. *Second semester. Two hours.* Text-book: Ames' Cases on Equity Jurisprudence, volume I. Mr. GOODNER.

ADMINISTRATIVE LAW. *Second semester. Two hours.* Text-book: Goodner's Administrative Law. Mr. BEECHLER.

PROCEDURE I AND II. *Each semester. One hour.* 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 CONDON and Mr. BEECHLER.

HOW TO FIND THE LAW, I AND II. *Each semester. One hour.* 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. Professor CONDON.

SECOND YEAR

EQUITY JURISDICTION. *Each semester. Two hours.* Text-book: Ames' Cases on Equity, volume II, supplemented by a selection of Washington cases. Mr. GOODNER.

EVIDENCE. *Each semester. Two hours.* Text-book: Wigmore's Cases on Evidence, supplemented by a selection of Washington statutes and cases. Professor CONDON.

PROPERTY. *Each semester. Two hours.* Text-book: Gray's Cases on Property, volumes III and V. Professor COLE.

CORPORATIONS, PRIVATE. *Each semester. Two hours.* Text-book: Warren's Cases on Private Corporations. Professor COLE.

BILLS AND NOTES. *First semester. Two hours.* Text-book: Hufcut's Cases on Negotiable Instruments.

Professor LANTZ.

SALES, INCLUDING CONDITIONAL SALES AND SALES UNDER SALES IN BULK ACT IN WASHINGTON. *First semester. Three hours.* Text-book: Williston's Cases on Sales and Washington statutes and cases. Professor COLE.

QUASI-CONTRACTS. *First semester. Two hours.* Text-book: Scott's Cases on Quasi-Contracts. Professor CONDON.

CARRIERS. *Second semester. Two hours.* Text-book: (To be announced later). Professor LANTZ.

BANKRUPTCY. *Second semester. One hour.* Text-book: Williston's Cases on Bankruptcy. Mr. GOODNER.

PARTNERSHIP. *Second semester. Two hours.* Text-book: Burdick's Cases on Partnership. Professor LANTZ.

DAMAGES. *Second semester. Two hours.* Text-book: Beale's Cases on Damages, supplemented by a selection of Washington cases. Professor LANTZ.

LIENS. *Second semester. One hour.* Text-book: Washington statutes and cases, supplemented by a few cases selected from other states. Professor ———

LEGAL INTERPRETATION. *First semester. One hour.* Text-book: (To be announced later). Professor CONDON.

PROCEDURE III AND IV. *Each semester. One hour.* 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. *Each semester. One hour.* A continuation of courses I and II of freshman year. Professor CONDON.

MOOT COURT. *Each semester. One hour.* Argument of questions of law upon statements given out to students by faculty. Professor CONDON.

THIRD YEAR.

CONSTITUTIONAL LAW. *Each semester. Two hours.* First semester, Federal; second semester, State of Washington. Text-book: (To be announced later). Professor CONDON.

PROPERTY. *Each semester. Two hours.* 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 COLE.

INSURANCE. *First semester. Two hours.* Text-book: Woodruff's Cases on Insurance and Washington statutes and cases. Professor LANTZ.

TRUSTS. *First semester. Two hours.* Text-book: Ames's Cases on Trusts. Professor CONDON.

CONFLICT OF LAWS. *First semester. Two hours.* Text-book: Beale's Shorter Selection of Cases on Conflict of Laws. Professor LANTZ.

MUNICIPAL CORPORATIONS. *Second semester. Two hours.* Text-book: Smith's Cases on Municipal Corporations and Washington Constitution, statutes and cases. Professor COLE.

ATTACHMENTS AND GARNISHMENTS, JUDGMENTS AND EXECUTIONS. *First semester. Two hours.* Text-book: Washington statutes and decisions. Professor GOODNER.

ADMIRALTY. *First semester. Two hours.* Text-book: Ames's Cases on Admiralty. Professor LANTZ.

WILLS. *First semester. Two hours.* Text-book: (To be announced later). Mr. GOODNER.

SURETYSHIP. *First semester. Two hours.* Text-book: Ames's Cases on Suretyship. Professor LANTZ.

MORTGAGES. *First semester. Two hours.* Text-book: Wyman's Cases on Mortgages and Washington statutes and cases. Professor COLE.

TAXATION. *First semester. Two hours.* Text-book: Goodnow's Cases on Taxation and Washington Constitution, statutes and cases. Professor CONDON.

PUBLIC INTERNATIONAL LAW. *Second semester. Two hours.* Text-book: (To be announced later). Professor CONDON.

CIVIL LAW, INTRODUCTION TO. *Second semester. Two hours.* Text-book: Howe's Studies in Civil Law. Professor CONDON.

EXTRAORDINARY LEGAL REMEDIES. *Second semester. Two hours.* Text-book: Robert's Cases on Extraordinary Legal Remedies and Washington statutes and cases. Professor CONDON.

PROCEDURE V AND VI. *Each semester. One hour.* 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. Professor CONDON.

OFFICE PRACTICE. *Each semester.* Conveyancing and examination of abstracts, care of a law office generally, drawing wills and contracts, preparation of briefs and office accounting. Professor CONDON.

MOOT COURT. *Each semester. One hour.* 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.

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 MORITZ, Ph. D., Professor of Mathematics and Astronomy.

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

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., 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.

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. G., Ph. D., Assistant Professor of Chemistry.

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

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

CHARLES M. HARRIS, C. E., Instructor in Civil Engineering.

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

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

C. H. SHAMEL, LL. B., Ph. D., Lecturer on Mining Law.

E. A. LOEW, B. S., Instructor in Electrical Engineering.

JOHN W. MILLER, B. S., Instructor in Civil Engineering.

JULIUS ADLER, B. S., Instructor in Civil Engineering.

SAMUEL THOMAS BEATTIE, Instructor in Wood Work.

ALLAN CUNNINGHAM, Assistant in Mining.

EDWARD H. DENNY, Assistant in Metallurgy.

MINE RESCUE AND TRAINING STATION

The Mine Rescue and Training Station has been established by the coal mine operators of the State of Washington, in conjunction with the technological branch of the United States Geological Survey.

The station is in charge of Mr. H. M. Wolfin, a mining engineer of the Geological Survey. It is maintained for the purpose of training miners in the use of the oxygen rescue helmets, which

have already proved their usefulness in saving lives and property in case of mine disasters or fires.

The coal mine operators of Washington expended about \$2,000 in fitting up a building and are now furnishing funds for the maintaining of the training. The University provided the building used by the government during the A.-Y.-P. Exposition for the Philippine exhibit. The course of training lasts ten days or two weeks. The applicants are required to wear the apparatus for four hours each day, in two periods of two hours each. The practice is carried on in a room filled with gas which cannot be breathed without immediate danger, and the work to be performed is the same as that which would be required in actual mining operations or rescue work. The smoke room represents a portion of a mine, and is equipped with mine car, overcast, tunnel, brattice cloth, timber and brick.

Applicants who have completed the course of training are given a certificate to that effect. The School of Mines offers special instruction to the applicants during their stay at the University.

LABORATORIES

The ore-dressing, metallurgy and other laboratories of the School of Mines are described on page 77.

ADMISSION

The requirements for admission to the freshman class of the School of Mines for the courses leading to the degrees of bachelor of science in mining engineering, in geology and mining, or in metallurgical engineering, are as follows:

	<i>Units.</i>
English	4
Algebra	1½
Plane Geometry	1
Solid geometry	½
Physics	1
Chemistry	1
A modern foreign language	2
Drawing	½
Elective	3½
Total	15

For course IV, leading to the degree of bachelor of science (B. S.), the entrance requirements are:

	<i>Units.</i>
English	4
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
A foreign language	2
Elective	5
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Total	15

Attention is called to the fact that each of the freshman and sophomore studies in all the mining courses is offered in each semester. Thus a student entering the University at the beginning of the second semester in February may enter upon his studies and continue them in the order shown in the schedule.

For more specific information concerning the preparation necessary to meet the above requirements and for list of electives see page 84 and following.

Students may be admitted:

- (1) By presenting a certificate of graduation from an accredited school (for list see page 95), 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 courses I and IV, geological field studies, or mine mapping under course II, and smelter or assay practice under course III.

DEGREES

The four-year courses in the School of Mines that are numbered I, II and III, are practically unchanged from those of previous years. They lead to the following degrees: Course I, Bachelor of science in mining engineering (B. S. in Min. E.); course II, bachelor of science in geology and mining (B. S. in Geol. and Min.); course III, bachelor of science in metallurgical engineering (B. S. in Met. E.).

In addition to the above, there is offered a new course, IV, which leads to the degree of Bachelor of Science (B. S.). The entrance requirements for course IV are less technical than for the other courses and the training given by it is broader. Students that graduate in this course are advised to spend an additional year in study and research according to the schedule given for the degree of Master of Science in Mining Engineering (M. S. in Min. E.).

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.

MINING AND METALLURGICAL INDUSTRIES AVAILABLE FOR STUDY

Excellent opportunities for becoming familiar with mining and metallurgical operations are open to students in the School of Mines. The amount of time available during the college year for this purpose is not great and even by using the summer vacations it is impossible for a student to cover the whole field of local industries included in his chosen profession.

Mining machinery of the best types is in operation within easy reach of the University. Much of the heavy mining machinery used in the neighboring states and Alaska is built in the city of Seattle, while the patented machines, such as drills and concen-

trating tables of all makes are kept in stock and as working exhibits by the firms that supply the North Pacific coast regions. The application of hydraulic mining methods to city grading is being carried on locally on a very large scale and with the most approved pumping and piping appliances and methods. Equally important to the mining engineer are the operations of the steam shovels, which are used largely now in iron, copper and gold mining. The engineers in charge of these plants have given the mining students every opportunity to become familiar with the methods of planning and carrying on the work, and the same statement applies to the mine operators throughout the state.

A brief list of the other available works of interest includes the coal mines, with the largest production west of the Rocky mountains; metal mines of gold, silver, copper, arsenic, antimony, iron, etc.; two cement plants, glass works, several stone quarries and dressing works; clay mines, clay and pottery works; gravel and sand pits with large production and approved methods; a region of varied geology with many economic minerals; the Tacoma and Everett smelters and refineries; the U. S. assay office; the Irondale steel plant of the Western Steel Corporation, and several plants engaged in metallurgical work.

COURSES IN THE SCHOOL OF MINES

I. Course in Mining Engineering

FRESHMAN YEAR

First Semester—

	Hours
Mathematics, 1a (plane trigonometry, higher algebra)...	4
Chemistry, 1a (general inorganic)	4
Civil engineering, 3 (Engin. drawing)	4
Rhetoric, 1a (Eng. Comp.)..	4
Mechanical engineering, 1a (woodwork)	2
Military science	2
	<hr/> 16+4

Second Semester—

	Hours
Mathematics, 2a (Anal. Geom., higher algebra)....	4
Chemistry, 2a (general inorganic)	4
Civil Engin., 4 (Engin. drawing)	4
Civil Engin., 20 (plane Surv.)	4
Mech. Engin., 1b (mine timber)	2
Military science	2
	<hr/> 16+4

SOPHOMORE YEAR

	Hours
Geology, 1a (general).....	4
Mathematics, 3b (Diff. calculus)	4
Physics, 1a.....	5
Civil Engin., 21 (mine surv.)	3
Military science.....	2
	<hr/> 16+2

	Hours
Geology, 5 (mineralogy)....	4
Mathematics, 4b (calculus)..	4
Chemistry, 9 (Quant. Anal.)	4
Physics, 2a.....	5
Military science.....	2
	<hr/> 17+2
Mining, 9 (field work).....	

JUNIOR YEAR

	Hours
Mining, 4 (coal mining).....	2
Math., 3a (analytics).....	2
Metallurgy, 1 (fire assaying)	4
Civil Engin., 41 (mechanics)	5
Geology, 6 (optical Cryst.)..	4
Mech. Engin., 3a (forge, foundry)	2
	<hr/> 17+2

	Hours
Metallurgy, 2 (general).....	4
Geology, 9 (petrography)...	4
Civil Engin., 50 (hydraulics)	4
Political science, 1a.....	4
	<hr/> 16

SENIOR YEAR

	Hours
Mining, 1 (metal mining)...	4
Mining, 3 (milling).....	2
Mining, 5 (field work).....	1
Metallurgy, 5 (gold, silver).	3
Metallurgy, 7 (wet assaying)	3
Metallurgy, 13 (design of plant)	3
	<hr/> 16

	Hours
Mining, 2 (ore dressing)....	4
Mining, 6 (mining law).....	1
Mining, 7 (mine examination)	1
Mining, 8 (thesis).....	2
Geology, 10 (economic)....	4
Geology, 16 (field work)....	1
Electrical engineering, 1f....	3
	<hr/> 16

II. Course in Geology and Mining

FRESHMAN YEAR

<i>First Semester—</i>		<i>Second Semester—</i>	
	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., 3 (Engin. drawing)	4	Civil Engin., 4 (Engin. drawing)	4
Rhetoric, 1a (English Comp.)	4	Civil Engin., 20 (plane Surv.)	4
Mech. Eng., 1a (woodwork) ..	2	Mech. Engin., 1b (mine timber)	2
Military science	2	Military science	2
	<u>16+4</u>		<u>16+4</u>

SOPHOMORE YEAR

	Hours		Hours
Geology, 1a (general)	4	Geology, 5 (mineralogy)	4
Math., 3b (Diff. calculus) ..	4	Math., 4b (calculus)	4
Physics, 1a	5	Chem., 9 (Quant. Anal.)	4
Civil Engin., 21 (mine Surv.)	3	Physics, 2a	5
Military science	2	Military science	2
	<u>16+2</u>		<u>17+2</u>
		Mining, 9 (field work)	

JUNIOR YEAR

	Hours		Hours
Mining, 4 (coal mining)	2	Metallurgy, 2 (general)	4
Metallurgy, 1 (fire assaying)	4	Metallurgy, 9 (pyrometry) ..	2
Metallurgy, 3 (fuels)	2	Metallurgy, 12 (clay testing) ..	2
Geology, 6 (optical cryst.) ..	4	Geology, 9 (petrography)	4
Political science, 1a	4	Geology, 16 (field work)	1
Mech. Engin., 3a (forge, foundry)	2	Civil Eng., 22 (Topog. Surv.)	3
	<u>16+2</u>	Mech. Engin., 4a (machine shop)	2
			<u>16+2</u>

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, 11 (paleontology) ..	4	Metallurgy, 4 or 6	3
Geology, 14 (field work)	1	Geology, 10 (economic)	4
	<u>16</u>	Geology, 16 (field work)	1
			<u>16</u>

III. Course in Metallurgical Engineering

FRESHMAN YEAR

First Semester—

	Hours
Mathematics, 1a (plane Trig., higher algebra)	4
Chemistry, 1a (general inorganic)	4
Civil Engin., 3 (Engin. drawing)	4
Rhetoric, 1a (English Comp.)	4
Mech. Eng., 1a (woodwork) ..	2
Military science	2
	<hr/> 16+4

Second Semester—

	Hours
Mathematics, 2a (Anal. Geom., higher algebra)	4
Chemistry, 2a (general inorganic)	4
Civil Engin., 4 (Engin. drawing)	4
Civil Engin., 20 (plane Surv.)	4
Mech. Engin., 1b (mine timber)	2
Military science	2
	<hr/> 16+4

SOPHOMORE YEAR

	Hours
Geology, 1a (general)	4
Math., 3b (Diff. calculus) ...	4
Physics, 1a	5
Civil Engin., 21 (mine Surv.)	3
Military science	2
	<hr/> 16+2

	Hours
Geology, 5 (mineralogy)	4
Math., 4b (calculus)	4
Chem., 9 (Quant. Anal.)	4
Physics, 2a	5
Military science	2
	<hr/> 17+2
Mining, 9 (field work)	

JUNIOR YEAR

	Hours
Metallurgy, 1 (fire assaying)	4
Metallurgy, 10 (metallography)	3
Civil Engin., 41 (mechanics)	5
Political science, 1a	4
Mech. Engin., 3a (forge, foundry)	2
	<hr/> 16+2

	Hours
Metallurgy, 2 (general)	4
Metallurgy, 4 (copper, lead).	3
Civil Engin., 42 (mechanics)	4
Civil Engin., 50 (hydraulics)	4
Mech. Engin., 5b (machine design)	1
Mech. Engin., 4a (machine work)	2
	<hr/> 16+2

SENIOR YEAR

	Hours
Mining, 1 (metal mining) ...	4
Metallurgy, 3 (fuels)	3
Metallurgy, 5 (gold, silver) ..	3
Metallurgy, 7 (wet assaying)	3
Metallurgy, 11 (problems) ..	1
Metallurgy, 13 (design)	3
	<hr/> 17

	Hours
Mining, 2 (ore dressing)	4
Mining, 8 (thesis)	2
Metallurgy, 6 (minor metals)	3
Metallurgy, 8 (analysis)	3
Geology, 10 (economic)	4
	<hr/> 16

IV. Course in Mining Engineering

Leading to degree of Bachelor of Science (B. S.).

FRESHMAN YEAR

First Semester—

	Hours
Mathematics, 1a (plane Trig., higher algebra).....	4
Chemistry, 1 (general).....	4
Rhetoric, 1a (English Comp.)	4
Modern foreign language....	4
Mech. Engin., 1a (woodwork)	2
Military science.....	2
	<hr/>
	16+4

Second Semester—

	Hours
Mathematics, 2a (Anal. Geom., higher algebra).....	4
Chemistry, 2 (general).....	4
Civil Engin., 3 (Engin. drawing)	4
Modern foreign language....	4
Mech. Eng., 1b (mine timber)	2
Military science.....	2
	<hr/>
	16+4

SOPHOMORE YEAR

	Hours
Mathematics, 3a (calculus)..	4
Chemistry, 8b (Qual. Anal.)..	4
Civil Engin., 4 (Engin. drawing)	4
Modern foreign language....	4
Mech. Engin., 3a (forge, foundry)	2
Military science.....	2
	<hr/>
	16+4

	Hours
Mathematics, 4a (calculus)..	4
Physics, 1a.....	5
Chemistry, 9 (Quant. Anal.)..	4
Civil Eng., 20 (surveying)..	4
Military science.....	2
	<hr/>
	17+2

JUNIOR YEAR

	Hours
Mathematics, 5a (calculus)..	2
Physics, 2a.....	6
Geology, 1a.....	4
Civil Engin., 21 (mine Surv.)	3
Mining, 5 (field work).....	1
	<hr/>
	16

	Hours
Metallurgy, 1 (fire assaying)	4
Elec. Engin., 1f.....	3
Civil Engin., 41 (mechanics)	5
Geology, 5 (mineralogy)....	4
	<hr/>
	16

SENIOR YEAR

	Hours
Metallurgy, 2 (general).....	4
Mining, 1 (mining).....	4
Civil Engin., 42 (mechanics)	4
Geology, 6 (optical Cryst.)...	4
	<hr/>
	16

	Hours
Mining, 2 (ore dressing)....	4
Metallurgy, 8 (metal Anal.)..	3
Geology, 9 (petrography)...	4
Geology, 16 (field work)....	1
Political science, 1a.....	4
	<hr/>
	16

Graduate Course in Mining Engineering

Following course IV and leading to the degree of master of science in mining engineering.

Hours		Hours	
Mining, 5 (field work).....	1	Mining, 4 (coal mining).....	4
Mining, 8 (thesis).....	3	Mining, 6 (mining law).....	1
Metallurgy, 7 (wet assay)...	3	Mining, 7 (mine exam.).....	1
Metallurgy, 4 (copper, lead). 3		Mining, 8 (thesis).....	3
Metallurgy, 13 (design).....	3	Geology, 10 (economic).....	4
Elective, engineering.....	3	Elective, engineering.....	3
	<hr/> 16		<hr/> 16

V. 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 that 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. 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 on page 77. 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. 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, Mr. SHAMEL.

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. THOMAS.

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*;

ALLAN CUNNINGHAM, *Assistant in Mining*;

EDWARD H. DENNY, *Assistant in Metallurgy*.

MINING ENGINEERING

For a description of the courses offered to the short-course students during January, February and March, see the preceding three pages.

Coal miners that are taking the ten-days' course in the Mine Rescue and Training Station are given daily instruction and laboratory practice in the subjects of mine gases, ventilation, the origin and composition of coals, and coal analysis.

A. MINERAL INDUSTRY. *Second semester*. A series of three lectures illustrated by stereopticon views. Wednesday evenings in March 7: 30 p.m. An outline of the mining and metallurgical industries of the Pacific Northwest and Alaska, illustrated by views of mines, mills and smelters. Professor ROBERTS.

1. MINING. *First semester*. *Four hours*. 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. *Second semester*. *Four hours*. 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. Overtstrom table, Wilfley table and slimer, revolving

slime table, 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.

7. **MINE EXAMINATION.** *Second semester. One hour.* Ten days in the second semester. 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. 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 9. Messrs. COREY and GLENN.

2. GENERAL METALLURGY. *Second semester.* Two lectures and two laboratory periods. Lectures and laboratory experiments on the properties of metals and alloys, fuels, refractory materials, furnaces and the extraction of the common metals from their ores. Visits to smelters. Prerequisites, geology 5, chemistry 9, metallurgy 1.

Professor ROBERTS, Messrs. COREY and TAYLOR.

3. METALLURGICAL FUELS. *First semester. Three hours.* 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. *Second semester. Three hours.* 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. *First semester. Three hours.* 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.** *Second semester. Three hours.* 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.** *First semester. Three hours.* The technical methods for the determination of copper, lead, zinc, etc., in ores and furnace products, etc. Prerequisite, chemistry 9. Mr. COREY.

8. **METALLURGICAL ANALYSIS.** *Second semester. Three hours.* Laboratory practice in technical methods of analysis of coals, slags, and industrial products, etc. Prerequisite, chemistry 9. Mr. COREY.

9. **PYROMETRY AND ALLOYS.** *Second semester. Two hours.* 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; liquidation and 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.** *First semester. Two hours.* 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.** *First semester. One hour.* Physical chemistry for the metallurgist, slag calculations, etc., illustrated by figures quoted from the present practice at a number of smelting plants. Prerequisites, chemistry 9, and metallurgy 2. Mr. COREY.

12. CLAY TESTING. *Second semester. Three hours.* One lecture and two laboratory periods. Methods of testing clays, refractory 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. *First semester. Three hours.* Three 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.

Professor ROBERTS and Mr. COREY.

THESIS. See Mining 8.

SUMMER FIELD WORK. See Mining 9.

SCHOOL OF PHARMACY

FACULTY

THOMAS FRANKLIN KANE, Ph. D., President.

CHARLES WILLIS JOHNSON, Ph. C., Ph. D., Dean and Professor of Pharmaceutical Chemistry.

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

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

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

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

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

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

ALBERT HASKIN DEWEY, Ph. G., B. S., Instructor in Pharmacy and Materia Medica.

GEORGE BURTON RIGG, B. S., A. M., Instructor in Botany.

JOHN JACOB WINTLER, Ph. C., B. S., Graduate Assistant in State Food and Drug Analysis.

Assistant in Pharmacy.

ARTHUR RAGAN PRIEST, A. M., Professor of Rhetoric.

FREDERICK ARTHUR OSBORN, Ph. D., Professor of Physics.

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

ROBERT EDOUARD MORITZ, Ph. D., Professor of Mathematics.

FREDERICK WILLIAM 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, physi-

ology, 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 premedical 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 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 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 264 and following.)

(b) With certificate of graduation. (Entrance requirements page 264 and following.)

FIRST YEAR, FIRST SEMESTER

	<i>Hours Credit.</i>	<i>Hours in Lec. & Rec.</i>	<i>Hours in Laboratory.</i>
Chemistry 1.....	4	54	90
Pharmacy 1.....	4	36	108
Botany 13.....	4	36	72
Physiology 7.....	4	36	72
Total for semester.....	16	162	342

FIRST YEAR, SECOND SEMESTER

Chemistry 2.....	4	54	90
Pharmacy 2.....	4	36	108
Botany 14.....	4	36	72
Chemistry 8b.....	4	36	108
Total for semester.....	16	162	378

SECOND YEAR, FIRST SEMESTER

Chemistry 9.....	4	18	162
Materia medica 1.....	4	72	
Pharmacy 3.....	2	36	
Chemistry 4c.....	4	36	108
Pharmacy 6.....	2	18	54
Total for semester.....	16	180	324

SECOND YEAR, SECOND SEMESTER

Chemistry 9a.....	4	18	162
Materia medica 2.....	4	72	
Pharmacy 4.....	2	36	
Chemistry 20a.....	4	36	108
Pharmacy 7.....	2	18	54
Total for semester.....	16	180	324
Totals of required work...	64	684	1368
Hours in lectures and laboratories.....			2052

2. With degree of bachelor of science. (Entrance requirements, page 264 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

HORACE G. BYERS, *Professor*;

CHARLES WILLIS JOHNSON, *Professor*;

IRVIN WALTER BRANDEL, *Assistant Professor*;

WILLIAM MAURICE DEHN, *Assistant Professor*.

