
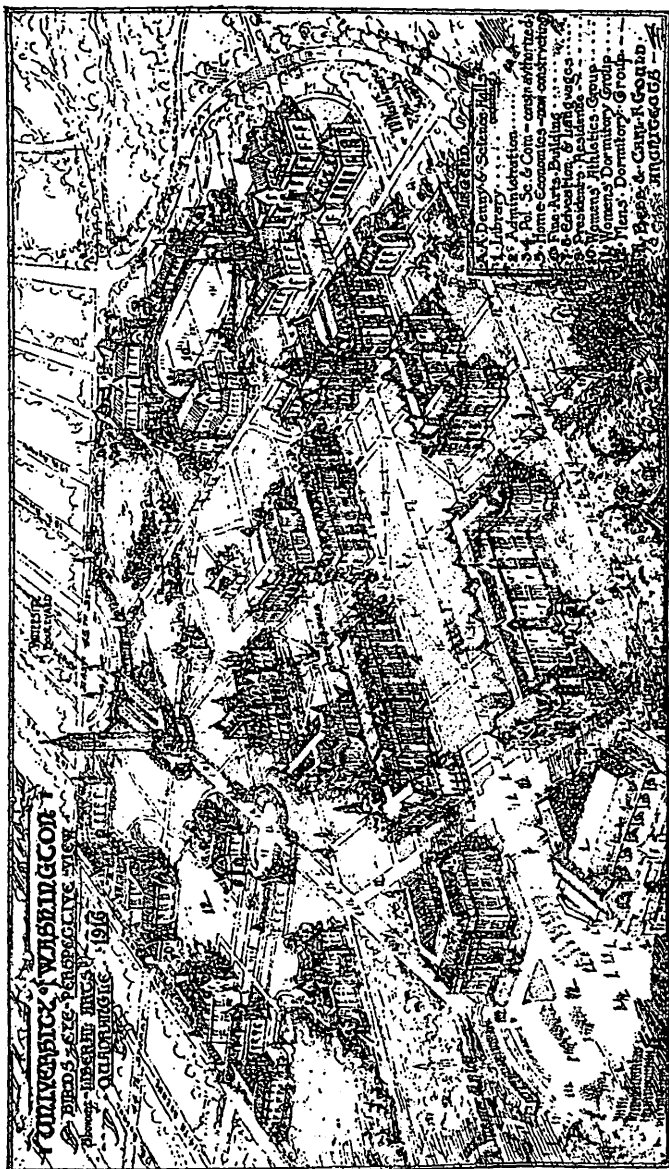


CATALOGUE
OF THE
University of Washington
FOR 1915-16
AND
ANNOUNCEMENTS
FOR 1916-17



SEATTLE
WASHINGTON

OLYMPIA, WASH.
FRANK M. LAMBORN  PUBLIC PRINTER
1916



UNIVERSITY OF WASHINGTON

BIRD'S EYE PERSPECTIVE VIEW

PLANNED BY THE ARCHITECTS

QUINN

- 1. Denby & Science Hall
- 2. Library
- 3. Administration
- 4. Pol. Sc. & Com. - east wing
- 5. Home Economics - east wing
- 6. Fine Arts Building
- 7. Education & Languages
- 8. Business Administration
- 9. Women's Athletics Group
- 10. Women's Dormitory Group
- 11. Men's Dormitory Group
- 12. Bessie Coleman Hall
- 13. Gymnasium

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UNIVERSITY CALENDAR

1916-1917

Summer session June 19 to July 28

FIRST SEMESTER

Examinations for admission and for exemption from College English... { Thursday, Friday and Saturday, September 7, 8, 9, at 9 a. m. and 2 p. m.

Registration days..... Monday and Tuesday, September 11 and 12

Instruction begins..... Wednesday, September 13

President's annual address..... Friday, September 15, 10 a. m.

Women's assembly..... Friday, September 22, 11 a. m.

Assembly of the Associated Students.....
..... Wednesday, September 27, 9 a. m.

Thanksgiving vacation..... { Wednesday, November 29, 6 p. m.,
to Monday, December 4, 8 a. m.

Assembly of the Associated Students.....
..... Wednesday, December 6, 1 p. m.

Christmas vacation..... { Friday, December 15, 6 p. m., to
Tuesday, January 2, 8 a. m.

Semester examinations { Monday, Tuesday, Wednesday, Thursday,
Friday, January 22, 23, 24, 25, 26

SECOND SEMESTER

Registration days..... Monday and Tuesday, January 29 and 30

Instruction begins..... Wednesday, January 31

Women's assembly..... Friday, February 2, 11 a. m.

Washington's birthday (holiday)..... Thursday, February 22

Spring vacation..... { Friday, March 30, 6 p. m., to
Monday, April 9, 8 a. m.

Assembly of the Associated Students.. Thursday, April 12, 9 a. m.

Campus day..... Friday, April 27

Junior day..... Saturday, May 5

Memorial day (holiday)..... Wednesday, May 30

Semester examinations. { Monday, Tuesday, Wednesday, Thursday,
Friday, Saturday, June 4, 5, 6, 7, 8, 9

Baccalaureate Sunday..... June 10

Class day and President's reception..... Monday, June 11

Alumni day..... Tuesday, June 12

Commencement..... Wednesday, June 13

THE BOARD OF REGENTS

OSCAR A. FECHTER, President.....North Yakima
Term ends March, 1922.

CHARLES E. GACHES.....Mount Vernon
Term ends March, 1917.

WILLIAM A. SHANNON.....Seattle
Term ends March, 1917.

WINLOCK W. MILLER.....Seattle
Term ends March, 1920.

WILLIAM T. PERKINS.....Seattle
Term ends March, 1920.

ELDRIDGE WHEELER.....Montesano
Term ends March, 1921.

JOHN A. REA.....Tacoma
Term ends March, 1922.

WILLIAM MARKHAM, Secretary to the Board.

OFFICERS OF ADMINISTRATION

THE UNIVERSITY

HENRY SUZZALLO, PH. D., President of the University, Administration Building.

HERBERT THOMAS CONDON, LL. B., Comptroller and Bursar, Administration Building.

EDWARD NOBLE STONE, A. M., Registrar and Recorder, Administration Building.

EDWIN BICKNELL STEVENS, A. M., Executive Secretary, Administration Building.

ARTHUR RAGAN PRIEST, A. M., Dean of Men, Administration Building.

ETHEL HUNLEY COLDWELL, A. M., Dean of Women, Denny Hall.

WILLIAM ELMER HENRY, A. M., Librarian, Library Building.

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

DAVID CONNOLLY HALL, M. D., University Health Officer, Gymnasium.

FRANK STEVENS HALL, Curator of the Museum, Forestry Building.

THE COLLEGES AND SCHOOLS

ARTHUR SEWALL HAGGETT, PH. D., Dean of the College of Liberal Arts, Denny Hall.

ALMON HOMER FULLER, M. S., C. E., Dean of the College of Engineering, Engineering Building.

MILNOR ROBERTS, A. B., Dean of the College of Mines, Mines Building.

CHARLES WILLIS JOHNSON, PH. C., PH. D., Dean of the College of Pharmacy, Bagley Hall.

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

HUGO WINKENWERDER, M. F., Dean of the College of Forestry, Good Roads Building.

J. ALLEN SMITH, PH. D., Dean of the Graduate School, Denny Hall.

***HENRY LANDES, A. M.,** Dean of the College of Science.

THEODORE CHRISTIAN FYE, PH. D., Acting Dean of the College of Science, Science Hall.

FREDERICK ELMER BOLTON, PH. D., Dean of the College of Education, Education Building.

IRVING MACKEY GLEN, A. M., Dean of the College of Fine Arts, Meany Hall.

THE EXTENSION DIVISION

EDWIN AUGUSTUS STAET, A. M., Director, Administration Building.

* Absent on leave, 1915-16.

OTHER ADMINISTRATIVE OFFICERS

Office of the President:

LILLIAN BROWN GETTY, Secretary to the President.

Office of the Comptroller:

MAX HIPKOE, Accountant.

WILLIAM BEACH JONES, A. B., Cashier.

AIMEE WILSON, Secretary to the Comptroller.

Office of the Registrar:

VICTOR J. BOUILLON, A. B., Assistant Registrar.

LAURA ALICE HURD, A. B., Chief Clerk.

KATE PROTHERO, Secretary to the Registrar.

HARRIETT WESTMORELAND, in charge of Alumni Register.

BUILDINGS AND GROUNDS

SANDY MORROW KANE, Engineer.

GERTRUDE ELLIOTT, B. S., Director of the Commons.

FRANCES HEVERLO, PH. B., Mistress of the Dormitory.

L. R. KETTENRING, Acting Electrician.

JAMES S. KRAPE, Head Carpenter.

GEORGE LEWIS MOTTER, Head Gardener.

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

CONRAD W. ZIMMERMAN, A. B., Engineer in Timber Tests, in charge.

CORNELIUS BARRY, Laboratory Assistant.

STATE FOOD AND DRUG WORK

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

FRANCES EDITH HINDMAN, M. S., Assistant State Chemist.

FOREST JACKSON GOODRICH, B. S., Assistant, State Food and Drug Analysis.

LIBRARY STAFF

WILLIAM ELMER HENRY, A. B. and A. M., Indiana; Librarian and Director of the Department of Library Economy.

CHARLES WESLEY SMITH, A. B. and B. L. S., Illinois; Reference Librarian and Associate Professor of Library Economy.

EMMA PEARL McDONNELL, A. B., Washington; Periodicals Librarian.

FLORENCE BAXTER CURRIE, A. B., Milwaukee-Downer; B. L. S., Illinois; Catalogue Librarian.

EVELYN MAY BLODGETT, A. B., Vassar; Pratt Institute Library School; Assistant Catalogue Librarian.

MARY HUBBARD, A. B., Western College for Women; B. L. S., Illinois; Assistant Reference Librarian and Instructor in Library Economy.

LOUISE FENIMORE SCHWARTZ, A. B., Knox College; B. L. S., Illinois; Circulation Librarian.

MABEL ASHLEY, A. B., Kansas; Washington, Department of Library Economy; Order and Accession Librarian and Instructor in Library Economy.

ANN VERNA BARSTAD, A. B., Washington, Department of Library Economy; Assistant Circulation Librarian.

UNIVERSITY FACULTY

In this list the names of the faculty are arranged in five groups, professors, associate professors, assistant professors, instructors, and lecturers, followed by the names of the teaching fellows and assistants. In each of the five groups the names occur in order of academic seniority. An alphabetical list of the faculty is given on pages 14-26.

HENRY SUZZALLO, President of the University, Chairman.

EDWARD NOBLE STONE, Registrar and Recorder, Secretary.

Professors

ORSON BENNETT JOHNSON
*HENRY LANDES
EDMOND STEPHEN MEANY
J. ALLEN SMITH
CAROLINE HAVEN OBER
ALMON HOMER FULLER
JOHN THOMAS CONDON
†HORACE G. BYERS
TREVOR KINCAID
FREDERICK MORGAN PADELFORD
MILNOR ROBERTS
ARTHUR SEWALL HAGGETT
FREDERICK ARTHUR OSBORN
WILLIAM SAVERY
DAVID THOMSON
CHARLES WILLIS JOHNSON
PIERRE JOSEPH FREIN
THEODORE CHRISTIAN FRYE
ROBERT EDOUARD MORITZ
CARL EDWARD MAGNUSSON
HARVEY LANTZ
EVERETT OWEN EASTWOOD
FREDERICK WILLIAM MEISNEST
WILLIAM ELMER HENRY

DAVID CONNOLLY HALL
HERBERT HENRY GOWEN
OLIVER HUNTINGTON RICHARDSON
IVAN WILBUR GOODNER
WALTER GREENWOOD BEACH
IRVING MACKEY GLEN
EDWIN AUGUSTUS STAAT
CHARLES CHURCH MORE
HENRY KREITZER BENSON
JOHN WEINZIRL
HUGO WINKENWERDER
VERNON LOUIS PARRINGTON
FREDERICK ELMER BOLTON
EDWIN JOHN VICKNER
HERBERT GALEN LULL
FRANK GEORGE KANE
EFFIE ISABEL RAITT
WILLIAM FRANKLIN ALLISON
STEVENSON SMITH
WILLIAM PIERCE GORSUCH
CLARK PRESCOTT BISSETT
ETHEL HUNLEY COLDWELL
WILLIAM TAYLOR PATTEN
ARTHUR RAGAN PRIEST

Associate Professors

ALLEN ROGERS BENHAM
†FRANK MARION MORRISON
LOREN DOUGLAS MILLIMAN
SAMUEL LATIMER BOOTHROYD
BURT PEARSONS KIRKLAND
THOMAS KAY SIDEY
WILLIAM MAURICE DEHN
EDWARD McMAHON

CHARLES WESLEY SMITH
JACOB NEIBERT BOWMAN
ARTHUR WILSON LINTON
GEORGE SAMUEL WILSON
GEORGE WALLACE UMPHREY
OTTO PATZER
CHARLES WILLIAM HARRIS

* Absent on leave, 1915-16.

† Absent on leave, second semester, 1915-16.

Assistant Professors

*VANDERVEER CUSTIS	GINO ARTURO RATTI
EDWIN JAMES SAUNDERS	JOEL MARCUS JOHANSON
OTILIE GERTRUDE BOETZKES	JOHN WILLIAM MILLER
GEORGE IRVING GAVETT	FRED WASHINGTON KENNEDY
HANS JACOB HOFF	ERNEST OTTO ECKELMAN
ROBERT EVSTAFIEFF ROSE	CHARLES LOUIS HELMLINGE
ROBERT MAX GARRETT	JOHN WILLIAM HOTSON
EDGAR ALLEN LOEW	THERESA SCHMID MCMAHON
ELIAS TREAT CLARK	LEWIS IRVING NEIKIRK
EDWARD GODFREY COX	FRED WAYNE CATLETT
JOSEPH DANIELS	†HAROLD EUGENE CULVER
ELI VICTOR SMITH	FRANCES DIOKEY
HENRY LOUIS BRAKEL	CARL FRELINGHUYSEN GOULD
CHARLES MUNRO STRONG	MARY FREDERICKA RAUSCH
WILLIAM THEODORE DARBY	HARRY EDWIN SMITH
HARVEY BRUCE DENSMORE	LEE A WHITE
CHARLES EDWIN WEAVER	WALTER EDMUND SQUIRE
OBVILLE PORTER COCKERILL	MORITZ ROSEN
HERMAN GUSTAV ADOLPH BRAUER	ALBERT FRANZ VENINO
CLARENCE RAYMOND COREY	ATTILIO FILIPPO SBEDICO
ALLEN FULLER CARPENTER	SAMUEL HERBERT ANDERSON
GEORGE BURTON RIGG	FRANK MELVILLE WARNER
DAVID ALLEN ANDERSON	NANNIE BELLE JUDY
†ERNEST GEORGE ATKIN	DALLAS DEVELLO JOHNSON
ABRAHAM BERGLUND	FRIEDRICH KURT KIRSTEN
GRACE GOLDENA LENNY	CHARLES EDWARD NEWTON
HORACE JAMES MACINTIRE	SERENO BURTON CLARK

Instructors

SAMUEL THOMAS BEATTIE	THOMAS WITHERS
SANDY MORROW KANE	ERIC TEMPLE BELL
WALTER BELL WHITTLESEY	§CHARLES CULBERTSON MAY
JESSIE BEE MERRICK	EDWIN LEONARD STRANDBERG
NEWELL WHEELER SAWYER	JAMES EDGAR BELL
VICTOR LOVITT OAKES CHITTICK	BROB LEONARD GRÖNDAL
*RALPH HASWELL LUTZ	JOSEPH BARLOW HARRISON
HJALMAR LAURITS OSTERUD	MARY HUBBARD
HARLAN LEO TRUMBULL	GEORGE MILTON JAMES
HENRY SLATER WILCOX	ETHEL DOROTHY JOHNSON
*GERTRUDE CRUDEN	ELIZABETH ROTHERMEL
LESLIE FORREST CURTIS	LLOYD LEROY SMAIL
CURT JOHN DUCASSE	*GRACE LOOMIS TERRY
RUDOLPH HERBERT ERNST	CONRAD TRESSMANN
LEO JONES	LUTHER EWING WEAR

* Absent on leave, 1915-16.

† Absent on leave, second semester, 1915-16.

‡ Absent on leave, first semester, 1915-16.

§ Resigned, January 1, 1916.

FRANCES EDITH HINDMAN	CHARLES ALEXANDRE GUERARD
HIRAM BOARDMAN CONIBEAR	JOHN LEO CAMPION
HUGH ELMER AGNEW	CHARLES WENDELL DAVID
CLEMENT AKERMAN	JAMES ALVIN GILBREATH
MABEL ASHLEY	ROSWELL GRAY HAM
HELEN BALCH CULVER	FRANCES GRANT HEVERLO
EVERETT FRANCIS DAHM	SETH CHAPIN LANGDON
WILLIAM ELMHIRST DUCKERING	MORRIS MORGAN LEIGHTON
CATHERINE WALLACE EASTMAN	HORACE HARDY LESTER
VICTOR JOHN FARRAR	FREDERICK ROBERTSON MACAULAY
NATHAN FASTEN	EARL LEROY PACKARD
ROBERT CHENAULT GIVLER	WALTER EDWARD ROLOFF
EDWIN RAY GUTHRIE	GLENOLA BEHLING ROSE
PAUL JEHU KRUSE	LUIS SANTANDER
CHARLES GUSTAVE PAUL KUSCHKE	*RUSSELL OSBORNE STIDSTON
FRANK JOSEPH LAUBE	LOUISE HOWE TIFFANY
JOSEPH GRATAN O'BRYAN	LOUISE VAN OGLE
EARL MILLIRON PLATT	OTTO DIEDRICH ROHLFS
HAROLD OGDEN SEXSMITH	ALBERT PORTER ADAMS
HARRY KELLEY RUBEY	MARIE GASHWEILER
GERTRUDE ELLIOTT	†CHAUNCEY WERNECKE
ANNE VOELKER	†MARY BEDELL
ALLETTA GILLETTE	

Lecturers

CHARLES EVAN FOWLER	CORNELIUS OSSEWARD
HARVEY L. GLENN	CONRAD ZIMMERMAN
GEORGE NELSON SALISBURY	CARL BUSH
FREDERICK POWELL	JAMES P. ROBERTSON
ROBERT F. McELVENNY	B. LETCHER LAMBUTH
L. A. NELSON	THOMAS ROCHESTER SHEPARD

Teaching Fellows

HERMAN EVERETT BROWN	MARGARET PROSSER
BERTHA MARY CHALLIS	WILLIAM RENNIE
MADELL GILLE	ALFRED SCHEER
FRANK HARRISON	WINFIELD SCOTT
JOHN HEINES	EMERY ENFIELD SMITH
WILLIAM WILEY HOLLINGSWORTH	CHARLES ROY STILLINGER
GLADYS GENEVRA IDE	GEORGE LEWIS SCHWARTZ
ESTHER ZALLA JENCKS	THOMAS GORDON THOMPSON
DAVID HJALMAR JOHNSON	ALMIRA K. BONHAM
MARTIN WILLIAM LISSE	RODRIGO DIEZ
JOHN BROOKS MOORE	RAOUL BRINCK
DAVID OHLSON	SAREVA DOWELL
VINNIE ARAH PEASE	

* Absent on leave, 1915-16.

† Appointed, February 1, 1916.

Assistants

FOREST JACKSON GOODRICH
CLARENCE JOHN ALBRECHT
FRANK MILTON JONES
MARTHA REEKIE

MADGE WILKINSON
ELLA PATTON WINSLOW
ARTHUR SIMON

ALPHABETICAL LIST OF THE UNIVERSITY FACULTY

HENRY SUZZALLO, PH. D., President of the University.

ALBERT PORTER ADAMS, Instructor in Music.

HUGH ELMER AGNEW, Instructor in Journalism.
A. B., Michigan, 1902.

CLEMENT AKERMAN, Instructor in Economics.
A. B., Georgia, 1898; A. M., Harvard, 1914.

WILLIAM FRANKLIN ALLISON, Professor of Municipal and Highway
Engineering.
B. S., South Dakota State College, 1895; B. S. (C. E.), Purdue, 1897;
C. E., Cornell, 1904.

DAVID ALLEN ANDERSON, Assistant Professor of Education.
A. B., Iowa, 1908; A. M., 1910; Ph. D., 1912.

SAMUEL HERBERT ANDERSON, Assistant Professor of Physics.
A. B., Park College, 1902; A. M., 1903; Ph. D., Illinois, 1912.

MABEL ASHLEY, Instructor in Library Economy.
A. B., Kansas, 1905.

*ERNEST GEORGE ATKIN, Assistant Professor of French.
A. B., Cornell, 1904; A. M., Harvard, 1911.

WALTER GREENWOOD BEACH, Professor of Social Science.
A. B., Marietta, 1888; A. B., Harvard, 1891; A. M., Harvard, 1892.

SAMUEL THOMAS BEATTIE, Instructor in Woodwork.

†MARY BEDELL, Acting Instructor in Chemistry.
B. S., University of Washington, 1914.

ERIC TEMPLE BELL, Instructor in Mathematics.
A. B., Stanford, 1904; A. M., University of Washington, 1908; Ph. D.,
Columbia, 1912.

* Absent on leave, second semester, 1915-16.

† Appointed, February 1, 1916.

JAMES EDGAR BELL, Instructor in Chemistry.

B. S., Chicago, 1905; Ph. D., Illinois, 1913.

ALLEN ROGERS BENHAM, Associate Professor of English.

A. B., Minnesota, 1900; A. M., 1901; Ph. D., Yale, 1905.

HENRY KREITZER BENSON, Professor of Industrial Chemistry.

A. B., Franklin and Marshall, 1899; A. M., 1902; Ph. D., Columbia, 1907.

ABRAHAM BERGLUND, Assistant Professor of Economics.

A. B., Chicago, 1904; Ph. D., Columbia, 1907.

CLARK PRESCOTT BISSETT, Professor of Law.

A. B., Hobart College, 1896.

OTILIE GERTRUDE BOETZKES, Assistant Professor of German.

A. B., University of Washington, 1901; A. M., 1902.

FREDERICK ELMER BOLTON, Professor of Education and Dean of the College of Education.

B. S., Wisconsin, 1893; M. S., 1896; Ph. D., Clark, 1898.

SAMUEL LATIMER BOOTHROYD, Associate Professor of Astronomy and Mathematics.

B. S., Colorado Agricultural College, 1893; M. S., 1904.

JACOB NEIBERT BOWMAN, Associate Professor of European History.

A. B., Heidelberg (Ohio), 1896; Ph. D., Heidelberg (Germany), 1900.

HENRY LOUIS BRAKEL, Assistant Professor of Physics.

B. A., Olivet, 1902; A. M., University of Washington, 1905; Ph. D., Cornell, 1912.

HERMAN GUSTAV ADOLPH BRAUER, Chief of the Municipal Research Bureau in the Extension Division.