1, 2. **GENERAL CHEMISTRY.** *Four hours.* 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.

Professor BYERS, Instructors and Assistants.

3, 4. **ORGANIC CHEMISTRY.** *Four hours.* A lecture course on the chemistry of the compounds of carbon. Laboratory work on the preparation and testing of representative compounds. Bernthsen-Sudborough's text is used as a reference book in connection with the lectures and Sudborough-James's laboratory manual is used as a laboratory guide. Assistant Professor BRANDEL.

4c. **ORGANIC CHEMISTRY.** *First semester. Four hours.* For the year 1910-11 the second semester of organic chemistry, corresponding to chemistry 4, will be given in the first semester.

Assistant Professor BRANDEL.

8b. **ELEMENTARY QUALITATIVE ANALYSIS.** *Second semester. Four hours.* 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.

9. **QUANTITATIVE ANALYSIS.** *First semester. Four hours.* 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. Professor JOHNSON.

9a. **QUANTITATIVE ANALYSIS.** (Drug Assaying). *Second semester. Two hours.* Methods of quantitatively estimating the active

constituents of crude drugs and their preparations, also the assay of a number of inorganic pharmaceutical preparations.

Professor JOHNSON.

9b. ALKALOIDS AND DRUG ASSAYING. *Either semester. Continuation of chemistry 9a. 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. FATS AND OILS. *First semester. Four hours.* 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.

11. FOOD ANALYSIS. *Second semester. Four hours.* This course, together with courses 9 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.

12. 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.

20a. PHYSIOLOGICAL CHEMISTRY. *Second semester. Four hours.* 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.

15. PHYSIOLOGICAL CHEMISTRY. *First semester. Four hours.* A continuation of course 14 with special attention to the chem-

istry of the cell and individual organs and studies of sera and immunity. The laboratory practice consists largely of select quantitative methods. Assistant Professor DEHN.

19. URINARY ANALYSIS. *Second half of second semester. One hour.* 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.

NOTE—For additional courses in chemistry, see under Liberal Arts.

PHARMACY

CHARLES WILLIS JOHNSON, *Professor*;
ALBERT H. DEWEY, *Instructor*.

1. THEORY AND PRACTICE OF PHARMACY. *First semester. Four hours.* The study of the principles 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. Mr. DEWEY.

2. PHARMACEUTICAL PREPARATIONS. *Second semester. Four hours.* 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. Mr. DEWEY.

3. U. S. PHARMACOPOEIA. *First semester. Two hours.* A study of the inorganic and organic chemicals included in the pharmacopoeia. The manufacture, tests for purity, assay and medicinal properties are considered. Mr. DEWEY.

4. U. S. PHARMACOPOEIA AND NATIONAL FORMULARY. *Second semester. Two hours.* 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. Mr. DEWEY.

5. MANUFACTURING PHARMACY AND CHEMISTRY. *Either 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.

Professor JOHNSON and Mr. DEWEY.

6. MANUFACTURING PHARMACY AND PRESCRIPTIONS. *First semester. Two hours.* 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 compounding of prescriptions and to the study of physical, chemical and therapeutical incompatibilities.

Mr. DEWEY.

7. PRESCRIPTION PRACTICE. Continuation of 6. *Second semester.* One lecture period and one laboratory period.

Mr. DEWEY.

PHARMACOGNOSY, MATERIA MEDICA AND TOXICOLOGY

ALBERT H. DEWEY, *Instructor.*

1. PHARMACOGNOSY. *First semester. Four hours.* A study of crude drugs, their source, methods of collecting and preserving, identification, active constituents and adulteration.

Mr. DEWEY.

2. THERAPEUTICS AND TOXICOLOGY. *Second semester.* A study of the action of chemicals, drugs and their preparations on the human organism in health and disease, also the physiological action of the various poisons, their antidotes and emergency treatment in cases of poisoning.

Mr. DEWEY.

PHYSIOLOGY

ARTHUR DAY HOWARD, *Assistant Professor.*

7. ELEMENTARY PHYSIOLOGY. *First semester. Four hours.* 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.* 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 WEINZIRL.

8. MEDICAL BACTERIOLOGY. *Second semester.* 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.

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. *First semester. Four hours.* 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.

14. PHARMACY BOTANY. *Second semester.* 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.

NOTE—Students desiring information on courses in language, mathematics, physics, rhetoric and other liberal arts subjects will consult those departments in the general catalogue.

THE GRADUATE SCHOOL.

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 graduate work.

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 graduate work.

3. No work done in the major subject can be counted toward the master's degree, until the candidate for such degree has complied with the departmental requirement as to previous work in

*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.

that subject, which in no case shall be less than twelve hours. For the courses open to graduate students see the departmental statements.

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 graduate work 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 graduate work, 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.

GRADUATE FELLOWSHIPS

Three fellowships of \$416.66 each, known as the Loretta Denny fellowships, are open to graduate students in any department of the University. Applications for these fellowships must be in the hands of the Registrar of the University on or before March fifteenth.

THE SUMMER SCHOOL

The seventh annual summer session under the direction of the faculty of the University of Washington will begin June 20, 1910.

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 20. 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

Daily 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 \$5.00 per week. 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

- Adler, Julius, B. S. (C. E.).....4539 Brooklyn Ave.
Instructor. 24.
- Andrews, W. T.....4314 Twelfth Ave. N. E.
Instructor. 24.
- Ashmun, R. N., A. B.
Assistant. 29
- Austin, Isabella, A. B.....Clark Hall
Dean. 32.
- Beale, F. F.....927 Twenty-third Ave.
Instructor. 30.
- Beattie, S. T.....5714 Fifteenth Ave. N. E.
Instructor. 21.
- Beechler, G. C., A. B., LL. B.....4119 Twelfth Ave. N. E.
Instructor. 24.
- Benham, A. R., Ph. D.....1708 Ravenna Boulevard
Assistant Professor. 17.
- Bennett, H. B., Ph. B.....5249 Seventeenth Ave. N. E.
Instructor. 24.
- Benson, H. K., Ph. D.....4733 University Boulevard
Associate Professor. 16.
- Boyd, H. L., A. B.
Assistant. 29.
- Brakel, H. L., A. M.....4556 Twelfth Ave. N. E.
Instructor. 20.
- Brandel, I. W., Ph. G., Ph. D.....5732 Seventeenth Ave. N. E.
Assistant Professor. 18.
- Byers, H. G., Ph. D.....546 E. Fifteenth St.
Professor. 10.
- Collett, A. J.....4530 Fourteenth Ave.
Assistant Registrar. 32.
- Carpenter, A. F.....4708 Brooklyn Ave.
Instructor. 25.
- Cole, G. S., LL. B.
Professor. 15.

- Cole, Lucy K.
 Instructor. 30.
- Condon, H. T., LL. B.....5047 Fifteenth Ave. N. E.
 Registrar and Secretary of Faculties. 32.
- Condon, J. T., LL. M.....120 Thirteenth Ave. N.
 Professor and Dean. 10.
- Cooper, Elva, A. M.....5704 Sixteenth Ave. N. E.
 Assistant. 28.
- Cooper, Frank B.....1202 Fifteenth Ave. N.
 Lecturer. 28.
- Corey, C. R., E. M.....4754 Twenty-first Ave. N. E.
 Instructor. 21.
- Cosgrove, Howard G.....Seattle
 Regent. 7.
- Currie, Florence B., B. L., B. L. S.....4519 Fourteenth Ave. N. E.
 Catalog Librarian. 31.
- Custis, Vandever, Ph. D.....4504 University Boulevard
 Assistant Professor. 18.
- Daggy, M. L., A. B.....1719 Ravenna Boulevard
 Associate Professor. 17.
- Darby, W. T., A. M.....1819 Kilbourne Ave.
 Instructor. 21.
- Dehn, W. M., Ph. D.....5027 Fifteenth Ave. N. E.
 Assistant Professor. 18.
- Densmore, H. B., A. B.....4549 Fifteenth Ave. N. E.
 Instructor. 22.
- Dewey, A. H., Ph. G.....6302 Fifteenth Ave. N. E.
 Instructor. 24.
- Ducasse, C. J., A. B.....6313 Fifteenth Ave. N. E.
 Assistant. 25.
- Earle, H. P., A. B.....4530 Eleventh Ave. N. E.
 Instructor. 24.
- Eastwood, E. O., C. E., A. M.....4702 Twelfth Ave. N. E.
 Professor. 13.
- Fleager, C. E., C. E.....1600 Thirty-fifth Ave.
 Lecturer. 23.
- Fowler, C. E., M. Am. Soc. C. E.....1600 Thirty-fifth Ave.
 Lecturer. 27.
- Frein, P. J., Ph. D.....4317 Fifteenth Ave. N. E.
 Professor. 12.
- Frye, T. C., Ph. D.....4558 Ninth Ave. N. E.
 Professor. 12.

- Fuller, A. H., M. S. C. E.....5208 Fourteenth Ave. N. E.
Professor and Dean. 9.
- Garrett, Max Robert, Ph. D.....4218 Eleventh Ave. N. E.
Instructor. 25.
- Gavett, G. I., B. S. (C. E.).....5525 Sixteenth Ave. N. E.
Instructor. 22.
- Getty, Lillian B.....4742 Fifteenth Ave. N. E.
Secretary to President. 32.
- Glenn, H. L., B. S.....703 Twentieth Ave.
Lecturer. 28.
- Goodner, I. W., LL. B.....Central Building
Lecturer. 15.
- Goff, L. C., A. B.
Assistant. 29.
- Goss, O. P. M., C. E.....4750 Sixteenth Ave. N. E.
Instructor. 23.
- Gould, J. E., A. M.....5015 Fifteenth Ave. N. E.
Assistant Professor. 16.
- Gowen, H. H., F. R. G. S.....619 Eighth Ave.
Professorial Lecturer. 14.
- Greenlee, Ida K., A. B.....4337 Fifteenth Ave. N. E.
Instructor. 20.
- Guerard, C. A., H. B.
Assistant. 29.
- Grondahl, L. O., Ph. D.....The Lisbon
Instructor. 25.
- Haggett, A. S., Ph. D.....4549 Fifteenth Ave. N. E.
Professor. 11.
- Hall, D. C., M. D.....4547 Tenth Ave. N. E.
Professor. 14.
- Hall, F. S.....On Campus
Assistant Curator. 31.
- Hanna, C. Elizabeth.
Secretary to Registrar. 32.
- Harisberger, John.....4015 Fourth Ave. N. E.
Lecturer. 28.
- Harris, C. W., C. E.....4123 Twelfth Ave. N. E.
Instructor. 21.
- Hauschild, G. W., A. B.....4540 University Boulevard
Instructor. 25.
- Hazeltine, F. A.....South Bend, Wash.
Regent. 7.

- Henninger, Carl, A. M.....4217 Tenth Ave. N. E.
Assistant. 29.
- Henry, W. E., A. M.....5209 Fifteenth Ave. N. E.
Librarian. 31.
- Herbsman, J. C., A. B., LL. B.
Instructor. 25.
- Higgins, J. C.....1212 Seventh Ave. W.
Regent. 7.
- Hipkoe, Max.....4312 Fourth Ave. N. E.
Clerk. 32.
- Hoff, H. J., Ph. D.....804 E. Forty-fifth St.
Instructor. 23.
- Howard, H. D., Ph. D.....5232 Brooklyn Ave.
Assistant Professor. 19.
- Hummell, Sarah M.....1415 Boren Ave.
Instructor. 26.
- Jamme, G. E.....1627 Summit Ave.
Lecturer. 28.
- Johanson, J. M., A. B.....4530 Fourteenth Ave. N. E.
Instructor. 22.
- Johnson, C. W., Ph. C., Ph. D.....5031 Fifteenth Ave. N. E.
Professor and Dean. 12.
- Johnson, F. E., E. E.....On the Campus
Instructor. 21.
- Kane, F. G., A. B.
Instructor. 26.
- Kane, S. M.....On the Campus
Instructor. 22.
- Kane, T. F., Ph. D.....On the Campus
President. 9.
- Kimball, C. O.....4123 Eleventh Ave. N. E.
Director of Music. 30.
- Kincaid, Trevor, A. M.....4526 Brooklyn Ave
Professor. 10.
- Lancaster, S. C.....5737 Seventeenth Ave. N. E.
Professor. 14.
- Landes, Henry, A. M.....4503 Brooklyn Ave.
Professor. 9.
- Lantz, Harvey, A. M., LL. B.....4549 Fifteenth Ave. N. E.
Professor. 13.
- Lester, H. H., A. B.
Assistant. 20.

- Leow, E. A., B. S., E. E.....4128 Brooklyn Ave.
Instructor. 26.
- Lord, F. H., A. B.....4734 University Boulevard
Curator of Buildings and Grounds. 32.
- Lovitt, W. V., A. B., Ph. M.....4325 Brooklyn Ave.
Instructor. 22.
- Lull, H. G., A. B.....5643 Twentieth Ave. N. E.
Associate Professor. 16.
- McCaustland, E. J., C. E., M. C. E.....5264 Nineteenth Ave. N. E.
Professor. 14.
- McDonnell, Pearl, A. B.....4239 Fifteenth Ave. N. E.
Periodicals and Local History Librarian. 31.
- McEwan, A. F.....1409 Madison
Regent. 7.
- McMahon, Edward, A. M.....4128 Brooklyn Ave.
Instructor. 19.
- Magnusson, C. E., Ph. D., E. E.....4123 Twelfth Ave. N. E.
Professor. 13.
- Markham, William.....117 E. Sixtieth St.
Secretary Board of Regents. 7.
- Meany, E. S., M. L.....4025 Tenth Ave. N. E.
Professor. 9.
- Merrill, A. R., A. B.
Assistant. 29.
- Meisnest, F. W., Ph. D.....4705 Sixteenth Ave. N. E.
Professor. 13.
- Meissner, Josephine, B. L. S.....4022 Tenth Ave. N. E.
Circulation Librarian. 31.
- Merrick, Jessie B.....4743 University Boulevard
Instructor. 26.
- Michelson, Edith S., A. B.....420 Sixteenth Ave. N.
Instructor. 24.
- Miller, A. A., B. S.
Lecturer. 27.
- Miller, F. G., M. F.....The San Marco
Professor and Dean. 14.
- Miller, J. W.....5517 Twelfth Ave. N. E.
Instructor. 26.
- Milliman, L. D., A. B.....5247 Fifteenth Ave. N. E.
Assistant Professor. 18.
- More, C. C., M. S., C. E.....4309 Fourth Ave. N. E.
Associate Professor. 16.

- Moritz, R. E., Ph. D., Ph. n. D.....4705 Twenty-first Ave. N. E.
Professor. 12.
- Morris, W. A., Ph. D.....5015 Fifteenth Ave. N. E.
Assistant Professor. 20.
- Morrison, F. W., A. B.....4719 Fifteenth Ave. N. E.
Assistant Professor. 18.
- Nyvall, David H. B.
Professor. 15.
- Ober, Caroline H.....4226 Brooklyn Ave.
Professor. 10.
- Osborn, F. A., Ph. D.....5215 Fifteenth Ave. N. E.
Professor. 11.
- Osterud, H. L., A. B.
Assistant. 20.
- Padelford, F. M., Ph. D.....4711 Fifteenth Ave. N. E.
Professor. 11.
- Parrington, V. L., A. M.....6212 Twelfth Ave. N. E.
Assistant Professor. 19.
- Patten, Capt. W. T.....2836 Tenth Ave. N.
Commandant. 15.
- Patzner, Otto, Ph. D.....5232 Eighteenth Ave. N. E.
Assistant Professor. 19.
- Pease, R. B., A. M.....4549 Eleventh Ave. N. E.
Instructor. 27.
- Priest, A. R., A. M.....4504 University Boulevard
Professor and Dean. 10.
- Rapeer, L. W., A. M.....5208 Brooklyn Ave.
Assistant Professor. 20.
- Rea, J. A.Tacoma
Regent. 7.
- Rice, E. G., A. B., LL. B.
Instructor.
- Richardson, O. H., Pr. D.....4717 Nineteenth Ave. N. E.
Professor. 15.
- Rigg, G. B., A. B.....4122 Eastern Ave.
Instructor. 27.
- Roberts, Milnor, A. B.....4505 Fifteenth Ave. N. E.
Professor and Dean. 11.
- Rogers, A. L.Waterville
Regent. 7.
- Rose, R. E., Ph. D.....4723 Trackeray Place
Instructor. 23.

- Ross, J. D.....811 E. Harrison
Lecturer. 27.
- Salisbury, G. N., B. S.....916 Nineteenth Ave.
Lecturer. 28.
- Saunders, E. J., A. M.....4228 Tenth Ave. N. E.
Assistant Professor. 20.
- Savery, William, Ph. D.....5503 Fifteenth Ave. N. E.
Professor. 11.
- Scott, S. F., Ph. C., M. S.....5027 Fifteenth Ave. N. E.
Instructor. 21.
- Sidey, T. K., Ph. D.....4245 Brooklyn Ave.
Assistant Professor. 17.
- Sisson, E. O., Ph. D.....1833 Revenna Boulevard
Professor. 13.
- Smith, C. W., A. B., B. L. S.....5033 Twenty-first Ave. N. E.
Assistant Librarian. 31.
- Smith, J. A., Ph. D.....4533 Fifteenth Ave. N. E.
Professor. 9.
- Smith, Stanley, A. M.....123 Eastlake Ave.
Instructor. 22.
- Stevens, H. C., Ph. D.....4026 Eleventh Ave. N. E.
Assistant Professor. 18.
- Steinke, M. W., A. B.
Assistant. 29.
- Strong, C. M., A. M.
Instructor. 21.
- Taylor, Roger, C. E.
Lecturer. 28.
- Thomas, H. A., C. E.....4727 Brooklyn Ave.
Instructor. 24.
- Thompson, David, A. B.....4504 University Boulevard
Professor. 12.
- Thorpe, M. H., A. B.....5647 Brooklyn Ave.
Assistant Professor. 19.
- Weaver, C. E., Ph. D.....4727 Brooklyn Ave.
Instructor. 23.
- 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. 23.
- Wester, C. W., B. S.....5625 Fifteenth Ave. N. E.
Instructor. 27.

Wintler, J. J., Ph. C., B. S.

Assistant. 29.

Wilson, G. S., B. S.....4114 Tenth Ave. N. E.

Assistant Professor. 19.

Whittlesey, W. B., A. B.....2113 Fourth Ave. N.

Instructor. 24.

Winkenwerder, H. A.....6306 Seventeenth Ave. N. E.

Associate Professor. 17.

Zimmerman, C. W.

Engineer Timber Tests. 32.

DEGREES
CONFERRED ON COMMENCEMENT DAY 1909

COLLEGE OF LIBERAL ARTS

MASTER OF ARTS

Lucy Rowena Barnes, A. B., University of Washington.	George Burton Rigg, B. S., Iowa State University.
Curt John Ducasse, A. B., University of Washington.	Eli Victor Smith, Ph. B., Illinois Wesleyan University.
Lewis Henry Fee, A. B., University of Michigan.	Walter Bell Whittlesey, A. B., University of Washington.
Ella May Kuentzell, B. S., Beloit College.	

BACHELOR OF ARTS

Mabel Bryant Adams	Eldin Verne Lynn
Anne Bienvenu Allen	Margaret McCarney
Eva Delia Allen	John Merritt McGee
Ina Pearl Allen	Ella Carkner McMaster
Andrew Gustav Anderson	Alice Beatrice McWilliams
Raymond Nims Ashmun	Elizabeth Livingstone Macleay
Laurel Gail Baker	Elsie Anna Meier
Clarence Austen Berge	Alice Estelle Montgomery
Doris Walty Best	Ralph Strong Montgomery
Helen Blackman	<i>(cum laude)</i>
Hazel Almon Blake	Margaret Mabel Morgan
Blanche Frances Brace	Edna Robb Mott
Dora Frances Breece	Alice Murchison
Ethel Brown	Nellie Maud Nelson
<i>(cum laude)</i>	Dolph Francis Olds
Vera Mae Brown	Arthur Thomas O'Neal
Nellie Augusta Buckley	Hjalmar Laurits Osterud
Gordon Burke	<i>(cum laude)</i>
Edna Mary Byrd	Lela Kathleen Parker
Dora Sophia Campbell	Mary Elizabeth Perley
Olaf Emerie Harrison Caskin	As of the Class of 1908
Joseph Weller Chamberlin	Roxy Minnie Peterson

Caroline Duston Cogswell	Myrtle Ruth Powers
Edith Lorne Collier	Olive Rachel Powles
Caroline Catherine E. Connors	Louise M. Renkin
(<i>cum laude</i>)	Lavina Christine Rudberg
Elizabeth Dearborn	Roy David Rudlo
Frank William Denny	Beulah Faye Smith
Mabel Lucile Durham	Glen Harry Smith
(<i>cum laude</i>)	Laura Amelia Smith
Grace Silvia Egbert	(<i>cum laude</i>)
Edna Hope Enyart	Mary Agnes Smith
(<i>cum laude</i>)	Maude Alice Stead
Adelaide Dorothy Fischer	Gertrude Inez Streator
(<i>cum laude</i>)	Rena Elizabeth Strout
Grace Ward Freiday	As of the Class of 1908
Bessie Mabel Frein	Ruth Emeline Sturley
Rosemary Georgeson	Catherine Bruce Sutherland
Mabel E. Gleason	As of the Class of 1908
Minnie May Hadlock	Fred Hobson Sutton
Eugene Ammon Hancock	Nettie May Swem
Mary Pauline Harsell	Ray Lillian Isobel Tierney
Fern Healey	As of the Class of 1908
Elsie May Henry	Helen Catherine Tillman
Clara Alice Hunt	Abraham Arnold Tremper
Ida Johnson	Annie May Troll
Pearl Johnson	Eva Mary Waugh
Anna Rachel Jones	Myrtle Mae Whaley
Christine Roos Kanters	Charlotte Forsyth Williams
Lew Geate Kay	Florence Alden Wilson
Albert Frederick Krohn	Grace Blanche Zimmerman
Kate Elizabeth Lee	

COLLEGE OF ENGINEERING

DEGREE OF CIVIL ENGINEER

Stirling Bryant Hill, B. S. William Ryland Hill, B. S.
 John Charles Rathburn, B. S.

DEGREE OF ELECTRICAL ENGINEER

Uichi Kuniyasu, B. S.

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Frank Lee Vernon

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Clarence Burwell Bantz	Paul Denby Mackie
William Elmhurst Duckering,	Russell Lloyd O'Brien
A. B.	Kenneth Lawrence Partlow
John Arthur Elliott, A. B.	William Glenn Peters
Victor Hugo Garvey	Chester Gordon Wells
George Raymond Hawes	Walter Melvin Wells

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Arthur Blain Dean	Kurt Frederick Johannes Kirsten
John Alfred Dewhurst	(cum laude)
Roderick Ralph Easter	Charles Earl Mallory
William Grant Ellis	(cum laude)
Benjamin Guy Flaherty	Norman Clarence Nelson
(cum laude)	Robert Conrad Skone
Bert Alvin Hansen	Hendley Norton Swyne
Frederick Dean Harman	Walter Roger Thomas
Paul Jarvis	

SCHOOL OF MINES

BACHELOR OF SCIENCE IN MINING ENGINEERING

Frank Ellarson Babcock	William Rufus Lindsay
Edward Frederick Hughes	Walton Fletcher Mackey

SCHOOL OF FORESTRY

MASTER OF SCIENCE IN FORESTRY

Alexander Grant Jackson, A. B.

SCHOOL OF LAW

BACHELOR OF LAWS

Otto Johnson Albers ✓	Albert J. Kulzer, A. B. ✓
Edward Weber Allen ✓	Adolph Loewe ✓
Irving Marshall Clark, A. B. ✓	Walter George Loewe ✓
Ardys Branham Cunningham, ✓	Arthur C. McLane, A. B. ✓
A. B.	James Vernon Metcalfe ✓
James William Dootson, A. B. ✓	Delos J. Needham, A. B. ✓
Earnest Eddy, A. B. ✓	John Herbert Norris ✓
John Fields Roy Erford, A. B. ✓	Arthur William Ostrom ✓
DeWitt Morris Evans, B. L. ✓	Stanley Joseph Padden, A. B. ✓
Ralph Herbert Foster, A. B. ✓	William Edmund Parker, A. B. ✓

Graduated Alice Olson

Blanche Elizabeth Funk, A. B.	Star Thomas Halley Pinkham
Melvin Stuart Good	James Archibald Stinson, Ph. B.
Clyde Musgrave Hadley, A. B.	Otto Monroe Thomason
Alexander Theodore Kowalsky, A. B.	Jay Anesly Whitfield, A. B.
	Alfred Grisson Worthington

SCHOOL OF PHARMACY

BACHELOR OF SCIENCE IN PHARMACY

Albert Haskin Dewey (cum laude)	Martha Susan Keatts
Maude Whittier Fos	Rickey Laughlin Waugh
Dora Hutchinson	John Jacob Wintler

PHARMACEUTICAL CHEMIST

George Augustus Wright Barker	Theaton Earl Green
Halron John Carey	Dora Hutchinson
Charles Clifford Clementson	Martha Susan Keatts
William Herbert Cooper	Irving Meyer Levinson
Maude Whittier Fos	Gladys Leah Wanamaker
Henry Stanley Gibson	Cedric Fauntleroy Whittlesey

CERTIFICATE OF PHARMACY

Nellie Lee Bailey	Milton Fitz Randolph
Burton Augustus Brown	Harry Hamilton Ross
Clair Dunmore	Genevieve Isabell Starkey
Fred Andrew Ludwig	Herman Thomas Wanamaker
Edward Willis Moore	Thomas Young

NORMAL DIPLOMA

Mabel Bryant Adams	Albert Frederick Krohn
Anne Bienvenu Allen	Kate Elizabeth Lee
Ina Pearl Allen	Margaret McCarney
Raymond Nims Ashmun	Ella Carkner McMaster
Laurel Gail Baker	Alice Beatrice McWilliams
Helen Blackman	Elizabeth Livingstone Macleay
Hazel Almon Blake	Elsie Anna Meier
Fanchon Borie	Alfred Clay Millican
As of the Class of 1908	Alice Estella Montgomery
Blanche Frances Brace	Ralph Strong Montgomery
Dora Frances Breece	Edna Robb Mott
Ethel Brown	Dolph Francis Olds

Vera Mae Brown
Edna Mary Byrd
Dora Sophia Campbell
Olaf Emerie Harrison Caskin
Joseph Weller Chamberlin
Caroline Duston Cogswell
Edith Lorne Collier
Irene Russell Conner
Caroline Catherine E. Connors
Elizabeth Dearborn
Frank William Denny
Mabel Lucile Durham
Clara May Elmer
Edna Hope Enyart
Adelaide Dorothy Fischer
Grace Ward Freiday
Bessie Mabel Frein
Mabel E. Gleason
Minnie May Hadlock
Eugene Ammon Hancock
Mary Pauline Harsell
Ida Johnson
Pearl Johnson
Anna Rachel Jones
Lew Geate Kay

Hjalmar Laurits Osterud
Lela Kathleen Parker
Roxy Minnie Peterson
Myrtle Ruth Powers
Louise M. Renkin
Beulah Faye Smith
Laura Amelia Smith
Mary Agnes Smith
Maude Alice Stead
Gertrude Inez Streator
Rena Elizabeth Strout
As of the Class of 1908
Catherine Bruce Sutherland
As of the Class of 1908
Fred Hobson Sutton
Nettie May Swem
Nellie Mackintosh Talbot
As of the Class of 1907
Josephine Taylor
As of the Class of 1908
Ray Lillian Isabel Tierney
As of the Class of 1908
Annie May Troll
Charlotte Forsyth Williams

SCHOLARSHIPS AND PRIZES AWARDED

The following awards of prizes and scholarships were made for 1910:

The John Walter Ackerson Scholarship for Women.....
Miss Carrie Cowgill.

The Judge Alfred Battle Cash Prize for Debate.....
Fred R. Angevine, Leo Baisden, Glenn Hoover.

The Philo Sherman Bennett Cash Prize in Political Science..
Lloyd L. Black.
Honorable mention—Will Z. Kerr.

The Big Red Apple Scholarship Cash Prize...Raymond Morrison

The E. F. Blaine Cash Prize for Oratory.....Glenn Hoover

The Judge Thomas Burke Scholarship Cash Prize in Latin..
Miss Sarah Sutton.

The Vivian M. Carkeek Cash Prize for Law Thesis.....
Edward M. Allen.

Honorable mention—Clyde A. Hadley, Jay A. Whitfield.

The Cash Prize in Chemistry (anonymous).....
Miss Josephine Johnson.

The L. J. Corkey Cash Prize for Oratory...Arthur Ralph Tollefson

The R. C. Erskine Senior Cash Prize in Oratory.....
Arthur Ralph Tollefson.

The Funk & Wagnall's Standard Dictionary Prize in Fresh-
man English.....Miss Harriett Effie Steele

The Jacob Furth Scholarship Cash Prize in Electrical En-
gineeringKurt Frederick J. Kirsten

The Thomas W. Lough Gold Medal in Pharmacy.....
Miss Gertrude Fay Derry.

The John L. Wilson Cash Prizes in Chemistry of Logged-off
Lands.....(1) Newell L. Wright, (2) Lewis A. Treen, Jr.

Senior Scholars.....

Miss Marion Lombard Colkett, Latin; Miss Ione Edith Fenton, German; Miss Edna Ficks, Latin; Miss Blanche Lydia Hackshaw, German; Mr. Joseph Barlow Harrison, English; Miss Margaret Mable McMurray, Botany; Miss Helen Therese Renard, English; Miss Ethel Shave, History; Mr. Francis William Thompson, Zoology.

Sigma Xi.....

Lewis Henry Fee, Graduate Student; Albert Haskin Dewey, Kurt Frederick Johannes Kirsten, Charles Earl Mallory, Hjalmar Lauritz Osterud, Benjamin Guy Flaherty.

The Alden J. Blethen Prizes for Declamation and Oratory..

Declamation—William St. Clare, Marysville, first; Miss Lydia Neufang, Auburn, second; Vernon Bacher, Bremerton, third. Oratory—Mary Barrill, Seattle, first; Lance Hart, Aberdeen, second; Maude Walker, Puyallup, third.

REGISTER OF STUDENTS

1909-10

GRADUATES

NAME	HOME ADDRESS
Ash, Ida	Cleveland, Georgia
Ashman, Raymond Nirus.....	Cosmopolis
A. B., University of Washington.	Mathematics.
Bowlby, Virginia	Crete, Nebraska
A. B., Doane College.	History.
Clark, Lois	Seattle
A. B., University of Washington.	Botany.
Collett, Albert Jackson.....	Beverly, W. Va.
LL. M., University of West Virginia.	Philosophy.
Cooper, Elva	Seattle
A. M., University of Wisconsin.	Mathematics.
Currie, Florence Baxter.....	Milwaukee, Wis.
B. L. S., University of Illinois.	Spanish.
Dewey, Albert Haskin.....	Seattle
A. B., University of Washington.	Chemistry.
Erbeck, Clara M.....	Seattle
A. B., University of Wooster.	Chemistry.
Gleason, Mabel E.....	Seattle
A. B., University of Washington.	Mathematics.
Hancock, Eugene Ammon.....	Coupeville
A. B., University of Washington.	English.
Harris, Mrs. Charles P.....	Seattle
A. B., Ohio State University.	English.
Hartman, Frank Alexander.....	Seattle
A. B., University of Kansas.	Botany.
Henninger, Carl	Indianapolis, Ind.
A. B., University of Indiana.	German.
A. M., University of Illinois.	
Hooton, Ada Margaret.....	Tacoma, Wash.
A. B., University of Puget Sound.	French.
Johnson, Herman M.....	Seattle
A. B., University of California.	Forestry.

Kitamuro, Yushituro	Kioto, Japan
A. B., Doshisha University.	Education.
Lester, Horace Hardy.....	Carlisle, Ind.
A. B., University of Minnesota.	Physics.
McCarthy, William G.....	Seattle
A. B., University of Washington.	
McDonnell, Emma Pearl.....	Seattle
A. B., University of Washington.	Spanish.
McGee, John Merritt.....	Seattle
A. B., University of Washington.	Chemistry.
Michelson, Edith Sidonie.....	Seattle
A. B., University of Washington.	French.
Miller, Mayme Bernice.....	Seattle
A. B., University of Washington.	Spanish.
Osterud, Hjalmar Laurito.....	Seattle
A. B., University of Washington.	Zoology.
Pagliuchi, Frank Dominicus.....	Florence, Italy
B. S., Durham College of Science.	Mining.
Perkins, Mrs. Georgia G.....	Seattle
B. S., Cornell University.	
Pope, Clarence R.....	Hoxie, Kansas
B. S., Bellevue College.	Forestry.
Quitze, Fritz Carl.....	Hanover, Germany
Royal University, Berlin.	German.
Rankin, Jeanette Pickering.....	Missoula, Mont.
B. S., University of Montana.	
Rice, Edward O.....	Seattle
A. B., University of Wisconsin.	English.
Ruehle, Godfrey Leonard	Port Townsend
University of Washington.	Chemistry.
Shaffrath, Mrs. Louise Brown.....	Seattle
A. B., Mount Holyoke.	Domestic Science.
Siewart, Samuel August	Seattle
A. B., Willamette University.	
Steinke, Martin William.....	Seattle
A. B., Wartburg College.	German.
Streator, Gertrude Inez.....	Seattle
A. B., University of Washington.	English.
Tillman, Helen Catherine	Seattle
A. B., University of Washington.	Spanish.
Townsend, Sophia Elizabeth.....	Salem, Oregon
A. B., Willamette University.	Latin.

Troll, Annie May.....	Seattle
A. B., University of Washington.....	English.
Webster, Genevieve	Spokane
A. B., Wellesley College.....	English.
Zeller, Myron Sanford.....	Seattle
A. B., Greenville College.....	Botany.
Zimmerman, Grace Blanche	Seattle
A. B., University of Washington.....	

SENIORS

<i>Name</i>	<i>School</i>	<i>Home Address</i>
Anderson, Bessie Louise.....	A. B.	Seattle
Anderson, Ruth F.....	A. B.	Seattle
Barash, Iona.....	A. B.	Seattle
Barker, George Augustus.....	Pharmacy	Spokane
Bartow, Jeanette.....	A. B.	Seattle
Bates, Clarence Myers.....	C. E.	Bellingham
Beery, Earl Jacob.....	E. E.	Orillia
Black, Lloyd Llewellyn.....	A. B.	Everett
Bond, Rowena.....	A. B.	Seattle
Boyles, Page R.....	A. B.	Seattle
Brown, Charles S.....	A. B.	Seattle
A. B., Valparaiso College.....		
Brown, Edwin J.....	A. B.	Seattle
Bruehlman, William Lloyd.....	A. B.	Seattle
Bulkeley, Josephine Mary.....	A. B.	Seattle
Burkholder, Ethel.....	Pharmacy	Seattle
Cadwell, Catherine.....	Pharmacy	Seattle
Camp, Hiram W.....	C. E.	Centralia
Carey, J. Halron.....	Pharmacy	Seattle
Carlin, Rita Agnes.....	Pharmacy	Spokane
Carnine, Edna Adeline.....	A. B.	Seattle
Challis, Bertha Mary.....	A. B.	Seattle
Chase, Marguerita.....	A. B.	Seattle
Christopherson, Olive.....	A. B.	Tacoma
Clark, Levi.....	A. B.	Seattle
Clulow, Lillian.....	A. B.	Wenatchee
Cogswell, Vera Anna.....	A. B.	Blaine
Colkett, Marion Lombard.....	A. B.	Seattle
Collins, Helen Holman.....	A. B.	Kirkland
Colvin, Howard Milton.....	A. B.	Alva, Okla.

Cook, William Bell.....	A. B.	Seattle
Cowgill, Carrie.....	A. B.	Seattle
Crismas, Roy.....	A. B.	Joliet, Mont.
Cunningham, Allan.....	Mines	Seattle
Dalby, Edwin Justus.....	A. B.	Seattle
Dalgity, Ruby Isabelle Livingstone.....	A. B.	Seattle
Das, Taraknath.....	A. B.	Seattle
Davis, Arthur Anderson.....	Mech. Eng.	Tacoma
Derry, Fay Gertrude.....	Pharmacy	Seattle
Deva, Satya.....	A. B.	Pumjab, India
Dootson, Charlotte.....	A. B.	Everett
Drummond, Nan Marion.....	A. B.	Tacoma
DuCasse, Edward Frederic.....	A. B.	Seattle
Dungan, Violet W.....	A. B.	Seattle
Eisenbeis, Hilda Elizabeth.....	A. B.	Port Townsend
Etsell, Ada S.....	A. B.	Seattle
Evans, Winnie.....	A. B.	Ferndale
Everett, Ethel.....	A. B.	Custer
Fairbrook, Lloyd Flint.....	C. E.	North Yakima
Fenton, Ione Edith.....	A. B.	Seattle
Fertsch, Albert.....	A. B.	Wenatchee
Fettke, Charles Reinhard.....	Mines	Tacoma
Ficks, Edna.....	A. B.	Seattle
Filer, Henry Paul.....	A. B.	Ellensburg
Fitch, Albert Le Verne.....	A. B.	Seattle
Forbes, Grace Annabel.....	A. B.	Asotin
Fünfsinn, Rosa	A. B.	Seattle
Gilluly, Frank.....	Pharmacy	Seattle
Gilmore, Floy Victoria.....	A. B.	Seattle
Goodner, Grace Emily.....	A. B.	Seattle
Gralnger, Clyde.....	A. B.	Sumner
Gray, Grace Leone.....	A. B.	Seattle
Hackshaw, Blanche Lydia.....	A. B.	Seattle
Harris, William Herbert.....	A. B.	Vancouver
Harrison, Joseph B.....	A. B.	East Sound
Hibben, Harriett Fingland.....	A. B.	Seattle
Hindman, Edith.....	Pharmacy ...	Baker City, Ore.
Hopkins, Raymond Allon.....	E. E.	Tacoma
Howes, Alice.....	A. B.	Spokane
Hubert, Lulu.....	A. B.	Seattle
Hunter, Addie May.....	A. B.	Seattle

Jack, Eugene Clarence.....	C. E.	Seattle
Johnson, Anne Ogden.....	A. B.	Tacoma
Johnson, James Raymond.....	E. E.	Aberdeen
Johnson, Thomas M.....	Pharmacy	Seattle
Johnstone, Annabel Milligan.....	A. B.	Seattle
Jones, Eleanor.....	A. B.	Seattle
Jones, Ethel.....	A. B.	Usk
Jonson, Oscar Frekerick T.....	A. B.	Rockford, Ill.
Keenan, Edmund M.....	A. B.	Seattle
Kerr, William Zinn.....	A. B.	Seattle
Kindig, Grace.....	A. B.	Seattle
King, Grace Elizabeth.....	A. B.	Seattle
Lall, George Gray.....	E. E.	Seattle
Latham, Ethel.....	A. B.	Seattle
Le Sourd, Minnie.....	A. B.	Coupeville
Lewis, George John, Jr.....	A. B.	Seattle
Lohman, Lillian.....	A. B.	Chinook, Mont.
Lovegren, Levi Alton.....	C. E.	Preston
Lovejoy, Bartlett Howard.....	C. E.	Seattle
McCormack, Mabel Agnes.....	A. B.	Golden, B. C.
McKay, Bess O.....	A. B.	Olympia
McKean, Flobell.....	A. B.	Walla Walla
McMurray, Mabel Margaret.....	A. B.	Seattle
Madison, Lillian.....	A. B.	Kent
Maltbie, Axia Adella.....	A. B.	Seattle
Mathieu, Elizabeth Josephine.....	A. B.	Seattle
Mathieu, Mae.....	A. B.	Seattle
Mauermann, Olive Maybelle Leone..	A. B.	Oakville
May, Charles Culbertson.....	C. E.	Pasadena, Cal.
Melton, Gertrude Lucile.....	A. B.	Pomeroy
Mitchell, W. Benjamin.....	Pharmacy	Everett
Moyer, Leonard Mathias.....	E. E.	Seattle
Neal, Mable Annora.....	A. B.	Lewiston, Idaho
Norum, Birger.....	Mines	Seattle
Olsen, Charles Edwin.....	A. B.	Elma
O'Meara, Margaret Catherine.....	A. B.	Seattle
Osberg, Rosanna.....	A. B.	Seattle
Parks, Helena Eleanor.....	A. B.	Seattle
Parton, Ida Anna.....	A. B.	Seattle
Patton, Priscilla Irene.....	A. B.	Bellingham
Paulson, Freda Ruth.....	A. B.	Portland, Ore.

Peaslee, Emilie Stewart.....	A. B.	Seattle
Phelps, Benjamin Franklin.....	Mech. Eng.....	North Yakima
Plum, Frank Arents.....	A. B.	Port Townsend
Prater, James William.....	A. B.	Ellensburg
Priest, Jessie Nutting (Mrs.).....	A. B.	Seattle
Quigley, Mary B.....	A. B.	Seattle
Rademaker, Dora Pearl.....	A. B.	Seattle
Ramsey, Anna.....	Pharmacy	Kent
Raymond, Chester E.....	A. B.	Bellingham
Romine, Carolyn Elizabeth.....	A. B.	Walla Walla
Ryan, Warren Wood.....	C. E.	Sumner
Saeman, Marie Caroline.....	A. B.	Seattle
Scatcherd, Roy	Pharmacy	Seattle
Schricker, Ottilie Iona.....	A. B.	LaConner
Scott, Emma T.....	A. B.	Everett
Searle, Elizabeth Creed.....	A. B.	Seattle
Sears, Carleton I.....	Pharmacy	Centrallia
Sempert, Edward Otto.....	Pharmacy.....	Grangeville, Idaho
Shave, Ethel.....	A. B.	Seattle
Shelton, Edward Kirk.....	E. E.	Seattle
Simpson, Nina Blanch.....	A. B.	Kalama
Slater, Doy.....	A. B.	Ferndale
Smiley, Clara.....	A. B.	Seattle
Smith, Elsie Pearl.....	A. B.	Seattle
Smith, Glenn Harry.....	E. E.	Seattle
Spannagel, Erna.....	A. B.	Spokane
Stahl, Gustav R.....	A. B.	Seattle
Stanford, Edna Belle.....	A. B.	Olympia
Stanton, Edgar Adolphus.....	A. B.	Seattle
Statler, Pluma.....	A. B.	Seattle
Stilwell, Edward M.....	A. B.	Seattle
Storch, Bessie.....	Pharmacy	Seattle
Strout, Ethel Margaret.....	A. B.	Tacoma
Tegtmeier, Fred.....	C. E.	Everett
Terrell, Charles Foster.....	E. E.	Seattle
Thompson, Claude Sims.....	Mines	Seattle
Thompson, Peter.....	Pharmacy	Seattle
Tibbals, Henry Curtis.....	C. E.	Port Townsend
Titus, Leo Grant.....	C. E.	Seattle
Tollefson, Arthur Ralph.....	A. B.....	West Salene, Wis.
Truesdell, Inda Nelly.....	A. B.	Vancouver, Wash.

Urquhart, Helen Caroline.....	A. B.	Chehalis
Van Sant, Clara.....	A. B.....	Victoria, B. C.
Wagoner, Lovina Catherine.....	A. B.	Seattle
Walker, Grace.....	A. B.	Seattle
Wells, Ernest F.....	A. B..	So. Farmington, Mass.
Wernecke, Chauncey.....	C. E.	Seattle
White, Florence.....	A. B.	Seattle
Whitney, Glenn Thornton.....	A. B.	Seattle
Wickwire, Esther Irene.....	A. B.	Angola, Ind.
Wills, Alma Josephine.....	A. B.	Spokane
Wintler, Ella.....	A. B.	Vancouver, Wash.
Yeager, Ida.....	A. B.	Olympia

JUNIORS

<i>Name</i>	<i>School</i>	<i>Home Address</i>
Adair, Grover Charles.....	A. B.	Littlerock
Allen, Alta E.....	A. B.	Memphis, Mo.
Allmond, Adelaide Laura.....	A. B.	Seattle
Anderson, Clifford Walter.....	C. E.	Seattle
Ashton, Fred William.....	A. B.	Seattle
Atwood, Stanley Freeman.....	A. B.	Seattle
Baker, Don R.....	A. B.	Seattle
Barto, Joseph Abel.....	A. B.	Seattle
Bass, Emma Alice.....	A. B.	Bellevue
Bass, Mabel Lena.....	A. B.	Seattle
Batchellor, Willis Tryon.....	C. E.	Seattle
Baumann, Henry N., Jr.....	Mines	Seattle
Beck, Brous Coman.....	E. E.	Seattle
Benson, Beatrice.....	A. B.	Seattle
Bergan, Clara Amanda.....	A. B.	Everett
Bigelow, Bertha Lucile.....	A. B.	Spokane
Blair, Nathan D.....	E. E.	Selah
Boissonault, Frank.....	E. E.	Everett
Bolger, May Elizabeth.....	A. B.	Spokane
Bowers, James B.....	A. B.	Seattle
Brill, Geneva V.....	A. B.	Seattle
Brinkley, Joseph Arthur.....	Forestry	Seattle
Brown, Clarence Albert.....	A. B.	Arlington
Brown, Charles Earle.....	E. E.	Bellingham
Buell, Elsa Lenore.....	A. B.	Arlington
Cahill, Fred.....	A. B.	Dayton

Campbell, Arthur Clinton.....	A. B.	Chelan
Canton, William Reynolds.....	Mines	Waterville
Celleyhan, Adeline Hayes.....	A. B.	Seattle
Chloupek, Edward Harry.....	Forestry	Manitowac, Wis.
Christoe, Alice M. H.....	A. B.	Treadwell, Ala.
Christopher, Willis Clinton.....	C. E.	Seattle
Church, Edith Estelle.....	A. B.	Spokane
Clark, Pearl.....	A. B.	Seattle
Clementson, Charles Clifford.....	Pharmacy	Seattle
Cole, Henry Ambrose.....	Mines	Seattle
Conner, Elmer A.....	C. E.	Seattle
Cook, Orpha Belle.....	A. B.	Castle Rock
Cookerly, Grover E.....	Mech. Eng.	Tacoma
Cordz, Effie.....	Chem. Eng.	Seattle
Corey, Margaret.....	A. B.	Seattle
Corpron, C. Fred.....	Pharmacy...	McMinnville, Ore.
Crowley, Myrtle Melva.....	A. B.	Vancouver
Damus, Robert.....	A. B.	Seattle
Damus, Walter.....	C. E.	Seattle
Davies, Estell.....	A. B.	Van Asselt
De Chesne, Victor Charles.....	Mines	Seattle
Deering, Tam.....	A. B.	Snohomish
Denny, Edward Henry.....	Mines	Seattle
Diether, Louis Meyer.....	Mines	Seattle
Dixon, Elsa Klore.....	A. B.	Seattle
Drake, Dorothy Ellen.....	A. B.	Seattle
Drum, Barbara Banks.....	A. B.	Seattle
Dudley, William Lyle.....	Mech. Eng.	Seattle
Eagan, Clarence.....	A. B.	Seattle
Eakins, Bess Dacotah.....	A. B.	Seattle
Edwards, Elva Salome.....	A. B.	Port Townsend
Edwards, Lola Edith.....	A. B.	Port Townsend
Ellis, Hubert Ingersoll.....	Mines	Seattle
Erickson, Elsie.....	A. B.	Seattle
Estee, Lula M.....	A. B.	Gibson City, Ill.
Evans, Virginia Harriett.....	A. B.	Tacoma
Fenton, Enid Elizabeth.....	A. B.	Seattle
Finley, Madge.....	A. B.	Seattle
Floyd, Margaret Sarah.....	A. B.	Spokane
Forster, Abbie Marion.....	A. B.	Spokane
Franklin, Will Hawley.....	C. E.	Seattle