A. B., Colorado College, 1896; A. M., Wisconsin, 1898; Ph. D., Wisconsin, 1904; A. M. (Hon.), University of Adelaide, South Australia, 1906.

***HORACE G. BYERS**, Professor of Chemistry.

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

JOHN LEO CAMPION, Instructor in German.

A. M., Columbia, 1912.

ALLEN FULLER CARPENTER, Assistant Professor of Mathematics.

A. B., Hastings, 1901; A. M., Nebraska, 1909; Ph. D., Chicago, 1915.

* Absent on leave, second semester, 1915-16.

FRED WAYNE CATLETT, Assistant Professor of Law.

A. B., Harvard, 1904; A. M., Harvard, 1905; LL. B., Harvard, 1907.

VICTOR LOVITT OAKES CHITTICK, Instructor in English.

A. B., Acadia, 1905; A. M., 1906; A. M., Harvard, 1908.

ELIAS TREAT CLARK, Assistant Professor of Forestry.

Ph. B., Yale, 1907; M. F., 1908.

SERENO BURTON CLARK, Assistant Professor of Latin and Greek.

A. B., Michigan, 1901; Ph. D., Harvard, 1907.

ORVILLE PORTER COCKERILL, Assistant Professor of Law.

A. B., Ohio State, 1902; LL. B., 1905.

ETHEL HUNLEY COLDWELL, Dean of Women.

B. L., Mills College, 1894; A. M., Stanford, 1899.

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

LL. B., Michigan, 1891; LL. M., Northwestern, 1892.

HIRAM BOARDMAN CONIBEAR, Supervisor of Aquatics.

Graduate, Chautauqua School of Physical Training and Athletics, 1901.

CLARENCE RAYMOND COREY, Assistant Professor of Mining and Metallurgy.

E. M., Montana State School of Mines, 1905; M. S., Columbia, 1915.

EDWARD GODFREY COX, Assistant Professor of English.

A. B., Wabash, 1899; A. M., Cornell, 1901; Ph. D., 1906.

*GERTRUDE CRUDEN, Instructor in Domestic Art.

A. B., Smith, 1907; B. S., Columbia, 1912.

†HAROLD EUGENE CULVER, Assistant Professor of Geology.

Ph. B., Wisconsin, 1910; Ph. M., 1911.

HELEN BALCH CULVER, Instructor in Design.

Graduate, Pratt Institute, 1905; Graduate, Teachers' College, Columbia, 1909.

LESLIE FORREST CURTIS, Instructor in Electrical Engineering.

B. S., Tufts, 1910.

*VANDERVEER CUSTIS, Assistant Professor of Economics.

A. B., Harvard, 1901; A. M., 1902; Ph. D., 1905.

* Absent on leave, 1915-16.

† Absent on leave, first semester, 1915-16.

EVERETT FRANCOIS DAHM, Instructor in Business Administration,
Extension Division.

A. B., Wisconsin, 1913.

JOSEPH DANIELS, Assistant Professor of Mining Engineering and
Metallurgy.

S. B., Massachusetts Institute of Technology, 1905; M. S., Lehigh,
1908.

WILLIAM THEODORE DARBY, Assistant Professor of English.

A. B., Yale, 1905; A. M., Columbia, 1907.

CHARLES WENDELL DAVID, Instructor in History.

A. B., Oxford, 1911; A. M., Wisconsin, 1912.

WILLIAM MAURICE DEHN, Associate Professor of Chemistry.

A. B., Hope, 1893; A. M., 1896; Ph. D., Illinois, 1903.

GRACE GOLDENA DENNY, Assistant Professor of Domestic Art.

A. B., Nebraska, 1907.

HARVEY BRUCE DENSMORE, Assistant Professor of Greek.

A. B., Oregon, 1903.

FRANCES DICKEY, Assistant Professor of Music.

Graduate, Iowa State Teachers' College, 1901; B. S., Columbia, 1912;
A. M., 1913.

CURT JOHN DUCASSE, Instructor in Philosophy.

A. B., University of Washington, 1903; A. M., 1909; Ph. D., Harvard,
1912.

WILLIAM ELMHIRST DUCKERING, Instructor in Civil Engineering.

A. B., University of Washington, 1903; B. S. (C. E.), 1909.

CATHERINE WALLACE EASTMAN, Instructor in Physical Education.

Graduate, Wellesley College, 1911.

EVERETT OWEN EASTWOOD, Professor of Mechanical Engineering.

C. E., Virginia, 1896; A. B., 1897; A. M., 1899; B. S., Massachu-
setts Institute of Technology, 1902.

ERNEST OTTO ECKELMAN, Assistant Professor of German.

A. B., Northwestern (Watertown, Wis.), 1897; B. L., Wisconsin,
1898; Ph. D., Heidelberg (Germany), 1906.

GERTRUDE ELLIOTT, Director of the University Commons.

B. S., Illinois, 1913.

RUDOLPH HERBERT ERNST, Instructor in German.

A. B., Northwestern (Watertown, Wis.), 1904; A. M., Harvard, 1911.

VICTOR JOHN FARRAR, Research Assistant in History.

A. B., Wisconsin, 1911; A. M., 1912.

NATHAN FASTEN, Instructor in Zoology.

B. S., College of New York, 1910; Ph. D., Wisconsin, 1914.

PIERRE JOSEPH FREIN, Professor of French.

A. B., Williams, 1892; Ph. D., Johns Hopkins, 1899.

THEODORE CHRISTIAN FRYE, Professor of Botany, and Acting Dean of the College of Science.

B. S., Illinois, 1894; Ph. D., Chicago, 1902.

ALMON HOMER FULLER, Professor of Civil Engineering and Dean of the College of Engineering.

C. E., Lafayette, 1897; M. C. E., Cornell, 1898; M. S., Lafayette, 1900.

ROBERT MAX GARRETT, Assistant Professor of English.

A. B., Idaho, 1902; A. M., University of Washington, 1903; Ph. D., Munich, 1909.

MARIE GASHWEILER, Instructor in Music.

A. B., Colorado College, 1902.

GEORGE IRVING GAVETT, Assistant Professor of Mathematics.

B. S. (C. E.), Michigan, 1893.

JAMES ALVIN GILBREATH, Instructor in Physics.

B. S., Whitman, 1906; A. M., 1907.

ALLETTA GILLETTE, Extension Instructor in English.

A. B., Smith, 1907; A. M., University of Washington, 1911.

ROBERT CHENAULT GIVLER, Instructor in Psychology.

A. B., Hamline, 1906; A. M., Harvard, 1913; Ph. D., 1914.

IRVING MACKEY GLEN, Professor of Music and Dean of the College of Fine Arts.

A. B., Oregon, 1894; A. M., 1897.

IVAN WILBUR GOODNER, Professor of Law.

LL. B., Nebraska, 1897.

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

A. B., Knox, 1898.

CARL FRELINGHUYSEN GOULD, Assistant Professor of Architecture.

A. B., Harvard, 1898.

HERBERT HENRY GOWEN, Professor of Oriental History, Literature and Institutions.

St. Augustine's College (Canterbury); D. D., Whitman College, 1912.

BROB LEONARD GRÖNDAL, Instructor in Forestry.

A. B., Bethany (Kansas), 1910; M. S. F., University of Washington, 1913.

CHARLES ALEXANDRE GUERARD, Instructor in French.

B. L., University of France, 1876.

EDWIN RAY GUTHRIE, Instructor in Philosophy.

A. B., Nebraska, 1907; A. M., 1910; Ph. D., Pennsylvania, 1912.

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

A. B., Bowdoin, 1893; A. M., 1894; Ph. D., Johns Hopkins, 1897.

DAVID CONNOLLY HALL, University Health Officer and Director of Physical Education for Men.

Ph. B., Brown, 1901; Sc. M., Chicago, 1903; M. D., Rush Medical College, 1907.

ROSSELL GRAY HAM, Instructor in English.

B. L., California, 1914.

CHARLES WILLIAM HARRIS, Associate Professor of Civil Engineering.

B. S. (C. E.), University of Washington, 1903; C. E., Cornell, 1905.

JOSEPH BARLOW HARRISON, Instructor in English.

A. B., University of Washington, 1910; A. B., Oxford, 1913.

CHARLES LOUIS HELMLINGE, Assistant Professor of French.

B. Ph., Wallace College (Ohio), 1911; A. M., University of Washington, 1915.

WILLIAM ELMER HENRY, Librarian and Director of the Department of Library Economy.

A. B., Indiana, 1891; A. M., 1892.

FRANCES GRANT HEVERLO, Instructor in Home Economics.

Ph. B., Chicago, 1908.

FRANCES EDITH HINDMAN, Instructor in Pharmacy and Assistant State Chemist and Bacteriologist.

Ph. C., University of Washington, 1910; B. S., 1912; M. S., 1914.

HANS JACOB HOFF, Assistant Professor of German.

A. B., Bethany (Kansas), 1901; Ph. D., Illinois, 1908.

JOHN WILLIAM HOTSON, Assistant Professor of Botany.

A. B., McMaster, 1901; A. M., 1902; Ph. D., Harvard, 1913.

MARY HUBBARD, Instructor in Library Economy.

A. B., Western College for Women, 1896; B. L. S., Illinois, 1913.

GEORGE MILTON JANES, Instructor in Political and Social Science.

B. Litt., Dartmouth, 1901; S. T. B., Harvard, 1902; A. B., Middlebury, 1903; A. M., Harvard, 1910; Ph. D., Johns Hopkins, 1913.

JOEL MARCUS JOHANSON, Assistant Professor of English.

A. B., University of Washington, 1904.

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

Ph. C., Michigan, 1896; B. S., 1900; Ph. D., 1903.

DALLAS DEVELLO JOHNSON, Assistant Professor of Education.

A. B., Iowa State Teachers' College, 1914; A. M., Columbia, 1915.

ETHEL DOROTHY JOHNSON, Instructor in Physical Education.

A. B., Nebraska, 1913.

ORSON BENNETT JOHNSON, Professor Emeritus of Zoology.

LL. B., Union College Law School, 1869.

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

A. B., University of Washington, 1912.

NANNIE BELLE JUDY, Assistant Professor of Home Economics.

Certificate, Teachers' College, 1910.

FRANK GEORGE KANE, Professor of Journalism.

A. B., Michigan, 1908.

SANDY MORROW KANE, Instructor in Metalwork.

FRED WASHINGTON KENNEDY, Assistant Professor and Director of the Journalism Laboratories.

TREVOR KINCAID, Professor of Zoology.

B. S., University of Washington, 1899; A. M., 1901.

BURT PERSONS KIRKLAND, Associate Professor of Forestry.

A. B., Cornell, 1905.

FRIEDRICH KURT KIRSTEN, Assistant Professor of Electrical Engineering.

B. S., University of Washington, 1909; E. E., 1914.

PAUL JEHU KRUSE, Instructor in Education.

B. A., Iowa, 1906; A. M., University of Washington, 1913.

CHARLES GUSTAVE PAUL KUSCHKE, Instructor in Mathematics.

Graduate in Mechanical Engineering, Mittweida (Saxony) Technikum; A. M., Columbia, 1908; Ph. D., California, 1912.

***HENRY LANDES**, Professor of Geology and Mineralogy and Dean of the College of Science.

A. B., Indiana, 1892; A. B., Harvard, 1892; A. M., 1893.

SETH CHAPIN LANGDON, Instructor in Chemistry.

B. S., Northwestern, 1911; A. M., University of Washington, 1913; Ph. D., 1915.

HARVEY LANTZ, Professor of Law.

Ph. B., De Pauw, 1888; A. M., 1891; LL. B., Kent Law School, 1893.

FRANK JOSEPH LAUBE, Instructor in Political and Social Science.

A. B., Wisconsin, 1899; A. M., University of Washington, 1913.

MORRIS MORGAN LEIGHTON, Instructor in Geology.

A. B., Iowa, 1912; M. S., 1913.

HORACE HARDY LESTER, Instructor in Physics.

A. B., Minnesota, 1906; A. M., University of Washington, 1912; Ph. D., Princeton, 1915.

ARTHUR WILSON LINTON, Associate Professor of Pharmacy.

Ph. G., Highland Park, 1902; B. S., Michigan, 1909; M. S., University of Washington, 1915.

EDGAR ALLEN LOEW, Assistant Professor of Electrical Engineering.

B. S. E. E., Wisconsin, 1906.

HERBERT GALEN LULL, Professor of Education.

A. B., Michigan, 1904; A. M., University of Washington, 1911; M. Pd. (Hon.), Michigan State Normal College, 1912; Ph. D., California, 1912.

***RALPH HASWELL LUTZ**, Instructor in History.

A. B., Stanford, 1906; LL. B., University of Washington, 1907; A. M., Ph. D., Heidelberg (Germany), 1910.

EDWARD McMAHON, Associate Professor of American History.

Ph. B., University of Washington, 1898; A. M., Wisconsin, 1907.

THERESA SCHMID McMAHON, Assistant Professor of Political and Social Science.

A. B., University of Washington, 1899; A. M., 1901; Ph. D., Wisconsin, 1909.

FREDERICK ROBERTSON MACAULAY, Instructor in Economics.

A. B., Colorado, 1909; A. M., 1910; LL. B., 1911.

HORACE JAMES MACINTIRE, Assistant Professor of Mechanical Engineering.

S. B., Massachusetts Institute of Technology, 1905; M. M. E., Harvard, 1911.

* Absent on leave, 1915-16.

CARL EDWARD MAGNUSSON, Professor of Electrical Engineering.

B. E. E., Minnesota, 1896; M. S., 1897; E. E., 1905; Ph. D., Wisconsin, 1900.

*CHARLES CULBERTSON MAY, Instructor in Civil Engineering.

B. S. (C. E.), University of Washington, 1910.

EDMOND STEPHEN MEANY, Professor of History.

B. S., University of Washington, 1885; M. S., 1899; M. L., Wisconsin, 1901.

FREDERICK WILLIAM MEISNEST, Professor of German.

B. S., Wisconsin, 1893; Ph. D., 1904.

JESSIE BEE MERRICK, Director of Physical Education for Women.

Ph. B., Wisconsin, 1904; B. S., Columbia, 1907.

JOHN WILLIAM MILLER, Assistant Professor of Civil Engineering.

B. S. (C. E.), Nebraska, 1905.

LOREN DOUGLAS MILLIMAN, Associate Professor of English.

A. B., Michigan, 1890.

CHARLES CHURCH MORE, Professor of Civil Engineering.

C. E., Lafayette, 1898; M. C. E., Cornell, 1899; M. S., Lafayette, 1901.

ROBERT EDOUARD MORITZ, Professor of Mathematics and Astronomy.

B. S., Hastings, 1892; Ph. M., Chicago, 1896; Ph. D., Nebraska, 1901; Ph. N. D., Universitaet Strassburg, 1902.

†FRANK MARION MORRISON, Associate Professor of Mathematics.

A. B., Michigan, 1892; Ph. D., Chicago, 1913.

LEWIS IRVING NEIKIRK, Assistant Professor of Mathematics.

B. S., Colorado, 1898; M. S., 1901; Ph. D., Pennsylvania, 1903.

CHARLES EDWARD NEWTON, Assistant Professor of Civil Engineering.

B. S., Michigan College of Mines, 1906; E. M., 1907.

CAROLINE HAVEN OBER, Professor of Spanish.

JOSEPH GRATTAN O'BRYAN, Lecturer on Law.

A. B., Jesuit College (Denver), 1893.

FREDERICK ARTHUR OSBORN, Professor of Physics and Director of Physics Laboratories.

Ph. B., Michigan, 1896; Ph. D., 1907.

* Resigned, January 1, 1916.

† Absent on leave, second semester, 1915-16.

HJALMAR LAURITS OSTERUD, Instructor in Zoology.

A. B., University of Washington, 1909; A. M., 1910.

EARL LEROY PACKARD, Instructor in Geology.

A. B., University of Washington, 1911; A. M., 1912; Ph. D., California, 1915.

FREDERICK MORGAN PADEFORD, Professor of English.

A. B., Colby, 1896; A. M., 1899; Ph. D., Yale, 1899.

VERNON LOUIS PARRINGTON, Professor of English.

A. B., Harvard, 1893; A. M., Emporia, 1895.

WILLIAM TAYLOR PATTEN, Captain, U. S. A., Retired, Professor of Military Science and Tactics.

Graduate, United States Military Academy, 1899; Graduate, Infantry and Cavalry School, Fort Leavenworth, 1905.

OTTO PATZER, Associate Professor of French.

B. L., Wisconsin, 1898; M. L., 1899; Ph. D., 1907.

EARL MILLIRON PLATT, Instructor in Pharmacy.

Ph. C., University of Washington, 1911; B. S., 1914.

ARTHUR RAGAN PRIEST, Professor of Debating and Dean of Men.

A. B., DePauw, 1891; A. M., 1894.

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

B. S., Columbia, 1912.

GINO ARTURO RATTI, Assistant Professor of French.

A. B., Middlebury, 1907; A. M., 1909; Docteur de l'Universite de Grenoble, 1911.

MARY FREDERICKA RAUSCH, Assistant Professor of Home Economics in the Extension Division.

B. S., Colorado State College, 1908.

OLIVER HUNTINGTON RICHARDSON, Professor of European History.

A. B., Yale, 1889; A. M., Ph. D., Heidelberg (Germany), 1897.

GEORGE BURTON RIGG, Assistant Professor of Botany.

B. S., Iowa, 1896; B. D., 1899; A. M., University of Washington, 1909; Ph. D., Chicago, 1914.

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

A. B., Stanford, 1899.

OTTO DIEDRICH ROHLFS, Instructor in Mining in the Short Session.

E. M., Columbia, 1905.

WALTER EDWARD ROLOFF, Instructor in German.

A. B., Northwestern, 1904; A. M., 1905; Ph. D., Wisconsin, 1912.

GLENOLA BEHLING ROSE, Instructor in Chemistry.

B. S., Chicago, 1913; M. S., University of Washington, 1915.

ROBERT EVSTAFIEFF ROSE, Assistant Professor of Chemistry.

Ph. D., Leipzig, 1903.

MORITZ ROSEN, Assistant Professor of Music.

Graduate, Warsaw Conservatory, Russia.

ELIZABETH ROTHERMEL, Instructor in Home Economics.

A. B., California, 1899; A. M., Columbia, 1913.

HARRY KELLEY RUBEN, Instructor in Civil Engineering.

B. S. (C. E.), Illinois, 1905.

LUIS A. SANTANDER, Instructor in Spanish.

B. S., and Ph. B., University of Santiago, Chile, 1894; LL. B., 1898;
Licenciate in Laws, 1899.

EDWIN JAMES SAUNDERS, Assistant Professor of Geology.

A. B., Toronto, 1896; A. M., Harvard, 1907.

WILLIAM SAVERY, Professor of Philosophy.

A. B., Brown, 1896; A. M., Harvard, 1897; Ph. D., 1899.

NEWELL WHEELER SAWYER, Instructor in English.

Ph. B., Dickinson, 1908; A. M., Pennsylvania, 1909.

ATTILIO FILIPPO SBEDICO, Assistant Professor of French and Italian.

Licenza Liceale, 1903; A. M., Pennsylvania, 1907; Ph. D., 1909.

HAROLD OGDEN SEXSMITH, Instructor in Architecture.

Armour Institute of Technology; Chicago Art Institute.

THOMAS KAY SIDEY, Associate Professor of Latin and Greek.

A. B., Toronto, 1891; Ph. D., Chicago, 1900.

LLOYD LEROY SMAIL, Instructor in Mathematics.

A. B., University of Washington, 1911; A. M., 1912; Ph. D., Columbia,
1913.

CHARLES WESLEY SMITH, Reference Librarian and Associate Professor of Library Economy.

A. B., Illinois, 1903; B. L. S., 1905.

ELI VICTOR SMITH, Assistant Professor of Zoology.

Ph. B., Illinois Wesleyan, 1907; A. M., University of Washington,
1909; Ph. D., Northwestern, 1911.

HARRY EDWIN SMITH, Assistant Professor of Economics.

A. B., DePauw, 1906; Ph. D., Cornell, 1912.

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

A. B., Missouri, 1886; LL. B., 1887; Ph. D., Michigan, 1894.

STEVENSON SMITH, Professor of Psychology.

A. B., Pennsylvania, 1904; Ph. D., 1909.

WALTER EDMUND SQUIRE, Assistant Professor of Music.

Graduate in Music, Northwestern, 1906.

EDWIN AUGUSTUS START, Director of University Extension Division.

A. B., Tufts, 1884; A. M., Harvard, 1893.

***RUSSELL OSBORNE STIDSTON**, Instructor in English.

A. B., Stanford, 1911; A. M., 1912; Ph. D., 1914.

EDWIN LEONARD STRANDBERG, Instructor in Civil Engineering.

B. S. (C. E.), University of Washington, 1912.

CHARLES MUNRO STRONG, Assistant Professor of Spanish.

A. B., Missouri, 1897; A. M., 1900.

***GRACE LOOMIS TERRY**, Instructor in Music.

B. Mus., Knox Conservatory of Music, 1895.

DAVID THOMSON, Professor of Latin.

A. B., Toronto, 1892.

LOUISE HOWE TIFFANY, Instructor in Music.

Graduate, Knox Conservatory, 1914.

CONRAD TRESSMANN, Instructor in German.

A. B., Minnesota, 1906; Ph. D., Pennsylvania, 1913.

HARLAN LEO TRUMBULL, Instructor in Chemistry.

A. B., University of Washington, 1907; A. M., 1908; Ph. D., Chicago, 1911.

GEORGE WALLACE UMPHREY, Associate Professor of Spanish.

A. B., Toronto, 1899; A. M., Harvard, 1901; Ph. D., Harvard, 1905.

LOUISE VAN OGLE, Instructor in Music.

Theoretical work, Dr. Bridge, Chester, England; Richter, Leipzig;
Piano, Godowsky, Berlin; Lhevinne, Berlin; Harold Bauer, Paris.

ALBERT FRANZ VENINO, Assistant Professor of Music.

New York College; Pupil, Stuttgart Conservatory of Music; Pupil of
Leschetizky.

EDWIN JOHN VICKNER, Professor of the Scandinavian Languages.

A. B., Minnesota, 1901; A. M., 1902; Ph. D., 1905.

* Absent on leave, 1915-16.

ANNE VOELKER, Instructor in Music.

Oberlin, Michigan, Pupil of Walter Squire.

FRANK MELVILLE WARNER, Assistant Professor of Engineering Drawing.

B. S. (M. E.), Wisconsin, 1907.

LUTHER EWING WEAR, Instructor in Mathematics.

A. B., Cumberland, 1902; Ph. D., Johns Hopkins, 1913.

CHARLES EDWIN WEAVER, Assistant Professor of Geology.

B. S., California, 1904; Ph. D., 1907.

JOHN WEINZIRL, Professor of Bacteriology.