Fraser, Alice Sinclair.....	A. B.	Seattle
Fraser, Eva Florence.....	A. B.	Seattle
Frater, John Archibald.....	A. B.	Seattle
Fuller, Emilie Stone.....	A. B.	Seattle
Furry, Mabel Georgine.....	A. B.	Seattle
Gage, Marguerite.....	A. B.	Bellingham
Gault, George.....	A. B.	Seattle
Gibbon, Edna Scott.....	A. B.	Seattle
Gist, Arthur Stanley.....	A. B.	Seattle
Greenberg, Edith Lois.....	A. B.	Spokane
Greene, Roy Laird.....	C. E.	Centralia
Grindrod, Iona.....	A. B.	Ellensburg
Gruber, Edwin Albert.....	A. B.	Winlock
Haley, Lucie.....	A. B.	Seattle
Hallock, Geo. O.....	Mines	Seattle
Hallstrom, Maude Evangeline.....	A. B.	Seattle
Hannan, Ethel Elizabeth Miriam.....	A. B.	Seattle
Hanzlik, Edward John.....	Forestry	Chicago, Ill.
Hartnett, Edmon Emmett.....	A. B.	Seattle
Hattrem, Agnes Josephine.....	A. B.	Seattle
Hawley, Neal C.....	Mines	Seattle
Henry, Zella Jane.....	A. B.	Seattle
Hensley, John Jackson.....	A. B.	Seattle
Heuss, Edward Charles.....	Mines	Seattle
Hill, Sallie Haddock.....	A. B.	Port Townsend
Hipkoe, Max Otto.....	A. B.	Seattle
Hoffman, Kathryn Eugenia.....	A. B.	Ellensburg
Howard, Grace Elizabeth.....	A. B.	Seattle
Hunter, Sue Marshall.....	A. B.	Los Angeles, Cal.
Iffland, Nellie.....	A. B.	Port Townsend
Irie, Charles Arthur.....	E. E.	Sumner
Israel, Genevieve.....	A. B.	Seattle
Jackson, Blanche Gertrude.....	A. B.	Seattle
Jarvis, Bruce Wilber.....	A. B.	Davenport
Jeans, Ethel Jay.....	A. B.	Maplevalley
Johnson, Dallas Devello.....	A. B.	Seattle
Johnson, Frank Melvin.....	C. E.	Seattle
Johnson, George Wilfred.....	A. B.	Seattle
Johnson, Julia.....	A. B.	Aberdeen
Joslin, Effie Rubarda.....	A. B.	Seattle
Joslin, Ethel Roberta.....	A. B.	Seattle

Kaneko, Takayoshi.....	Chem. Eng.	Achigasaki, Japan
Karrer, Anna Marie.....	A. B.	Roslyn
Karrer, Enoch.....	A. B.	Roslyn
Karrer, Frank Xavier.....	A. B.	Roslyn
Karrer, Matilda Wilhelmine.....	A. B.	Roslyn
Karrer, Sebastian.....	A. B.	Roslyn
Keith, Clarence Benjamin.....	Forestry	Seattle
Kenny, Kathryn Petranella.....	A. B.	Seattle
Kibbe, Alice Lovina.....	A. B.	Elma
Kilty, Irene Mae.....	A. B.	Seattle
Kiltz, Lillian Viola.....	A. B.	Vancouver, B. C.
Kirkpatrick, Mrs. Rossae Swartz...	A. B.	Seattle
Knisley, J. M.....	A. B.	Seattle
Latham, Leonie Marie.....	A. B.	Seattle
Lee, Jessie Louisa.....	A. B.	Seattle
Le Huquet, Gertrude.....	A. B.	Sandpoint, Ida.
Le Seure, Callie Belle.....	A. B.	Streator, Ill.
Leve, Walter Hanson.....	Forestry	Seattle
Lindley, Kathleen.....	A. B.	Mooreville, Ind.
Lipscomb, Roy S.....	E. E.	Seattle
Lockwood, Everett Wellington....	Mines	Waterville
Luby, Mabel A.....	A. B.	Seattle
Luther, India Ethel.....	A. B.	Seattle
Lynn, Genevieve.....	A. B.	Seattle
McDonald, Eva Elizabeth.....	A. B.	Bellingham
McGinnis, Minnie.....	A. B.	Waterville
McHugh, Ruth.....	A. B.	Seattle
McPhee, John A.....	Mines	Spokane
Madison, Marguerite.....	A. B.	Kent
Mahler, Eva May Elliott (Mrs)....	A. B.	Seattle
Mallette, Gertrude E.....	A. B.	Spokane
Mansfield, Austin Gladstone.....	C. E.	Bellingham
Marsh, Elizabeth.....	A. B.	Seattle
Mason, Dorothy Craik.....	A. B.	Seattle
Mattson, William Whitlock.....	A. B.	Seattle
Metzler, Frances.....	A. B.	Tacoma
Millican, Charles Welsey.....	A. B.	Seattle
Montgomery, John Raymond.....	A. B.	Bellingham
Moody, Ruth.....	A. B.	Everett
Mowrey, Ruth Alice M.....	A. B.	Pomeroy

Mullen, Roger B.....	E. E.	Lakebay B. S., Kansas Agricultural College.
Muncaster, Mary Ellen.....	A. B.	Seattle
Newman, Rosamond Anna Marie...	A. B.	Seattle
Nisbet, Hazel Bell.....	A. B.	Seattle
Norris, Sadie Alice S.....	A. B.	Seattle
O'Neill, Hazel Edwards.....	A. B.	Michigan, So. Dak.
Osberg, Minnie Alice.....	A. B.	Seattle
Packard, Earl Leroy.....	A. B.	Tacoma
Parish, William Frank.....	A. B.	Seattle A. B., Valparaiso University.
Payne, Alice Mabel.....	A. B.	Port Townsend
Pease, Eugene Irving.....	E. E.	Tacoma
Perry, Stewart.....	A. B.	Puyallup
Phillips, Ben Nelson.....	A. B.	Seattle
Pinkerton, Roy David.....	A. B.	Tacoma
Pollock, Carl D.....	C. E.	Seattle
Post, Frances E.....	A. B.	Syracuse, N. Y.
Powell, Sarah Mathloma.....	A. B.	Seattle
Pratt, Eloise Sawyer.....	A. B.	Prosser
Quigley, Agnes E.....	A. B.	Seattle
Rae, David Edward.....	C. E.	Walla Walla
Randall, Flora Elsie.....	A. B.	Seattle
Randell, Ralph R.....	C. E.	Seattle
Range, Walker.....	E. E.	Seattle
Rathbun, V. Richard.....	C. E.	Seattle
Reynolds, Florence Lucile.....	A. B.	Seattle
Rich, Margaret Jeanette.....	A. B.	Seattle
Roberts, Caesar Rodney.....	C. E.	Denver, Colo.
Rogers, Emily Alberta.....	A. B.	Waterville
Rogers, Reese Frierson.....	Mines	Starkville, Miss.
Ross, Helen Montana.....	A. B.	Seattle
Scearce, Lillian.....	A. B.	Seattle
Schrieber, Louise P.....	A. B.	Tacoma
Severs, Florence.....	A. B.	Cove, Ore.
Shadinger, Gail B.....	E. E.	Snohomish
Shuey, Mabel.....	A. B.	Seattle
Sims, Ethel.....	A. B.	Seattle
Skans, Williams Samuel.....	Chem. Eng.	Portland, Ore.
Skirls, Ethel.....	A. B.	Seattle
Small, Lloyd Leroy.....	A. B.	Seattle

Stetson, Fred Lea.....	A. B.	Seattle
Strandberg, Edwin L.....	C. E.	Seattle
Summersett, John.....	C. E.	Chehalis
Sutherland, Esther Helena.....	A. B.	Seattle
Sutton, Mary Catherine.....	A. B.	Seattle
Sutton, Sarah Patience.....	A. B.	Seattle
Swan, Eleanor Josephine.....	A. B.	Seattle
Swarva, George Lewis.....	Mines	Seattle
Sweet, Will.....	A. B.	Blaine
Tanner, Merle Harriett.....	A. B.	Seattle
Taylor, Irene Eglantine.....	A. B.	Bellingham
Teel, Arvilla Marie.....	A. B.	Bellingham
Tenneson, Boletta Amella.....	A. B.	Portland, Ore.
Therkelsen, Eric.....	E. E.	Portage
Thomas, Clarence L.....	A. B.	Seattle
Thomas, Ethel Ida.....	A. B.	Seattle
Treen, Lewis Angevine, Jr.....	Forestry	Seattle
Ullin, Anna M.....	A. B.	Seattle
Van Sicklen, William John.....	A. B.	Castleton
Varga, Francis Melvil.....	A. B.	Leon, Iowa
Wagoner, Lyman Fisher.....	A. B.	Seattle
Wallace, Hazel.....	A. B.	Seattle
Wanamaker, Gladys Leah.....	Pharmacy	Seattle
Weatherford, Clara Belle.....	A. B.	Dayton
Wessela, Helena Marie Frances....	A. B.	Gardiner, Ore.
Whitman, Ruth Ellen.....	A. B.	Seattle
Wilkie, Linda.....	A. B.	Spokane
Willard, Blanche Heller.....	A. B.	Seattle
Willard, Ida Estella.....	A. B.	Seattle
Williams, Charles Harvey.....	C. E.	Centralia
Williams, Jane.....	A. B.	Seattle
Williams, Bertha Krogoll.....	A. B.	Seattle
Williams, Marie Bertha.....	A. B.	Seattle
Williams, Warner E.....	A. B.	Seattle
Wold, Sylvia.....	A. B.	Seattle
Wychoff, Hulett Judsen.....	E. E.	Seattle
Yameo, Masuo.....	A. B.	Seattle
Young, Grace Mae.....	A. B.	Aberdeen

SOPHOMORES

<i>Name</i>	<i>School</i>	<i>Home Address</i>
Adams, Alfred Charles.....	C. E.	Bellingham
Allen, Lillian.....	A. B.	Tacoma
Anderson, Clarence.....	Forestry	Hoquiam
Anderson, Edward Robert.....	Mines	Spokane
Andrews, Elsie.....	A. B.	Newberg, Ore.
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 D.....	E. E.	Seattle
Arnot, Agnes Jean.....	A. B.	Sedro-Woolley
Awoki, Monroe Tetsuji.....	Mines	Seattle
Ballie, James G.....	A. B.	North Yakima
Balsden, Leo Bernard.....	A. B.	Seattle
Balch, Anna Cordelia.....	A. B.	Seattle
Baldrige, Ethel L.....	A. B.	Seattle
Ballard, Dean Dayton.....	Forestry	Seattle
Barash, Arnold Jay.....	E. E.	Seattle
Barber, Mary Mabel.....	A. B.	Seattle
Bardell, Ethel Mary.....	A. B.	Seattle
Baumgarten, M. Earl.....	A. B.	Seattle
Beam, Carl.....	C. E.	North Yakima
Belshaw, Vida Hazel.....	A. B.	Spokane
Biggs, Katherine.....	A. B.	Seattle
Blair, Homer Orrin.....	E. E.	Tacoma
Bloom, Verda Mell.....	A. B.	Seattle
Boddy, Pearl M.....	A. B.	Seattle
Bohn, Herman C.....	A. B.	Waverly, Iowa
Bonney, Parker Samuel.....	Forestry	Bellingham
Bonsall, Vera Valentine.....	A. B.	Spokane
Borrill, Marjorie.....	A. B.	Seattle
Bossong, Pearl.....	A. B.	Ellensburg
Bouton, Edna Fay.....	A. B.	Vancouver, Wn.
Bowman, Claire.....	E. E.	Seattle
Bowman, Hugh A.....	A. B.	Seattle
Breece, William L.....	C. E.	Seattle
Bringinghurst, Horace M.....	C. E.	Seattle
Brokaw, James Frank.....	A. B.	Tacoma

Brown, Arthur Leroy.....	C. E.	Bellingham
Brown, Artie.....	A. B.	Arlington
Brown, Ethel May.....	A. B.	Seattle
Brown, Luella Margaret.....	A. B.	Seattle
Brown, Warren H.....	Forestry	Arlington
Bunch, Agnes H.....	A. B.	Seattle
Burnett, Mollie.....	A. B.	Seattle
Bushnell, Spencer Gilbert.....	C. E.	Seattle
Calderhead, Samuel John.....	A. B.	Seattle
Campbell, John.....	Mech. Eng.	Georgetown
Carey, Elizabeth May.....	A. B.	Seattle
Carmichael, James Troy.....	C. E.	Seattle
Carr, Delbert E.....	Mines	Portland, Ore.
Carter, Marjorie Dean.....	A. B.	Seattle
Carter, Lee Jefferson.....	A. B.	Tacoma
Catlin, Claude.....	Mech. Eng.	Ellensburg
Chandler, William Elmer.....	C. E.	Spokane
Charles, Fanny Grace.....	A. B.	Puyallup
Chew, Elizabeth Huntington.....	A. B.	Seattle
Child, Irma.....	A. B.	Spokane
Child, Laura Theo.....	A. B.	Spokane
Churchill, Frederick Arthur, Jr....	A. B.	Seattle
Clark, Charles Walter.....	A. B.	Kirkland
Clark, Elizabeth Freeman.....	A. B.	Spokane
Clifford, Raymond W.....	A. B.	Tacoma
Cochran, Ralph Campbell.....	A. B.	Snohomish
Cogswell, Louis Harold.....	Mines	Seattle
Collier, Helen.....	A. B.	Wenatchee
Collier, Ira Leonard.....	C. E.	Wenatchee
Conklin, Mabelle.....	A. B.	Vickeryville, Mich.
Corbet, Margaret Victoria.....	A. B.	Seattle
Corlett, Ruth E.....	A. B.	Seattle
Courtney, Alice Marie.....	A. B.	Seattle
Cowley, Bess.....	A. B.	Cove
Cox, Julia V.....	A. B.	Toppenish
Cragg, Robert J.....	A. B.	Juneau, Alaska
Crary, Horace Holmes.....	Mines	Canisto, N. Y.
Criswell, Clare.....	A. B.	Tacoma
Crites, Gertrude.....	A. B.	Bellingham
Curry, Mauryce Louise.....	A. B.	Olympia
Cushman, Arthur Wilhelm.....	A. B.	Tacoma

Dall, Jeanette MacKenzie.....	A. B.	Seattle
Dalquist, Emma Christine.....	A. B.	Everett
Daniels, Ethel Agnes.....	A. B.	Seattle
Darnell, John Monroe.....	Mines	Seattle
Darrin, Marc de Lepine.....	Chem. Eng.	Bellingham
Daubney, Lucy Adelaide.....	A. B.	Centralia
Davies, Myvanwy.....	A. B.	Seattle
Dean, Clara.....	A. B.	Seattle
Delaney, Howard H.....	A. B.	Ellensburg
Derham, Harry Michael.....	C. E.	Pocotello, Idaho
Dickinson, Lillian.....	A. B.	Seattle
Dodd, Emily M.....	A. B.	Bellingham
Donaway, Alice May.....	A. B.	Tacoma
Douglass, Clifford.....	A. B.	Walla Walla
Doust, Horace.....	Pharmacy	North Yakima
Duckering, Bernice Rillett.....	A. B.	Seattle
Dunlap, George T.....	E. E.	La Conner
Earhart, Samuel Darragh.....	A. B.	Medford, Ore.
Eberle, Winfield Richard.....	A. B.	Vancouver, Wn.
Edwards, George Ray.....	C. E.	Port Townsend
Edwards, Guy De Witte.....	C. E.	Port Townsend
Eernisse, James Guy.....	M. E.	Vashon
Elich, Walter H.....	Forestry	Chicago, Ill.
Elliott, May.....	A. B.	Seattle
Enos, Max Truman.....	A. B.	Seattle
Eshelman, Wallace Clair.....	Chem. Eng.	Seattle
Ettelson, Sadie.....	A. B.	Sprague
Everett, Johnstone Richard.....	C. E.	Custer
Featherstone, Beth.....	A. B.	Bozeman, Mont.
Felt, Julia Irene.....	A. B.	Seattle
Fisher, Harry Clifford.....	A. B.	Tacoma
Flagg, Herbert Judson.....	C. E.	Seattle
Flesher, Joyce Nathan.....	A. B.	Ballard
Fletcher, Hazel Velma.....	A. B.	Seattle
Forbes, Earl Grey.....	Forestry	Cadillac, Mich.
Ford, Kathryn Mabel.....	A. B.	Port Blakeley
Foster, Fay.....	A. B.	Seattle
Franklin, Phil. A.....	C. E.	Seattle
Fukagava, Keech.....	E. E.	Toyama, Japan
Furnas, Lucy Mary.....	A. B.	Seattle
Garcken, Paul Harold.....	Mines	Seattle

Gleason, Villeroy, Jr.....	Mines	Seattle
Godfrey, Sabra Augusta.....	A. B.	Seattle
Godfrey, William B.....	C. E.	Port Townsend
Gotchy, Hattie May.....	A. B.	Blaine
Gowen, Vincent Herbert.....	A. B.	Seattle
Grace, Clarence Miles.....	A. B.	Chillicothe, Mo.
Graves, Emma Arthur.....	A. B.	Spokane
Gray, Clarence Hubert.....	C. E.	Wenatchee
Griffin, Arthur Russell.....	A. B.	Seattle
Gustafson, Robert Raymond.....	Forestry	Seattle
Hall, Cora Mae.....	A. B.	La Conner
Hamilton, Fred Ellis.....	A. B.	Seattle
Hanford, William Brown.....	E. E.	Seattle
Hankins, M. Lillian.....	A. B.	Seattle
Hannan, Ethel Alberta.....	A. B.	Seattle
Harmeling, Emma.....	A. B.	Vashon
Harris, Margaret Dellinger.....	A. B.	Kelso
Harris, Marjorie.....	A. B.	Seattle
Hartman, Dwight Dryden.....	M. E.	Seattle
Hashiguchi, Jihel.....	A. B.	Seattle
Hastings, Clara.....	A. B.	Seattle
Hawley, Don Malligan.....	M. E.	Seattle
Haworth, James Porter.....	A. B.	Vancouver, B. C.
Hermann, Wm. Edmond.....	E. E.	South Bend
Herthum, Florence Emery.....	A. B.	Seattle
Hewitt, Clara Adell.....	A. B.	Spokane
Hill, William Lair.....	M. E.	Seattle
Hilton, Edmund Wilbur.....	A. B.	Seattle
Hively, Mary Margaret.....	A. B.	Seattle
Hoffman, Frank Joyce.....	A. B.	Seattle
Holeman, Beulah Jane.....	A. B.	Puyallup
Hopkins, George R.....	C. E.	Milton
Howe, Ellen F.....	A. B.	Seattle
Howell, Mary Bradner.....	A. B.	Seattle
Hunter, Lilla Alice.....	A. B.	Seattle
Hunter, Stella Thetta.....	A. B.	Island City, Ore.
Iffland, Kathryn.....	A. B.	Port Townsend
Johnson, Carl Edmund.....	E. E.	Seattle
Johnson, Guy J.....	Mines	Spokane
Johnson, Josephine.....	Pharmacy	Seattle
Joiner, Winnie Davis.....	A. B.	Seattle

Jones, Effie D.....	A. B.	North Yakima
Jones, Vera Florence.....	A. B.	Riverside
Kable, Geo. Wallace.....	C. E.	Dixon, Ill.
Karrer, Clara B.....	A. B.	Roslyn
Kaylor, Paul Porter.....	E. E.	Bellingham
Keeler, Otis Edward.....	E. E.	Seattle
Keesling, Nelle.....	A. B.	Tacoma
Kellogg, June.....	A. B.	Seattle
Keyes, Ruth Mary.....	A. B.	Seattle
King, Forest.....	Mines	Seattle
King, George Hilderbrand.....	C. E.	Seattle
Kinne, Elizabeth Pauline.....	A. B.	Seattle
Kinne, Verle Elma.....	A. B.	Seattle
Koenig, James Victor.....	Pharmacy	Seattle
Kumpf, George W.....	C. E.	Seattle
Lacey, Allen M.....	A. B.	Colfax
Laden, Ruth Elizabeth.....	A. B.	Seattle
Lamar, Agnes Rosalie.....	A. B.	Bellingham
Larson, Louis Karl.....	Forestry	Tacoma
Lawrence, Edna Belle.....	A. B.	Seattle
Leasure, Daphna Evelyn.....	A. B.	Portland, Ore.
Lee, George Olin.....	C. E.	Maltby, Wash.
Levinson, Montie.....	A. B.	Seattle
Lewis, Clinton Robert.....	Mines	Port Blakeley
Lewis, Florence.....	A. B.	Seattle
Lewis, Isaac I.....	Mines	Seattle
Lewis, Sol Harris.....	A. B.	Seattle
Lind, Algodt.....	A. B.	Seattle
Livingston, Carl Donnan.....	A. B.	Seattle
Loring, Mildred West.....	A. B.	Seattle
Losee, Mary.....	A. B.	Seattle
Lucks, Florence.....	A. B.	Seattle
McCollough, Esther Mary.....	A. B.	Seattle
McDonald, James Michael.....	Mines	Seattle
MacDougall, Georgia.....	A. B.	Seattle
McGahn, Mary Ryley.....	Pharmacy	Seattle
McInnis, Arthur Elver.....	A. B.	Spokane
McKinley, Robin.....	Mines	Spokane
McLean, Berenice.....	A. B.	Seattle
McLeod, John C.....	C. E.	Bellingham
MacNaughton, Corabel.....	A. B.	Seattle

McRae, Duncan Wendell.....	Mines	Tacoma
Macready, Jean.....	A. B.	Tacoma
Major, Ralph Day.....	A. B.	Seattle
Maltbie, Theodora Edna Alice.....	A. B.	Seattle
Maney, Richard Sylvester.....	A. B.	Seattle
Mann, Anna Viola.....	A. B.	Olympia
Marion, Arthur Thompson.....	Mech. Eng.....	North Yakima
Marshall, Rachael E.....	A. B.	Seattle
Martin, George Hamilton.....	Forestry	Spokane
Mason, Elizabeth.....	A. B.	Seattle
Mathieu, Irene.....	A. B.	Seattle
Matson, Oliver Sidney.....	E. E.	Olympia
Mattice, Cornelia.....	A. B.	Sedro-Woolley
Meece, James C.....	E. E.	Seattle
Miller, Thomas	C. E.	Seattle
Mills, George Freeman.....	C. E.	Seattle
Mitchell, Marie.....	A. B.	Glengary, Idaho
Mitchum, Imogen.....	A. B.	Harrington
Moody, Adelaide.....	A. B.	Everett
Moody, Ruth Anna.....	A. B.	Seattle
Morgan, Joseph Geo. Gregory.....	Forestry	Seattle
Morris, Benjamin Graham.....	A. B.	Seattle
Morse, Mable Verne.....	A. B.	Puyallup
Mullen, Charles G.....	Forestry	Seattle
Muncaster, Marjorie.....	A. B.	Seattle
Murray, Welwood.....	A. B.	Seattle
Neander, Joseph Evie.....	A. B.	Seattle
Nelson, Arthur Emil L.....	A. B.	Seattle
Nelson, Wendall Monroe.....	E. E.	Seattle
Newberry, Arthur Percival.....	E. E.	Kirkland
O'Donnell, Gretchen M.....	A. B.	Seattle
Oliver, James Allen.....	Mines	Kent
Olson, Albin Oscar.....	A. B.	Seattle
O'Neill, Catherine Amelia.....	A. B.	Michigan, S. D.
Ort, Chester Walden.....	C. E.	Centralia
Otterstadt, Justin Walter.....	Forestry	Blaine
Palmer, George S.....	E. E.	Ellensburg
Park, Lical.....	A. B.	Seattle
Parker, Kathleen Eudora.....	A. B.	Seattle
Partlow, Beulah A.....	A. B.	Olympia
Patterson, Thomas Scofield.....	A. B.	Seattle