B. S., Wisconsin, 1896; M. S., 1899; Ph. D., 1906.

***CHAUNCEY WERNECKE**, Instructor in Civil Engineering.

B. S. (C. E.), University of Washington, 1910.

LEE A. WHITE, Assistant Professor of Journalism.

A. B., Michigan, 1910; A. M., 1911.

WALTER BELL WHITTLESEY, Instructor in French.

A. B., University of Washington, 1907; A. M., 1909.

HENRY SLATER WILCOX, Instructor in Psychology.

B. S., Trinity (Hartford), 1908; A. M., Harvard, 1911.

GEORGE SAMUEL WILSON, Associate Professor of Mechanical Engineering.

B. S., Nebraska, 1906.

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

B. S., Wisconsin, 1902; M. F., Yale, 1907.

THOMAS WITHERS, Instructor in English.

C. E., Virginia Military Institute, 1870.

COMMITTEES OF THE FACULTY

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

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

APPOINTMENTS: Deans Bolton, Priest and Coldwell; major professors.

ASSEMBLY: Professors Kane, Glen and Benson.

* Appointed, February 1, 1916.

ATHLETICS: Deans Roberts and Priest; Professors Hall, Moritz, Densmore and Dehn.

GRADUATION: Professors Byers, Magnusson, Lantz, Anderson, Kirkland, Custis and Mr. Stone.

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

HYGIENE AND SANITATION: Professors Hall, Weinzirl, Allison, Stevenson Smith and Ralitt.

PETITIONS: The Deans of the Colleges and Schools.

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

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

PUBLICATIONS: Professors Henry, Millman, Kane, Umphrey, Saunders and Start.

RELATIONS WITH SECONDARY SCHOOLS: Deans Bolton and Haggett; Professors Meisnest, Padelford, Frye and Mr. Stone.

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

SCHEDULE: Professors Wilson, Morrison, Rose, Johanson and H. E. Smith.

SPECIAL STUDENTS: The Deans and the Registrar.

STUDENT AFFAIRS: Professor Thomson, Deans Coldwell and Priest; Professors McMahon, Cockerill and Loew.

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

GENERAL INFORMATION

HISTORICAL

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

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

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

GOVERNMENT

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

ENDOWMENT AND SUPPORT.

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

The legislative maintenance appropriation for the biennium 1915-17 amounts to \$1,110,000.00. This is derived from the millage tax of 47½ hundredths of one mill, together with sundry receipts from property income.

The legislature of 1915 also appropriated \$150,000.00 for a Home Economics Building and further provided for a permanent building fund to be derived from tuition and matriculation fees,

together with rental receipts from the old University Campus site; this fund to be limited for the present biennium to \$150,000.00.

The property of the University includes:

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

(2) The old University site, consisting of the tract of 8.32 acres, donated in 1861 by Arthur Denny and wife; and 1.67 acres donated by C. C. Terry and wife and Edward Lander. This "ten-acre tract" is situated in the very heart of Seattle, and is rapidly enhancing in value.

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

BEQUESTS

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

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

EQUIPMENT

GROUNDS

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

BUILDINGS

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

The Home Economics Building, now under course of construction, will be completed by the fall registration of 1916.

LIBRARY FACILITIES

The general library contains 72,322 volumes, and receives 502 current magazines. About 6,000 volumes a year are being added.

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

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

THE MUSEUM

By an enactment of the Legislature of the state of Washington in 1899 the museum at the University of Washington was "constituted the State Museum and the depository for the preser-

vation and exhibition of documents and objects possessing an historical value, of material illustrating the fauna, flora, anthropology, mineral wealth, and natural resources of the state, and for all documents and objects whose preservation will be of value to the student of history and the natural sciences."

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

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

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

Through the generosity of Mrs. A. M. H. Ellis, the museum recently came into possession of some old Italian laces, mosaics, a piece of Grecian jewelry of prehistoric design, and a number of textiles.

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

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

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

LABORATORIES

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

BOTANY LABORATORIES

The botanical and bacteriological laboratories are on the third floor of Science Hall. They occupy about 5,000 feet of floor space divided as follows: Three large laboratories of about 1,200 square feet each; four small laboratories, one for physiology, one for research, one for taxonomy and agriculture, one for a media-room for bacteriology. The laboratories are fitted with the apparatus and conveniences usual for the work.

CHEMISTRY LABORATORIES

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

CIVIL ENGINEERING LABORATORIES

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

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

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

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

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

ELECTRICAL ENGINEERING LABORATORIES

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

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

FORESTRY LABORATORIES

DENDROLOGY. Individual lockers, compound microscopes, gas and water. An herbarium of fruits, twigs and trunk sections of trees is well under way. An area has been set aside and a beginning has been made toward the establishment of an arboretum.

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

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

SILVICULTURE. A forest tree nursery is provided on the campus. The forests about Seattle offer wide opportunities for other practical studies and demonstrations.

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

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

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

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

WOOD DISTILLATION. A wood distillation plant of commercial size operated in conjunction with the U. S. Forest Service.

GEOLOGY LABORATORIES

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

For work in mineralogy and petrography extensive collections of minerals and rocks are supplied; and for paleontological study collections of fossils and casts represent the principal geological

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

MECHANICAL ENGINEERING LABORATORIES

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

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

MINING AND METALLURGICAL LABORATORIES

The laboratories of the College of Mines are housed in a two-story brick building. One section, 79 by 49 feet, contains the fire assay desks and furnace rooms, a crushing and sampling laboratory, metallurgical laboratories, balance rooms, and drafting and lecture rooms. The other section of the building, 65 by 40 feet, contains the mining and milling machinery, storage room for ores, and settling tanks. An Otis elevator runs the entire height of the building. An addition contains a locker and shower bathroom and a small laboratory for metallographic work.

The United States Mine Rescue Training Station occupies a separate building nearby. The "smokeroom" fitted with track

and car, overcast airway and smudge floors, is the largest of its kind in the country. Several sets of rescue and resuscitation apparatus are kept on hand for practice as well as for use in mine rescue work, or emergencies such as asphyxiation, drowning, electric shock, and the like. A lamp testing machine has recently been installed in a room sixteen feet square for the purpose of testing safety lamps in mixtures of gas and air under varying conditions of velocity. This machine is a duplicate of the one at the Pittsburgh laboratory of the United States Bureau of Mines.

The equipment of the assaying and metallurgical laboratories consists of electric, gas, coal, coke, gasoline, and fuel-oil fired furnaces, a reverberatory furnace, pyrometers, cyanide tanks, amalgamating machinery, flotation cells, calorimeters, etc. The mining and milling laboratory contains an air compressor, rock drills, aerial tram, loading and tamping models, breakers, rolls, stamp mill, classifiers, jigs, concentrating tables and coal washing equipment.

PHARMACY AND MATERIA MEDICA LABORATORIES

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

PHYSICS

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

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

THE BUREAU OF TESTING. The bureau is equipping itself as rapidly as possible to meet the demand for a bureau where scientific instruments may be accurately calibrated and tested. The

standards of the bureau will be calibrated by our National Bureau of Standards at Washington, D. C.

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

PSYCHOLOGY LABORATORY

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

ZOOLOGY LABORATORIES

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

OBSERVATORY

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

BAILEY AND BABETTE GATZERT FOUNDATION FOR CHILD WELFARE

On December 21, 1910, this foundation was established by a gift to the University of thirty thousand dollars made by Sigmund Schwabacher and by the executor of the will of the late Abraham Schwabacher. The purpose of the foundation is (1)

to conduct a laboratory for the mental and physical examination of children in order to determine their individual defects and aptitudes and, in accordance with the results of this examination, to suggest the best means of education and treatment, (2) to assist in establishing child welfare agencies and child study laboratories throughout the state, and (3) to carry on research in child psychology.

In December, 1915, the Bailey and Babette Gatzert Foundation for Child Welfare was created a separate department of the University of Washington.

BUREAU OF INDUSTRIAL RESEARCH

A bureau of industrial research has been established for the purpose of cooperating with the industries of the state in the study of industrial problems. Such problems may be referred to the University as industrial fellowships. Through the bureau the various departments of the University cooperate in a study of a given problem.

It is believed that mutual benefit is derived from such cooperation between the University and the industries. The University benefits through the contact of its faculty with industrial problems and the presence of graduate students working on such problems. The industries benefit through research work done at the University and the special training given to men who become interested in the particular problems of a given industry.

Two industrial fellowships have been established for the year 1916-17. One problem deals with the iron and steel industry, while the other takes up a study of wood preservation. Inquiries regarding the work of the Bureau should be addressed to Henry K. Benson, Director.

ENTRANCE INFORMATION

LOCATION OF THE UNIVERSITY

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

INSTRUCTION OFFERED BY THE UNIVERSITY

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

REGISTRATION

Both old and new students will be registered on the first and second days of each semester, Monday and Tuesday, September 11 and 12, 1916, and January 29 and 30, 1917.

LATE REGISTRATION: In order to enforce promptness in the matter of taking up University work at the opening of the semester a penalty of \$1.00 is imposed for registration after the regular registration days. The same penalty is imposed for

changes in election after the beginning of regular class work, except where such changes are made upon the initiative of the student's instructor or class officer. An excuse from the payment of the penalty must in each case be endorsed by the dean of the college in which the student is enrolled.

No student will be allowed to register after the first week of the semester without qualifying by the aid of an approved tutor. (This rule does not apply to graduate students.)

Except in the cases of students who have been granted a leave of absence, or withdrawn in good standing, during the preceding semester of residence, no student may register in the University after the third week of a semester without special permission from the Board of Deans.

ENGLISH EXAMINATIONS: Examinations in composition for all freshmen will be held in Denny Hall, on Thursday, Friday and Saturday preceding registration at 9 and 1 o'clock. The regular fee of \$1.00 for special examination is charged for any examination in composition taken after the announced dates.

ADMISSION TO THE UNIVERSITY

CORRESPONDENCE AND CREDENTIALS

All correspondence regarding the admission of students to the residence courses of the University as well as the requirements for graduation should be addressed to the Recorder. Every applicant for admission in September, 1916, is requested to forward his credentials as early in the summer as possible, at the same time indicating the college or school of the University that he intends to enter.

METHODS OF ADMISSION

Students are admitted to the residence work of the University by certificate or by examination, a graduate of an accredited* four-year secondary school only being admitted without examination.


(a) ADMISSION BY CERTIFICATE

A graduate of an accredited secondary school, whose course has covered the requirements for entrance as either a regular or an unclassified student (see pages 42-45) will be admitted upon recommendation of his principal and the presentation of a satis-

* For list of accredited secondary schools see page 48.

factory, official certificate. Since the school diplomas do not give the necessary information, they cannot be accepted for this purpose. The principals of all accredited high schools in the state are furnished with the official blanks, which may also be obtained from the Recorder's office.

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

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

(b) ADMISSION ON EXAMINATION

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

Entrance examinations and examinations for exemption from college English are held at the University on Thursday, Friday and Saturday preceding the opening of each semester.

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

Certificates of successful examinations before the College Entrance Examination Board will be accepted in lieu of matriculation examinations conducted by the University of Washington.

STATUS OF STUDENTS

Students are classified as graduate and undergraduate. Undergraduates are classed as regular students (freshmen, sophomores, juniors, and seniors), unclassified students, and special students.

ADMISSION TO FRESHMAN STANDING.*

Beginning with September, 1916, freshman standing in the University will be granted to any recommended graduate of an

* Until September, 1918, students who have been planning their secondary school work to meet the old entrance requirements, may be admitted under these requirements as stated in the catalogue of 1914-15.

accredited secondary school who presents fifteen units† of credit, distributed as follows:

- 3 units of English.
- 2 units of mathematics (or 3 units if desired).
- 3 units in *one* of following groups (or 2 units, if 3 units of mathematics are presented):
 - (a) Latin and Greek (not less than 2 units of Latin or 1 of Greek counted).
 - (b) Modern foreign language (at least 2 units in *one* language; not less than 1 unit counted in any language).
 - (c) History, civics, economics (at least one unit to form a year of consecutive work in history).
 - (d) Physics, chemistry, botany, zoology, general biology, physiology, physical geography or geology. (Not less than 1 unit counted in physics, chemistry, or general biology. No science counted as applying on this requirement unless it includes a satisfactory amount of laboratory work.)
- 2 units selected from the above groups.
- 5 units selected from any subjects accepted by an approved high school for its diploma; not more than 4, however, to be in vocational subjects.

A candidate who fulfills these requirements will be admitted to freshman standing in any of the colleges of the University. However, if he has not taken in high school certain of the subjects recommended for admission to the college that he may decide to enter, he will take them in the University. These subjects may apply toward a degree, as far as elective courses make this practicable. In certain curricula, however, these subjects must be taken in addition to the prescribed subjects.

Advanced algebra and elementary physics will not be offered in the University in 1916-17.

Entrance with condition, to freshman standing, is not permitted. Excess admission credit does not establish any presumptive claim for advanced standing, unless the student has taken a post-graduate course in the high school of at least one semester.

† 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.

SUBJECTS RECOMMENDED FOR ADMISSION TO THE
SEVERAL COLLEGES

COLLEGES OF LIBERAL ARTS AND EDUCATION

- 3 units of English
- 1 unit of algebra
- 1 unit of plane geometry
- 2 units in *one* foreign language
- 1 unit in *one* of the following: physics, chemistry, botany, zoology
- 1 unit in a history
(or $\frac{1}{2}$ unit U. S. history, and $\frac{1}{2}$ unit civics)

COLLEGE OF SCIENCE

- 3 units of English
- $1\frac{1}{2}$ units of algebra
- 1 unit of plane geometry
- 2 units in *one* foreign language
- 1 unit of physics
- 1 unit in *one* of the following: chemistry, botany, zoology, general biology, physical geography, geology, physiology. (Must include satisfactory amount of laboratory work).
- 1 unit in a history (or $\frac{1}{2}$ unit U. S. history and $\frac{1}{2}$ unit civics)

COLLEGE OF ENGINEERING

- 3 units of English
- $1\frac{1}{2}$ units of algebra
- 1 unit of plane geometry
- $\frac{1}{2}$ unit of solid geometry
- 1 unit of physics

COLLEGE OF MINES

- 3 units of English
- $1\frac{1}{2}$ units of algebra
- 1 unit of plane geometry
- $\frac{1}{2}$ unit of solid geometry
- 2 units in *one* foreign language
- 1 unit in a history (or $\frac{1}{2}$ unit U. S. history and $\frac{1}{2}$ unit civics)
- 1 unit of physics
- 1 unit of chemistry (for admission to four-year course only)

COLLEGE OF FINE ARTS (MUSIC, ARCHITECTURE, DRAWING)

General recommended subjects are the same as for the colleges of Liberal Arts and Education.

Music students must present the equivalent of 4 units in music.

Architecture students should present 1 unit each in physics and chemistry, and one-half unit each in trigonometry and free-hand drawing.

As all curricula in Fine Arts require at least four years of foreign language, it is desirable that as much of this work as possible be taken in high school.

COLLEGE OF FORESTRY

- 2 units of a foreign language
- 3 units of English
- 1½ units of algebra
- 1 unit of plane geometry
- ½ unit of solid geometry
- 1 unit of physics
- 1 or ½ unit of botany

COLLEGE OF PHARMACY

For the three-year course:

- 3 units of English
- 1 unit of algebra
- 1 unit of plane geometry

For the four-year course:

- 3 units of English
- 1 unit of algebra
- 1 unit of plane geometry
- 2 units in one foreign language
- 1 unit in one of the following: physics, chemistry, botany, zoology, physiology, general biology. (Must include satisfactory amount of laboratory work).

SCHOOL OF LAW

(See "admission to advanced undergraduate standing," page 47.)

ADMISSION TO UNCLASSIFIED STANDING

A graduate of an accredited secondary school who presents fifteen units in subjects accepted by his school for graduation, but who does not meet the requirements for admission to freshman standing may, upon recommendation of his principal, be admitted as an unclassified student. Such a student will be allowed to enroll for those courses only for which he has had adequate preparation. By virtue of his classification, he is not a candidate for a degree, but he may ultimately become a candidate for a degree by fulfilling as part of his college prescriptions all the requirements for entrance to and graduation from the college in which he is registered.

In special cases, a student who is entitled to freshman standing, but who does not desire to become a candidate for a degree, may, with the consent of his dean, be registered as an unclassified student.

ADMISSION OF SPECIAL STUDENTS

Under certain regulations a student who cannot be admitted to freshman standing or as an unclassified student, may be admitted, classified as a special student, and allowed to register for courses for which he shows special preparation.

The number of such students admitted is necessarily limited by the facilities of the University. The regulations governing the admission of special students are as follows:

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

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

3. All available certified credits for previous school work must be submitted to the Recorder and an application blank for admission as a special student filled out, giving, in addition to other information, the kind of work desired, the reasons for desiring such work, and, when no credits can be presented, a detailed statement of any previous educational work and practical experience.

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

5. Registration as a special student is for one semester only. Re-registration will be refused if the student has not shown satisfactory earnestness and definiteness of purpose, or if his work has not been good.

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

ADMISSION TO ADVANCED UNDERGRADUATE STANDING

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

ADMISSION TO THE SCHOOL OF LAW

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

**ADMISSION OF NORMAL SCHOOL GRADUATES TO ADVANCED STANDING
IN THE COLLEGES OF LIBERAL ARTS, SCIENCE AND EDUCATION**

Graduates of the advanced courses of approved normal schools who have completed two years of normal work in addition to a four-year high school course fully covering college entrance requirements receive 48 scholastic credits plus 8 in physical training. For graduation with the degree of Bachelor of Arts or Bachelor of Science, they must satisfy the following specific requirements: Ancient foreign language or literature, 6 hours; a modern foreign language, 8 hours; laboratory courses in physics, or chemistry, or astronomy, 8 hours; laboratory courses in botany or geology, or zoology, 8 hours; economics, or sociology, or American government, 6 hours; philosophy, 8 hours; major subject, 24 hours; elective, 4 hours. For the degree of Bachelor of Education, they must earn 74 hours of credit, covering the requirements of the College of Education. On all these points, however, they may have the benefit of the stated exemptions for entrance subjects, and they may also be excused from any prescribed subject for which they have completed a fair equivalent in the normal school, such excuse to be granted only upon the recommendation of the head of the department concerned. In cases of exemption, an equal amount of work in elective subjects is required.

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

ADMISSION TO GRADUATE STANDING

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

LIST OF ACCREDITED SCHOOLS

I. PUBLIC HIGH SCHOOLS

Aberdeen	Eatonville	Mabton
Almira	Edmonds	Malden
Anacortes	Ellensburg	Marysville
Arlington	Elma	Medical Lake
Asotin	Endicott	Monroe
Auburn	Enumclaw	Montesano
Bellingham	Ephrata	Mossy Rock
Whatcom	Everett	Mount Vernon
Fairhaven	Fairfield	Newport
Blaine	Farmington	Nooksack
Bothell	Ferndale	North Bend
Bremerton (U. H.)	Friday Harbor	North Yakima
Buckley	Garfield	Oakesdale
Burlington	Goldendale	Odessa
Burton (U. H.)	Grandview	Okanogan
Camas	Granger	Olympia
Cashmere	Granite Falls	Omak
Castle Rock	Harrington	Orting
Centralia	Hillyard	Outlook
Chehalis	Hoquiam	Palouse
Chelan	Kalama	Pasco
Cheney	Kelso	Pe Ell
Chewelah	Kennewick	Pomeroy
Clarkston	Kent	Port Angeles
Cle Elum	Kirkland	Port Townsend
Colfax	Kittitas	Prescott
Colville	La Conner	Prosser
Conconully	Latah	Pullman
Coupeville	Laurel	Puyallup
Creston	Leavenworth	Raymond
Davenport	Lebam	Reardan
Dayton	Lind	Renton
Deer Park	Lynden	Republic

Richland	South Bend	Toppenish
Ridgefield	Spokane	Twisp
Ritzville	Lewis and Clark	Vancouver
Rockford	North Central	Vashon
Rosalia	Sprague	Waitsburg
Roslyn	Stanwood	Walla Walla
Roy	Stevenson	Wapato
Seattle	St. John	Washougal
Ballard	Sultan (U. H.)	Waterville
Broadway	Sumas	Wenatchee
Franklin	Sumner	White Salmon
Lincoln	Sunnyside	Wilbur
Queen Anne	Tacoma	Wilson Creek
West Seattle	Stadium	Winslow
Sedro Woolley	Lincoln Park	Winlock
Selah	Tekoa	Woodland
Shelton	Tenino	Douglas, Alaska
Snohomish	Tolt	Juneau, Alaska

II. OTHER SECONDARY SCHOOLS

Adelphia College, Seattle (academic department)
 Annie Wright Seminary, Tacoma
 Brunot Hall, Spokane
 Holy Names Academy, Seattle
 Holy Names Academy, Spokane
 Pacific Lutheran Academy, Parkland
 Seattle Pacific College, Seattle, (academy)
 St. Helen's Hall, Portland, Oregon
 St. Martin's College, Lacey (high school department)
 St. Nicholas School, Seattle
 St. Paul's Academy, Walla Walla
 College of Puget Sound, Tacoma (preparatory department)
 Walla Walla College Academy, Walla Walla

III. SCHOOLS OUTSIDE OF WASHINGTON

Graduates of secondary schools outside of Washington will be admitted on the same terms as graduates of accredited schools in Washington, provided the school in question is fully accredited, (1) by the North Central Association of Schools and Colleges, (2) by the New England College Entrance Certificate Board, or (3) by a leading state university whose standards of admission are practically the same as those of the University of Washington.

DEGREES

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

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

GRADUATE DEGREES

Courses adapted to the needs of students who wish to earn the M. A. degree are offered in nearly all departments of the colleges of Liberal Arts and Science. In three departments, Chemistry, English, and Botany, courses are offered leading to the Ph. D. degree. Courses leading to the degree of M. S. are offered in the College of Engineering, the College of Mines, the College of Forestry and the College of Pharmacy. For further information concerning the requirements for graduate degrees, see the bulletin of the Graduate School.

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 majoring in his department as he thinks may be eligible for honors.

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

THE UNIVERSITY NORMAL DIPLOMAS

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

GENERAL SCHOLASTIC REGULATIONS

STUDIES

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

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

A course of two years in military training is required. All able-bodied male students except those from foreign countries, not intending to become naturalized, must take the course which by regulation of the University is required during the first and second year.

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

REGULATIONS FOR WITHDRAWAL

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

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

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

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

5. A student who withdraws from a course without first securing written permission from his instructor, endorsed by his adviser, shall be given a grade of "E" in that course.

SCHOLARSHIP STANDING

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

A student who has been dropped twice for scholastic delinquencies is ineligible for re-registration in the University at any future time, except by special permission of the Board of Deans.

(b) Any student who, in any semester, is reported as doing unsatisfactory work in more than one-quarter of his registered hours will be placed on probation for the remainder of that semester and for the following semester. During the full proba-

tionary period the student must pass in twelve hours; or in all his hours, if he is registered for less than twelve.

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

EXAMINATIONS

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

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

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

SYSTEM OF GRADES

1. The following is the system of grades:*

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

(An incomplete is given only in case the student has been in attendance and done satisfactory work to a time within two weeks of the close of the semester.)

2. Candidates for the bachelor's degrees in the colleges of Liberal Arts, Science, Education, Fine Arts and Forestry must

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

receive grades of A, B, or C in three-fourths of the credits required for their respective degrees. This rule became operative in June, 1913, and does not apply to grades given before the year 1910-11.

FRATERNITY PLEDGING

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

No student shall be initiated into a fraternity or sorority until he or she has earned 12 scholastic credits or provisional credits at this University. Work taken to remove entrance deficiencies is not counted as part of the 12 credits.

EXPENSES

TUITION

By an act of the Legislature approved by the Governor March 15, 1915, students of the University of Washington are required to pay certain matriculation and tuition fees as follows:

(a) A fee of \$10.00 to be paid by each student upon matriculation. This fee is collected once for all from each student who has not enrolled at a previous regular session of the University.

(b) A tuition of \$10.00 a semester to be paid by each student of the University.

(c) An additional tuition fee of \$12.50 a semester to be paid by each student in Law.

(d) A tuition fee of \$10.00 to be paid by each student in the following special courses: The short course in forestry, the short course in mining, the summer session, and the marine station. A student in any of these special courses of the University is not required to pay a matriculation fee.

RETURN OF TUITION FEES

The matriculation fee is not returnable to the student in whole or in part. Tuition fees are not returnable except in case of sickness or causes entirely beyond the control of the student. No portion of the fees will be returned for voluntary or enforced withdrawal after sixty days from the date of registration of the student. Students withdrawing under discipline forfeit all rights

to the return of any portion of the fees. In no case will more than one-half the fee be refunded.

FREE SCHOLARSHIPS

After one semester's residence at the University free scholarships may be granted to a certain number of students who are practically dependent upon their own resources and who have shown a capacity for University work. The appointment to a free scholarship releases the student from the payment of the general tuition charge of ten dollars a semester, but does not affect his obligation with reference to other fees. The number of free scholarships granted in any semester may not exceed ten per cent of the total attendance.

ASSOCIATED STUDENTS FEE

The Associated Students fee of five dollars is paid by every student on entering the University. See page 61.

LABORATORY DEPOSITS

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

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

ASTRONOMY, 3-4—\$1.00.

BACTERIOLOGY, 110—\$2.50; 5, 103, 104, 106, 108, 111, 112, 116, 200 and 210—\$5.00

BOTANY, 13, 14—\$2.00; 1, 2, 10, 11, 12, 23, 24, 117, 120, 125, 126, 141, 142, 143, 144, 233, 250, 251, 252, 253, 254, 261, 262—\$3.00.

CHEMISTRY, 1, 2, 3, 5, 6, 21, 22, 31, 32, 33, 41, 43, 51, 101, 102, 111, 112, 113, 121, 122, 123, 133, 135, 136, 141, 142, 144, 146, 201, 202, 211, 212, 231, 232, 250—\$10.00. (Courses 9, 10, see Pharmacy.)

CIVIL ENGINEERING, 20, 22, 27, 30, 32, 38, 55, 56, 107, 108, 167—\$3.00.

ELECTRICAL ENGINEERING, 132, 141, 156—\$2.00; 102, 105, 115, 122—\$3.00; 104, 163, 166—\$4.00.

FORESTRY, 1, 102, 303—\$1.00; 51, 52, 101, 103, 306, 309, 310, 313, 314—\$2.00.

GEOLOGY, 1-2, 3, 6, 11, 12, 21—\$1.00; 22, 121, 123, 124—\$2.00.

GYMNASIUM, \$1.00 for the year, locker and apparatus; paid by all taking one or more courses in physical education.

HOME ECONOMICS, 7, 11-12, 25, 57, 63-64, 66—\$1.00; 61,—\$1.50; 20, 55, 72—\$2.00; 1-2, 53, 54—\$3.00; 4, 5, 51—\$4.00.

JOURNALISM, 1-2, 3-4, 5-6, 7-8, 101, 102, 103, 105-106, 107-108, 111-112, 115-116, 121-122—\$2.00.

MECHANICAL ENGINEERING, 1, 2, 4, 53, 54, 105, 106, 107, 109, 140, 141, 151, 152, 153—\$2.00.

MINES, Mining, 101, 151—\$3.00; 152, 176—\$5.00; Metallurgy, 101—\$15.00; 102, 106, 153, 160—\$10.00; 103, 151, 158—\$5.00; 162, 163, 164—\$3.00.

PHARMACY, 5, 6—\$5.00; 1, 2, 9-10, 101-102, 105-106, 111-112, 113-114—\$10.00; 103-104, 201—\$5.00 or \$10.00, according to hours. (Chemistry 9, 10—\$15.00.)

PSYCHOLOGY, 101, 102, 114—\$1.00; 1,—\$2.00.

PHYSICS, 1-2, 4, 7, 9, 51, 52, 53-54, 87, 89, 93-94, 101, 103, 105, 110, 206—\$2.50 per semester; 92, 95, 96—\$6.00 for the year.

ZOOLOGY, 11-12, 107-108—\$1.00; 1-2, 3, 4, 5-6, 7, 101, 102, 103-104, 105—\$2.00; 109-110, 201-202, 203-204—to be arranged.

SPECIAL EXAMINATIONS—A fee of \$1.00 will be charged for all examinations given outside of the regular schedule.

LATE REGISTRATION—A penalty of \$1.00 is imposed upon registration after the regular registration days.

BOARD AND ROOM

(a) In the University dormitories the room rent (\$18.00 a semester) is payable in advance and no rooms will be reserved unless paid for by August 15th. The rooms are furnished with necessary articles of plain furniture, but the student is expected to supply his own bed linen, bedding, towels, and rugs.

The price of board is nineteen dollars (\$19.00), payable monthly as the bills are rendered.

A deposit of \$19.00 (one month's board bill) is required in advance of all who board at the dining hall. This amount is exclusive of the board bill for the first month, and is applied on the bill for the last month of the college year.

All remittances should be made payable to the University of Washington, and addressed to the Bursar of the University.

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

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

CADET UNIFORM

The uniform with which the members of the cadet corps are required to provide themselves costs about sixteen dollars (\$16.00). The amount necessary to cover this cost is deposited with the Bursar of the University. The uniform is designed to be worn in place of civilian dress.

GRADUATION FEE

The fee charged to graduates is five dollars for each one receiving a baccalaureate or higher degree, or a diploma in pharmacy, and three dollars for each one receiving a teacher's diploma. This teachers' diploma fee does not include the legal registration fee of \$1.00 paid to that county school superintendent who first registers a teacher's diploma.

STUDENT HELP

A considerable number of students who have found it necessary to support themselves while at the University have been enabled to do so by securing occupation of various sorts. There is an employment bureau conducted by the Y. M. C. A. to secure work for men who have to make their own expenses. There is also a faculty committee which lends its assistance in securing aid for such students. The Y. W. C. A. in co-operation with the Dean of Women, renders a similar service for women.

Students who expect to earn a portion of their support are advised not to register for a full schedule of studies.

Every effort is made on the part of the officials of the University to aid students in their efforts to secure employment, but it is not deemed advisable for anyone to register unless he has in hand or in immediate prospect sufficient funds to maintain him for the first few months.

DEAN OF MEN

When entering the University, young men who have not fully decided on a vocation for life are urged to consult the Dean of Men. Through his office the University is attempting to direct men into vocations for which they are naturally adapted and to point out lines of work in which there is an insufficient supply of well trained men. The Dean is always ready, also, to aid students in any of their individual or group problems.

DEAN OF WOMEN

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

FELLOWSHIPS AND SCHOLARSHIPS

GRADUATE FELLOWSHIPS

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

UNIVERSITY TEACHING FELLOWSHIPS

The University each year provides for about twelve teaching fellowships in nearly as many departments. The graduate student receiving such a fellowship divides his time equally between his studies and assistance in the teaching work of the department in which he is enrolled.

THE JOHN WALTER ACKERSON SCHOLARSHIP

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

ISABELLA AUSTIN SCHOLARSHIP

The Isabella Austin scholarship for entering freshmen women was established in 1916 from the income of a fund given in memory of Isabella Austin, Dean of Women, University of Washington, 1909-1915. The award will be made to a young woman of promise on the basis of scholarship and financial need.

WOMAN'S LEAGUE SCHOLARSHIP

The Woman's League of the University of Washington offers a scholarship of one hundred dollars annually to a woman member of the junior class adjudged worthy on the basis of scholarship, financial need, and personal influence.

SENIOR SCHOLARS

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

PRIZES

FOR EXCELLENCE IN PUBLIC SPEAKING AND DEBATE

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

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

FOR ESSAYS

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

Mr. Vivian W. Carkeek, of the law class of 1901, offers an annual cash prize of twenty-five dollars for the best thesis on Washington law.

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

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

FOR ELECTRICAL ENGINEERING

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

FOR SCHOLARSHIP IN ITALIAN

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

STUDENT LOAN FUNDS

Mr. Samuel H. Hedges, of Seattle, has endowed a student loan fund, known as The David Jackson Hedges Memorial Fund in memory of the donor's son, which affords assistance by way of

emergency loans to young men of the University upon applications duly approved by the trustees of the fund.

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

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

STUDENT GOVERNMENT

As a result of action taken by the A. S. U. W. and ratified by the faculty, the plan has been adopted of having the student members of the Board of Control act as a discipline committee to deal with cases of misconduct among students. The success of this plan makes it probable that before long student government will be still further advanced.

ASSOCIATIONS AND CLUBS

ALUMNI ASSOCIATION

The officers of the Alumni Association for 1915-16 are as follows: President, Hon. King Dykeman; first-vice-president, Roy D. Pinkerton; second vice-president, A. R. Hilen; secretary, Elsa K. Dixon; treasurer, Fred E. Hamilton.

THE ASSOCIATED STUDENTS

The Associated Students of the University of Washington (incorporated) is an organization of the entire student body. The powers of government are vested by its constitution in an annually elected board of control, upon which three members of the faculty and three alumni also have seats. The board appoints a general manager, who has the financial control of all branches of athletics, musical organizations, and of contests in debate and oratory. The associated student fee of \$5.00 a year entitles the student to a subscription to the University of Washington Daily—the official student paper—free admission to all athletic, debating and oratorical contests given under the auspices of the A. S. U. W., the annual musical concert, the discounts in the co-operative bookstore, and to all the voting and other privileges of the association.

CHRISTIAN ASSOCIATIONS

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

DEPARTMENT CLUBS

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

DEBATING

There are four debating and literary societies in the University, 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.

The Pacific Coast Triangular Debating League, consisting of the Universities of Washington, Oregon, and Stanford, holds an annual triangular debate. Each institution is represented by two teams representing the affirmative and negative of the question under discussion.

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

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

MUSICAL ORGANIZATIONS

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

PHILOLOGICAL ASSOCIATION

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

HONOR SOCIETIES

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

WASHINGTON UNIVERSITY STATE HISTORICAL SOCIETY

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

COLLEGE OF LIBERAL ARTS

THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), PRESIDENT.

ARTHUR SEWALL HAGGETT, PH. D. (Johns Hopkins), Professor of Greek; DEAN.

EDMOND STEPHEN MEANY, M. L. (Wisconsin), Professor of History.

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

CAROLINE HAVEN OBER, Professor of Spanish.

FREDERICK MORGAN PADELFORD, PH. D. (Yale), Professor of English.

WILLIAM SAVERY, PH. D. (Harvard), Professor of Philosophy.

DAVID THOMSON, A. B. (Toronto), Professor of Latin.

PIERRE JOSEPH FREIN, PH. D. (Johns Hopkins), Professor of French.

FREDERICK WILLIAM MEISNEST, PH. D. (Wisconsin), Professor of German.

WILLIAM ELMER HENRY, A. M. (Indiana), Librarian and Director of the Department of Library Economy.

HERBERT HENRY GOWEN, D. D. (Whitman), F. R. G. S., F. R. S. A., Professor of Oriental History, Literature and Institutions.

OLIVER HUNTINGTON RICHARDSON, PH. D. (Heidelberg), Professor of European History.

WALTER GREENWOOD BEACH, A. M. (Harvard), Professor of Social Science.

VERNON LOUIS PARRINGTON, A. B. (Harvard), A. M. (Emporia), Professor of English.

FREDERICK ELMER BOLTON, PH. D. (Clark), Professor of Education and Dean of the College of Education.

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

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

FRANK GEORGE KANE, A. B. (Michigan), Professor of Journalism.

STEVENSON SMITH, PH. D. (Pennsylvania), Professor of Psychology.

- WILLIAM PIERCE GORSUCH, A. B. (Knox), Professor in charge of the Department of Public Speaking and Debate.
- WILLIAM TAYLOR PATTEN, Captain U. S. A., Retired, Professor of Military Science and Tactics.
- ARTHUR RAGAN PRIEST, A. M., (De Pauw), Professor of Debating and Dean of Men.
- ALLEN ROGERS BENHAM, PH. D. (Yale), Associate Professor of English.
- LOREN DOUGLAS MILLIMAN, A. B. (Michigan), Associate Professor of English.
- THOMAS KAY SIDEX, PH. D. (Chicago), Associate Professor of Latin and Greek.
- EDWARD MCMAHON, A. M. (Wisconsin), Associate Professor of American History.
- CHARLES WESLEY SMITH, B. L. S. (Illinois), Reference Librarian and Associate Professor of Library Economy.
- JACOB NEIBERT BOWMAN, PH. D. (Heidelberg), Associate Professor of European History.
- GEORGE WALLACE UMPHREY, PH. D. (Harvard), Associate Professor of Spanish.
- OTTO PATZER, PH. D. (Wisconsin), Associate Professor of French.
- *VANDERVEER CUSTIS, PH. D. (Harvard), Assistant Professor of Economics.
- OTILLIE GERTRUDE BOETZKES, A. M. (Washington), Assistant Professor of German.
- HANS JACOB HOFF, PH. D. (Illinois), Assistant Professor of German.
- ROBERT MAX GARRETT, PH. D. (Munich), Assistant Professor of English.
- EDWARD GODFREY COX, PH. D. (Cornell), Assistant Professor of English.
- CHARLES MUNRO STRONG, A. M. (Missouri), Assistant Professor of Spanish.
- WILLIAM THEODORE DARBY, A. M. (Columbia), Assistant Professor of English.
- HARVEY BRUCE DENSMORE, A. B. (Oxford), Assistant Professor of Greek.
- DAVID ALLEN ANDERSON, PH. D. (Iowa), Assistant Professor of Education.

* Absent on leave, 1915-16.

ABRAHAM BERGLUND, PH. D. (Columbia), Assistant Professor of Economics.

ERNEST GEORGE ATKIN, A. M. (Harvard), Assistant Professor of French.

GINO ARTURO RATTI, PH. D. (Grenoble), Assistant Professor of French.

JOEL MARCUS JOHANSON, A. B. (Washington), Assistant Professor of English.

THERESA SCHMID McMAHON, PH. D. (Wisconsin), Assistant Professor of Political and Social Science.

CHARLES LOUIS HELMLINGE, A. M. (Washington), Assistant Professor of French.

ERNEST OTTO ECKELMAN, PH. D. (Heidelberg), Assistant Professor of German.

FRED WASHINGTON KENNEDY, Assistant Professor of Journalism and Director of the Journalism Laboratories.

HARRY EDWIN SMITH, PH. D. (Cornell), Assistant Professor of Economics.

LEE A WHITE, A. M. (Michigan), Assistant Professor of Journalism.

ATTILIO PHILIPPO SEEDICO, PH. D. (Pennsylvania), Assistant Professor of French and Italian.

SERENO BURTON CLARK, PH. D. (Harvard), Assistant Professor of Greek and Latin.

DALLAS DEVELLO JOHNSON, A. M. (Columbia), Assistant Professor of Education.

WALTER BELL WHITTLESEY, A. M. (Washington), Instructor in French.

*RALPH HASWELL LUTZ, PH. D. (Heidelberg), Instructor in History.

NEWELL WHEELER SAWYER, A. M. (Pennsylvania), Instructor in English.

VICTOR LOVITT OAKES CHITTICK, A. M. (Harvard), Instructor in English.

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

RUDOLPH HERBERT ERNST, A. M. (Harvard), Instructor in German.

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

THOMAS WITHERS, C. E. (Virginia Military Institute), Instructor in English.

* Absent on leave, 1915-16.

JOSEPH BARLOW HARRISON, A. B. (Oxford), Instructor in English.
MARY HUBBARD, B. L. S. (Illinois), Instructor in Library Economy.
CONRAD TRESSMANN, PH. D. (Pennsylvania), Instructor in German.
GEORGE MILTON JANES, PH. D. (Johns Hopkins), Instructor in Political and Social Science.

HUGH ELMER AGNEW, A. B. (Michigan), Instructor in Journalism.
FRANK JOSEPH LAUBE, A. M. (Washington), Instructor in Political and Social Science.

EDWIN RAY GUTHRIE, PH. D. (Pennsylvania), Instructor in Philosophy.

PAUL JEHU KRUSE, A. M. (Washington), Instructor in Education.
ROBERT CHENAULT GIVLER, PH. D. (Harvard), Instructor in Psychology.

CLEMENT AKERMAN, A. M. (Harvard), Instructor in Economics.
MABEL ASHLEY A. B. (Kansas), Instructor in Library Economy.
CHARLES ALEXANDRE GUERARD, B. L. (University of France), Instructor in French.

JOHN LEO CAMPION, A. M. (Columbia), Instructor in German.
CHARLES WENDELL DAVID, A. M. (Wisconsin), Instructor in History.

FREDERICK ROBERTSON MACAULAY, A. M. (Colorado), Instructor in Economics.

LUIS SANTANDER, B. PH. (University of Santiago), Instructor in Spanish.

*RUSSELL OSBORNE STIDSTON, PH. D. (Stanford), Instructor in English.

ROSWELL GRAY HAM, B. L. (California), Instructor in English.
WALTER EDWARD ROLOFF, PH. D. (Wisconsin), Instructor in German.

JOHN HEINES, A. B. (Rutgers College), Teaching Fellow in English.

WILLIAM RENNIE, A. B. (Hillsdale College), Teaching Fellow in English.

MARGARET PROSSER, A. B. (Vassar), Teaching Fellow in English.
JOHN BROOKS MOORE, A. B. (Harvard), Teaching Fellow in English.

HERMAN EVERETT BROWN, A. B. (Clark College), Teaching Fellow in History.

WILLIAM WILEY HOLLINGSWORTH, A. M. (Princeton), Teaching Fellow in History.

* Absent on leave, 1915-16.

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

DAVID CONNOLLY HALL, M. D. (Chicago), University Health Officer and Director of Physical Education for Men.

IRVING MACKEY GLEN, A. M. (Oregon), Professor of Music and Dean of the College of Fine Arts.

†FRANK MARION MORRISON, PH. D. (Chicago), Associate Professor of Mathematics.

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

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

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

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

GEORGE BURTON RIGG, PH. D. (Chicago), Assistant Professor of Botany.

JESSIE BEE MERRICK, B. S. (Columbia), Director of Physical Education for Women.

†Absent on leave, second semester, 1915-16.

***ADMISSION TO FRESHMAN STANDING**

A student must offer for admission to freshman standing in the University, fifteen units by examination or by certificate from an accredited school from which he has graduated. The fifteen units must include the following combinations:

3 units of English.

2 units of mathematics (or 3 units if desired).

3 units selected from one of the following groups (or 2 units, if 3 units of mathematics are presented):

(a) Latin and Greek (not less than 2 units of Latin, or 1 of Greek will be counted).

(b) Modern foreign language (at least 2 units in one language; not less than one unit will be counted in any language).

(c) History, civics, economics (at least one unit to form a year of consecutive work in history).

(d) Physics, chemistry, botany, zoology, general biology, physical geography, geology, physiology. (Not less than one unit will be counted in physics, chemistry, or general biology. No science will be counted as applying on this requirement unless it includes a satisfactory amount of laboratory work.)

2 units in subjects represented in the above groups (a)-(d).

5 units selected from any subjects accepted by an approved high school for its diploma; not more than 4 units, however, may be in vocational subjects.

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University, it is recommended that a student expecting to enter the College of Liberal Arts should elect his work from the groups (a) to (d), so as to offer the following subjects:

A foreign language.....at least 2 units

A history (American preferred) or U. S. history and civics).....1 unit

A science (physics, chemistry, botany, or zoology) .1 unit

* More detailed information concerning admission is furnished on pages 43-46.

If he shall not have included these subjects in his high school elections, it will be necessary for him to include them among his elections in college.

SUGGESTIONS AS TO GROUPING OF SUBJECTS IN PREPARATION FOR ADMISSION.

FOREIGN LANGUAGE. The study of foreign language is best begun in the high school. Students should present at least two units. It is desirable that those who intend to specialize in foreign language should present at least four units.

HISTORY. While it is recommended that a student present for entrance at least one unit of history, his attention is called to the fact that if he presents three units, he will be exempt from the college requirement of eight credits in history.

NATURAL SCIENCE. While it is recommended that a student present for entrance at least one unit of science, his attention is called to the fact that if he presents three units, he will be exempt from eight of the sixteen credits of science required in college.

MATHEMATICS. While two units of mathematics are required for admission, the student should observe that if he presents three and one-half units, he will be exempt from the college requirement of four credits in mathematics.

CURRICULUM OF THE COLLEGE OF LIBERAL ARTS

GROUPS

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

Group I. LANGUAGE AND LITERATURE.

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

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

Group II. PHILOSOPHICAL.

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

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

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

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

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

- a. Ancient Language and Literature.....†6 or 8 credits ✓
- b. A Modern Foreign Language.....†8 credits ✓
- c. Rhetoric‡0 to 8 credits ✓
- d. Mathematics4 credits ✓
- e. A Physical Science.....8 credits ✓
- f. A Biological Science.....8 credits ✓
- g. History8 credits ✓
- h. Philosophy8 credits ✓
- i. Political Science6 credits ✓
- j. Physical Training or Military Science.....8 credits ✓
- k. College Problems1 credit ✓

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

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

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

† At least four years of foreign language must be taken in high school and college combined.

‡ Freshmen on entering the University will be examined in English composition and will either be excused from that subject in the University or required to take a 2, 3, or 4 hour course per week throughout the year, according to their needs.

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

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

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

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

From *d* if he presents for entrance $3\frac{1}{2}$ units of mathematics; viz.: $1\frac{1}{2}$ units of algebra, 1 unit of plane geometry, $\frac{1}{2}$ unit solid geometry, and $\frac{1}{2}$ unit trigonometry.

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

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

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

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

PENALTIES: Of the above requirements *c* must be completed within the first year, otherwise only $\frac{1}{2}$ credit will be allowed; *a* or *b*, *d*, *e* or *f* and *g* must be completed within the first two years, otherwise only $\frac{1}{2}$ credit will be allowed.