Pebbley, Alonzo Finch.....	C. E.	Deming
Pendleton, Lura Wallace.....	A. B.	Everett
Pendleton, Ross Louis.....	Forestry	Everett
Philip, Frank Joseph.....	A. B.	Tacoma
Potter, Edith L.....	A. B.	Seattle
Preston, Therese Martha.....	A. B.	Seattle
Price, John Chauncey.....	A. B.	Vancouver
Pullen, Royal R.....	E. E.	Seattle
Rabel, Victor Edmund.....	C. E.	Seattle
Radford, Marion Alma.....	A. B.	Seattle
Ramseyer, Walter Chapin.....	A. B.	Seattle
Reeves, Zelma.....	A. B.	Wenatchee
Rice, Bertah Belle.....	A. B.	Seattle
Rice, Stuart Arthur.....	A. B.	Longbranch
Richardson, Mary Louise.....	A. B.	Olympia
Ridgeway, Hubert Ralph.....	Pharmacy	Seattle
Rinker, Julia Edith.....	A. B.	Seattle
Roberts, Franklin George.....	Mines	Seattle
Roberts, Mary Christina.....	A. B.	Seattle
Robinson, Elizabeth Langley.....	A. B.	Seattle
Roeder, Ethel Aryeness.....	A. B.	Bellingham
Romney, Winifred.....	A. B.	Seattle
Rose, Albert Chatellier.....	C. E.	Philadelphia, Pa.
Rosenkrans, Elizabeth Ruth.....	A. B.	Milwaukee, Wis.
Ross, Catherine.....	A. B.	Everett
Ross, Donald W.....	Chem. Eng.	Everett
Ross, Helen Winifred.....	A. B.	Seattle
Rowe, Hazel Mary.....	A. B.	Seattle
Roys, Hattie.....	A. B.	Seattle
Sackett, Margaret Josephine.....	A. B.	Seattle
Sallberg, Millicent Charlotte.....	A. B.	Seattle
Sauter, Ruth.....	A. B.	Seattle
Sceva, Paul H.....	Mines	Tacoma
Schively, Anna Cunningham.....	A. B.	Olympia
Schneider, Hugo H.....	Mech. Eng.	Seattle
Schneider, Rebecca.....	A. B.	Seattle
Schoenfeld, William.....	Forestry	Seattle
Shave, Samuel Richard.....	E. E.	Seattle
Shaw, Ernest Thornton.....	A. B.	Tacoma
Sheldon, Inez Kendall.....	E. E.	Seattle
Shelton, Alice Margaret.....	A. B.	Seattle

Shelton, John Milton.....	C. E.	Seattle
Shemran, Florence M.....	A. B.	Seattle
Sherrick, Johnson.....	A. B.	Edmonds
Short, Fay Charlotte.....	A. B.	Seattle
Short, Isabel.....	A. B.	Puyallup
Shotwell, Lyman Ray.....	A. B.	Wenatchee
Simison, Donald Schreiner.....	A. B.	Seattle
Simonds, William.....	A. B.	Bothell
Smith, Bonna Ethlyn.....	A. B.	Bellingham
Smith, Percy Charles.....	A. B.	San Jose, Cal.
Smith, Roxy Margaret.....	A. B.	Seattle
Smith, Roy Elmer.....	C. E.	Seattle
Smith, Warren Slocum.....	Mines	Berlin
Sorensen, Beatrice Marie.....	A. B.	Everett
Soule, John Arthur.....	A. B.	Kent
Spencer, Walter J.....	A. B.	Tacoma
Sprengle, Enid Amelia.....	A. B.	Seattle
Stevens, Robert Wetzler.....	A. B.	Seattle
Stevenson, Frances.....	A. B.	Seattle
Stevenson, Janet Elizabeth.....	A. B.	Seattle
Stewart, Neva Gracia.....	A. B.	Spokane
Stewart, Roy Vincent.....	A. B.	Seattle
Stoll, Walter.....	A. B.	Seattle
St. Onge, Arthur J.....	A. B.	Seattle
Stuen, Ole.....	E. E.	Seattle
Suzuki, William K.....	E. E.	Seattle
Swartz, Leo.....	Mech. Eng.	Granite Falls
Tanner, Bertrand Nyron.....	C. E.	Idaho Falls, Idaho
Taylor, Howard Holbrooke.....	A. B.	Seattle
Teel, Gladys Augusta.....	A. B.	Bellingham
Thomason, Errol Llewellyn.....	Mines	Seattle
Thurmond, Viola.....	A. B.	Seattle
Tiedje, Henry Felix.....	C. E.	Bellingham
Tooker, Verna.....	A. B.	Everett
Towsley, Edith Edna.....	A. B.	Seattle
Trueblood, Don.....	A. B.	Seattle
Truesdell, Gladys E.....	A. B.	Vancouver
Turner, Frank Lindsay.....	A. B.	South Bend
Van Dame, Walter F.....	A. B.	Buckley
Van Kuren, Herbert.....	E. E.	Seattle
Vinsonhaler, Sara Rae.....	A. B.	Seattle

Vinton, Edward L.....	C. E.	Portland, Ore.
Waite, Clement F.....	C. E.	Vancouver
Wanamaker, Lemuel A.....	A. B.	Coupeville
Ward, Elmer V.....	Forestry	Centralia
Warren, Anna Pixler.....	A. B.	Seattle
Watanuki, Toyoharu	E. E.	Fukuoka, Japan
Wagh, James Ruggles.....	A. B.	Seattle
Way, William Floyd.....	C. E.	Seattle
Wells, Maude Euphemia.....	A. B.	Seattle
Welts, Robin Victor.....	A. B.	Mt. Vernon
West, Ethel M.....	A. B.	Seattle
West, Ruth.....	Pharmacy	Seattle
Westervelt, Margaret.....	A. B.	Seattle
Wheeler, George.....	Pharmacy	Seattle
Wheelon, C Homer.....	A. B.	Seattle
Whims, Floyds James.....	Chem. Eng.	Seattle
White, Chris.....	C. E.	Anacortes
White, Earl.....	Mines	Meridian, Tex.
Whiting, D. Lyn.....	Mech. Eng.	Seattle
Whitmore, James Lester.....	A. B.	Buckley
Whitney, Wendell Rienze.....	Forestry	Anacortes
Wight, Ada Laughlin S.....	A. B.	Seattle
Wilkinson, Bernard Walker.....	E. E.	North Yakima
Willemin, Ernest Grant.....	C. E.	Seattle
Williams, Lewis Daniel.....	C. E.	Ilwaco
Williams, Snow Elder.....	Mines	Seattle
Williams, Walter J.....	C. E.	Seattle
Willson, Catherine N.	A. B.	Seattle
Wilson, Emma Frances.....	A. B.	Seattle
Wilson, Genevieve.....	A. B.	Seattle
Wilson, Jean Burd.....	A. B.	Seattle
Wingate, Alma Martha	A. B.	Krupp
Wingfield, Wallace Lee.....	A. B.	Seattle
Winquest, Arthur Franklin.....	A. B.	Seattle
Wisner, Raymond Rex.....	E. E.	Seattle
Wittemore, Ida Rachel.....	A. B.	Seattle
Woodnutt, Hannah Mildred.....	A. B.	Seattle
Woodnutt, Lloyd Hale.....	A. B.	Seattle
Wright, Newell L.....	Forestry	So. Bellingham
Wyckoff, Halsey P.....	C. E.	Seattle
Yaw, Lora Blanche.....	A. B.	Seattle
Young, Avi Setta.....	A. B.	Burton

FRESHMEN

<i>Name</i>	<i>School</i>	<i>Home Address</i>
Ahrens, Edlef K.....	A. B.	Seattle
Akè, Mary Frances.....	A. B.	Mountain Home, Ida.
Albitz, Alice Blanche.....	A. B.	Seattle
Allan, Rhea Emma.....	A. B.	Seattle
Almack, Loisbelenthal.....	A. B.	Seattle
Anderson, Ada Charlotte.....	A. B.	Seattle
Anderson, Harry Finch.....	A. B.	The Dalles, Ore.
Anderson, Herman.....	C. E.	Mt. Vernon, Wn.
Anderson, James Almer.....	Forestry	Tacoma
Anderson, Edwin Charles.....	C. E.	Seattle
Armstrong, Cecil Owen.....	E. E.	Bellingham
Armstrong, Florence Eloise.....	A. B.	West Sound
Armstrong, Gilbert Seymour.....	Mines	Seattle
Arnold, Clarence B.....	A. B.	Spokane
Auckland, Marie Tessie.....	A. B.	Lowell
Austin, Gail Georgine.....	A. B.	Seattle
Austin, Mary Beatrice.....	A. B.	Seattle
Auzias-Turenne, Aimar.....	A. B.	Seattle
Baer, Harold Eugene.....	E. E.	Seattle
Bailey, Frank Holmes.....	A. B.	Snohomish
Baird, Ivy.....	A. B.	Tacoma
Baker, Carl Samuel.....	Pharmacy	Centralia
Baker, Tracy Lee.....	A. B.	Pendleton, Ore.
Balkema, Richard Roy.....	A. B.	Seattle
Ballin, Charlotte Marie.....	A. B.	Portland, Ore.
Banks, Bertha Maude.....	A. B.	Seattle
Barash, Sidney P.....	E. E.	Seattle
Barnett, Dolph.....	A. B.	North Yakima
Barrell, Mary Lloyd.....	A. B.	Seattle
Bassett, Bae.....	A. B.	Seattle
Bayer, Ralph Wm.....	E. E.	Seattle
Bean, Ellis Hay.....	M. E.	Seattle
Beebe, Eugene Harrison.....	Forestry	Seattle
Beeler, Hazel Margaret.....	A. B.	Seattle
Beery, Carol Esse.....	A. B.	Seattle
Belding, Clarence Rush.....	A. B.	Corning, Iowa
Belford, Virgil H.....	C. E.	Seattle
Beltz, Frederick Alexis.....	A. B.	Aberdeen
Benjamin, Ralph James.....	A. B.	Seattle

Bennett, Roy Vincent.....	E. E.	Seattle
Bentley, Frank C.....	Mines	Ellensdale, N. D.
Berg, James Edward.....	Mines	Seattle
Berge, James Hallard.....	A. B.	Davenport
Bergman, Ryard Augustus.....	Mines	Chelan
Bessesen, Ben Burton.....	E. E.	Toppenish
Bickford, Ethel M.....	A. B.	Portland, Ore.
Biggs, Fred Pearce.....	Forestry	Seattle
Billings, Donald Kenneth.....	A. B.	Tacoma
Bisson, Francis, Jr.....	Mines	South Prairie
Blackburn, Helen.....	A. B.	Edmonton, Alberta, C.
Blackman, Benjamin Harrison.....	E. E.	Everett
Bliss, James Bernard.....	E. E.	Seattle
Bloom, Chester Abbott.....	A. B.	Bellingham
Bond, Clarke.....	C. E.	Seattle
Booker, Leon Charles.....	A. B.	Dayton
Bouillon, Victor J.....	A. B.	Seattle
Bouton, William Carlton.....	Mech. Eng.	Vancouver, Wn.
Bowen, Hiram.....	E. E.	Raymond
Bowles, Warde Ryder.....	C. E.	Seattle
Bown, Robert F.....	A. B.	Kent
Bozorth, Claude A.....	A. B.	Woodland
Bradner, Leo Chas.....	A. B.	Seattle
Bragg, Frances Elizabeth.....	A. B.	Hood River, Ore.
Brand, Kenneth K.....	A. B.	Bellingham
Brand, Vernice J.....	A. B.	Bellingham
Bridgman, Ethan Allan, Jr.....	Mines	Seattle
Brisbin, Lella Mearle.....	A. B.	Bellingham
Brisky, John William.....	A. B.	Cashmere
Brock, Elias William, Jr.....	Mech. Eng.	Tacoma
Brohl, Marie.....	A. B.	Seaside
Brokmeyer, Pauline.....	A. B.	Seattle
Brotherton, Francis G.....	Pharmacy	Tacoma
Brown, Bessie E.....	A. B.	Tacoma
Brown, Earl Theodore.....	E. E.	Centralia
Brown, Kirk Charles.....	A. B.	Seattle
Brown, Winifred Caroline.....	A. B.	Seattle
Bruce, Harriett Lucinda.....	A. B.	Seattle
Budden, Agnes Mary.....	A. B.	Seattle
Bull, John Ava.....	A. B.	Ellensburg
Burford, Grover Scott.....	A. B.	Tacoma

Burg, Charles Copeland.....	A. B.	Livingston, Mont.
Burg, Mona Louella.....	A. B.	Tacoma
Burgert, Wilbur Clarence.....	Mines	Seattle
Burns, Fern Elizabeth.....	A. B.	Thorp
Buwalda, Paul P.....	C. E.	North Yakima
Buzzelle, Mary Charlotte.....	A. B.	Sedro-Woolley
Cade, Claude L.....	C. E.	Bellingham
Cahill, Wm. Starrs.....	Forestry	Chicago, Ill.
Caithness, Chester James.....	C. E.	Everett
Calkins, Earle D.....	Mines	Seattle
Campbell, Archibald.....	C. E.	Seattle
Campbell, Edwin L.....	C. E.	Seattle
Canright, Jesse Tuthill.....	C. E.	St. Johns, Ore.
Cardle, Maynard McLeod.....	A. B.	Everett
Carey, Harold Davis.....	A. B.	Seattle
Carlberg, Norman Fletcher.....	C. E.	Wenatchee
Carmondy, Arthur Bernard.....	A. B.	Seattle
Carpenter, Ira Jay.....	Mines	Everett
Carroll, Jason Fowler.....	E. E.	Seattle
Carroll, Levi Bailey.....	A. B.	Seattle
Case, Hazel Claire.....	A. B.	Seattle
Casey, Ralph Droz.....	A. B.	Seattle
Chambers, Lucile.....	A. B.	Seattle
Chapman, Asa B.....	C. E.	Seattle
Chenoweth, Austin Kennedy.....	Forestry	Seattle
Chouinard, William James.....	C. E.	Everett
Christoe, David.....	A. B.	Seattle
Christanson, Dwight Fitch.....	Pharmacy	Treadwell, Ala.
Clark, Ernest Goodliffe.....	Forestry	Tacoma
Clark, Mary Anabel.....	A. B.	Seattle
Cleaves, Harold Edwin.....	Chem. Eng.	Seattle
Clifford, Earl Vincent.....	A. B.	Tacoma
Clulow, Wm. Montgomery.....	Mines	Wenatchee
Coffman, Robert Gates.....	A. B.	Chehalis
Coggins, Anna Passmore.....	A. B.	Germantown, Penn.
Choron, Leonora.....	A. B.	Seattle
Colby, Azra G.....	C. E.	Seattle
Cole, Thomas Stevenson.....	A. B.	Juneau, Ala.
Collins, Walter Dudley.....	Forestry	Kirkland
Connaway, Lillian.....	A. B.	Vancouver, Wn.
Conner, Ray Bradford.....	Pharmacy	Everett

Cook, Burton Augustus.....	Forestry	Tacoma
Cook, Ernest D.....	Pharmacy	Tacoma
Cooper, Maude Agnes.....	A. B.	Tacoma
Corbett, Hugh Blake.....	Chem. Eng.	Seattle
Coryell, Geo. K., Jr.....	E. E.	Seattle
Coryell, Ruth E.....	A. B.	Seattle
Cossalman, James W.....	E. E.	Cheney
Covington, Claude Wilbough.....	A. B.	Seattle
Coy, Roy.....	E. E.	Seattle
Cox, Lola Lyde.....	A. B.	Toppenish
Cragan, Calvin.....	C. E.	Idaho Falls, Ida.
Crites, Herbert N.....	Pharmacy	Bellingham
Creuger, George Wm.....	A. B.	Snohomish
Cuddy, George Edward.....	Mech. Eng.	Kelso
Culbertson, Maria Josephine.....	A. B.	Dayton
Cusick, John.....	A. B.	Richmond Beach
Dalby, Minnie.....	A. B.	Seattle
Dana, Forest Charles.....	C. E.	Seattle
Davenport, Zoe Elizabeth.....	A. B.	Seattle
Davidson, Sadie Daisy.....	A. B.	Seattle
Dean, Edmond Gilbert.....	A. B.	Walla Walla
Deighton, Hilda Grace.....	A. B.	Seattle
DeLappe, George Spenser.....	Mines	Tacoma
Denham, Emerson Park.....	E. E.	Seattle
Dennis, Gail Layton.....	E. E.	Seattle
Denny, Horton Herschel.....	C. E.	Seattle
Denny, Margaret Mabel.....	A. B.	Seattle
Denton, Pierre Evans.....	A. B.	Etna Mills, Cal.
De Tourville, Audrey.....	A. B.	Seattle
Diamond, Rose Elizabeth.....	A. B.	Columbus, Mont.
Dickerson, Veola.....	A. B.	Centralia
Dickerson, Veora.....	A. B.	Centralia
Dill, Mattie Beryl.....	A. B.	Seattle
Diven, Florence Eugenia.....	A. B.	Seattle
Dobson, Camille Gans.....	A. B.	Auburn
Dobson, Chris Grenside.....	Mines	Seattle
Dodge, Eva Maude.....	A. B.	Seattle
Donahue, Sylvia Alice.....	A. B.	Tacoma
Donley, Levi B.....	A. B.	Marcus
Dootson, Lilly.....	A. B.	Everett
Dow, Edna.....	A. B.	Chehalis

Drake, Ethel Maude.....	A. B.	Seattle
Driscoll, Madge.....	A. B.	Bremerton
Driscoll, Thomas, Jr.....	C. E.	Bremerton
Drummond, Jessie Smith.....	A. B.	Tacoma
Drylie, Thomas Frame.....	Mines	Issaquah
Dunlap, Clarence.....	Mech. Eng.	La Conner
Dunlap, Sadie Lorraine.....	A. B.	Pe Ell
Durham, W. W. (Mrs.).....	A. B.	Seattle
Eakins, Maxwell R.....	C. E.	Seattle
Easterday, Virginia.....	A. B.	Tacoma
Eberle, Sidney Sohns.....	Mech. Eng.	Vancouver, Wn.
Ecker, Lester.....	C. E.	Bellingham
Eckstorm, Lucile Marie.....	A. B.	Seattle
Edminson, Ross Wolton.....	C. E.	Pasadena, Cal.
Ehlers, James Parker.....	A. B.	Clearbrook
Eldred, Andrew.....	A. B.	Seattle
Elliott, Annabelle.....	A. B.	Kirkland
Elliott, Jean S.....	A. B.	Seattle
Ellis, Leila Phoebe.....	A. B.	Seattle
Ellis, Russell De Puy.....	A. B.	Seattle
Emery, Marie Corinne.....	A. B.	Seattle
Enegren, Helen M.....	A. B.	Seattle
Escher, Wiley Ernest.....	Forestry	Seattle
Etsell, Irma.....	A. B.	Seattle
Evans, Donald Hampton	C. E.	Seattle
Everett, Ivah Cleona.....	A. B.	Custer
Fagerberg, Walter.....	E. E.	Kirkland
Fahey, Edward G.....	E. E.	Seattle
Farley, Irene Beatrice.....	A. B.	Seattle
Fenton, Arthur Robert.....	M. E.	Seattle
Fenton, Robert Dulaney, Jr.....	M. E.	Seattle
Field, Newton.....	Forestry	Chelan
Fifer, Ethel Faith.....	A. B.	Seattle
Fifer, Eva Louella.....	A. B.	Seattle
Fitzgerald, Edward.....	A. B.	Oakville
Fitzpatrick, Lola Rhea.....	A. B.	Everett
Fleming, Florence Elizabeth.....	A. B.	Seattle
Fleming, Harley M.....	A. B.	Helena, Mont.
Fletcher, Gladys M.....	A. B.	Seattle
Flynn, William Leo.....	Chem. Eng.	Seattle
Folsom, Hazel Pearl.....	A. B.	Seattle

Foltz, Irving Judson.....	E. E.	Tacoma
Forbes, Frederick Barstow.....	E. E.	Seattle
Forbes, Minnie Irene.....	A. B.	Seattle
Fowler, Mildred.....	A. B.	Everett
Fowler, Harold Doyle.....	C. E.	Seattle
Fox, Franklin George.....	C. E.	Brant, Alberta, Can.
Francis, Kenneth.....	C. E.	Seattle
Fraser, Mabel.....	A. B.	Port Blakeley
Frederickson, Bertha Frederica....	A. B.	Cashmere
Freaser, Laura Louise.....	A. B.	Seattle
Freeborn, Hazel Switzer.....	A. B.	Seattle
French, Boyd Edward.....	E. E.	Cashmere
Gagnon, Joseph.....	E. E.	St. Claude, Quebec, Can.
Gannon, Anna.....	A. B.	Seattle
Gardner, Paul Lee.....	E. E.	Seattle
George, Kathleen Allan.....	A. B.	Seattle
Getz, Carl Henry.....	A. B.	Tacoma
Gibson, Edward Bayne.....	Forestry	Seattle
Gibson, Grant McDonald.....	A. B.	Issaquah
Gibson, Margaret Telford.....	A. B.	Seattle
Gilbert, George Wright.....	Forestry	Seattle
Gilbertson, Louis Steven.....	Pharmacy	Snohomish
Gilchrist, Frances Mildred.....	A. B.	Tacoma
Ginnold, Doris Louise.....	A. B.	Seattle
Gish, Daniel Brailey.....	A. B.	Seattle
Githens, Nellie Sutherlin.....	A. B.	Decatur City, Iowa
Glanfield, Mildred Estelle.....	A. B.	Seattle
Goldsmith, Edward Denham.....	Chem. Eng.	Puyallup
Goodnow, Marion.....	A. B.	Seattle
Goodrich, Forest Jackson.....	Pharmacy	Seattle
Gore, Lester Otto.....	A. B.	Kalama
Gratton, William Henry.....	A. B.	Tacoma
Graves, James Lewis.....	C. E.	Puyallup
Gray, Charles Harold.....	A. B.	Seattle
Graybail, Carl E.....	E. E.	Seattle
Greene, Gaylor Wilson.....	Chem. Eng.	Seattle
Greene, Taylor Mitchell.....	E. E.	Seattle
Greider, Claude E.....	Forestry	Spokane
Griffin, Hazel Beth.....	A. B.	Seattle
Griffith, Ruth Helen.....	A. B.	Seattle
Griffiths, Glenn George.....	A. B.	North Yakima

Griffiths, Thomas Erskin.....	A. B.	Seattle
Grignon, Jessie Irene.....	A. B.	Seattle
Gross, Carl Wilhelm.....	A. B.	Seattle
Groves, Mary Luella.....	A. B.	Seattle
Gulliksen, Edna Louise.....	A. B.	Seattle
Hadley, Martha Katherine.....	A. B.	Seattle
Halferdahl, Arthur Clarence.....	Mines	Seattle
Halferty, Chauncy D.....	A. B.	Seattle
Hall, Charles Leroy.....	Chem. Eng.	Seattle
Hall, Christine Loraine.....	A. B.	Mt. Vernon
Hall, Nora.....	A. B.	Tacoma
Halleck, Leah Elaine.....	A. B.	Seattle
Haller, Marian.....	A. B.	Seattle
Hamley, Lester.....	A. B.	Pendleton, Ore.
Hampson, Paul Frances.....	Pharmacy.....	Ackley, Iowa
Hancock, Virgil Kinney.....	Forestry	Coupeville
Hansen, Verne.....	E. E.	Everett
Hanson, Mathea.....	A. B.	Seattle
Harding, William Henry.....	E. E.	Tacoma
Harding, Helen Tahafeno.....	A. B.	Seattle
Hargrave, Bertram Paterson.....	A. B.	Colfax
Hargreaves, William James.....	E. E.	Seattle
Harkins, Marjorie.....	A. B.	Seattle
Harkness, Hazel Alice.....	A. B.	Seattle
Harris, Anna Christian.....	A. B.	Seattle
Harris, Ardenvoir.....	A. B.	Entiat
Harrison, Millard, Jr.....	E. E.	Seattle
Hart, Melton Edward.....	A. B.	Seattle
Hartman, Albert Gus.....	E. E.	Victoria, B. C.
Harvey, Vere Waller.....	Mech. Eng.	Walla Walla
Hawks, Hazel Edwina.....	A. B.	Snohomish
Hayfield, Mark Frederick.....	A. B.	Spokane
Haynes, John Broadus.....	A. B.	Seattle
Hedlund, David Arthur.....	Forestry	Spokane
Heg, Henry Thorton.....	A. B.	Seattle
Hemenway, Merton Clarence.....	A. B.	Seattle
Hensel, Emilie Theresea.....	A. B.	Seattle
Herrick, John Sidney.....	E. E.	Seattle
Hess, Lucy Elizabeth.....	A. B.	Goldendale
Heston, Margaret La Rhue.....	A. B.	Seattle
Hibler, Jessie Lucile.....	A. B.	Seattle

Higgins, Nellie Linda.....	A. B.	Vancouver, Wash.
Hill, Daniel Haddock.....	E. E.	Port Townsend
Hill, Frank Albert, Jr.....	Mines	Seattle
Hinton, Warren D.....	C. E.	Seattle
Hipkoe, George August.....	A. B.	Seattle
Hoerner, Berta.....	A. B.	Seattle
Hoffman, Edward Willman.....	A. B.	Seattle
Hoffman, Harry.....	A. B.	Ellensburg
Hoffstrom, Earl Clifton.....	Mines	Seattle
Holmes, Joseph Lister.....	C. E.	Seattle
Homan, Wm. Platt.....	C. E.	Vancouver
Hooper, Walter R.....	A. B.	Walla Walla
Hoover, Hill Custer.....	C. E.	Seattle
Hoover, Pearl Erma.....	A. B.	Everett
Horsley, Wm. Henry.....	A. B.	North Yakima
Horton, Gilbert Robinson.....	M. E.	Litchfield, Minn.
Horton, Lucy Sherwood.....	A. B.	Marshfield, Ore.
Howard, Edna Caroline.....	A. B.	Seattle
Hoxsie, Olive Grace.....	A. B.	Seattle
Hubbard, Robert Reed.....	Mines	Seattle
Hughes, Charles D. T.....	A. B.	Blaine
Hunter, Gordon Chester.....	A. B.	Meadowdale
Hutchinson, Orrel Eldora.....	A. B.	Seattle
Hutchinson, Thomas Mills.....	C. E.	Seattle
Hutton, George Willson.....	Forestry	Portland, Ore.
Hutton, Wm. Leithoff.....	Mech. Eng.	Portland, Ore.
Hyslop, Logan Douglass.....	A. B.	Spokane
Irvine, Emily.....	A. B.	Everett
Irvine, Ethel.....	A. B.	Seattle
Izumi, Ichisaburo.....	E. E.	Seattle
Jaaddan, Nels.....	A. B.	Hogebostad, Norway
Jack, Grace Irene Pearl.....	A. B.	Seattle
Jackling, John Richard.....	Mines	Seattle
Jacobs, Beatrice Pearl.....	A. B.	Puyallup
Jacobus, Margaret Edith.....	A. B.	Tacoma
James, Elmer Ray.....	C. E.	Douglas, Alaska
Jarvis, Melville Bouton.....	A. B.	Davenport
Jensen, Alvin Lambert.....	Mech. Eng.	Spokane
Jensen, James Scott.....	Mech. Eng.	Spokane
Johnson, Agnes Victoria.....	A. B.	Seattle
Johnson, Carl Cecil.....	Mech. Eng.	Bellingham

Johnson, Chas.....	C. E.	Douglas, Alaska
Johnson, Irene.....	A. B.	Seattle
Johnson, James Edward.....	A. B.	Seattle
Johnson, Winnie R.....	A. B.	Seattle
Johnstone, M. Lucile.....	A. B.	Seattle
Jones, Martin Luther.....	E. E.	Seattle
Karlstrom, Ossian Leonard.....	A. B.	Seattle
Kawai, Soichi.....	A. B.	Yanai, Japan
Keenan, Elizabeth Hortense.....	A. B.	Seattle
Kellogg, George Edward.....	A. B.	Seattle
Kelly, Warren.....	C. E.	Seattle
Kendall, Percy.....	C. E.	Port Orchard
Kennedy, Mary Zoe.....	A. B.	Seattle
Kenward, Hazel De Etta.....	A. B.	Seattle
Kenyon, Clyde Elisha.....	A. B.	Seattle
King, Jennie Irene.....	A. B.	Bellingham
Kinner, Henriette Rutherford.....	A. B.	Rock Island, Ill.
Klinefelter, George Wesley, Jr.....	A. B.	Seattle
Knapp, Dutton.....	E. E.	Aberdeen
Knapp, Ellen Maude.....	A. B.	Seattle
Knuppenberg, Helen Mae.....	A. B.	Seattle
Koehler, Ben August.....	C. E.	Wenatchee
Kohler, Liela Mae.....	A. B.	Seattle
Konarski, Sigmund.....	C. E.	Seattle
Koren, Walter Arnold.....	Mech. Eng.	Spokane
Kuhnle, John Albert.....	E. E.	Everett
La Mont, Ina Adelia.....	A. B.	Seattle
Lamping, Anna Florence.....	A. B.	Seattle
Landsburg, Gertrude Olive.....	A. B.	Seattle
Lane, John William.....	A. B.	Seattle
Lang, Edward Merrill.....	A. B.	Seattle
Langley, Stanley Pawson.....	E. E.	Victoria, B. C.
LaTour, Virginia Adria.....	A. B.	Lake Ballinger
Learned, Aleen Hazel.....	A. B.	Port Townsend
Level, John Ambrose.....	A. B.	Davenport
Lewis, Florence Kathryne.....	A. B.	Seattle
Lewis, Walford Stanley.....	C. E.	Port Townsend
Lichty, Ethel.....	A. B.	Seattle
Lilly, Dorothy P.....	A. B.	Seattle
Lillyblade, Edward Roberts.....	E. E.	Seattle
Lincoln, Rolland Wayne.....	C. E.	Seattle

Lindborg, Arthur Emanuel.....	A. B.	Portland
Liska, Martha.....	A. B.	Seattle
Little, Horace S.....	E. E.	Vancouver, B. C.
Littlefield, Leah Ina.....	A. B.	Seattle
Lorente, Bernardo J.....	E. E.	Estella, Spain
Lovejoy, Winifred.....	A. B.	Seattle
Lowder, De Esta Marie.....	A. B.	Idaho Falls, Ida.
Lowman, Raymond Baer.....	Mines	Anacortes
Lund, Mabel Amonda.....	A. B.	Seattle
MacCallum, Alice Ruth.....	A. B.	Deer Lodge, Mont.
McCallum, James David.....	A. B.	Seattle
McCann, Richard Joseph.....	A. B.	Seattle
McClure, May Elizabeth.....	A. B.	Seattle
McCormack, Robert Leslie.....	Mech. Eng.	Lewiston, Ida.
McCoy, Kelsey.....	A. B.	Castle Rock, Wn.
McCoy, Ray.....	E. E.	Sprague
McDonald, Allan.....	E. E.	Philipsburg, Mont.
MacDonald, Kenneth Daniel.....	E. E.	Philipsburg, Mont.
McEwen, Helen.....	A. B.	Seattle
McEwen, John R.....	A. B.	Goldendale, Wn.
McFatrige, Leslie Vincent.....	A. B.	Pendleton, Ore.
McGee, Eva Angeline.....	A. B.	Seattle
McGranahan, Chester.....	C. E.	Ellensburg
McHenry, Mary.....	A. B.	Des Moines, Iowa
McIntosh, Lawrence R.....	Mech. Eng.	Tumwater
McKinley, Charles.....	A. B.	Vancouver, Wn.
McKinley, David A.....	Mines	Seattle
McLean, Libbie Blanche.....	A. B.	Seattle
McLean, Dollie Lomila.....	A. B.	Seattle
McLean, Murray Donnell.....	A. B.	Seattle
McMaster, Jessie.....	A. B.	Seattle
McNamara, Eugene James.....	A. B.	Edmonds
Maass, John Lyman.....	E. E.	Seattle
Macauley, Norman Gladstone.....	Forestry	Deming
Mackay, Florence Graham.....	A. B.	Seattle
Mackay, Marguerite.....	A. B.	Seattle
Mackinnon, Goff.....	A. B.	Seattle
Maegly, Monta Cecelia.....	A. B.	Portland, Ore.
Maguire, Ernest.....	A. B.	Seattle
Madigan, Gladys May.....	A. B.	Seattle
Major, Archie Moyer.....	A. B.	Seattle

Manson, Harry Emil Petri.....	C. E.	Dockton
Marsh, Olive May.....	A. B.	Seattle
Martin, Cedric Albert.....	E. E.	Puyallup
Martin, Frances Margaret.....	A. B.	Seattle
Mason, Harrison.....	Pharmacy	Seattle
Mason, Jessie Vivian.....	A. B.	Seattle
Massey, Mildred.....	Pharmacy	Tacoma
Meacham, Eugene Mills.....	A. B.	Seattle
Mead, Donald G.....	M. E.	Everett
Meany, George Edward.....	Mines	Colfax
Meler, Harry Allison.....	Pharmacy	Portland, Ore.
Meissner, Laurentine.....	A. B.	Seattle
Merrifield, Edgar Eugene.....	Mech. Eng.	Ellensburg, S. D.
Merrihew, Sydney Marshall.....	A. B.	Seattle
Merril, Harold Dexter.....	Mech. Eng.	Seattle
Miles, Florence Elizabeth.....	A. B.	Albany, B. C.
Miller, Samuel Pritchard.....	A. B.	Tacoma
Million, Ten.....	Forestry	Seattle
Mills, Alice Isabel.....	A. B.	Seattle
Mills, Lotta.....	A. B.	Ballard
Misfeldt, Carl Richard.....	E. E.	Ellendale, N. D.
Mitchell, Beulah Clyde.....	A. B.	Seattle
Mitchell, Edith Beatrice.....	A. B.	Seattle
Mobeck, Agnes Myrtle.....	A. B.	Seattle
Moberg, Alger Andrew.....	A. B.	Mt. Vernon
Mohn, Esther.....	A. B.	Bothell
Mohr, Rosella Laura.....	A. B.	Spokane
Moncrieff, Arthur J.....	E. E.	Seattle
Monk, Welba.....	E. E.	Cheney
Moore, Charlotte.....	A. B.	Spokane
Moore, Elsie Virginia.....	A. B.	Seattle
Moore, Florence Harrison.....	A. B.	Seattle
Morgan, Helen Charlotte.....	A. B.	Spokane
Morrison, Raymond Ralph.....	Mines	Wenatchee
Morse, Elsie Jane.....	A. B.	Seattle
Morse, Charles Leland.....	A. B.	Bellingham
Mower, Victor Irving.....	A. B.	Blaine
Mueller, Moritz Ludwig.....	Forestry	Seattle
Muenz, Grace.....	A. B.	Seattle
Munch, Morryan Isaac.....	C. E.	Lovington, Ill.
Munro, Elizabeth.....	A. B.	Grand Junction, Colo.

Murnen, Edgar John.....	Forestry	Tacoma
Murray, Ernest Kenneth.....	A. B.	Roy
Murray, Lorman Gourlay.....	C. E.	Seattle
Myers, Leah B.	A. B.	Port Angeles
Nakao, Yoshihito	A. B.	Seattle
Neill, Frank Wm.....	A. B.	Seattle
Nelson, Ruth Fugett.....	A. B.	Seattle
Nelson, William Katz.....	C. E.	Bobruisk, Russia
Nesbit, Leslie Creighton.....	A. B.	Ellensburg
Neumen, Frances Hattie.....	A. B.	Seattle
Newlands, Eloise	A. B.	Seattle
Newton, Clifford Watson.....	A. B.	Everett
Noble, Claude Shelton.....	E. E.	Seattle
Norris, Hazel	A. B.	Tacoma
Norris, Stewart Matthew.....	C. E.	Burlington
Norton, Joe	A. B.	Mt. Vernon
Nourse, Claribel	A. B.	Tacoma
Nourse, Wynn A.....	A. B.	Tacoma
Ohlson, David	A. B.	Seattle
Ohnick, Benjamin Shannon.....	A. B.	Seattle
Oldfield, Edward Freeman.....	Mech. Eng.	Oakville
Olsen, Chris	Chem. Eng.	Everett
Olson, Margretta Catherine.....	A. B.	Seattle
Olson, Oscar Alexander.....	C. E.	Brooklyn, N. Y.
Orner, Pearl Lillian.....	A. B.	Seattle
Owen, Elva Estello.....	A. B.	Sultan
Palmer, Ben Bishop.....	A. B.	Dunlap
Palmer, Lester J.....	A. B.	North Yakima
Pape, Glenn E.....	C. E.	Seattle
Park, Quais Workman.....	Mech. Eng.	Seattle
Parker, Ella Margaret.....	A. B.	Seattle
Parr, Clifton Rus.....	A. B.	Davenport
Parsons, John Pearl.....	C. E.	Seattle
Patton, Joseph Lynch.....	M. E.	Bellingham
Payne, Caroline	A. B.	Seattle
Peeples, Henry Cook.....	C. E.	Seattle
Pendleton, Verna	A. B.	Everett
Perl, Herman	A. B.	Seattle
Perry, Edgar Roland.....	E. E.	Seattle
Pershing, Grace	A. B.	Seattle
Peters, Francis William.....	E. E.	Seattle

Peters, Harold Edwin.....	A. B.	South Bend
Peters, James Raymond.....	Mines	Seattle
Peterson, Elinore Beatrice.....	A. B.	Wampa, Idaho
Peterson, Jennie.....	A. B.	Seattle
Peterson, Lela Genevieve.....	A. B.	Seattle
Petteys, Fred Elmer.....	Mines	Georgetown
Phillips, Nathan Cressey.....	A. B.	Seattle
Phillips, Vetabel Yvonne.....	A. B.	Seattle
Phipps, Claude Edgerton.....	Mines	Spokane
Pierce, Ora Exta.....	A. B.	Goldendale
Pierce, Phebe Marion.....	A. B.	Seattle
Pinkerton, Helen M.....	A. B.	Tacoma
Place, Chas. Francis.....	C. E.	Seattle
Polson, Ollie Hinckley.....	Mech. Eng.	Seattle
Porter, Reynolds Mayo.....	A. B.	Seattle
Post, Frank Burdett.....	E. E.	Seattle
Pratt, Foster	C. E.	Spokane
Pratt, Frank Linden.....	A. B.	Seattle
Prescott, Carol Alberta.....	A. B.	Seattle
Prosch, Phoebe	A. B.	Seattle
Prolux, Camilla Eglantine.....	A. B.	Seattle
Purdy, Frank Marion.....	C. E.	Tacoma
Randell, Dorothy Catherine.....	A. B.	Seattle
Randell, Laura	A. B.	Seattle
Rapp, Frederick Albert.....	A. B.	Seattle
Raser, Charles Iddings.....	A. B.	Seattle
Reding, Eugenia Christina.....	A. B.	Sprague
Redman, Kenneth	Forestry	Seattle
Reed, Alfred Horace.....	A. B.	Seattle
Reekie, Martha Elizabeth.....	A. B.	Seattle
Reese, Jesse Lenhart.....	E. E.	Seattle
Reinhart, Eva Ruth.....	A. B.	Olympia
Reynolds, Arnold Chas.....	C. E.	Seattle
Richards, Karl Frederick.....	A. B.	Tacoma
Richardson, Lewis A.....	M. E.	Seattle
Rickles, Abraham	A. B.	Seattle
Rieth, James Anthony.....	A. B.	Kent
Riordan, Jeremiah.....	A. B.	Vancouver, Wn.
Rippey, Clara Irene.....	A. B.	Pendleton, Ore.
Roberts, Mason Henry.....	Mines	Portland, Ore.
Robertson, Frank Marlon.....	Mines	Burton

Robertson, Katherine Constance.....	A. B.	Seattle
Robinson, Hazel Elizabeth.....	A. B.	Seattle
Robinson, Chester Earl.....	A. B.	Ellensburg
Roe, Nellie Virginia.....	A. B.	Monroe
Rogers, Calvin Loyle.....	Pharmacy	Centralia
Rogers, Jennie	Pharmacy	Waterville
Rosman, Theos Juliet.....	A. B.	Dawson, Alaska
Ross, Royal Knox.....	A. B.	Puyallup
Ross, Will August.....	Mines	Portland, Ore.
Rowland, May	A. B.	Seattle
Royal, James Millard.....	Mech. Eng.	Skagway, Alaska
Roys, Allyn Goodrich.....	Forestry	Saginaw, Mich.
Ruggles, William Walker.....	A. B.	Seattle
Russel, Edgar	Mech. Eng.	Seattle
Sakuma, Jiro	E. E.	Seattle
Sanderson, Thomas Albert.....	Mines	Seattle
Sanford, Anne Laurie.....	A. B.	Seattle
Santerre, Flora Marie.....	A. B.	Cloquet, Minn.
Sanwick, Emma	A. B.	Ballard
Saunders, Dorothy Channing.....	A. B.	Seattle
Saunderson, Ruth	A. B.	Seattle
Sawyer, Miriam J.	A. B.	Grand Forks, Colo.
Scarff, Sestina Meda.....	A. B.	Seattle
Schlacht, Gloria Wiese.....	A. B.	Minneapolis
Schwabland, George Arthur.....	Chem. Eng.	Seattle
Scott, Bert J.....	E. E.	Port Townsend
Seabury, Laurence Everett.....	Mines	Sedro-Woolley
Searing, Oliver Palmer.....	Mines	Jacksonville, Fla.
Selleck, Ruth	A. B.	North Yakima
Shafer, Trinkett Hetherington.....	E. E.	Seattle
Shaffer, Harry Bartlett.....	E. E.	Seattle
Shaw, Alice Hilda.....	A. B.	Seattle
Shaw, Winifred Amanda.....	A. B.	Seattle
Shelton, Annah Louise.....	A. B.	Seattle
Sherman, Earl Clagg.....	Mech. Eng.	Seattle
Shiboji, Nakanishi	E. E.	Seattle
Shields, Cleo	A. B.	Seattle
Shumway, Arthur Lowell.....	E. E.	Vancouver
Skinner, Eva Maude.....	A. B.	Seattle
Smith, Fern	A. B.	Seattle
Smith, Joseph Rowe.....	A. B.	Seattle

Smith, Lillian Louise.....	A. B.	Seattle
Smith, Marie	A. B.	Seattle
Smith, Roy Ellsworth.....	A. B.	Seattle
Snyder, Ruby Wellborn.....	A. B.	Seattle
Sonna, Peter	Mech. Eng.....	Boise, Idaho
Sorenson, Bert	E. E.	Bellingham
Spannagel, Edna Genevieve.....	A. B.	Spokane
Sparger, Fred Robert.....	C. E.	Seattle
Sparling, Mary Helen.....	A. B.	Seattle
Spencer, Alura	A. B.	Seattle
Spenger, Fred Jacob.....	Mines	Bellingham
Spicer, Cecil	A. B.	Camas
Stahl, Eleanor Elizabeth.....	A. B.	Seattle
Stanwick, Chas. Ames.....	E. E.	Seattle
Statler, Gladys Gertrude.....	A. B.	Seattle
Stedman, Marion Grace.....	A. B.	Seattle
Steele, Helen	A. B.	Seattle
Stevens, Dwight Norton.....	A. B.	Seattle
Stewart, Wilfred Lee.....	A. B.	Sunnyside
Stewart, Janet Wylie.....	A. B.	Seattle
Stillinger, Beatrice May.....	A. B.	Iron Mountain
Stillson, George Hamilton.....	Chem. Eng.	Keith Siding
Stone, Roy Edward.....	Mines	Conway
Stone, William Edward.....	A. B.	Everett
Strase, Anna Elizabeth.....	A. B.	Seattle
Strausz, Alva Leslie.....	A. B.	North Yakima
Streeter, Mildred R.....	A. B.	Devil's Lake, N. D.
Sturgis, Cyrus Cressey.....	A. B.	Pendleton, Ore.
Sugg, Elmer Lee.....	A. B.	Vancouver
Sullivan, Geo. Arthur.....	E. E.	Seattle
Sully, Bernice Agnes.....	A. B.	Seattle
Swale, Thomas Nelings.....	A. B.	Everett
Swanson, Dorothy	A. B.	Seattle
Swartz, Albert William.....	Mech. Eng.	Granite Falls, Wn.
Swope, Harrison Alfred.....	E. E.	Buckley
Sylliason, Melvin Oliver.....	C. E.	Seattle
Talbott, Herbert Conner.....	A. B.	Ellensburg
Talbott, Walter Ivan.....	A. B.	Ellensburg
Tamura, Teijiro.....	A. B.	Omi, Japan
Tanner, Beth Edrie.....	A. B.	Seattle
Taylor, Edward Richard.....	A. B.	Conconully

Taylor, Elizabeth Marguerite.....	A. B.	Conconully
Taylor, Florence Lathian.....	A. B.	Seattle
Taylor, Harold Bayne.....	A. B.	Seattle
Taylor, Ida Marie.....	A. B.	Tacoma
Taylor, Laura Ella.....	A. B.	Seattle
Taylor, Leonard Gibson.....	Forestry	Monohan
Taylor, Mac C.....	Chem. Eng..	Winchester, Tenn.
Taylor, Ralph Thompson.....	A. B.	Snohomish
Thayer, Keisling W.....	A. B.	Bellingham
Thomason, Eric Burdette.....	E. E.	Seattle
Thompson, Albert Chamberlain....	Pharmacy	Tacoma
Thompson, Lucile	A. B.	Tacoma
Thompson, Ruth R.....	A. B.	Tacoma
Thorpe, Blanche	A. B.	Ellsworth, Kan.
Tibbits, Cecelia Louise.....	A. B.	Juneau, Alaska
Tibbits, Edna M.....	A. B.	Seattle
Tigner, Levi Morton.....	A. B.	Cashmere
Todd, Edward Paul.....	A. B.	Seattle
Tolhurst, Bessie.....	A. B.....	Livingston, Mont.
Tottory, Satoshi	E. E.	Seattle
Trenholme, Anna.....	A. B.	Seattle
Tremper, Bailey	A. B.	Seattle
Tripple, George	E. E.	Seattle
Trotter, Edwin C.....	E. E.	Seattle
Trumbull, Helen Catherine B.....	A. B.	Seattle
Tunison, Carl Miller.....	C. E.	Seattle
Upton, William Burr.....	C. E.	Seattle
Van Winter, Rex Oliver.....	A. B.	Seattle
Veldee, Milton Victor.....	Pharmacy	Bremerton
Veldee, William J.....	Mech. Eng.	Bremerton
Viele, Morris Marshall.....	C. E.	Orillia, Wash.
Viele, William Arthur.....	A. B.	Orillia, Wash.
Wagoner, Ruth Mary.....	A. B.	Seattle
Waldrip, Sarah	A. B.	New Kamilche
Wallace, Adeline Mary.....	A. B.	Bellingham
Wallace, Catherine Farrell.....	Pharmacy	Sedro-Woolley
Wallace, Charlotte Jane.....	A. B.	Seattle
Waller, Harold Henkle.....	C. E.	Seattle
Waller, Minnie Webster.....	A. B.	Seattle
Walsh, Gerard Roland.....	C. E.	Seattle
Walsh, William John.....	C. E.	Tacoma

Wanamaker, Muriel Aleca (Mrs.)	A. B.	Seattle
Wand, Thomas Harris	A. B.	Seattle
Warren, Helen Gertrude	A. B.	Bremerton
Wassard, Ange Christian	C. E.	Seattle
Waters, Belva Lockwood	A. B.	Waterville
Watrous, John Herbert	Mech. Eng.	Seattle
Waugh, Earl Arthur	Mines	Seattle
Waugh, Jay Virgil	Forestry	Snohomish
Weaver, Ethel Grace	A. B.	Seattle
Webb, Miriam Holton	A. B.	Riverside, Cal.
Wegener, Ralph Hawthorne	C. E.	Tacoma
Welch, George Bernard	Mines	Seattle
Wellington, Leland Stanford	Forestry	Julian, Cal.
West, Irene	A. B.	Seattle
Westover, Ralph	Mines	Seattle
Wharton, Verna Marie	A. B.	Everett
Wheeler, Leon Herbert	Mech. Eng.	Ellensburg
Whitfield, Robert Glass	A. B.	Seattle
Whittier, William Harrison	Mines	Riverton
Wilcox, Hazel Vivien	A. B.	Seattle
Willard, Richard Carl	A. B.	Seattle
Williams, Lawrence Johnson	C. E.	Seattle
Willis, Ora Pinkney	A. B.	Seattle
Willson, Lovina Elizabeth	A. B.	Olympia
Wilson, Alfred Snyder	Mech. Eng.	Seattle
Wilson, Charles Melville	E. E.	Seattle
Wilson, Horace Allen	A. B.	Seattle
Wilson, Lester J.	A. B.	Seattle
Wilson, Maud	A. B.	Seattle
Wilson, Ralph Rinehart	A. B.	Ellensburg
Wilton, Mabelle Clare	A. B.	Seattle
Windust, Marie	A. B.	Dayton
Winqest, Henry Willard	Mines	Seattle
Wodach, Mabel Norton	A. B.	Seattle
Woodworth, Madeline Emmons	A. B.	Seattle
Wright, Harrison Garner	A. B.	Seattle
Wright, June Mildred	A. B.	Tacoma
Wright, Samuel Aaron	A. B.	Seattle
Yamagucki, Mitsu	E. E.	Seattle
Yasuhara, Ichiro	A. B.	Seattle
Young, Anna Margaret	A. B.	Seattle