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

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

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

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

GENERAL NOTE: Each student is to be held either for the admission and graduation requirements of the catalogue under

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

which he enters, or for those of the catalogue under which he graduates.

DISTRIBUTION OF WORK BY YEARS

Of the work in the prescribed subjects (see 1 on page 71), that in English composition (rhetoric) must be completed in the freshman year; that in mathematics and in medieval and modern history (when taken in fulfillment of the history requirement) and also one year of science and one year of foreign language must be completed by the end of the sophomore year.† The work of the junior and senior years consists of those prescribed subjects which the student has not been able to take during the first two years, and of those additional courses which will fulfill the major and elective requirements as specified under 2, 3 and 4 on page 72.

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

SCHEME OF ELECTIVES

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

The following courses given outside the College of Liberal Arts may be counted toward a bachelor of arts degree. Not more than twelve such credits altogether shall be counted toward this degree except that from the College of Fine Arts, 24 credits may be so counted.

COLLEGE OF PHARMACY

Materia medica	}	Total amount allowed, 8 credits.
Therapeutics		
Toxicology		

COLLEGE OF ENGINEERING

Mechanical drawing, 4 credits	}	Total amount allowed, 12 credits.
Descriptive geometry, 4 credits		
Surveying, 4 credits		
Direct currents, 4 credits		
Alternating currents, 4 credits		

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

UNIVERSITY OF WASHINGTON

COLLEGE OF MINES

General metallurgy—4 credits.

COLLEGE OF FINE ARTS

A total of 24 credits in the College of Fine Arts may be counted toward the bachelor of arts degree.

COLLEGE OF FORESTRY

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

SCHOOL OF LAW

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

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

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

GROUP I. LANGUAGE AND LITERATURE.		GROUP II PHILOSOPHICAL
Sub-group I	Sub-group II	Sub-groups I and II
ANCIENT LANGUAGE AND LITERATURE <i>Freshman</i> †English 0 to 8 Greek 8 Latin 8 Mathematics 4 College Problems 1 Mil. Sci. or Phys. Ed. 4 <i>Sophomore</i> Latin 8 Greek 8 History 8 Phys. Science 8 Mil. Sci. or Phys. Ed. 4 <i>Junior</i> Major 8 Mod. For. Lang. 8 Philosophy 8 Biol. Science 8 <i>Senior</i> Major 8 Pol. Science 6 Electives 6	MODERN LANGUAGE AND LITERATURE <i>Freshman</i> †English 0 to 8 Mod. For. Lang. 8 History 8 Mathematics 4 College Problems 1 Mil. Sci. or Phys. Ed. 4 <i>Sophomore</i> Anc. Language 8 Philosophy 8 Science 8 *Elective 8 Mil. Sci. or Phys. Ed. 4 <i>Junior</i> Major 8 Pol. Economy 6 Science 8 Elective 8 <i>Senior</i> Major 8 Electives 6	HISTORY AND POLITICAL SCIENCE, OR PHILOSOPHY <i>Freshman</i> †English 0 to 8 Foreign Lang. 8 History 8 Mathematics 4 College Problems 1 Mil. Sci. or Phys. Ed. 4 <i>Sophomore</i> For. Language 8 Philosophy 8 Pol. Science 6 Science 8 Mil. Sci. or Phys. Ed. 4 <i>Junior</i> Major 8 Science 8 Electives 16 <i>Senior</i> Major 8 Electives 6

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

† Those students who are excused from one-half or more of the requirements in English composition should take a science.

CURRICULUM IN HOME ECONOMICS

Leading to the A. B. Degree

FRESHMAN	Credits	SOPHOMORE	Credits
†English 0 to 8		Zoology 7 4	
Modern language 8		Ancient Language 6 or 8	
Chemistry 8		History 8	
Home Economics 4		Mathematics 4	
Fine Arts III-3 2		Fine Arts II-1 3	
Physical Education 4		Home Economics 6	
College Problems 1		Physical Education 4	
JUNIOR		SENIOR	
Philosophy 8		Home Economics 6	
Political Science 3 and 4 6		Political Science 81-82 or 186 or Fine Arts 6	
*Biology 5		Philosophy 4	
Elective 6		Elective 10	
Home Economics 8			

* Bacteriology 106 advised.

† Those who are excused from all or a part of the requirement in English composition should either take some subject listed in the sophomore year or a corresponding number of hours of free elective.

CURRICULUM IN JOURNALISM

Leading to the A. B. Degree

A. EDITORIAL GROUP.

FRESHMAN YEAR

<i>First Semester</i>	<i>Credits</i>	<i>Second Semester</i>	<i>Credits</i>
Journalism 1	3	Journalism 2	3
Journalism 7	1	Journalism 8	1
Modern Language	4	Modern Language	4
English 1	4	Ancient Language and Lit. . .	3
Zoology	4	Zoology	4
Mil. Sci. or Physical Ed. . .	2	Mil. Sci. or Physical Ed. . .	2
	<hr/> 16+2		<hr/> 15+2

SOPHOMORE YEAR

Journalism 3	3	Journalism 4	3
Ancient Language and Lit. .	3	Journalism 104	2
Physical Science	4	Physical Science	4
History 7	4	History 8	4
Political Science 1.	3	Political Science 2.	3
Mil. Sci. or Physical Ed. . .	2	Mil. Sci. or Physical Ed. . .	2
	<hr/> 17+2		<hr/> 16+2

JUNIOR YEAR

Journalism 101, or Journalism elective equivalent. .	2	Journalism 102, or Journalism elective equivalent. .	2
Journalism 105	3	Journalism 106	3
Philosophy 1 or 101.	4	Philosophy 102, or Psychology 1	4
Political Science 181.	3	Political Science 182.	3
English 73, 137, 161 or 181	2 or 3	English 74, 138, 162 or 182	2 or 3
Elective	3 or 2	Elective	3 or 2
	<hr/> 17		<hr/> 17

SENIOR YEAR

Journalism 107	3	Journalism 108	3
Journalism 109	2	Journalism 110	2
Political Science 51.	3	Political Science 52.	3
Elective	7	Elective	7
	<hr/> 15		<hr/> 15

NOTE.—Students who wish to take two years of modern foreign language in succession may postpone physical science to the junior year, and English 73, 137, 161 or 181 and second semester continuation, to the senior year.

B. ADVERTISING AND BUSINESS ADMINISTRATION GROUP.

The curriculum in the "Advertising and Business Administration" group is the same as that for the editorial group in the freshman year. In the sophomore year, students electing this group will take Journalism 5-6, instead of Journalism 3-4; in the junior year, Journalism 115-116 instead of Journalism 101-102 or its elective equivalent in the editorial group, and Journalism

121-122 instead of Journalism 105-106; in the senior year, Journalism 119 and Journalism 120 instead of Journalism 109-110. This arrangement will give students in the advertising and business administration group one more hour elective in the junior year than those in the editorial group have.

CURRICULUM IN LIBRARY ECONOMY

Leading to the A. B. Degree

FRESHMAN YEAR

First Semester		Second Semester	
	Credits		Credits
English 1	4	English 2	4
Elementary botany, chemistry, or physics	4	Elementary botany, chemistry, or physics	4
History 1	4	History 2	4
French or German	4	French or German	4
Mil. Sci. or Physical Ed.	2	Mil. Sci. or Physical Ed.	2
	<hr/> 16+2		<hr/> 16+2

SOPHOMORE YEAR

Political Science 1	3	Political Science 2	3
Zoology 1	4	Geology 12	4
French or German	4	French or German	4
Mathematics or Political Science 51	2 or 3	Mathematics or Political Science 52	2 or 3
Greek 5 or Latin 11	3	History 154	3
Mil. Sci. or Physical Ed.	2	Mil. Sci. or Physical Ed.	2
	<hr/> 16 or 17+2		<hr/> 16 or 17+2

JUNIOR YEAR

History 7	4	History 8	4
English 163	2	English 164	2
Philosophy 1	4	Zoology 16	2
Library Economy		Library Economy	
Order and Accession 101 ..	2	Reference 102	2
Classification 103	3	Cataloging 104	3
	<hr/> 15	Practice (6 hrs.) 106	2
			<hr/> 15

SENIOR YEAR

Political Science 181	3	Political Science 182	3
Philosophy 111	2	Philosophy 112	2
Education 109	2	History 180	3
Library Economy		Library Economy	
Reference 105	2	Organization and extension 108	2
Organization and extension 107	2	Book Selection 110	2
Book Selection 109	1	Special Lectures 112	1
Practice (6 hrs.) 111	2	Practice (6 hrs.) 114	2
	<hr/> 14		<hr/> 15

1. Those students who are excused from one-half or more of the English 1 and 2 will substitute Greek 5, Latin 11, or mathe-

matics in the first semester and mathematics or zoology 16 in the second semester of the freshman year.

2. When the above substitutions are made in the freshman year, political science 51 and 52 will be taken in the sophomore year.

3. History 1 and 2 are required without regard to the history work done in high school.

CURRICULUM IN COMMERCE

Leading to the A. B. Degree

FRESHMAN YEAR

<i>First Semester</i>	<i>Credits</i>	<i>Second Semester</i>	<i>Credits</i>
English 1	4	English 2	4
History (Med. or Mod.) or Science	4	History (Med. or Mod.) or Science	4
Modern Language	4	Modern Language	4
Mathematics	4	Mathematics	4
College Problems	$\frac{1}{2}$	College Problems	$\frac{1}{2}$
Mil. Sci. or Physical Ed..	2	Mil. Sci. or Physical Ed..	2
	<hr/> 16 $\frac{1}{2}$ +2		<hr/> 16 $\frac{1}{2}$ +2

SOPHOMORE YEAR

Modern Language	3 or 4	Modern Language	3 or 4
Science or History (Amer., Eng. or Med. and Mod.)..	4	Science or History (Amer., Eng. or Med. & Mod.)....	4
Pol. & Soc. Sci. 7.....	3	Pol. & Soc. Sci. 8.....	3
Pol. & Soc. Sci. 1.....	3	Pol. & Soc. Sci. 2.....	3
Pol. & Soc. Sci. 5.....	3	Pol. & Soc. Sci. 6.....	3
Mil. Sci. or Physical Ed....	2	Mil. Sci. or Physical Ed....	2
	<hr/> 16 or 17+2		<hr/> 16 or 17+2

JUNIOR YEAR

Pol. & Soc. Sci. 51.....	3	Pol. & Soc. Sci. 52.....	3
Pol. & Soc. Sci. 101.....	3	Pol. & Soc. Sci. 6, 102, 106, or 112	3
Psychology 1	4	Philosophy 2	4
Law 153	3	Law 154	3
Elective		Elective	
Journalism 5	3	Journalism 6	3
	<hr/> 13 or 16		<hr/> 13 or 16

SENIOR YEAR

12 to 17 credits each semester

Pol. & Soc. Sci. 105.....	3	Pol. & Soc. Sci. 114.....	2
Pol. & Soc. Sci. 111.....	3	Pol. & Soc. Sci. 120.....	3
Pol. & Soc. Sci. 119 or 121..	3	Pol. & Soc. Sci. 102.....	3
Pol. & Soc. Sci. 109.....	3	Pol. & Soc. Sci. 106.....	3
Pol. & Soc. Sci. 113.....	3	Pol. & Soc. Sci. 104.....	3
Pol. & Soc. Sci. 103.....	3	Pol. & Soc. Sci. 6.....	3
Pol. & Soc. Sci. 115.....	3	Pol. & Soc. Sci. 118.....	3
Pol. & Soc. Sci. 117.....	3	Forestry 156	2
Psychology 107	2	Geology 16	2
Science	4		

TWO-YEAR CURRICULUM IN COMMERCE

<i>First Semester</i>		<i>Second Semester</i>	
	Credits		Credits
Pol. & Soc. Sci. 1.....	3	Pol. & Soc. Sci. 2.....	3
Pol. & Soc. Sci. 7.....	3	Pol. & Soc. Sci. 8.....	3
Pol. & Soc. Sci. 5.....	3	Pol. & Soc. Sci. 112.....	3
Law 153	3	Law 154	3
English	4	English	4
Military Sci.	2	Military Sci.	2
	<u>16+2</u>		<u>16+2</u>

SECOND YEAR

Pol. & Soc. Sci. 51.....	3	Pol. & Soc. Sci. 52.....	3
Journalism 5	3	Journalism 6	3
Electives	12	Electives	12
Pol. & Soc. Sci. 109....	3	Pol. & Soc. Sci. 106....	3
Pol. & Soc. Sci. 103....	3	Pol. & Soc. Sci. 104....	3
Pol. & Soc. Sci. 111....	3	Pol. & Soc. Sci. 6.....	3
Pol. & Soc. Sci. 101....	3	Pol. & Soc. Sci. 102 or	3
Pol. & Soc. Sci. 117....	3	Psychology 2	3
Military Sci.	2	Pol. & Soc. Sci. 118....	3
	<u>18+2</u>	Military Sci.	2
			<u>18+2</u>

This course is designed for students who have already reached the age of twenty-one, and who are unable to take a four-year course. Permission to students under twenty-one years of age to take the course may be granted on written application to the head of the department of Political and Social Science. Such permission is entirely optional and will be granted only in cases of extreme urgency and where the student has completed all entrance requirements. Applications must reach the University at least one week before the beginning of registration.

BANKING GROUP

JUNIOR YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Credits		Credits
Pol. & Soc. Sci. 109.....	3	Pol. & Soc. Sci. 110.....	3
Pol. & Soc. Sci. 51.....	3	Pol. & Soc. Sci. 52.....	3
Law 153	3	Law 154	3
Psychology 1	4	Philosophy 2	4
Electives		Electives	

SENIOR YEAR

Pol. & Soc. Sci. 105 or 107....	3	Pol. & Soc. Sci. 116.....	3
Pol. & Soc. Sci. 103.....	3	Pol. & Soc. Sci. 104.....	3
Electives		Pol. & Soc. Sci. 108.....	3
		Electives	

TRANSPORTATION GROUP

JUNIOR YEAR

Pol. & Soc. Sci. 7.....	3	Pol. & Soc. Sci. 8.....	3
Pol. & Soc. Sci. 51.....	3	Pol. & Soc. Sci. 52.....	3
Pol. & Soc. Sci. 101.....	3	Philosophy 2	4
Psychology 1	4	Law 154	3
Law 153	3	Electives	
Electives			

SENIOR YEAR

Pol. & Soc. Sci. 119.....	3	Pol. & Soc. Sci. 120.....	3
Pol. & Soc. Sci. 111.....	3	Pol. & Soc. Sci. 102.....	3
Pol. & Soc. Sci. 115.....	3	Pol. & Soc. Sci. 116.....	3
Electives		Electives	

PUBLIC SERVICE GROUP

JUNIOR YEAR

<i>First Semester</i>	<i>Credits</i>	<i>Second Semester</i>	<i>Credits</i>
Pol. & Soc. Sci. 7.....	3	Pol. & Soc. Sci. 8.....	3
Pol. & Soc. Sci. 51.....	3	Pol. & Soc. Sci. 52.....	3
Pol. & Soc. Sci. 107.....	3	Pol. & Soc. Sci. 108.....	3
Psychology 1	4	Philosophy 2	4
Electives		Electives	
Pol. & Soc. Sci. 81		Pol. & Soc. Sci. 102	
Pol. & Soc. Sci. 109		Pol. & Soc. Sci. 82	
Pol. & Soc. Sci. 101		Modern Language	
History		History	
Law		Law	
Modern Language		Science	
Science		Engineering	
Engineering			

SENIOR YEAR

Electives		Pol. & Soc. Sci. 156.....	2
Pol. & Soc. Sci.		Electives	
History		Pol. & Soc. Sci.	
Law		History	
Engineering		Law	
Science		Engineering	
		Science	

NOTE.—A total of 123 credits is required for the degree.

CURRICULUM PREPARATORY TO LAW

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

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

FIRST YEAR

English (1, 2), Freshman composition.....	0-8 credits
History (English or American).....	8 credits
Chemistry, zoology or botany.....	8 credits
(Preferably in the order named.)	
College mathematics or foreign language.....	8 credits
(If the student has taken two years of Latin, it is recommended that he take Roman law.)	
Military Sci. (men); Physical Ed. (women)....	4 credits
College Problems	1 credit

SECOND YEAR

Political and Social Science.....	6 credits
(Either Political and Social Science 1-2, 81-82, or 51-52.)	
Philosophy	8 credits
(Selected from the following courses: 1, 2, 3, 101-102, Psychology 107.)	
Sixteen credits from among the following subjects:	
Physics; the continuation of a foreign language; History, American or European, political or constitutional; Political and Social Science; Philosophy; English Literature; a year of Science; Argumentation and Debate; Vocational speaking.	

If a student registers in and completes the pre-law curriculum and later decides to remain in either the College of Liberal Arts or the College of Science, he must classify under some one of the groups as offered. In this case, the required mathematics may be taken in the junior year with full credit.

SIX-YEAR ARTS AND LAW CURRICULUM

This combined course allows the student with a good record to obtain an A. B. and an LL. B. in six years. It is open only to those students who have maintained a uniformly good record for scholarship during the first three years of collegiate work. At the end of three years, after the student has earned 98 credits, including 8 credits in military science or physical education and

including all of the required work, together with a major, he may for the fourth year register in the School of Law for the first year's work in law. He must, however, earn in the College of Liberal Arts additional credits sufficient to make the total credits amount to 104. Twenty-four credits in the first year law work may apply toward the A. B. degree, thus making 128 credits required for this degree.

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

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

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

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

COLLEGE OF SCIENCE

HENRY SUZZALLO, PH. D. (Columbia), PRESIDENT.

*HENRY LANDES, A. M. (Harvard), Professor of Geology; DEAN.

THEODORE CHRISTIAN FRYE, PH. D. (Chicago), Professor of Botany;
ACTING DEAN.

ORSON BENNETT JOHNSON, LL. B. (Union College of Law), Pro-
fessor Emeritus of Zoology.

†HORACE G. BYERS, PH. D. (Johns Hopkins), Professor of Chem-
istry.

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

FREDERICK ARTHUR OSBORN, PH. D. (Michigan), Professor of
Physics and Director of Physics Laboratories.

ROBERT EDOUARD MORITZ, PH. D. (Nebraska), Professor of Mathe-
matics and Astronomy.

DAVID CONNOLLY HALL, M. D. (Chicago), University Health Officer
and Director of Physical Education for Men.

HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Indus-
trial Chemistry.

JOHN WEINZIRL, PH. D. (Wisconsin), Professor of Bacteriology.

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

STEVENSON SMITH, PH. D. (Pennsylvania), Professor of Psychology.

WILLIAM TAYLOR PATTEN, Captain U. S. A., Retired, Professor of
Military Science and Tactics.

†FRANK MARION MORRISON, PH. D. (Chicago), Associate Professor
of Mathematics.

SAMUEL LATIMER BOOTHROYD, A. M. (Colorado Agricultural Col-
lege), Associate Professor of Astronomy and Mathematics.

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

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

GEORGE IRVING GAVETT, B. S. (C. E.) (Michigan), Assistant Pro-
fessor of Mathematics.

* Absent on leave, 1915-16.

† Absent on leave, second semester, 1915-16.

- ROBERT EVSTAFIEFF ROSE, PH. D. (Leipzig), Assistant Professor of Chemistry.
- ELI VICTOR SMITH, PH. D. (Northwestern), Assistant Professor of Zoology.
- HENRY LOUIS BRAKEL, PH. D. (Cornell), Assistant Professor of Physics.
- CHARLES EDWIN WEAVER, PH. D. (California), Assistant Professor of Geology.
- ALLEN FULLER CARPENTER, PH. D. (Chicago), Assistant Professor of Mathematics.
- GEORGE BURTON RIGG, PH. D. (Chicago), Assistant Professor of Botany.
- GRACE GOLDENA DENNY, A. B. (Nebraska), Assistant Professor of Domestic Art.
- JOHN WILLIAM HOTSON, PH. D. (Harvard), Assistant Professor of Botany.
- LEWIS IRVING NEIKIRK, PH. D. (Pennsylvania), Assistant Professor of Mathematics.
- *HAROLD EUGENE CULVER, PH. M. (Wisconsin), Assistant Professor of Geology.
- NANNIE BELLE JUDY (Columbia), Assistant Professor of Home Economics.
- SAMUEL HERBERT ANDERSON, PH. D. (Illinois), Assistant Professor of Physics.
- JESSIE BEE MERRICK, B. S. (Columbia), Director of Physical Education for Women.
- HJALMAR LAURITS OSTERUD, A. M. (Washington), Instructor in Zoology.
- HARLAN LEO TRUMBULL, PH. D. (Chicago), Instructor in Chemistry.
- HENRY SLATER WILCOX, A. M. (Harvard), Instructor in Psychology.
- CURT JOHN DUCASSE, PH. D. (Harvard), Instructor in Philosophy and Psychology.
- ERIC TEMPLE BELL, PH. D. (Columbia), Instructor in Mathematics.
- †GERTRUDE CRUDEN, B. S., (Columbia University), Instructor in Domestic Art.
- GEORGE NELSON SALISBURY, B. S. (Minnesota), Lecturer in Meteorology; United States Weather Bureau Official.
- JAMES EDGAR BELL, PH. D. (Illinois), Instructor in Chemistry.

* Absent on leave, first semester, 1915-16.

† Absent on leave, 1915-16.

- ETHEL DOROTHY JOHNSON, A. B. (Nebraska), Instructor in Physical Education.
- ELIZABETH ROTHERMEL, A. M. (Columbia), Instructor in Home Economics.
- LLOYD LEROY SMALL, PH. D. (Columbia), Instructor in Mathematics.
- LUTHER EWING WEAR, PH. D. (Johns Hopkins), Instructor in Mathematics.
- CATHERINE WALLACE EASTMAN (Wellesley), Instructor in Physical Education.
- NATHAN FASTEN, PH. D. (Wisconsin), Instructor in Zoology.
- CHARLES GUSTAVE PAUL KUSCHKE, PH. D. (California), Instructor in Mathematics.
- JAMES A. GILBREATH, B. S. (Whitman), Instructor in Physics.
- FRANCES GRANT HEVERLO, PH. B. (Chicago), Instructor in Home Economics.
- SETH CHAPIN LANGDON, PH. D. (Washington), Instructor in Chemistry.
- MORRIS MORGAN LEIGHTON, A. M. (Iowa), Instructor in Geology.
- HORACE HARDY LESTER, PH. D. (Princeton), Instructor in Physics.
- EARL LEROY PACKARD, PH. D. (California), Instructor in Geology.
- GLENOLA BEHLING ROSE, M. S. (Washington), Instructor in Chemistry.
- MARY BEDELL, B. S. (Washington), Acting Instructor in Chemistry.
- BERTHA MARY CHALLIS, A. M. (Washington), Teaching Fellow in Bacteriology.
- MADELL GILLE, B. S. (Washington), Teaching Fellow in Zoology.
- ZAHLIA JENCKS, B. S. (Chicago), Teaching Fellow in Chemistry.
- DAVID HJALMAR JOHNSON, B. S. (Whitworth), Teaching Fellow in Zoology.
- MARTIN WILLIAM LISSE, B. S. (Pennsylvania State College), Teaching Fellow in Chemistry.
- DAVID OHLSON, M. S. (Washington), Teaching Fellow in Physics.
- VINNIE ARAH PEASE, A. B. (Puget Sound), Teaching Fellow in Botany.
- ALFRED SCHEER, A. B. (Hamline), Teaching Fellow in Physics.
- GEORGE LEWIS SCHWARTZ, B. S. (Washington), Teaching Fellow in Chemistry.
- WINFIELD SCOTT, A. B. (Oberlin), Teaching Fellow in Chemistry.
- EMERY ENFIELD SMITH, A. B. (Wyoming), Teaching Fellow in Mathematics.