Young, Gertrude Mary.....	A. B.	Seattle
Zinkie, Majorie Jeannette.....	A. B.	Seattle
Zobrist, Gertrude Marie.....	A. B.	Acme

UNCLASSIFIED STUDENTS

Adams, Rose	A. B.	North Yakima
Anderson, Pearle Elma.....	A. B.	Spokane
Ayres, Jessie Cameron.....	A. B.	Seattle
Bains, Umrao Singh.....	E. E.	Mahil Pur, India
Beazell, Mrs. Annie Cox.....	A. B.	Brownsville, Pa.
Beebe, Walter B.....	Mech. Eng.	Seattle
Bestor, Irene Hunter.....	A. B.	Seattle
Bowers, Margaret E. K. (Mrs.)..	A. B.	Bellingham
Brooks, Helen Hayden.....	A. B.	Everett
Brown, Arthur C.....	A. B.	Seattle
Brown, Mrs. John M.....	A. B.	Seattle
Burch, Lita May.....	A. B.	Spokane
Burt, Nellie Louise.....	A. B.	Seattle
Cameron, Claire V. (Mrs.).....	A. B.	San Francisco, Cal.
Campbell, Mrs. Geo. B.....	A. B.	Bremerton
Carsen, Rose Foley B.....	A. B.	Seattle
Chenoweth, Ernest Blaine.....	A. B.	Lynn, Ind.
Cherkowskie, Moriss Waldemar...	A. B.	Milwaukee, Wis.
Clare, Eugene	A. B.	Seattle
Clise, Ruth	A. B.	Seattle
Conklin, Nathaniel Tresslar.....	A. B.	Bellevue, Idaho
Connor, Thomas P.....	A. B.	New York City, N. Y.
Conture, Agnes	A. B.	Litchfield, Minn.
Coyle, Frank	A. B.	Seattle
Crane, Halycone Caulk.....	A. B.	Seattle
Cravens, Leo Guy.....	Mines	Seattle
Crawhall, Patti A. E.....	Pharmacy	Seattle
Davidson, Philip R.....	A. B.	Ellensburg
Dean, Dorothy	A. B.	Seattle
Dillaway, Winthrop Chalmers.....	Pharmacy	Detroit, Mich.
Ditto, Ervin	A. B.	Stryker, Ohio
Dwire, Agnes Louise.....	A. B.	Toos, New Mexico
Eaton, Ross T.....	C. E.	Versailles, Mo.
Ellis, Lester Morris.....	C. E.	Duluth, Minn.
Fifer, Walter Robert.....	A. B.	Seattle

Fiske, Mary Green (Mrs.)	A. B.	Seattle
Fitts, Mary Grace	Pharmacy	Seattle
Fowler, Frances L. (Mrs.)	A. B.	Seattle
Frenger, Helen	A. B.	Seattle
Gerthune, Nelita	A. B.	Seattle
Gates, Nadine	A. B.	Seattle
Gibbons, William H.	A. B.	Seattle
Gillam, Frank Le Roy	Pharmacy	Seattle
Gran, Olga	A. B.	Buckley
Graves, Ethel Florence	A. B.	Spokane
Graves, Marion K.	A. B.	Seattle
Gregg, George Roy	A. B.	Seattle
Grumbach, Marguerite	A. B.	Galveston, Texas
Harper, Clarence S.	Mines	Ypsilanti, Mich.
Hastings, Robert Bruce	A. B.	Wenatchee
Hayes, Leslie William	A. B.	Seattle
Hermann, Russel Raymond	Pharmacy	Seattle
Hesse, William Albert	Mines	Nome, Alaska
Hill, Anna Josephine	A. B.	Halifax, Nova Scotia
Hill, Ole Ingebrait	Mines	Trondhiem, Norway
Houpert, Pierre Felix	C. E.	Seattle
Huelsdonk, Adolph	E. E.	Seattle
Ikeda, Choichi	A. B.	Kuroyoshi, Japan
Ingersoll, Edna Ione	A. B.	Seattle
Itter, Elizabeth Ellen	A. B.	Seattle
Izhiuroff, Bazil Alexandrovich	E. E.	Yst-Sysalak, Russia
Jacobsen, Andrew H.	A. B.	Woodinville
Jeffery, Fred Elton	A. B.	Seattle
Jerdee, Inger Carolina	A. B.	Spokane
Jobst, Frances	A. B.	Seattle
Jones, Pearl Ellen	A. B.	Seattle
Jones, Vivian M.	A. B.	North Yakima
Kane, Susan Mary	A. B.	Seattle
Kawaguchi, Hideta	Mines	Osaka, Japan
Keene, Margaret H.	A. B.	Seattle
Kellogg, Lucien Theron	A. B.	Wenatchee
Kerkow, Roy Robinson	Pharmacy	Seattle
Kinsel, Edward Conrad	Pharmacy	Seattle
Lawatschek, Elly W.	A. B.	Geplitz, Austria
Levin, David	Pharmacy	Seattle
Lewis, Katherine Louise	A. B.	Valparaiso, Ind.

Longshore, Isaac Holcomb.....	A. B.	Payson, Okla.
McCluskey, Joseph Albert.....	Pharmacy	Seattle
McConnell, Fred Jay.....	Forestry	Seattle
McKay, William Osborn.....	Mines	Seattle
McKern, Spencer Roy.....	A. B.	Bellingham
McKibben, Vinton Moore.....	Forestry	Seattle
McKnight, Verres Morton.....	A. B.	Seattle
McLean, Winifred	A. B.	Seattle
MacNeil, Elizabeth.....	A. B.	Bellingham
Mallett, Pansy	A. B.	Ontario, Ore.
Marchette, Gilda M.....	A. B.	Seattle
Martin, Helen Margaret.....	A. B.	Seattle
Misra, Jogesh Chandra.....	A. B.	Calcutta, India
Molloy, James Francis.....	Pharmacy	Seattle
Mott, Henry Valentine.....	C. E.	Grafton
Nakamura, Juro	A. B.	Kochiken, Japan
Nicol, Carl	A. B.	Tacoma
Norris, Ruth Stevens.....	A. B.	Seattle
Nunn, Herschel Pillsbury.....	C. E.	Seattle
Nyquist, Emelie Marie A.....	A. B.	Seattle
Painter, Elisha	A. B.	Seattle
Platt, Earl Milliron.....	Pharmacy	Seattle
Pratt, Anna Goodrich.....	A. B.	Seattle
Ralya, Earl Clare.....	Pharmacy	Seattle
Randles, J. Lawrence.....	Pharmacy	Friday Harbor
Reardon, Leo Lawrence.....	Forestry	Seattle
Rogers, Inez Mary.....	A. B.	Seattle
Romney, Kenneth	A. B.	Hamilton, Mont.
Rothenhoefer, Louis	E. E.	Seattle
Roy, Bijon Komar.....	Mines	Bengal, India
Russell, Lillian Blanche.....	Pharmacy	Seattle
Sands, Clifford W.....	Forestry	Seattle
Saxon, Fred Sigwald.....	Pharmacy	Bellingham
Short, Stuart	Pharmacy	Puyallup
Siegel, Harry	A. B.	Seattle
Simanson, Arnold David.....	C. E.	Seattle
Somervell, Somervell Bruce.....	C. E.	New York, N. Y.
Staup, Minnie Grant.....	A. B.	Seattle
Sterrett, Ray Mason.....	A. B.	Kansas City, Mo.
Steiner, May	A. B.	Waterville
Streeter, Ethel Beverly.....	A. B.	Seattle

Stubbs, Duke E.....	Mines	Seattle
Templeton, Bertha Rowena.....	A. B.	Halsey, Ore.
Todd, John Fennings.....	A. B.	Santa Cruz, Cal.
Trumbull, Francis J.....	A. B.	Seattle
Tsao, Mien	A. B.	Canton, China
Vachon, Elsworth V.....	A. B.	Wenatchee
Vandiver, John Joseph.....	C. E.	Seattle
Whaley, Ralph Seth.....	C. E.	Spokane
Whaley, Fred Guard.....	C. E.	Spokane
White, Genevieve Sayre.....	A. B.	Worcester, Mass.
White, Mary Hazel.....	A. B.	Olympia
Whitehead, Gustav A.....	Forestry	Seattle
Widmer, Louise R.....	A. B.	Seattle
Willard, David Anthony.....	Mech. Eng.	Seattle
Williams, William Henry Garfield..	Forestry	Port Blakeley
Wilson, Anna B.....	A. B.	Oakville
Wood, Mrs. Edna M. A.....	A. B.	Seattle
Woolsey, Frances	A. B.	Seattle

LAW SCHOOL

FIRST YEAR

<i>Name</i>	<i>Home Address</i>
Angevine, Fred R.....	Seattle
Ashen, Alexander James.....	Seattle
Barkwell, Frank M.....	Seattle
Bannon, Arthur C.....	Bremerton, Wash.
Berge, Matthew Garland.....	Ridgeland, Wis.
Boyd, Homer L.....	Seattle
Bowe, George Donald.....	Seattle
Brown, George Wm.....	Seattle
Brown, Warren Oretto.....	Seattle
Brownson, John J.....	Dubuque, Iowa
Burns, Edgar Floyd.....	Spokane
Campbell, Arthur Eugene.....	Richmond Beach
Chabot, Edward Francis.....	Walla Walla
Chamberlin, Perry Ross.....	Cottage Grove, Ore.
Chevalley, Leon, Jr.....	Mt. Vernon
Clark, James Francis.....	Coupeville
Coghlan, William Sebastian.....	Friday Harbor
Collier, John Edward.....	Spokane

Coyle, William Jennings.....	Seattle
Davidson, C. F.....	Seattle
Davis, Harold	Spokane
Denney, Robert Grant.....	Everett
Dowd, Van M.....	Tacoma
Dwarshack, Henry	Wels, Austria
Ellis, E. W.....	Seattle
Everly, Myra L.....	Seattle
Flint, Charles Oliver.....	Port Townsend
Garland, Francis Marion.....	Bremerton
Gibbon, Herbert A.....	Seattle
Griffin, Van Christenberry.....	Seattle
Grimm, Warren O.....	Centralia
Grimm, Hubert Edwin.....	Centralia
Hagman, Reuben J.....	Seattle
Halls, Carl Burre.....	Hills, Minn.
Hammond, Thomas Guy.....	Wellsville, Ohio
Harmeling, Henry	Vashon
Harri, Fritz F.....	Manhattan, Kans.
Hartson, Nelson Thomas.....	Tacoma
Hawkins, Benjamin H.....	Seattle
Heilig, Fred Whitaker.....	Fairbanks, Alaska
Hemphill, J. Wylie.....	Seattle
Henderson, Wilbur T.....	Tacoma
Henry, Elsie M.....	Seattle
Hergert, Otis Boutwell.....	Seattle
Hickey, William John.....	Norfolk, Va.
Hickingbottom, Fred Hubertus.....	Seattle
Hilen, Andrew Reuben.....	Auburn
Hoover, Glenn Edwin.....	Hoquiam
Husby, Peter	Stanwood
Inouye, Daniel Yoskitaka.....	Seattle
Johnson, Ida	Seattle
Johnson, Pearl	Seattle
Jones, Harry Leo.....	Arlington
Lawless, John Joseph.....	Toledo, Ohio
Lewis, Horace Herbert.....	Seattle
Lewis, Howard Lester.....	Seattle
Lowe, Roy	Seattle
McCleary, Perry Louis.....	Centralia
McGarry, Arthur Joseph.....	Seattle

Mackey, Russell Anderson.....	Seattle
Manson, Alexander Richard.....	Seattle
Manibo, José A.....	Seattle
Marshall, John Egbert.....	Deming
Molan, Louis Alexander.....	Everett
Mucklestone, Melville	Seattle
Murphy, Thomas F.....	Montevideo, Minn.
Norris, Carleton Howard.....	Manchester, Iowa
O'Meara, Josephine Augusta.....	Seattle
O'Meara, Mark Constantine.....	Seattle
O'Meara, Mary Gertrude.....	Seattle
Pardee, Otway	Seattle
Ph. B., Colorado College.	
Pardoe, Wallace Farnan.....	Seattle
Park, Earl G.....	Seattle
Paulson, Chester Randall.....	Spokane
Peart, George Brown.....	Los Animas, Colo.
Pierce, Alhira Edwin.....	Seattle
Roudebush, Rex Scott.....	Garfield
Royal, Ralph Harlan.....	Skagway, Alaska
Schwartz, Morris Jack.....	Bellingham
Severyns, Andrew	Prosser
Severyns, William B.....	Prosser
Shaw, Herbert J.....	London, Eng.
Shaw, Wilfred Sinclair.....	Seattle
Shea, John H.....	Seattle
Sieler, Herbert H.....	Spokane
Simpson, Andrew	Seattle
Smith, Edw. Charles.....	Seattle
Spurck, William, Jr.....	Seattle
Stephens, Ewing William.....	Spokane
Stevens, Albion Donald.....	Seattle
Stewart, Harold H.....	Richmond Beach
Sturgis, James H.....	Pendleton, Ore.
Sussman, Samuel H.....	Seattle
Thompson, Perry Paul.....	Seattle
Tupper, Walter Weldon.....	Snohomish
Wand, Walter Andrew.....	Seattle
Warner, Ellis Edwin.....	Sultan
Wettrick, Frederick Johann.....	Juneau, Alaska
Whitfield, George McCabe.....	Seattle

REGISTER OF STUDENTS

337

Wilson, Alfred P.....	Oakville
Wisby, Margaret Josephine.....	Seattle
Wisemann, Adolph Henry.....	Seattle
Winn, G. Clark.....	Richmond
Wood, Wallace Percival.....	Seattle

SENIORS

<i>Name</i>	<i>Home Address</i>
Allen, Alton Covell.....	Beaverton, Oregon
Bates, William C.....	Vancouver, Wash.
Benson, Carl Godfrey.....	Seattle
A. B., Gustavus Adolphus College.	
Biggle, Lester Arthur.....	Tacoma
Brinker, William H.....	Seattle
A. B., University of Washington.	
Brock, Frank V.....	Seattle
A. M., State University of Iowa.	
Brown, Broder D.....	Tacoma
A. B., University of Puget Sound.	
Burnett, Milton.....	Vancouver, Wash.
Chittenden, Ralph G.....	Seattle
Codd, Ambrose W.....	Spokane
A. B., Gonzaga College.	
Codd, W. Joseph.....	Spokane
A. B., Gonzaga College.	
Cogswell, Daniel Burgess.....	Seattle
Cook, Arthur A.....	Tacoma
Crollard, Frederick Michael.....	Wenatchee
Deane, Charles Henry.....	Seattle
Dorr, Frederick W.....	Seattle
Durham, Kenneth.....	Spokane
Foss, Wedell.....	Tacoma
Garretson, Max H.....	Tacoma
Gilbreath, James Alvin.....	Dayton
A. M., Whitman College.	
Gordon, John William.....	Tacoma
Herwitz, Abraham.....	Seattle
Hess, Emory Earl.....	Seattle
A. B., Wabash College.	
Hughes, Mervin Garfield.....	Seattle
B. S., Princeton University.	
Irbeck, F. J.....	Seattle
Jaeger, Nelda.....	Tacoma
Johnstone, Walter Lewis.....	Seattle

King, Cleo Preston.....	Seattle
Knapp, Ralph Read.....	Seattle
Knuteson, Knute J.....	Mankato
Krueger, Philip George.....	Pullman
Lawrence, Samuel B.....	Forest Grove, Ore.
A. B., Pacific University.	
Lebeck, Francis Joseph.....	Wenatchee
McCleaverty, Adelbert Durkee.....	Seattle
A. B., University of Kansas.	
McElwain, Penrose Lee.....	Seattle
A. M., University of Washington.	
MacKinnon, Charles Malcome.....	Seattle
Ph. G., University of Washington.	
McPhee, Ronald George.....	Spokane
March, John Gordon.....	Tacoma
Miller, Joseph Edison.....	Garfield
Norton, Charles Alfred.....	Seattle
Packard, Augustus Henry.....	Wenatchee
Page, George Reed.....	Toppenish
Palmer, Ervin Harold.....	Maquoketo, Iowa
Raymond, Mrs. Mabel Dora.....	Seattle
Reser, Byron Elmo.....	Walla Walla
Reser, George Yancy.....	Walla Walla
Rogers, Harold Mark.....	Walla Walla
Sigsworth, Jay H.....	Franklin, Pa.
Starr, George East.....	Chelan
A. B., University of Washington.	
St. John, James Irving.....	Snohomish
Tammany, Patrick Michael.....	Seattle
Teats, Ralph.....	Tacoma
Thompson, Alexander McKnight.....	Seattle
Totten, Joseph Phelps.....	Seattle
Waugh, Elmer Ambrose.....	Spokane
Williams, Lewie.....	Wenatchee
Willis, James Hart.....	Plains, Mont.
Winn, Grover Cleveland.....	Juneau, Alaska
Zettler, Hyman.....	Seattle

LAW SCHOOL—UNCLASSIFIED

<i>Name</i>	<i>Home Address</i>
Alderman, Lewis.....	New York City
Buck, Corrill	Seattle
Colley, Herbert DeLos.....	Everett
Corkery, Glenn Sibley.....	Spokane
Covington, William Darlington.....	Seattle
Danson, Robert W.....	Spokane
Davis, Brisbane	Seattle
Dunstan, Tremayne	Seattle
Fullen, Donald Douglass.....	Seattle
Glover, John Squire S.....	Seattle
Guntert, Carl C.....	Seattle
Haggist, Fred	Seattle
Hardy, Michael, W. H.....	Summit, S. D.
Herr, E. G.....	Seattle
Meikle, Walter	Olequa
Milice, Charles	Seattle
Miller, Herbert Rheinhart.....	Seattle
Neal, Fred T.....	Davenport
Newman, Paul.....	Iloilo, Philippine Islands
Nolan, Hugh Arthur.....	Everett
Noyes, Glen J.....	Fairbanks, Alaska
Partymueller, Maurice	Seattle
Phillips, Jesse James.....	Odessa
Raymond, C. B. W.....	Seattle
Sennott, E. H.....	Seattle
Smith, A. Jay.....	Seattle
Sutherland, George John Alexander.....	Bellingham
Welbern, John Leonard.....	Almira

SHORT COURSE FORESTERS

<i>Name</i>	<i>Home Address</i>
Allen, Charles Frank.....	Ashland, Oregon
Barnes, Ephraim	Sumpter, Ore.
Behrens, John George.....	Seattle
Bell, Carl E.....	Deming
Berry, Horace.....	Sisters, Ore.
Bettendorff, George.....	Alturas, Cal.
Blankenship, Edward O.....	Chelan
Blankenship, Spencer A.....	Leavenworth
Blevins, Leo Almer.....	Cove, Ore.
Bolin, James H.....	Farris
Bonebrake, George A.....	Roseburg, Ore.
Brittain, Roy	Havillah
Brown, Gilbert D.....	Lakeview, Ore.
Bruckhart, John R.....	Skykomish
Canby, Edmund Burnside.....	Leavenworth
Chilcoat, Roy	Randle
Colbentz, Joseph Henry.....	Fern Hill
Colter, Harry Nelson.....	Conconully
Cunningham, Harry M.....	Sulphur Springs
Dodge, Clark Howard.....	Seattle
Dullanet, Andrew Jackson.....	Seattle
Evarts, C. K.....	Eugene, Ore.
Ewart, Hugh Wilson.....	Seattle
Fisk, Dannie W.....	Prairie
Galbraeth, Charles Spence.....	Winnipeg, Manitoba
Guibble, Elmer W.....	Detroit, Ore.
Hansen, Hans Thomson.....	Leavenworth
Harlow, Henry Albert.....	Bremerton
Harpham, Vernon V.....	Roseburg, Ore.
Harris, Joseph Augustine.....	Chico, Ore.
Hill, Frank Pierce.....	Roseburg, Ore.
Hillgoss, Ralph A.....	Bellingham
Hine, Julius C.....	Bay City, Mich.
Holst, John D.....	Sans Valley
Ingram, Douglas C.....	Prineville, Ore.
Ingram, Pearl Vernon.....	Lakeview, Ore.
Ireland, Asher	Roseburg, Ore.
Johnson, Benjamin Franklin.....	Prineville, Ore.