CHARLES RAY STILLINGER, M. S. (Idaho), Teaching Fellow in Botany.

THOMAS GORDON THOMPSON, A. B. (Clark), Teaching Fellow in Chemistry.

FREDERICK ELMER BOLTON, PH. D. (Clark), Dean of the College of Education.

WILLIAM SAVERY, PH. D. (Harvard), Professor of Philosophy.

PIERRE JOSEPH FREIN, PH. D. (Johns Hopkins), Professor of French.

EDWIN JOHN VICKNER, PH. D. (Minnesota), Professor of Scandinavian Languages.

THOMAS KAY SIDEX, PH. D. (Chicago), Associate Professor of Latin and Greek.

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

GEORGE WALLACE UMPHREY, PH. D. (Harvard), Associate Professor of Spanish.

EDWARD GODFREY COX, PH. D. (Cornell), Assistant Professor of English.

HARVEY BRUCE DENSMORE, A. B. (Oxford), Assistant Professor of Greek.

THERESA SCHMID McMAHON, PH. D. (Wisconsin), Assistant Professor of Political and Social Science.

*ADMISSION TO FRESHMAN STANDING

A student must offer for admission to freshman standing in the University, fifteen units by examination or by certificate from an accredited school from which he has graduated. The fifteen units must include the following combinations:

3 units of English.

2 units of mathematics (or 3 units if desired).

3 units selected from one of the following groups (or 2 units, if 3 units of mathematics are presented):

(a) Latin and Greek (not less than 2 units of Latin, or 1 of Greek will be counted).

* More detailed information concerning admission is furnished on pages 43-46.

- (b) Modern foreign language (at least 2 units in *one* language; not less than one unit will be counted in any language).
- (c) History, civics, economics (at least one unit to form a year of consecutive work in history).
- (d) Physics, chemistry, botany, zoology, general biology, physical geography, geology, physiology. (Not less than one unit will be counted in physics, chemistry, or general biology. No science will be counted as applying on this requirement unless it includes a satisfactory amount of laboratory work.)

2 units in subjects represented in the above groups (a)-(d).

5 units selected from any subjects accepted by an approved high school for its diploma; not more than 4 units, however, may be in vocational subjects.

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University, it is recommended that a student expecting to enter the College of Science should elect his work from the groups (a) to (d), so as to offer the following subjects:

Advanced algebra	½ unit
A foreign language.....	at least 2 units
A history (American preferred) or U. S. history and civics	1 unit
Physics	1 unit
A second science (chemistry, botany, zoology, general biology, physiology, physical geog- raphy, geology)	1 unit

If he shall not have included these subjects in his high school elections, it will be necessary for him to include them among his elections in college.

CURRICULA OF THE COLLEGE OF SCIENCE

I. CURRICULA WITH ELECTIVE COURSES.

In this division, in order to receive the degree of bachelor of science, a candidate who has been regularly admitted to the College of Science must fulfill the following requirements:

1. The requirements for a major must be completed, which consist of 24 credits or more in some one department.

The department in which the student selects his major will be known as his major department and its head as his major advisor. Not more than 40 credits in the major department may be counted toward graduation.

2. A total of 128 credits must be secured, but of these not more than 24 may be counted in any department other than the major department. A minimum of 48 credits must be completed in the College of Science. Elections may be made of courses in the College of Arts and the College of Education in the same manner as in the College of Science.

3. The number of credits specified in each of the following subjects must be earned as a part of the total of 128 credits, subject to the possible exemptions stated below:

- a. Astronomy, chemistry, or physics.....8 credits
- b. Bacteriology, botany, geology, or zoology.....8 credits
- c. Physical education or military science.....8 credits
- d. Mathematics4 credits
- e. Ancient language and literature.....6 or 8 credits
- f. Modern foreign language.....8 credits

(At least 4 years of foreign language must be taken in high school and college combined.)

- g. Rhetoric0 to 8 credits
- h. History8 credits
- i. Philosophy6 or 8 credits
- j. Political science6 credits
- k. College problems1 credit

COLLEGE PROBLEMS. Freshmen in the colleges of Liberal Arts and Science, except those who are registered in "set" courses, are required to take one hour a week the first semester in instruction in "Problems of study," "How to use the library," and "Organization of departments and courses in the University," and in the second semester, one hour a week in the study of "Vocations open to college men and women of the Northwest." This course will include practical discussions of the organization of the student's plans for his university career, the consideration of a vocation, the planning of a course that will help him to work out his vocational interests, and the relating of his university work and his vocational plans to the demands of the world. One credit is allowed for the year's work.

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

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

Possible exemptions from the courses specified above:

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

From (a) if he presents for entrance 3 units of science, viz.: 1 unit of physics, 1 unit of chemistry, and 1 unit of another science.

From (b) if he presents for entrance 3 units of science, viz.: 1 unit of a biological science, 1 unit of physics, and 1 unit of another science.

From (d) if he presents for entrance $3\frac{1}{2}$ units of mathematics, viz.: $1\frac{1}{2}$ units of algebra, 1 unit of plane geometry, $\frac{1}{2}$ unit of solid geometry, and $\frac{1}{2}$ unit of trigonometry.

From (e) if he presents for entrance 4 units of ancient language.

From (f) if he presents for entrance 4 units of modern foreign language.

From (h) if he presents for entrance 3 units of history.

NOTE 1.—A student cannot obtain exemption from both (a) and (b).

NOTE 2.—Of the above requirements (g) must be completed within the first year, and (e) or (f), (d), (a) or (b), and (h) must be completed within the first two years, otherwise only one-half credit will be allowed.

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

THREE-FOURTHS GRADES ABOVE D

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

ELECTIVES IN OTHER COLLEGES

In Engineering, Forestry, Law, Mines, Music, and Pharmacy elections will be allowed to the extent of 12 credits from any one college, and not to exceed 16 from all.

SUGGESTIVE SCHEDULE BY YEARS FOR THE GENERAL OR ELECTIVE COURSES

Astronomy Chemistry Mathematics Physics	Bacteriology Botany Geology Zoology	Home Economics	Physical Education	Psychology
<i>Freshman</i>	<i>Freshman</i>	<i>Freshman</i>	<i>Freshman</i>	<i>Freshman</i>
Astron., chem. or physics 8 Mathematics 4 English 8 Foreign language. 8 College problems. 1 Physical Ed. or Military Sci.... 4	Botany, geol. or zoology 8 Mathematics 4 English 8 Foreign language. 8 College problems.. 1 Physical Ed. or Military Sci.... 4	Home economics.. 4 Chemistry 8 English 4 Foreign language. 8 Mathematics 4 Design 2 College problems.. 1 Physical Ed. or Military Sci.... 4	Mathematics 4 Zoology 5-6 8 English 8 Chemistry 5-6 ... 8 College problems.. 1 Physical Ed. or Military Sci.... 4	Mathematics 4 Zoology 8 English 8 Foreign language. 8 College problems. 1 Physical Ed. or Military Sci.... 4
<i>Sophomore</i>	<i>Sophomore</i>	<i>Sophomore</i>	<i>Sophomore</i>	<i>Sophomore</i>
Science 8 Foreign language. 8 History 8 Political science.. 6 Physical Ed. or Military Sci.... 4	Science 8 Foreign language. 8 History 8 Political science.. 6 Physical Ed. or Military Sci.... 4	Home economics.. 4 Chemistry 8 English 4 Zoology 8 Foreign language. 8 Physical Ed. or Military Sci.... 4	Chemistry 8 Zoology 103-104.. 8 History 8 Foreign language. 8 Political science.. 6 Physical Ed. or Military Sci.... 4	Major 4 Mathematics 4 Physics 8 History 8 Foreign language. 8 Physical Ed. or Military Sci.... 4
<i>Junior</i>	<i>Junior</i>	<i>Junior</i>	<i>Junior</i>	<i>Junior</i>
Major 8 Philosophy 8 Electives 14	Major 8 Philosophy 8 Electives 14	Home economics.. 6 Philosophy 8 History 8 Political science.. 6 Electives 2	Major 12 Education 4 Philosophy 8 Political science.. 6 Foreign language. 8	Major 8 Histology and neurology 8 History of phil- osophy 8 Political science.. 6
<i>Senior</i>	<i>Senior</i>	<i>Senior</i>	<i>Senior</i>	<i>Senior</i>
Major 8 Electives 22	Major 8 Electives 22	Home economics.. 10 Electives 20	Major 12 Education 8 Elective 10	Major 8 Electives 22

*CURRICULUM IN HOME ECONOMICS

A prescribed curriculum in Home Economics, designed for prospective teachers of that subject and leading to the degree of Bachelor of Science, is offered as follows:

FRESHMAN YEAR

First Semester		Second Semester	
	Credits		Credits
Chemistry 5	4	Chemistry 6	4
English 1	4	English 2	4
†Modern language or history. 4	4	†Modern language or history. 4	4
Home Economics 4 or 7 } ...	4	Home Economics 4 or 7 } ...	4
Fine Arts III-3		Fine Arts III-3	
Botany 1 or Zoology 1 }	2	Botany 1 or Zoology 1 }	2
Physical Education	2	Physical Education	2
	<u>16+2</u>		<u>16+2</u>

SOPHOMORE YEAR

Home Economics 5 or		Zoology 7 or H. E. 5.....	4
Zoology 7	4	Chemistry 144	4
Home Econ. 7.....	2	Physics 89	4
Home Econ. 25.....	3	German, French, English lit-	
Chemistry 33	4	erature, Greek and Roman	
German, French, English lit-		erature, or history.....	4
erature, Greek and Roman		Physical Education	2
literature, or history.....	4		
Physical Education.....	2		
	<u>17+2</u>		<u>16+2</u>

JUNIOR YEAR

Home Econ. 53.....	4	Home Econ. 51, 61, or 59... 4	
Fine Arts II-1.....	3	Home Econ. 72.....	3
Home Econ. 51, 61, or 59... 2 or 4		Bacteriology 106	5
Pol. Science 3.....	3	Political Science 4.....	2
Psychology 1 (or elective).. 4	4	Education	4
	<u>16 or 18</u>		<u>18</u>

SENIOR YEAR

Home Econ. 81 or 81.....	2	Home Economics 74.....	3
Home Econ. 55.....	2	Home Econ. 82, or elective.. 2	
Pol. Science 81.....	3	Pol. Science 82 or	
Philosophy 2	4	Psychology 112	3
Education	4	Education	4
	<u>15</u>	Elective	2
			<u>14</u>

*A student may also major in the department of Home Economics, meeting the requirements for the B. S. degree as outlined on page 91.

† Home Economics students who have credit for one year of a modern language in high school must elect at least one year of the same language in college. Students who offer no credit in modern language for entrance and who elect a modern language in college, must complete two years of that language.

CURRICULUM PREPARATORY TO MEDICINE

Four years of prescribed work, leading to the B. S. degree, are provided for those students who desire to enter a medical school after graduation from this institution. By special permission, a student planning to enter a medical school before completion of the four-year course may be permitted to take out of regular order such courses as may be accorded advanced credits in the particular school selected. This course must not be interpreted as waiving any portion of the four years' work required in residence at a medical school in order to secure a medical degree.

<i>Freshman</i>	Credits	<i>Sophomore</i>	Credits
Botany (a)	4	Anatomy, comparative	8
Chemistry 21 (b)	8	Chemistry (22)	8
Zoology, invertebrate	4	Physics (93-94)	8
Mathematics (c)	4	French or German	8
English	4	Mil. Sci. or Phys. Ed.	4
German or French (d)	8		
Mil. Sci. or Phys. Ed.	4		
<i>Junior</i>		<i>Senior</i>	
Chemistry, physiological	4	Bacteriology 103 and 108	8
Embryology	4	Elective	12
Histology	4	Pharmacology and Toxicology ..	4
Neurology	4	Psychology	8
Physiology	8		
Elective	8		

(a) Botany 2, second semester. If botany was studied in the high school, then botany 10 should be elected.

(b) Chemistry 1, 2 and 41 are required of students who have not had high school chemistry.

(c) Trigonometry is regularly required, but solid geometry may be elected if not previously studied in the high school.

(d) Students offering four units of German or French are exempt from this requirement and may elect a corresponding number of hours. Students offering two units of either German or French are required to take the other language.

CURRICULUM FOR PROSPECTIVE SCIENCE TEACHERS

Most of those science students who expect to teach must begin in a small high school. In such schools one teacher usually teaches several or all the sciences. It is therefore desirable that such students get a wider range of scientific knowledge, rather than the intensive training secured by three years' work for a major in some one department. The following course permits the

student to prepare in more sciences by not requiring three years of any one science:

<i>Freshman</i>	Credits	<i>Sophomore</i>	Credits
Science (botany, geology, or zoology)	8	History	8
Science (physics or chemistry) ..	8	Political Science	6
Mathematics	4	Science	16
English	0 to 8	Physical Ed. or Mil. Sci.	4
German or French	8		
Physical Ed. or Mil. Sci.	4		
<i>Junior</i>		<i>Senior</i>	
Ancient language or literature ..	6	Education	12
Philosophy and psychology	8	Science	8
Science	16	Elective	8

REGULATIONS GOVERNING THIS CURRICULUM

(a) A student may select any three of the following sciences and must do the amount of work in any particular science, as indicated:

- Botany (exclusive of bacteriology), 16 credits
- Chemistry, 16 credits
- Geology, 15 credits
- Mathematics (exclusive of astronomy), 16 credits
- Physics, 16 credits
- Zoology, 16 credits

(b) Included in or in addition to the work in (a) every student must take 4 credits in mathematics, 8 credits in physics, 8 credits in chemistry, 8 credits in botany or zoology.

(c) In (a) chemistry and zoology may *not* be selected in a group together.

(d) If 16 credits of chemistry are taken, only 12 credits of geology are required.

(e) When mathematics is selected as one of the three sciences, physics must be selected also.

(f) The modern foreign language required shall be either French or German and a continuation of the language taken in high school.

(g) The work in freshman composition shall be 0 to 8 credits.

(h) Until 1919 students may fulfill the requirements for the normal diploma by electing 12 credits from the following subjects: Principles of Education, Educational Sociology, Secondary Education, Principles of Teaching, and Practice Teaching. However, under Rule 64 (e), until 1919-20 students who find it difficult to adjust their schedules to include practice work will be allowed to fulfill the previous requirements. By including History of Education, instead of Educational Sociology, all the specific requirements can be met. It is recommended that the additional credits be made up by including Childhood and Adolescence as a substitute for the practice work. The Department of Education has authority to make any reasonable adjustments.

COLLEGE OF EDUCATION

FACULTY

HENRY SUZZALLO, PH. D. (Columbia), PRESIDENT.

FREDERICK ELMER BOLTON, PH. D. (Clark), Professor of Education;
DEAN.

CAROLINE HAVEN OBER, Professor of Spanish.

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

FREDERICK MORGAN PADELFORD, PH. D. (Yale), Professor of English.

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

FREDERICK ARTHUR OSBORN, PH. D. (Michigan), Professor of Physics and Director of the Physics Laboratories.

WILLIAM SAVERY, PH. D. (Harvard), Professor of Philosophy.

DAVID THOMSON, A. B. (Toronto), Professor of Latin.

PIERRE JOSEPH FREIN, PH. D. (Johns Hopkins), Professor of French.

THEODORE CHRISTIAN FRYE, PH. D. (Chicago), Professor of Botany and Acting Dean of the College of Science.

ROBERT EDOUARD MORITZ, PH. D. (Nebraska), PH. N. D. (Strassburg), Professor of Mathematics and Astronomy.

FREDERICK WILLIAM MEISNEST, PH. D. (Wisconsin), Professor of German.

DAVID CONNOLLY HALL, SC. M., M. D. (Chicago), University Health Officer and Director of Physical Education for Men.

WALTER GREENWOOD BEACH, A. M. (Harvard), Professor of Social Science.

IRVING MACKEY GLEN, A. M. (Oregon), Professor of Music and Dean of the College of Fine Arts.

JOHN WEINZIRL, PH. D. (Wisconsin), Professor of Bacteriology.

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

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

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

- WILLIAM PIERCE GOBSUCH, A. B. (Knox), Professor in charge of Public Speaking and Debate.
- STEVENSON SMITH, PH. D. (Pennsylvania), Professor of Psychology.
- WILLIAM TAYLOR PATTEN, Captain U. S. A., Retired, Professor of Military Science and Tactics.
- EDWARD MCMAHON, A. M. (Wisconsin), Associate Professor of American History.
- GEORGE WALLACE UMPHREY, PH. D. (Harvard), Associate Professor of Spanish.
- EDWIN JAMES SAUNDERS, A. M. (Harvard), Assistant Professor of Geology.
- ROBERT EVSTAFIEFF ROSE, PH. D. (Leipzig), Assistant Professor of Chemistry.
- ROBERT MAX GARRETT, PH. D. (Munich), Assistant Professor of English.
- ALLEN FULLER CARPENTER, PH. D. (Chicago), Assistant Professor of Mathematics.
- DAVID ALLEN ANDERSON, PH. D. (Iowa), Assistant Professor of Education.
- ERNEST OTTO ECKELMAN, PH. D. (Heidelberg), Assistant Professor of German.
- FRANCES DICKEY, A. M. (Columbia), Assistant Professor of Music.
- DALLAS DEVELLO JOHNSON, A. M. (Columbia), Assistant Professor of Education.
- JESSIE BEE MERRICK, B. S. (Columbia), Director of Physical Education for Women.
- HENRY SLATER WILCOX, A. M. (Harvard), Instructor in Psychology.
- *GERTRUDE CRUDEN, B. S. (Columbia), Instructor in Domestic Art.
- HELEN BALCH CULVER, Bachelor's Diploma (Pratt), Instructor in Design.
- ROBERT C. GIVLER, PH. D. (Harvard), Instructor in Psychology.
- PAUL JEHU KRUSE, A. M. (Washington), Instructor in Education.

* Absent on leave, 1915-16.

SCOPE AND AIMS

The purpose of the College of Education is to bring together and correlate all of the forces of the University which contribute in a professional way to the preparation of superior teachers and other educational leaders. By the establishment of this advanced college for teachers it is hoped to set a high standard for the training of teachers in the State of Washington and in the Northwest.

The curriculum of the college is based upon the assumption that teachers should have first of all, and fundamental to all other preparation, a broad and liberal education; second, that this training should be supplemented by professional education which gives a knowledge of the pupils to be taught, the problems to be met, and new meaning to the subjects of instruction, as well as fundamental principles of teaching; and third, that they should be masters of some special subjects which they expect to teach.

The College of Education is especially fitted to provide teachers of the following types:

(1) High school teachers; (2) high school principals; (3) superintendents of public schools; (4) grammar school principals; (5) supervisors of primary schools; (6) supervisors and teachers of music, drawing, manual training, home economics, physical training and other special subjects; (7) normal school and college instructors in education; (8) specialists in the education of defectives; (9) playground directors; (10) Y. M. C. A. and Y. W. C. A. workers; (11) juvenile court workers; (12) high class grade and primary school teachers.

GENERAL ACADEMIC WORK

Because of the variety of work which every teacher is likely to be required to do upon beginning to teach, and because of the requirements for state certificates, at least elementary college courses should be taken in not less than four subjects which are taught in the high schools.

SPECIALIZED ACADEMIC WORK

Each teacher should have thorough, extended preparation in one subject and reasonable preparation in at least two additional subjects. Experience has shown that the following combinations

are most frequently demanded: Latin, German; Latin, Greek; English, German; English, history, civics; English, Latin, history; Spanish, French; Mathematics, physics, chemistry; Botany, zoology, physiology, physiography; French, German; Home Economics alone or in connection with one or two other subjects; Manual Training alone or in connection with one or two other subjects; Commercial subjects alone or with other subjects; Athletics, music, or drawing in combination with other work. One teacher is frequently required to teach all of the sciences. Public speaking is desirable as a part of the preparation for teaching English.

PROFESSIONAL WORK

The requirements for the academic major and minors secure a proper distribution of the academic subjects. The professional work consists (a) of the courses given in the department of Education, (b) the teachers' courses given in the various academic departments, and (c) the courses closely allied to and fundamental to those in Education, those in zoology, psychology, and sociology.

SPECIAL TEACHERS' COURSES

Nearly all of the academic departments have teachers' courses for the purpose of studying the problems of teaching those subjects in the high schools. Work in special methods relating to particular subjects is given by those dealing most directly with the given subject-matter. Foundation principles of general method as based upon the laws of learning and teaching are developed in the subject of Education.

OBSERVATION AND PRACTICE TEACHING

By an arrangement between the University and the schools of Seattle, students in the Department of Education may observe the regular work in certain schools (at present twelve are used) and do cadet work under direction of the regular teachers of the school and the University professor in charge of the practice work. In this way students have an opportunity to observe and gain valuable experience under exceptionally favorable conditions. One or two semesters of such experience under guidance and expert criticism is far superior to several years of the trial and error method through which many teachers are obliged to gain their first teaching experience.

MATERIAL EQUIPMENT OF DEPARTMENT OF EDUCATION

The Department of Education occupies seven rooms on the second floor of the Education Building, comprising five offices, two lecture rooms and a seminar room. The department is equipped with the standard educational works, besides many special books and monographs in English, German, and French. All the American educational journals of importance, and many English, German, and French periodicals are on file. In all, nearly sixty journals are received. The equipment is especially good for work in educational psychology, educational sociology, educational tests and measurements, philosophy of education, child study, educational organization and administration, and current school problems.

**THE BAILEY AND BABETTE GATZERT FOUNDATION
FOR CHILD WELFARE**

Although not a teaching department, the work of this foundation is open to the observation of students in Education.

INDUSTRIAL ARTS

While no separate department of industrial arts is maintained during the regular year, special attention is devoted to this work during the summer session. A good curriculum may be secured during the regular academic year by selecting from the courses in engineering and fine arts and education. The following courses are suggested: carpentry and wood-turning, pattern making and cabinet work, forge and foundry, engineering drawing, public school drawing, freehand drawing, principles of design and the theory and organization of industrial arts. Because of the splendid industrial arts work in the Seattle public schools, students have unusual facilities for observing the best organization and equipment. A large number of industrial centers and prevocational classes are maintained in various parts of the city.

ATHLETICS AND PLAYGROUND ACTIVITIES

There is at the present time, a strong demand for teachers, both men and women, who can direct the various forms of athletics and playground activities in the high school and the grammar grades.

PUBLIC SCHOOL MUSIC

Not only is there a demand for specially trained supervisors of music in the schools, but every school needs teachers who can give some assistance in the general musical activities of the school and the community. Every teacher who has any musical ability ought to secure some training in music and participate in some of the musical organizations of the University.

DEBATING, DRAMATICS, PUBLIC SPEAKING

Every teacher will be called upon to assist in the incidental work of the school. The small towns can not afford special teachers of public speaking and debate and consequently the teacher who can assist in these lines increases his usefulness. Every student should participate in some of these lines all through the college course and definite courses in them should be taken.

JOURNALISM IN HIGH SCHOOLS

Newspaper writing is being introduced in some of the best high schools as a part of the English course. It seems to afford a valuable incentive to many pupils in their English work. The teacher who undertakes this work needs to be especially well trained professionally as well as in English and journalism. For a proper combination of courses the student should consult the departments of education, English and journalism.

COMMERCIAL SUBJECTS

At present the demand upon the University for teachers of commercial subjects far exceeds the supply. To prepare for this line of work the student should include courses in book-keeping, stenography, commercial law, commercial policies, commercial geography, besides courses in economics, and the professional training in education.

LIBRARY TRAINING

A demand is developing for teachers who can combine library management with some high school subjects, preferably English. By the proper selection of courses the students can secure sufficient training in library science to be able to arrange, classify, catalogue and manage a school library.

TEACHING OF TECHNICAL SUBJECTS IN COLLEGE

Many students of engineering, forestry, law and other technical subjects ultimately plan to teach those subjects in colleges or technical schools. An increasing number of such students desire professional training in educational theory and methods as a part of their preparation.

THE STUDY OF EDUCATION AND CITIZENSHIP

Courses in education are valuable, not only for those who expect to teach, but also for those who expect to be citizens of any community. Many of the courses in education, therefore, are rightly coming to be pursued by students not expecting to become teachers.

EXTENSION SERVICE

The Department of Education is glad to render service to the cause of education in many ways besides through the regular courses of instruction. Members frequently give addresses at teachers' institutes, parent-teachers' associations, educational associations, community centers, school dedications, etc. They are also glad to conduct educational surveys as far as time will permit.

SATURDAY AND EVENING CLASSES

To accommodate the teachers of Seattle and vicinity several classes in education are scheduled on Saturday and during the late afternoon and evening. For the courses thus arranged for the year 1916-1917, see the statement of courses in education.

ORGANIZATION OF THE WORK IN THE COLLEGE OF EDUCATION

Three lines of work are provided in the College of Education:

- (a) The course leading to the degree of Bachelor of Education;
- (b) The courses leading to the degrees of Master of Arts in Education and Master of Science in Education;
- (c) Work leading to the Normal Diploma in connection with a degree from the College of Liberal Arts, the College of Science or the College of Education.

The College of Education is so organized that the student shall begin to think of the profession of teaching immediately upon entering the University. While the main work in education does not come until the junior and senior years, the student re-

ceives guidance and counsel from the outset in selecting his courses and is helped to get in touch with the professional atmosphere that should surround a teachers' college. The foundation work in zoology and psychology will be given as far as possible with the teaching profession in mind. It is planned to give some work of a general nature in education during the first two years that will serve as vocational guidance and will assist the student to arrange his work most advantageously and to accomplish it most economically. By the more prolonged individual acquaintance between students and the faculty of the College of Education it is hoped that the student will receive greater professional help and the faculty will be better able to judge of the teaching qualities of the students.

Under the new plan the student will not take so many required courses as formerly. The specific requirements in foreign language, physical science, mathematics, history and a half year of philosophy have been omitted. Of course, the student may elect these if he chooses. By this means the curriculum will be much more flexible and the student will be given the important educational privilege of choosing largely his own courses. This is in harmony with the idea of the greater vocationalizing of education.

The work in education and allied courses has been so extended that adequate professional preparation can now be secured. The courses in zoology, psychology, and sociology are all directly contributory to a knowledge of, and to an interpretation of, the courses in education. It is believed that the growing demand for thoroughly equipped teachers will now be met.

A degree may be obtained at the end of the fourth year, but the standard which the University encourages and hopes to establish for high school teaching is the five-year course, consisting of two years of collegiate work and three years of professional work combined with advanced academic study. Students expecting to teach are encouraged on entering to plan their courses for the master's degree in education. While the extended period is preferred it is possible for students with adequate preparation to secure the masters' degrees in a year of graduate work. The masters' degrees in education are specifically intended as teachers' degrees representing mastery of an extensive field of scholarship plus professional training, rather than intensive research in a limited field of investigation.

***ADMISSION TO FRESHMAN STANDING**

A student must offer for admission to freshman standing in the University, fifteen units by examination or by certificate from an accredited school from which he has graduated. The fifteen units must include the following combinations:

3 units of English.

2 units of mathematics (or 3 units if desired).

3 units selected from one of the following groups (or 2 units, if 3 units of mathematics are presented).

(a) Latin and Greek (not less than 2 units of Latin, or 1 of Greek will be counted).

(b) Modern foreign language (at least 2 units in *one* language; not less than one unit will be counted in any language).

(c) History, civics, economics (at least one unit to form a year of consecutive work in history).

(d) Physics, chemistry, botany, zoology, general biology, physical geography, geology, physiology. (Not less than one unit will be counted in physics, chemistry, or general biology. No science will be counted as applying on this requirement unless it includes a satisfactory amount of laboratory work).

2 units in subjects represented in the above groups (a)-(d).

5 units selected from any subjects accepted by an approved high school for its diploma; not more than 4 units, however, may be in vocational subjects.

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University, it is recommended that a student expecting to enter the College of Education should elect his work from the groups (a) to (d), so as to offer the following subjects:

A foreign language.....at least 2 units

A history (American preferred) or U. S. history
and civics1 unit

A science (physics, chemistry, botany, or zoology) 1 unit

If he shall not have included these subjects in his high school elections, it will be necessary for him to include them among his elections in college.

* More detailed information concerning admission is furnished on pages 43-46.

REQUIREMENTS FOR GRADUATION WITH THE DEGREE OF BACHELOR OF EDUCATION

To secure the degree of Bachelor of Education the candidate must fulfill the following conditions:

1. Comply with the admission regulations as stated above.
2. Complete the requirements in college subjects as follows:

Zoology	8 credits
Psychology	4 credits
Sociology	6 credits
Physical education	8 credits
English	0-8 credits
Education	24 credits
Teaching subjects:	64 credits
- (a) Two academic majors or
- (b) One academic major and two or three academic minors.

Free electives, depending upon the foregoing selections

Total for graduation.....132 credits

1. An academic major shall consist of 24 to 32 credits. At the option of the major professor this may include the teachers' course.
2. An academic minor shall consist of 12 to 16 credits.
3. The distribution of the 64 credits in teaching subjects shall be under the advice of the dean of the School of Education and the head of the department in which the academic major is selected. The distribution of the majors and minors shall be considered in the light of the actual calls for teachers year by year.
4. The teachers' course in the academic major is required, if offered.
5. The hours of credit in English will vary according to the section in which the student is assigned. Those whose preliminary training has been poor will be required to take four hours, those whose preliminary training has been fair will be required to take three hours, those whose preliminary training has been superior will be excused from the course.

6. The student's free electives may, therefore, vary from 0 to 18 credits according to the exemption in English and the number of credits secured in the major and minor subjects.

7. The teaching subjects may be selected from any subjects now recognized in the College of Liberal Arts or the College of Science.

8. The 24 credits in Education required for the degree of Bachelor of Education should include as foundation work the 12 credits required for the normal diploma. The work should also include a course in the history of education and one in childhood or adolescence. The remainder of the work should be selected so as to emphasize the line of special interest, as, for example, administration, secondary education, educational psychology, etc.

9. The required English must be completed during the first year. The required zoology or some other year of science must be taken during the first two years. If history or foreign languages are elected one course in the ones selected must be completed during the first two years. If mathematics is elected, four credits in it must be completed during the first two years. If the foregoing courses are not completed as specified, only half credit will be allowed.

10. The distribution of the 8 credits in zoology required of students in the College of Education shall be determined by the head of the department of zoology.

11. For purposes of the senior examination, Education is to be regarded as the senior examination major of students in the College of Education.

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

13. Courses in manual training, or in manual training combined with drawing, will be accepted as a minor toward the degree of Bachelor of Education.

14. Students in the College of Liberal Arts have the right to major in the Department of Education. Students majoring in Education must take at least 24 credits in Education. Students in the Colleges of Science, Engineering, Forestry, Mines, Law, and

Fine Arts, may elect courses in education according to conditions fixed by these divisions.

FRESHMAN YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Credits		Credits
English	0-4	English	0-4
Zoology	4	Zoology	4
Phys. Ed.	2	Phys. Ed.	2
Elective	8-12	Elective	8-12
Total	16+2	Total	16+2

ELECTIVES OPEN TO FRESHMEN

Languages: English, French, German, Greek, Italian, Latin, Public Speaking, Scandinavian, Spanish.

Natural Sciences: Botany, chemistry, geology, home economics, mathematics, physics, zoology.

Social Sciences: History, journalism, political and social science.

SOPHOMORE YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Credits		Credits
Phys. Ed.	2	Phys. Ed.	2
Psychology	4	Education	3
Major subject	4	Major subject	4
Elective	8	Elective	9
Total	16+2	Total	16+2

The foregoing for the sophomore year is only suggestive. Physical education is the only fixed requirement in the sophomore year. If psychology is not taken the first semester it should be taken the second and the education may be postponed until the junior year. The range of electives open to sophomores is very wide. For limitations see the departmental statements.

JUNIOR AND SENIOR YEARS

During the junior and senior years about six hours of work in Education will be necessary each semester. The academic major and minor should also be completed. The remainder of the work is elective.

ADMISSION OF NORMAL SCHOOL GRADUATES TO ADVANCED STANDING

Graduates from the advanced course of the Washington State Normal Schools, who have completed two full years of advanced work in addition to a four-year high school course covering college entrance requirements, will be admitted to the College of Education with provisional junior standing. They are given 48 scholastic credit plus 8 in physical education. The remaining work necessary to full junior standing may be made up after admission to the College of Education.

Graduates from approved normal schools who enter the College of Education may be exempted from such portions of prescribed subjects, including Education, as they have completed in the normal school, exemptions to be granted only upon the recommendation of the heads of the departments concerned.

Graduates from approved normal schools who major in Education in the College of Liberal Arts may be exempted from such portions of the work in Education as they have completed satisfactorily in the normal school, such exemption to be granted only upon the recommendation of the head of the Department of Education.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN EDUCATION OR MASTER OF SCIENCE IN EDUCATION

1. Registration in the College of Education at least one year before graduation. (The student may register in the College of Education as early as the beginning of the freshman year and is urged to do so if he plans to prepare for teaching.)

2. A bachelor's degree from this University or from some other institution of recognized standing.

3. Education, 24 credits.

4. A major academic subject, 24 to 32 credits at the option of the major professor.

5. Two academic minors of at least 16 credits each.

6. A teachers' course in the academic major, maximum 6 credits.

7. At least 3 credits in psychology.

8. Total 158 credits, including the undergraduate credits.

9. Upon completion of the course for the degree of M. A. in Education or M. S. in Education the candidate shall be exam-

ined in the academic major, the two academic minors and in Education under regulations which apply to the examination of candidates for masters' degrees in the graduate school.

NOTE 1. Such of the above requirements as have been included in the work taken for the bachelor's degree need not, of course, be taken a second time.

NOTE 2. Upon approval of the professor in charge of the academic major a part of the work for the major may be taken in allied lines.

REQUIREMENTS FOR THE NORMAL DIPLOMAS AND LIFE DIPLOMAS

The University is authorized by law to issue teachers' diplomas, valid as teachers' licenses in all public schools of the state, as described below. Candidates for these diplomas should file an application with the dean of the College of Education as early as possible after the beginning of the junior year, and should consult with him from time to time regarding their work for the diploma and their preparation for teaching.

I. THE UNIVERSITY FIVE-YEAR NORMAL 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. (a) Graduation from this University from the Colleges of Liberal Arts, Science, or Education. (The candidate must present 132 credits for graduation.) (b) Completion of at least twelve credits (semester hours) in the Department of Education, including the following:

Principles of Education.....	3 credits
Educational Sociology	2 credits
Secondary Education	2 credits
Principles of Teaching.....	2 credits
Practice of Teaching.....	3 credits

The department reserves the right to adjust these requirements to individual cases. Variations will sometimes need to be made in the case of normal school students, persons who have taken education courses in summer sessions, and teachers with considerable experience. No deviations will be permitted except on approval of the dean of the College of Education. Candidates for the University five-year diploma who have done part of their

education work in other colleges or universities than the University of Washington shall be required to earn not less than 8 credits in Education in this University. The amount of exemption shall be determined in each case by the dean of the College of Education. (c) Completion of a teachers' course in the major academic subject, if offered: maximum, 6 credits. (d) Evidence of such general scholarship and personal qualities as give promise of success and credit in the profession of teaching. Legible handwriting, good spelling, and correct English are indispensable. Active interest in the prospective work as a teacher will be considered.

2. Persons who have received the masters' or doctors' degree from this University shall be eligible to the University five-year normal diploma, provided they have fulfilled the specific professional requirements exacted of those with the bachelors' degree.

3. Graduates from other accredited colleges or universities than the University of Washington who desire the University five-year normal diploma shall be required to be in residence in this University at least one semester subsequent to graduation and to earn not less than 16 credits in approved courses, at least 8 credits of which shall be in Education. They must have secured at least 3 credits in psychology, a total of 12 credits in education, and have completed a teacher's course in an academic subject.

4. Graduates of the advanced courses of state normal schools who subsequently graduate from this University and who become candidates for the University five-year diploma must earn at least 8 credits in Education in this University.

II. THE UNIVERSITY LIFE DIPLOMA is granted to candidates who fulfill the requirements for the University five-year diploma and also give satisfactory evidence of having taught successfully for at least twenty-four months.

TEACHERS' APPOINTMENT COMMITTEE

The University maintains an Appointment Committee for the purpose of assisting teachers to secure desirable positions. The services of this committee are entirely free to students and graduates of the University and to school officers. Calls are received at all times of the year. The head of the department of education is chairman of the committee.

DEPARTMENTS OF INSTRUCTION

COLLEGES OF LIBERAL ARTS, SCIENCE, AND EDUCATION,

The departments of these three colleges are arranged in alphabetical order. Distinct subjects which are not organized as separate departments but are given in connection with the related work of an established department have directory headings in the alphabetical list.

Courses bearing numbers from 1 to 99 inclusive are normally offered to freshmen and sophomores; those from 100 to 199, to juniors and seniors; and those from 300 upward, to graduate students.

Odd numbers denote courses regularly given in the first semester, even numbers those regularly given in the second semester.

Two numbers connected by a hyphen indicate a year course.

Courses listed as year courses ordinarily carry credit only when pursued for the full time; the instructor's permission must be obtained for credit for only a single semester of such a course.

The credit indicated in connection with each course is the "semester credit," being based on the class periods per week.

ASTRONOMY

(See Mathematics and Astronomy)

BACTERIOLOGY

(Office, Science Hall)

PROFESSOR WEINZIRL, MISS CHALLIS, MR. THOMPSON.

The courses in bacteriology are essentially all applied and bear primarily upon: (a) medicine, (b) sanitation, and (c) industry.

SUGGESTED ELECTIONS

For pre-medical students: 103, 108, are required; 111, 112, 113, 114, may be elected.

For home economics students: 106 is required; 113 is recommended.

For chemical engineering students: 103, 104, 111, 113.

For other engineering students: 110 only is open.

For pharmacists: 5 is required; in junior and senior years, 103, 111, 112, 113, 114, may be elected.

For hygienic training: 103, 104, 111, 113, 207, 208, 209, 210.

For a major: 103, 104 or 108, 111, 112, 113, 114, 207, 208, 209, 210.

The laboratory fee for courses 5, 103, 104, 106, 108, 111, 112, 116, 200 and 210 is \$5 per semester; for course 110 is \$2.50; no fee for other courses.

FOR UNDERGRADUATES

5. BACTERIOLOGY FOR PHARMACISTS. Four credits. First semester. Prerequisites, sophomore standing, one year of botany and one year of chemistry. Professor WEINZIRL.

A general survey including technique, biology, diseases, immune sera, vaccines, disinfectants, etc.

106. HOUSEHOLD BACTERIOLOGY. Five credits. Second semester. Three lectures and two laboratory periods. For home economics students. Professor WEINZIRL.

Bacteriology as related to the home and its activities.

*110. BACTERIOLOGY FOR ENGINEERS. Two credits. Second semester. Laboratory deposit, \$2.50. Professor WEINZIRL.

General course. Application to sewage disposal and water supplies.

FOR UNDERGRADUATES AND GRADUATES

103. GENERAL BACTERIOLOGY. Four credits. First semester. Prerequisite, junior standing; botany or zoology, 1 year; chemistry, 1 year. Professor WEINZIRL and Miss CHALLIS.

Methods of growing bacteria and studying their structure, functions and distribution.

104. SANITARY AND INDUSTRIAL BACTERIOLOGY. Four credits. Second semester. Prerequisite, bacteriology 103. Professor WEINZIRL and Miss CHALLIS.

A brief survey of disease bacteria. Most of the time is given to sanitation and industry. Inspection trips.

* Not offered in 1916-17.

108. **MEDICAL BACTERIOLOGY.** Four credits. Second semester. Prerequisite, bacteriology 5 or 103. Required of pre-medical students. Professor WEINZIRL and Miss CHALLIS.

The study of pathogenic bacteria.

111. **BACTERIOLOGICAL ANALYSIS.** Two credits. First semester. Laboratory work only. Prerequisite, bacteriology 103 or equivalent. Professor WEINZIRL.

Analysis of water, sewage, milk, meat, etc.

112. **LABORATORY DIAGNOSIS.** Two credits. Second semester. Prerequisite, bacteriology 104 or 108. Professor WEINZIRL.

The diagnosis of disease by laboratory methods, mainly bacteriological.

113. **SANITARY PROBLEMS.** Two credits. First semester. Lectures only. Prerequisite, bacteriology 103 or equivalent. Professor WEINZIRL.

The sanitary problems relating to water, sewage, and food.

114. **DIAGNOSTIC METHODS.** Two credits. Second semester. Lectures only. Prerequisite, bacteriology 104 or 108. To be taken with bacteriology 112. Professor WEINZIRL.

The consideration of diagnostic methods and their application.

*116. **GENERAL PATHOLOGY.** Four credits. Second semester. Prerequisites, bacteriology 103, zoology 101 and junior standing. Professor WEINZIRL.

Gross and microscopical study of pathological lesions.

205. **SCHOOL HYGIENE.** See EDUCATION 165. Professor WEINZIRL.

207-208. **SEMINAR.** Two credits per semester. For graduate students only. With research constitutes a full year's work, and is planned as the regular third year's work in bacteriology. Time to be arranged. Professor WEINZIRL.

209-210. **RESEARCH.** Two or four credits per semester. Open to qualified students after consultation. Professor WEINZIRL.

* Not offered in 1916-17.

BOTANY

(Office, Science Hall)

PROFESSOR FRYE, ASSISTANT PROFESSORS RIGG AND HOTSON, MR. STILLINGER, MISS PEASE, MISS CADWELL, MISS HURD, MISS KARRER, MR. SCHMITZ, MR. THOMPSON.

SUGGESTED SELECTIONS

1. For the required science in the colleges of Liberal Arts and Science only courses 1, 2, 10, 105, 106 will be accepted; for Home Economics majors, 23 and 24 will also be accepted.

2. For a major: courses 105, 106, 141, 142, 143, 144, of which 105 and 106 are required. The total number of credits in the department must be at least 24.

3. For those preparing to teach botany: courses 10, 105, 106, 141, 142, 143, 144.

4. For pharmacy students: courses 13, 14.

5. For forestry students: courses 1, 11, 12, 141, 142, 143, 144.

6. For home economics students: courses 1, 2, 23, 24.

7. For students preparing to teach agriculture: courses 10, 105, 106, 125, 126, 141, 142, 143, 144.

8. For those desiring to enter seed laboratories: courses 10, 105, 106, 117, 143, 144.

1. **ELEMENTARY BOTANY.** Four credits. First semester. Professor FRYE and Assistant Professor Rigg.

The structure and functions of roots, stems, leaves and seeds. Only for those who have had no botany in the high school.

2. **ELEMENTARY BOTANY.** Four credits. Second semester. Open to students entering the second semester without any previous botany work. Professor FRYE and Assistant Professor Rigg.

Types of the great groups of plants from the lowest to the highest. Plant analysis.

10. **ECOLOGY AND TAXONOMY.** Four credits. Second semester. To be taken rather than botany 2, by those who expect to continue with botany 105. Prerequisite, botany 1 or one year of high school botany, except for teachers and seniors. Professor FRYE.

Elementary ecology with field work. Analysis of plants.

11. FORESTERS' BOTANY. Four credits. First semester. For forestry students. Prerequisite, botany 1. Assistant Professor HOTSON and Assistants.

A study of types of plants to illustrate the advances in complexity.

12. FORESTERS' BOTANY. Four credits. Second semester. A continuation of course 11. Prerequisite, botany 11. Assistant Professor HOTSON and Assistant.

13-14. PHARMACY BOTANY. Four credits per semester. Assistant Professor RIGG.

Gross structure of vegetative and reproductive parts of seed plants. Brief study of spore plants. Microscopy of powdered drugs.

*23. FOODS. Four credits. First semester. Prerequisite, botany 1 or high school botany. Assistant Professor RIGG.

The origin and structure of fibre-producing tissue in plants.

*24. FIBRES. Four credits. Second semester. Prerequisite, botany 1 or high school botany. Assistant Professor RIGG.

The origin and structure of fibre-producing tissue in plants.

105. MORPHOLOGY AND EVOLUTION. Four credits. First semester. Prerequisites, botany 2 or 10, or zoology 1 and 2. Professor FRYE and Assistant.

A morphological study of types to show advances in complexity; the principles upon which advance is based; the general line of evolution. Required of all majors.

106. MORPHOLOGY AND EVOLUTION. Four credits. Second semester. A continuation of 105. Required of all majors. Professor FRYE and Assistants.

*117. SEEDS. Four credits. First semester. Prerequisites, one year of botany; junior standing.

Seed structure and physiology. The recognition of plants by their seeds.

120. PLANT HISTOLOGY. Three credits. Second semester. Prerequisite, botany 106. Professor FRYE.

Preparation of slides for the compound microscope. Study of plant tissues.

125. **ELEMENTARY AGRICULTURE.** Four credits. First semester. Prerequisites, botany 1, and 2 or 10; junior standing. Assistant Professor HOTSON.

Designed as a preparation for those who expect to teach the subject in high schools.