Jones, Walter James.....	Chitdo, Ore.
Jourdan, Edward	Georgetown, Wash.
Keithley, Celsus L.....	Heppner, Ore.
Kellogg, Freeman Orson.....	Hoquiam
Kendall, William	Dayton
Kreische, Frank J.....	Seattle
Looney, Gaines H.....	Paisley, Ore.
McClain, James Fred.....	Joseph, Ore.
McLaughlin, Ursis Floyd.....	Roseburg, Ore.
Mahn, Edward Herman.....	Roseburg, Ore.
Milbury, William B.....	Port Orford, Ore.
Morgenroth, Chris.....	Olympia
Morris, Walter.....	Post, Ore.
Musgrave, Mark Edward.....	Portland, Ore.
Nelson, Jay Billings.....	Silver Lake, Ore.
Patch, Aubrey Melchion Wm.....	Winnipeg, Canada
Patton, Benjamin S.....	Seattle
Pearson, Carroll L.....	Burns, Ore.
Pierpont, Russell B.....	Conconully
Poole, Andrew T.....	Drew, Ore.
Poore, James F.....	Alturas, Cal.
Rainsden, Francis Chas. H.....	Seattle
Radigan, Arthur	Republic
Robertson, Erasmus E.....	Castle Rock
Roescheisen, Chas. H.....	Orient
Ross, Homer.....	Multnomah, Ore.
Russell, Frederick R.....	Cloverdale, Ore.
Schurr, John M.....	Seattle
Sethe, Fritz	Randle
Shaner, Osner Witson.....	Heppner, Ore.
Smith, G. Leroy.....	Troy, Ore.
Smith, Lyman Taylor.....	McKnight Bridge, Ore.
Smith, R. E.....	Sumpter, Ore.
Thompson, Thomas	Sauk
West, George H.....	Eagle Point, Ore.
Wheeler, Eugene W.....	Republic
Williams, Hal R.....	Deer Lodge, Mont.
Worthington, W. J.....	Quilcene
Wright, Abner T.....	Orting

SHORT MINER'S COURSE

<i>Name</i>	<i>Home Address</i>
Bell, John Arthur.....	La Jolla, Cal.
Burns, William Tomas.....	Portland, Ore.
Campbell, William Smith.....	Litchfield, New Ham.
Danielson, Emil.....	Mace, Idaho
Devitt, Joseph P.....	Crofton, B. C.
Krippaehne, William August.....	Chicago, Ill.
Robertson, Ralph Elliott.....	Juneau, Alaska
Rodermans, Joseph Hendrick.....	Amsterdam, Holland
Theilsieffe, Fred	Seattle

SATURDAY EXTENSION COURSES

<i>Name</i>	<i>Home Address</i>
Alt, Louis William.....	Dunlap Station
Armstrong, Ethel Viola.....	Ballard
Bigelow, Mabel	Seattle
Blough, Allie	Ballard
Butler, Charles Wm.....	Seattle
Cain, Mabel Celestia.....	Seattle
Cassel, J. U.....	Seattle
Clark, Mary	Hayes
Cunningham, Thomas Michael.....	Seattle
DeVoe, Helen G.....	Seattle
Dunmore, Laura Blanche.....	Seattle
Elsentraut, Dora	Seattle
Farrar, Grace	Seattle
Flick, James Patton.....	Seattle
Haserick, Alice Ernestine.....	Seattle
Henderson, Gus M.....	Alki Point
Jones, Estelle	Seattle
Oakley, Enola Inez.....	Seattle
Oakley, June	Seattle
Oakley, Mary Elizabeth.....	Seattle
Pearce, Stella E.....	Seattle
Rouse, Elizabeth	Seattle
Sceeles, Jeanette E.....	Seattle
Sheach, William Sidney.....	Seattle
Simmons, Elma	Seattle
Strahberger, Mary Louise.....	Seattle

REGISTER OF STUDENTS

343

Underwood, Charles Frere.....	Seattle
Weed, George Merritt.....	Seattle
Whitfield, Wilmot G.....	Seattle
Yerkes, Jennie L.....	Ballard

SUMMER SCHOOL OF 1909

<i>Name</i>	<i>Home Address</i>
Adams, Rose.....	Yakima, Wash.
Albert, Grace L.....	Seattle
Anderson, Bessie Louise.....	Seattle
Anderson, Maurice P.....	Seattle
Arnett, Susie	Almira
Aune, Bert	Manzanita
Auzias-Turenne, Aimar	Seattle
Baldwin, Bernice M.....	Chicago, Ill.
Ball, Myrtle Maitland.....	Black Rock, Ark.
Barnes, Carrie	Chelan
Bascom, Louise.....	Dickey, Idaho
Belswick, Emily	Seattle
Bemus, Hazel Nell.....	Santa Ana, Cal.
Bennett, Edward A.....	Seattle
Bennett, Franks Gordon.....	Grandview
Berry, Elsie.....	Winono, Minn.
Bever, James.....	North Yakima
Biegert, Hanna Elise.....	Seattle
Bigelow, Bertha Lucile.....	Spokane
Bliss, Jeanette	Seattle
Blough, Allie	Ballard
Bolin, Marguerite Ann.....	Portland, Ore.
Bolin, Marian Anglin.....	Multnomah, Ore.
Bonhag, John P.....	Seattle
Bradley, Mary Elizabeth.....	Spokane
Brill, Geneva V.....	Seattle
Brown, Edwin James.....	Seattle
Brown, Kirk Charles.....	Seattle
Bryan, Clara M.....	Seattle
Burge, Ethelda.....	Mt. Vernon, Iowa
Burns, Alfred A.....	Seattle
Burmester, Dora.....	Salt Lake City, Utah
Burr, Sadie P.....	Walla Walla

Burrell, Florence Cotton.....	Oakland, Cal.
Burton, Jennie L.....	Galena, Ill.
Busch, Sheridan.....	Racine, Ohio
Byron, Margaret.....	Worcester, Mass.
Calderwood, Elizabeth.....	North Yakima
Celleyhan, Adeline Hayes.....	Seattle
Chapman, Anamay	Santa Ana, Cal.
Charrion, Ida R.....	Bellingham
Chase, Marguerite	Seattle
Clarahan, Catherine Elizabeth.....	Seattle
Clark, Hester J.....	Lake City, Minn.
Clark, Levi	Ellensburg
Coffman, Marion.....	Urbana, Ill.
Coleman, William Gaylord.....	Tacoma
Collins, Helen Holman.....	Kirkland
Conklin, Mabelle.....	Vickeryville, Mich.
Corbet, Margaret	Seattle
Cotter, Ethel M.....	Puyallup
Cowgill, James Daniel.....	Uniontown
Cox, Andora	Tacoma
Cox, John A.....	Tarrant, Texas
Cox, Mary Clarinda.....	Tacoma
Coxwell, Jeanette.....	Crediton, Ontario
Crane, Halcyone C.....	Seattle
Cummings, Wm. O.....	Colville
Cummings, Mrs. W. O.....	Colville
Cutting, Forrest B.....	Hartline
Cypher, George A.....	Butler, Pa.
Das, Taraknath	Seattle
Davis, Mrs. Alida Wesser.....	Butler, Kans.
Davis, Margaret	Spokane
Deane, Charles Henry.....	Seattle
DeGraff, Grace.....	Portland, Ore.
De Lartigue, Adele.....	Seattle
Doster, Alice Mable.....	Allegan, Mich.
Ducasse, Edmond Frederic.....	Seattle
Dunmore, L. Blanche.....	Seattle
Dunning, Nettle.....	Memphis, Mich.
Easton, George E.....	Strawberry Point, Iowa
Egan, Marie V.....	Port Henry, N. Y.
Elliott, M. Olive.....	Marion, Kans.

Estee, Lula May.....	Gibson City, Ill.
Etsell, Ada S.....	Seattle
Etsell, Irma	Seattle
Ewing, Richard Howe.....	Norman, Okla.
Feeger, Luther Martin.....	Georgetown
Field, Ada Martitia.....	Newman, Ga.
Fleischer, Jeanette Vinnie.....	Lewiston, Ida.
Foote, Leon Russell.....	Dillon, Mont.
Forbes, Grace A.....	Asotin
Fraser, Harriett	Puyallup
Gardner, Edward H.....	Winlock
Gardner, Ethel Jane.....	Santa Ana, Cal.
Garretson, Henry Hartshorn.....	Tacoma
Georgeson, Dagmar	Sitka, Alaska
Gilbreath, Nannie E.....	Dayton
Girthoffer, Bertha May.....	Spokane
Gist, Arthur S.....	Seattle
Goldsmith, John S.....	Sigourney, Ia.
Graham, Elmina Elizabeth.....	Walla Walla
Grady, Agnes.....	Butte, Mont.
Graves, Ethel Florence.....	Spokane
Grindrod, Ione	Roslyn
Guha, Nirupam.....	Calcutta, India
Hamilton, Rachel Elizabeth.....	Walla Walla
Harris, Mrs. Charles P.....	Seattle
Hartnett, Edmond Emmett.....	Seattle
Haynes, Hazel Emily.....	Seattle
Haynes, Sarah Isabelle.....	Seattle
Henneken, Maude C.....	Seattle
Hickman, Fred	Chicago, Ill.
Horsley, William Henry.....	North Yakima
Howes, Alice	Spokane
Hyink, Jeanette.....	Alton, Ia.
Ingalls, Estelle.....	Portland, Ore.
Ingalls, Mae C.....	Portland, Ore.
Irvine, Ethel	Seattle
Irving, Margaret Patterson.....	New Glasgow, Nova Scotia
Itter, Elizabeth E.....	Seattle
Jarvis, Mrs. S. C.....	Canton, Mo.
Jarvis, Vivian.....	Troy, Ill.
Jensen, Anne Sigurd.....	Everett

Jepsen, Alma	Spokane
Jerdee, Inger Carolina.....	Spokane
Johnson, J. May.....	Albert Lea, Minn.
Johnson, Sven Oscar.....	Coeur d'Alene, Idaho
Johnston, Austie May.....	Walla Walla
Jones, Lucien A.....	Seattle
Kahan, Sarah Edna.....	Seattle
Kane, Anna	Seattle
Karrer, Anna M.....	Roslyn
Karrer, Clara B.....	Roslyn
Karrer, Matilda W.....	Roslyn
Kellett, Gwendolyn Olive.....	Seattle
Kellog, Lucien Thereon.....	Seattle
Keller, Lulu E.....	Pendleton, Ore.
Kennedy, Mrs. Annie de Lartigue.....	Riverton
Khoje, P. Khan.....	India
Kindig, Grace M.....	Seattle
Kinzle, Elbert G.....	Seattle
Kirkpatrick, Rossae Swartz.....	Seattle
Kniseley, John Mitchell.....	Seattle
Knudson, Inga Olive.....	Bellingham
Kroetch, Gertrude Margaret.....	Spokane
Laughlin, Harold C.....	Butler, Pa.
Larsen, Mathilde	Seattle
Laurhammer, Pedir O.....	Everett
Lawson, Annie S.....	Chicago, Ill.
Lazenby, Charles D.....	Angola, Ind.
Leavitt, Mattie Ruth.....	Portland, Ore.
LeConte, Tallulah.....	Berkeley, Cal.
Lee, Yee.....	Walla Walla
Lester, Horace H.....	Bellingham
Liddell, Grace Isadora.....	Cashmere
Loop, H. Enzo.....	Puyallup
Lowe, M. Alora.....	Hamerton, Iowa
Luby, Mabel Agnes.....	Seattle
Lyon, Caleb M. S.....	Vesta
McCann, Elma L.....	Pullman
McCluskey, J. Albert.....	St. John, Canada
McDonald, Hugh John.....	Deming
MacDougall, Georgia J.....	Seattle
McGohan, James Hiram.....	Wenatchee

McIntosh, Isabel M.....	Seattle
MacLachlan, Margaret Mae.....	Sedro-Woolley
Mahaffy, Lucius Edward.....	Sunnyside
Mallette, Gertrude E.....	Spokane
Marston, C. May.....	Seattle
Mather, Alvah B.....	Colville
Matheson, Anna May.....	Seattle
Mauermann, Bertha	Olympia
Meek, Jennie.....	Berthold, N. D.
Melton, Gertrude	Pomeroy
Miller, Laura	Seattle
Miller, Marion Augusta.....	Seattle
Mitchell, L. Lillian.....	Corwith, Ia.
Milliken, Vesta Vernon Heywood.....	Seattle
Mitchell, DuBois	Seattle
Moore, Clarence W.....	Wenatchee
Morrison, Kellaphene Alfred.....	Howard, Colo.
Nachtoheim, Anna	Tacoma
Neal, Fred T.....	Davenport
Nelson, Arthur Emil Laurnet.....	Seattle
Nelson, Sena C.....	Cherikee, Ia.
Ness, Sever Walter.....	Wapato
Nicholson, Hazel	Spokane
Nicholson, Mary Norwood.....	Spokane
Nicolson, Ethel Emma.....	Marletta, Mich.
Norman, Catherine Glenn.....	Seattle
Nordue, Anna	Stanford, Conn.
O'Donnell, Gretchen Marion.....	Seattle
Olen, Hubert Leonard.....	Tonkawa, Okla.
Olsgard, Constance.....	Minot, N. D.
Orner, Pearl Lillian.....	Seattle
Owens, Lycurgus D.....	Tacoma
Park, Lical	Ballard
Parton, Ida	Seattle
Patton, Priscilla Irene.....	Bellingham
Pearce, Stella E.....	Seattle
Pease, Vinnie Arah.....	Tacoma
Pederson, Olga.....	Port Madison
Pederson, Ella	Seattle
Peters, Mrs. Lizzie.....	Pt. Roberts
Peters, Woodie.....	Pt. Roberts

Pollick, Mary.....	Pawhuska, Okla.
Potter, Johnathan B.....	Pendleton, Ore.
Pratt, Charles Robert.....	Kirkland
Pratt, Frank Linden.....	Kirkland
Pratt, Ida Margaret.....	Kirkland
Priest, Mrs. Jessie Nutting.....	Snohomish
Quigley, Anna	Ellensburg
Quigley, Mary Black.....	Seattle
Radmaker, Frank	Chehalis
Renard, Helen Therese.....	Spokane
Revenaugh, Carl M.....	Seattle
Rice, Bertha Belle.....	Seattle
Robinson, Elizabeth Langley.....	Seattle
Rodell, Lucretia Amelia.....	Spokane
Rockwood, Alfred Loveday.....	Pacific Grove, Cal.
Rossing, Clara.....	Bode, Ia.
Rouse, Louise Elizabeth.....	Lakefield, Minn.
Royal, James Millard.....	Seattle
Rundell, Carrie G.....	Hoquiam
Russell, Lillian Blanche.....	Seattle
Saeman, Marie	Seattle
St. Onge, Arthur J.....	Seattle
Salmon, Alfa	Winthrop
Sands, Clifford W.....	Seattle
Saunders, Dorothy Channing.....	Seattle
Sawyer, Minnie Birge (Mrs.).....	Santa Clara, Cal.
Sawyer, Miriam Jefferson.....	Colorado Springs, Colo.
Schricker, Florence Hilda.....	LaConner
Schricker, Otille Ione.....	LaConner
Schroeder, Helen H.....	Deer Lodge, Mont.
Sears, Florence G.....	South Bellingham
Sechler, A. May.....	Portland, Ore.
Selby, Kathleen.....	Downs, Kans.
Sheridan, Victoria.....	Ventura, Cal.
Shimmins, Zellah Mary.....	Bristol
Shotwell, Lyman Ray.....	Wenatchee
Simmons, Elma	Seattle
Sims, Ethel	Seattle
Smiley, Clara	Seattle
Smith, Elsie P.....	Seattle
Spencer, Clarissa Eleanor.....	Missoula, Mont.

Stannard, Elizabeth Susan.....	Millville
Starrett, Lou Christina.....	Forest Grove, Ore.
Steele, Harriett Effie.....	Seattle
Stienke, Martin William.....	Seattle
Sterling, Elizabeth Caward (Mrs.).....	Seattle
Stoddard, Grace.....	Albion, Mich.
Stoll, Lucia E.....	Seattle
Streator, Gertrude Inez.....	Seattle
Sullivan, Bartholomew Richard.....	North Yakima
Sveinsin, Mekkin	Seattle
Swiney, Edna Colgan.....	Seattle
Taylor, Howard Holbrook.....	Seattle
Thomas, Elouise.....	Walla Walla
Thomas, May K.....	Walla Walla
Thorson, Thorwald.....	Forest City, Ia.
Travillion, Claire Edmund.....	Baker City, Ore.
Trukositz, Elizabeth Clara.....	Spokane
Turkee, Fred E.....	Burlington
Tytler, Bertha Eletta Van Marter.....	Seattle
Ullery, Ira Lee.....	Port Angeles
Unruh, Otto Adolph.....	Pawnee, Kans.
Wagoner, Lyman Fisher.....	Seattle
Waldron, Alice Margretta.....	Greenfield, Ia.
Wallis, Floy Esther.....	Moberly, Mo.
Walton, Margaret Aileen.....	Snohomish
Wansbrouge, Richard M.....	Florence
Watson, Percy Eunice.....	Mt. Vernon, Ia.
Wells, Elsie Priest.....	Seattle
Wheeler, Chetta M.....	Cashmere
Wheeler, Mae Lucile.....	North Yakima
White, Florence	Seattle
Whitfield, Willmot Gladstone.....	Seattle
Whitham, Ethel Frances.....	Pocatello, Ida.
Whitney, Glenn Thornton.....	Seattle
Wickwire, Esther Irene.....	Angola, Ind.
Wiggins, Julia J.....	Jefferson, Ia.
Wilkerson, Christina Ann.....	LaGrande, Ore.
Wilkerson, Robert Alexander.....	LaGrande, Ore.
Ellson, Louise.....	Livingston, Mont.
Wilson, Mabel E.....	Wilbur
Wiseman, Adolph Henry.....	Seattle

Wood, Kate Mabel.....Astoria, Ore.
Worcester, Eleanor Sewall.....Spokane
Wright, Della May.....Santa Ana, Cal.
Wuthrich, Maude G.....Hoquiam
Young, Dalma Eloise.....Jefferson, Ia.
Young, Grace Mae.....Aberdeen
Young, Mary.....Post Falls, Ida.
Zent, George Woodruff.....Pasco

SUMMARY OF ENROLLMENT

BY SCHOOLS

Graduate School.....	41
College of Liberal Arts.....	1,073
College of Engineering.....	326
Chemical Engineering.....	17
Civil Engineering.....	142
Electrical Engineering.....	115
Mechanical Engineering.....	52
School of Forestry.....	59
School of Law.....	178
School of Mines.....	85
School of Pharmacy.....	59
Foresters' Short Course (Three-months' course).....	78
Miners' Short Course (Three-months' course).....	9
Saturday Extension Courses.....	30
Total.....	1,938

BY CLASSES

Graduate Students.....	41
Seniors	224
Juniors	328
Sophomores	366
Freshmen	701
Unclassified Liberal Arts.. (Age requirement, over 20 years)	87
Unclassified Engineering and Mining " "	24
Unclassified Forestry..... " "	6
Unclassified Pharmacy..... " "	16
Unclassified Law (Sophomore standing requisite for regular law classification).....	28
Short Course Foresters.....	78
Short Course Miners.....	9
Saturday Extension Teachers'.....	30
Total.....	1,938
Summer School of 1909.....	288
Total for the year.....	2,226
Deduct Summer Students now attending University.....	70
Net total for the year.....	2,156

INDEX.

ACCREDITED SCHOOLS—	<i>Page</i>
Admission from	84
List of	95
ADMISSION—	
As special students.....	96
To advanced undergraduate standing.....	95
To freshman class.....	83
College of Liberal Arts.....	84
College of Engineering and School of Mines.....	84
From accredited schools.....	94
School of Forestry.....	222
School of Law.....	84, 234
School of Mines.....	84, 245
School of Pharmacy.....	84, 264
To graduate standing.....	96
ALUMNI ASSOCIATION	46
ARTS AND LAW COURSE.....	111
ASSAYING—	
Laboratory deposit	40
ASSEMBLY ADDRESSES	51
ASSOCIATIONS AND CLUBS.....	46
Alumni Association	46
Associated students	46
Chemistry Club	47
Christian associations	47
Classical Club	47
County and state clubs.....	48
Debating clubs	48
Deutscher Verein	48
Forest Club	49
French Club	49
Historical Society	51
Lincoln Literary Society.....	48
Mathematical Club	49
Musical organizations	49
Mozart Club	50
Philological Association	50
Political Science Club.....	50
Sigma Xi	51
ASTRONOMY—	
Department of	112
Entrance requirements	85
Laboratory deposit	40

	<i>Page</i>
BEQUESTS	38
BOARD AND ROOM	39
BOTANY—	
Department of	114
Entrance requirements	85
Laboratories	66
Laboratory deposits	40
BUILDINGS AND GROUNDS	53
BUREAU OF TESTING	76
CHEMICAL ENGINEERING—	
Course in	198
Department of	207
CHEMISTRY—	
Department of	117
Entrance requirements	85
Laboratories	66
Laboratory deposits	40
CIVIL ENGINEERING—	
Course in	200
Department of	207
Laboratories	68
CLUBS—see Associations and Clubs.	
COLLEGE OF ENGINEERING	191
Admission to	84
Courses of study in	198
Degrees in	196
COLLEGE OF LIBERAL ARTS	102
Admission to	84
Courses in	106
Prescribed subjects in	106
COMBINED ARTS AND LAW COURSE	111
COMMITTEES OF THE FACULTY	33
DEAN OF WOMEN	32, 42
DEGREES	98
With honors	98
Granted in 1909	286
DIPLOMA FEE	42
DIRECTORY OF OFFICERS	278
DORMITORIES	56
EDUCATION—	
Department of	123
ELECTIVES, SCHEME OF	110
ELECTRICAL ENGINEERING—	
Course in	203
Department of	212
Laboratory deposit	40
ELECTRICAL ENGINEERING LABORATORIES	69

INDEX

355

Page

ENDOWMENTS AND SUPPORT.....	37
ENGLISH LANGUAGE AND LITERATURE—	
Department of	127
Entrance requirements	86
ENVIRONS OF UNIVERSITY.....	37
EXAMINATIONS	97
FACULTY AND OTHER OFFICERS.....	8
FACULTY COMMITTEES	33
FELLOWSHIPS	275
FORESTRY—	
Laboratories	73
Laboratory deposit	41
School of	220
FRENCH—	
Department of	130
Entrance requirements	87
GEOLOGY—	
Department of	133
Laboratories	74
Laboratory deposits	41
GERMAN—	
Department of	136
Entrance requirements	88
GIFTS—see Scholarships, Prizes and Gifts.	
GOVERNMENT OF UNIVERSITY.....	37
GRADES, SYSTEM OF.....	99
GRADUATE SCHOOL	274
GREEK—	
Department of	139
Entrance requirements	88
GROUND AND BUILDINGS.....	53
HEAT, LIGHT AND POWER PLANT.....	55
HISTORICAL SKETCH	35
HISTORY—	
Department of	142
Entrance requirements	89
HOME ECONOMICS—	
Department of	147
Laboratory deposit	41
Admission to department.....	148
Teachers' course in.....	150
ITALIAN—	
Department of	131

JOURNALISM—	<i>Page</i>
Department of	151
Laboratory deposit	41
LABORATORIES	66
LABORATORY DEPOSITS	40
LATIN—	
Department of	155
Entrance requirements	91
LAW—see School of Law.	
LIBRARY—	
Location and contents.....	56
Staff	31
LIFE DIPLOMAS	99
MAJORS AND MINORS.....	106
Table of	107-8
MATHEMATICS—	
Department of	158
Entrance requirements	92
MECHANICAL ENGINEERING—	
Course in	205, 206
Department of	215
Laboratories	71
MEDICAL PREPARATORY COURSE.....	110
METALLURGY	258
Laboratories	79
Laboratory deposit	41
MILITARY SCIENCE AND TACTICS—	
Department of	163
MINE RESCUE TRAINING STATION.....	80
MINES LABORATORIES	77
MINING—see School of Mines.	
MUSEUM	58
Botany and Forestry collection.....	60
Education collection	65
Ethnology collection	62
Geology collection	61
Historical sketch	58
Staff	31
Zoology collection	64
MUSIC—	
Department of	164
NORMAL DIPLOMA	98
OBSERVATORY	81
OFFICERS OF ADMINISTRATION.....	7
OFFICERS OF ADMINISTRATION AND INSTRUCTION, DIRECTORY OF	278

ORIENTAL HISTORY AND LITERATURE—	<i>Page</i>
Department of	188
ORGANIZATION OF THE UNIVERSITY.....	101
PHARMACY AND MATERIA MEDICA LABORATORIES.....	75
Laboratory deposits	41
PHARMACY—	
School of	261
PHILOSOPHY—	
Department of	168
PHYSICAL GEOGRAPHY—	
Entrance requirement	93
PHYSICAL TRAINING—	
Department of	174
PHYSICS—	
Department of	170
Entrance requirements	93
Laboratories	76
Laboratory deposit	41
PHYSIOLOGY—	
Entrance requirements	94
POLITICAL AND SOCIAL SCIENCE—	
Department of	178
POWER PLANT	55
PREPARATION FOR ADMISSION TO FRESHMAN CLASS.....	85
PREPARATORY MEDICAL COURSE.....	110
PRIZES—see Scholarships and Prizes.	
PSYCHOLOGY—	
Laboratory	77
Laboratory deposit	41
REGENTS, BOARD OF.....	7
REGISTER OF STUDENTS.....	293
REGISTRATION	96
RHETORIC AND ORATORY—	
Department of	183
SCANDINAVIAN LANGUAGES—	
Department of	186
SCHOLARSHIPS, PRIZES AND GIFTS.....	43
John Walter Ackerson scholarship.....	43
Anonymous scholarship	43
Alfred Battle prize.....	43
Philo Sherman Bennett prize.....	43
Big Red Apple scholarship.....	44
R. F. Blaine prize.....	44
Alden J. Blethen prize.....	44
Thomas Burke prizes.....	44

SCHOLARSHIPS, PRIZES AND GIFTS—Continued.	Page
Vivian W. Carkeek prize.....	45
L. J. Corkery prize.....	45
Loretta Denny fellowships.....	45
R. C. Erskine prize.....	45
Funk & Wagnalls prize.....	45
Jacob Furth prize.....	45
Thomas W. Lough medal.....	45
Charles E. and Belle F. Remsberg gift.....	45
Seattle Bar Association gift.....	46
Senior Scholars	46
John L. Wilson prizes.....	46
SCHOLARSHIPS AND PRIZES AWARDED FOR 1910.....	291
SCHOOL OF FORESTRY.....	220
Admission	222
SCHOOL OF LAW.....	233
Admission to	84, 234
Combined course	235
Course of study.....	238
Degrees	237
Registration and examination.....	238
SCHOOL OF MINES.....	243
Admission to	84, 245
Course in	249
SCHOOL OF PHARMACY.....	261
Admission to	84, 264
Course of study.....	262
SHOP WORK—	
Laboratory deposit	41
SPANISH—	
Department of	187
STUDENT EXPENSES	39
STUDENT HELP	42
STUDENT ORGANIZATIONS—see Associations and Clubs.	
STUDIES, SELECTION OF.....	97
SUMMER SCHOOL	276
TEACHER'S DIPLOMA—see Normal Diploma.	
TUITION	39
ZOOLOGY—	
Department of	188
Entrance requirements	94
Laboratories	80
Laboratory deposit	42