126. **ELEMENTARY AGRICULTURE.** Four credits. Second semester. A continuation of botany 125. Assistant Professor HOTSON.

137. **JOURNAL CLUB.** No credit. One meeting per week at time to be arranged. Prerequisite, junior standing; two years of botany. Professor FRYE.

Review of articles in current journals. Suggested for all seniors, graduates and instructors in the department.

141. **GENERAL FUNGI.** Four credits. First semester. Time to be arranged. Prerequisites, botany 11 or 105 and junior standing. Assistant Professor HOTSON.

Morphology and classification of fungi; designed as a basis for plant pathology.

142. **GENERAL FUNGI.** Four credits. Second semester. Prerequisite, botany 141. A continuation of course 141. Assistant Professor HOTSON.

143. **PLANT PHYSIOLOGY.** Four credits. First semester. Prerequisites, chemistry 1 and 2; botany 1, 2 or 10. Assistant Professor RIGG.

The fundamental physical and chemical processes in plants.

144. **PLANT PHYSIOLOGY.** Four credits. Second semester. Prerequisite, botany 143. Assistant Professor RIGG.

The laws underlying growth and movement in plants.

233. **RESEARCH.** Either semester or both. Credit and time to be arranged. Open to qualified students after consultation. Professor FRYE, Assistant Professors RIGG and HOTSON.

250. **ALGAE.** Four credits. Either semester. Prerequisite, botany 105 and 106, or 11 and 12. Professor FRYE.

251. **BRYOPHYTES.** Four credits. Either semester. Prerequisite, botany 105 and 106, or 11 and 12. Professor FRYE.

252. **PTERIDOPHYTES.** Four credits. Either semester. Prerequisites, botany 105 and 106, or 11 and 12. Professor FRYE.

253. **ANGIOSPERMS.** Four credits. Either semester. Prerequisite, botany 105 and 106, or 11 and 12. Professor FRYE.

254. **ANGIOSPERMS.** Four credits. Either semester. Prerequisite, botany 105 and 106, or 11 and 12. Professor FRYE.

Only one of courses 250 to 254, inclusive, will be given in one semester, the particular course to depend upon requests from the advanced students.

261. **PLANT PATHOLOGY.** Four credits. First semester. Prerequisite, botany 142. Assistant Professor HOTSON.

A study of the diseases of plants and of the fungi which produce them.

262. **PLANT PATHOLOGY.** Four credits. Second semester. Prerequisite, botany 1. Assistant Professor HOTSON.

CHEMISTRY

(Bagley Hall)

PROFESSORS BYERS AND BENSON, ASSOCIATE PROFESSOR DEHN, ASSISTANT PROFESSOR ROSE, DR. TRUMBULL, DR. BELL, DR. LANGDON, MRS. ROSE, MR. THOMPSON, MR. LISSE, MR. SCOTT, MISS JENOKS, MR. SCHWARTZ, AND DEAN JOHNSON AND MISS HINDMAN OF THE COLLEGE OF PHARMACY.

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

REQUIREMENTS OF THE DEPARTMENT

For a major, a minimum of twenty-four credits selected from the courses outlined and including courses 21, 22, 31, 32, and 101, or their equivalents.

The deposit for each laboratory course is ten dollars per semester. This deposit covers the materials actually consumed in the laboratory and with care provides the student for a full semester's work. Any portion of the deposit not used will be refunded.

ELEMENTARY COURSES

1. **GENERAL CHEMISTRY.** Four credits. Either semester. Two lectures and six laboratory hours per week. Professor BYERS, Assistant Professor ROSE, Instructors and Assistants.

This course is designed to meet the needs of students who come from accredited schools in which chemistry is not required.

2. GENERAL CHEMISTRY. Four credits. Either semester. A continuation of 1.

3. GENERAL CHEMISTRY. Four credits. From January 1st to April 1st. Three lectures and four laboratory hours per week. Professor BENSON.

This course is open to students who enter the University short courses, and does not demand any previous knowledge of chemistry.

5. GENERAL CHEMISTRY. Four credits. First semester. Two lectures and six laboratory hours per week. No high school course is required as a prerequisite. Open only to women in the colleges of Liberal Arts, Fine Arts, and Science. Assistant Professor ROSE.

6. GENERAL CHEMISTRY. Four credits. Second semester. A continuation of 5. Assistant Professor ROSE.

7. GENERAL CHEMISTRY. Four credits. First semester. Dr. BELL.

A lecture and recitation course designed for students of the College of Pharmacy. It must be taken in conjunction with 9.

8. ORGANIC CHEMISTRY. Four credits. Second semester. Dr. BELL.

A continuation of 7. For students in Pharmacy. Must be accompanied by 10.

9. GENERAL CHEMISTRY. Four credits. First semester. A laboratory course designed to accompany 7. Twelve hours per week. Dr. BELL.

A portion of this course, together with a portion of 10, form a continuous course in qualitative analysis.

10. ORGANIC CHEMISTRY. Four credits. Second semester. Dr. BELL.

A laboratory course in organic preparations. (See also 9.)

21. GENERAL CHEMISTRY. Four credits. First semester. Two lectures and six laboratory hours per week. This course is open to students who have had a year of chemistry in an accredited high school. Professor BYERS, Dr. TRUMBULL, Dr. LANGDON, and Assistants.

22. **GENERAL CHEMISTRY.** Four credits. Second semester. A continuation of 21. Professor BYERS, Dr. TRUMBULL, Dr. LANGDON, and Assistants.

The laboratory work is an elementary course in Qualitative Analysis.

31. **ORGANIC CHEMISTRY.** Four credits. First semester. Prerequisite, 22, or its equivalent. Associate Professor DEHN.

Introductory course in organic chemistry, consisting of three lectures per week and four hours laboratory work, on the preparation and testing of representative compounds.

32. **ORGANIC CHEMISTRY.** Four credits. Second semester. Associate Professor DEHN.

A continuation of 31.

33. **ORGANIC CHEMISTRY.** Four credits. First semester. Prerequisite, 6. Associate Professor DEHN.

A lecture and laboratory course for the women of the department of home economics, and adapted to the students of the colleges of Liberal Arts and Science who wish to make a more rapid survey of the subject than is furnished by courses 31 and 32.

41. **ELEMENTARY QUALITATIVE ANALYSIS.** Four credits. Either semester. Two lectures and six laboratory hours per week. Mrs. ROSE.

This course is designed to follow chemistry 1 and 2, and is required of those students in the College of Engineering who have not presented high school chemistry for entrance.

43. **ADVANCED QUALITATIVE ANALYSIS.** Four credits. First semester. Professor BYERS.

Lectures on theory of solution as applied to analytical work. Laboratory work on the analysis of alloys and minerals.

51. **ENGINEERING CHEMISTRY.** Three credits. Either semester. Prerequisite, 22 or its equivalent. Professor BENSON.

A course in the chemistry of engineering materials. Designed for sophomore engineers.

FOR UPPERCLASSMEN

101. **QUANTITATIVE ANALYSIS.** Four credits. Either semester. Twelve laboratory hours and one recitation per week. Dr. BELL.

The technique of gravimetric and volumetric analysis.

102. QUANTITATIVE ANALYSIS. Four credits. Either semester. Dr. BELL.

A continuation of 101. Mineral analysis and special analytical processes.

111. FOOD ANALYSIS. Four credits. First semester. Professor JOHNSON and Miss HINDMAN.

Lectures and laboratory work on the methods of analysis of food products and the federal and state laws regulating the sale of foods and drugs.

112. FOOD ANALYSIS. Four credits. Second semester. A continuation of 111. Professor JOHNSON and Miss HINDMAN.

113. CHEMISTRY OF FOODS. Four credits. Either semester. Two lectures and two laboratory periods per week. Prerequisites, chemistry 5, 6 and 33, or their equivalent. Miss HINDMAN.

A course designed particularly for students of home economics.

121. INDUSTRIAL CHEMISTRY. Four credits. First semester. Prerequisite, 101. Professor BENSON.

A course designed primarily for chemical engineers, and dealing with a detailed study of chemical industries.

122. INDUSTRIAL CHEMISTRY. Four credits. Second semester. A continuation of chemistry 121.

123. ORGANIC ANALYSIS AND GLASS BLOWING. One to four credits. Either semester. Associate Professor DEHN.

133. SANITARY CHEMISTRY. Three credits. First semester. Two lectures and one laboratory period. Professor BENSON.

A study of the materials and processes used in the purification of water and sewage and in sanitation.

135. FOREST PRODUCTS. Three credits. First semester. A course designed especially for students of forestry. Two lectures and one laboratory period. Professor BENSON.

A detailed study of the chemical processes involved in the utilization of wood.

*136. ROAD MATERIALS. Two credits. Second semester. One lecture and one laboratory period. Professor BENSON.

A course designed for students in civil engineering. Deals with the materials of, and methods for examination of, road binders, dust preventives, etc.

141-142. PHYSIOLOGICAL CHEMISTRY. Four credits per semester. Prerequisite, 32. Associate Professor DEHN.

A course designed for medical, chemical and general science students. The chemical composition of foods, tissues, secretions and excretions, their physiological and pathological changes. Special attention is given to the composition and analysis of blood, milk and urine.

144. PHYSIOLOGICAL CHEMISTRY. Four credits. Second semester. Primarily for home economics students. Essentially the same as course 141. Associate Professor DEHN.

146. URINARY ANALYSIS. Two credits. Second semester. Associate Professor DEHN.

Laboratory work only, on the analysis of normal and pathological urine. Designed especially for students preparing for medical study.

FOR GRADUATES

201. PHYSICAL CHEMISTRY. Five credits. First semester. Prerequisite, physics 1-2. Dr. TRUMBULL.

An elementary course dealing with the fundamental theories of chemistry based upon physical measurements. Three lectures and two laboratory periods per week.

202. ADVANCED PHYSICAL CHEMISTRY. Four credits. Second semester. Prerequisites, 201, and differential calculus. Two lectures and six laboratory hours per week. Dr. TRUMBULL.

A course in chemical statics and dynamics with physical chemical measurements.

204. ELECTRO CHEMISTRY. Four credits. Second semester. Prerequisite, 201. Professor BYERS and Dr. TRUMBULL.

The lecture course deals with the historical development of electro chemistry and the theories of voltaic and electrolytic cells. The laboratory work deals with the practical methods of electro analysis and electro synthesis and related processes.

211. INORGANIC PREPARATIONS. Four credits. First semester. Twelve laboratory hours per week. Professor BYERS.

The course deals with the methods of preparation of inorganic chemical compounds.

212. **ADVANCED ORGANIC PREPARATIONS.** Four credits. Second semester. Twelve laboratory hours per week. Associate Professor DEHN.

The course deals with the synthesis of organic compounds.

221-222. **CHEMICAL THEORY.** Two credits per semester. Professor BYERS.

All graduate students registering in the Department of Chemistry are expected to take this course, which deals with the historical development of the fundamental laws and theories.

231. **ADVANCED ORGANIC CHEMISTRY.** Four credits. First semester. Assistant Professor ROSE.

A review of the theories of organic chemistry with special reference to the volatile oils, dye stuffs, alkaloids, sugars, etc. Special laboratory work to be arranged.

232. **ADVANCED ORGANIC CHEMISTRY.** Four credits. Second semester. A continuation of 231. Assistant Professor ROSE.

241-242. **JOURNAL COURSE.** One credit per semester. Dr. LANGDON.

The course deals with the sources of information through the publications of various sorts and involves the preparation of abstracts of articles in English, French, German, and other periodicals.

250. **RESEARCH.** Credit to be arranged. The work in research offered by the department consists of three types; first, thesis work for the Bachelor's Degree in chemical engineering. Such work may receive a maximum of six credits. Second, research work for the Master's Degree. This work is not necessarily laboratory investigation, although the investigation of the literature is ordinarily supplemented by more or less practical development of the subject. Maximum credit, six hours. Third, research for the Doctor's Degree. Maximum credit, thirty hours. Work for the Doctor's Degree may be carried on with any member of the staff of the department, on any topic, subject to the approval of the department.

EDUCATION

(Office, Education Building)

PROFESSORS BOLTON AND LULL, ASSISTANT PROFESSORS ANDERSON AND JOHNSON, MR. KRUSE.

Elementary psychology is prerequisite to all courses in education. Some knowledge of ethics, sociology, and zoology is also very desirable. The last two are required of candidates for the bachelor's degree in the College of Education. The courses in principles of education, educational sociology, secondary education, principles of teaching and practice of teaching are required for the normal diploma. They are also fundamental to all other courses in education. At least 12 credits in elementary courses in education are required before any courses can be counted toward graduate credit. Students should take psychology during the sophomore year and principles of education in either the last half of the sophomore year or the first half of the junior year. This should be followed by educational sociology and secondary education and then with principles of teaching and practice of teaching in the senior year. Deviation will doubtless sometimes be necessary to arrange schedules, also in the case of normal school students, persons who have taken some work in education during summer sessions, and experienced teachers. Deviations and changes from the foregoing may be made only with approval of the head of the department. Students who major in the department should take all of the fundamental courses and then elect enough to total 24 credits in the department. Candidates for the Master's Degree should have at least one-third of the work in strictly graduate courses.

I. PRINCIPLES OF EDUCATION

99. PRINCIPLES OF EDUCATION. Three credits. Either semester. Professor BOLTON and Assistant Professor ANDERSON.

A foundation course introductory to the rest of the study of education. An attempt is made to interpret the meaning of education, to understand human nature and to comprehend how environment may be utilized to promote the development of the individual and of society. An inductive development of principles of education derived from (1) biology, (2) psychology, and (3) sociology. Representative topics: meaning of education, so-

cial and hereditary factors in the educative process; educational bearings of instinct, habit, culture epochs, individual differences; training of senses, memory, imagination, emotions, will, motor activities, moral nature; formal discipline, educational values; the foregoing in relation to the school curriculum.

207-208. PHILOSOPHY OF EDUCATION. Two credits per semester. Professor BOLTON.

Advanced course. A critical examination of the fundamental principles which underlie a scientific theory of education. The processes and problems of education are examined from the standpoint of biology, psychology, sociology, philosophy and the history of education. An attempt to formulate a philosophical basis for educational theory and practice. Time arranged to accommodate teachers of Seattle and vicinity.

II. EDUCATIONAL SOCIOLOGY

109. SOCIAL FOUNDATIONS OF THE SCHOOL SYSTEM. Two credits. Either semester. Assistant Professor JOHNSON.

The social origin and social function of education; distribution of educative functions among the various social agencies; social interpretation of the school. The sociological factors conditioning: (1) What we teach (curriculum); (2) how we teach (instruction and supervision); (3) participation of pupils in government of the school (discipline and management); (4) inner organization of the school (administration).

151. (A continuation of 109.) Two credits. Second semester. Assistant Professor JOHNSON.

The external social aspects of education as carried on through the institution called the school. Particular attention to relation between: (1) school and home; (2) school and vocation; (3) school and social progress. Prerequisite, 109.

159-160. HISTORY OF EDUCATION. Two credits per semester. Mr. KRUSE.

First semester, ancient and medieval. A study of the development of educational ideals and practices from a typical oriental civilization through Jewish, Greek, Roman, early Christian civilization and the Renaissance period. Second semester, the modern period. The educational forces that have been active since the Middle Ages; the conservative and creative elements in social and educational institutions during the modern period. American

education emphasizing the beginnings and development of the American high school. At every point an effort will be made to trace the origin and development of present-day educational theories and practices. The relation between the civilization of a given people and their education, and the reciprocal effect of education upon national ideals.

200. VOCATIONAL EDUCATION. Two credits. Either semester. Assistant Professor JOHNSON.

A consideration of the need for more adequate provision for vocational education as revealed in the demands coming from organized labor, employers, charities workers, educators, and statesmen. A comparative study of various administrative schemes, in operation and proposed, for meeting this need.

211-212. COMPARATIVE EDUCATION. Two credits per semester.

The critical study of modern educational organization and practice in foreign countries, especially in Germany, France, England, Norway, Sweden and Canada. Brief consideration of their development. Particular emphasis regarding their influence upon the development of the educational theories and practices in America.

III. EDUCATIONAL PSYCHOLOGY

155. CHILDHOOD AND ADOLESCENCE. Two credits. Either semester. Professor BOLTON.

A study of the characteristics of the child to reveal how education is conditioned upon the successive stages of development; hygiene of the school child; child welfare agencies; value of child study for parents and teachers; educational theories and methods of some of the great leaders in child study, including Froebel, Pestalozzi, Hall, Dewey, Montessori. (As the majority of students will be high school teachers, special emphasis is placed upon adolescence or the high school period.)

203-204. EDUCATIONAL PROBLEMS OF ADOLESCENCE. Two credits per semester. Professor BOLTON.

A critical consideration of the physical, intellectual, emotional, moral and social characteristics of adolescence, and the educative activities suited to the period of secondary school education. An evaluation of the content of some selected subjects of the high school curriculum to determine their adaptability to the adolescent period. Time especially arranged for teachers of Seattle and vicinity.

205-206. **EXPERIMENTAL EDUCATION.** Two credits per semester. Mr. KRUSE.

(a) A summary of the literature of recent experimental studies in education. (b) Methods of investigation and interpretation of results. (c) Scales and tests. (d) Problems suitable for class and individual experimentation. A consideration of those problems in the teaching of reading, writing, spelling, arithmetic, etc., which lend themselves to experimental investigation. Data will be obtained from various public schools.

215-216. **ADVANCED EDUCATIONAL PSYCHOLOGY.** Two credits per semester. Professor BOLTON.

Lectures, readings, discussions and demonstrations. Consideration of typical experimental methods in relation to the present state of exact knowledge involved in definite educational problems.

IV. EDUCATIONAL ADMINISTRATION

119. **SECONDARY EDUCATION.** Three credits. Either semester. Professor LULL.

Development of secondary education briefly traced to aid in understanding current problems. Relation to higher institutions, to the elementary school, and to the industrial life of the community. Organization and curricula of the socialized high school. Direction of study. Value of home study versus school study. Home and school association. Cooperative agencies. Internal government. Administration of the social activities, athletics, debating activities, vocational guidance and continuation work. Much attention to the organization of the branches of instruction, students making a special study of branches which they are preparing to teach. This connects very closely with the academic training and the teachers' courses given by other departments of the University.

156. **SUPERVISION AND MANAGEMENT.** Three credits. Second semester. Professor LULL.

For those who are preparing for supervision, principalships or teaching positions. Practical problems of school organization and administration, such as the making and administration of courses of study; functions of school boards, superintendents, and principals; supervision of class work, teachers' meetings, student organizations.

165. SCHOOL HYGIENE. Two credits. First semester. Professor WEINZIRL.

Problems of school hygiene, including heating, lighting, and ventilation; school diseases and medical inspection of schools, hygiene of various school activities.

209-210. ADMINISTRATION OF AMERICAN EDUCATION. Two credits per semester. Professor LULL.

Plan: To discover the educational needs and then to determine as far as possible to what extent the present systems of administration should be reorganized. First semester. National, state and county (or other similar local unit) administration. Problems in the reorganization of state and county units of administration. Emphasis upon the State of Washington. Second semester. Local administration, including cities and towns. The administrative machinery of the schools. Administration of instruction, secondary, elementary, and special forms.

V. TEACHER TRAINING

157. PRINCIPLES OF TEACHING. Two credits. Either semester. Prerequisite, 99. Mr. KRUSE.

The principles of teaching based upon the laws of psychology. The application of the fundamental laws of mental life to school room procedure. Specifically, (1) a consideration of the laws governing the acquisition of habits and skill in the light of the best experimental evidence; (2) a study of the laws of reflective thinking including problem solving and the acquisition of generalizations. How to study and teaching how to study, questioning, use of books, measuring the results of teaching.

This course must be accompanied by 161-162, in which the student will be required to do a specific amount of observation of teaching for the purpose of obtaining material illustrative of the principles developed in class.

161. PRACTICE TEACHING. Three credits per semester. (By permission may be taken a second semester as 162.) Assistant Professor ANDERSON.

Taken in connection with principles of teaching. Practice teaching under supervision in some of the Seattle city schools.

VI. GRADUATE SEMINARS AND INDIVIDUAL RESEARCH

249-250. SEMINAR IN MODERN EDUCATIONAL THEORIES. Two credits per semester. Professor BOLTON.

Critical consideration of technical educational literature bearing upon modern educational theories and problems. The evolution of these theories and problems will be traced. Reports on individual topics.

251-252. SEMINAR IN INDUSTRIAL ARTS EDUCATION. Two credits per semester. Assistant Professor JOHNSON.

The need for a study of industry in the elementary school; typical approaches to the study of industry; relation of industrial arts to other studies of the curriculum; criteria for curriculum making in the industrial arts; problems of supervision and administration. The endpoint of this course is the development of a tentative course of study in industrial arts for the elementary school.

253-254. SEMINAR IN EDUCATIONAL SURVEYS. Two credits per semester. Professor LULL.

Methods and literature of educational surveys.

255-256. SEMINAR IN ELEMENTARY SCHOOL CURRICULUM. Two credits per semester. Assistant Professor ANDERSON.

The function, character, and organization of the elementary school curriculum. A consideration of what subject-matter and experiences are of greatest worth for the individual. Adaptation of the curriculum to growth periods. The curriculum from the standpoint of the immediate interests, needs, and future efficiency of the child. Minimum essentials in and possibilities for the enrichment of the course of study. The time is especially arranged for teachers of Seattle and vicinity.

299-300. INDIVIDUAL RESEARCH OR THESIS WORK. Credits to be arranged.

Intensive study and original investigation of special problems. Results are usually reported in one of the seminars and when especially meritorious may be published. The special problems are directed by different members of the department. Consult head of the department regarding registration.

ENGLISH

(Office, Denny Hall)

PROFESSORS PADELFORD AND PARRINGTON; ASSOCIATE PROFESSORS
BENHAM AND MILLIMAN; ASSISTANT PROFESSORS GARRETT,
COX, DARBY AND JOHANSON; MR. SAWYER, MR.
CHITTICK, MR. WITHERS, MR. HARRISON
AND MR. STIDSTON.

Departmental Committee on Underclass Work: Milliman, Chittick, Withers, and Stidston.

Departmental Committee on Upperclass Work: Parrington, Milliman, Cox, and Johanson.

Departmental Committee on Course of Study: Johanson, Parrington, Milliman, and Cox.

REQUIREMENTS FOR MAJOR STUDENTS

Major students are required to take course 121-122 or course 123-124. Candidates for the teachers' certificate are required to take, in addition, course 183-184.

It is expected that senior major students will take course 191-192, but the work is not a definite prescription.

I. COMPOSITION

1-2. FRESHMAN COMPOSITION. Two to four credits per semester. Required of all freshmen in the College of Liberal Arts and in the College of Science. If taken later than the freshman year, only half credit will be given. Associate Professor MILLIMAN in charge.

The principles of English composition, with practice in writing, and conferences in theme criticism.

The work done in this course is regarded as belonging rather to the high school than to the university, and the amount prescribed varies with the preparation of the student. Those whose preliminary training has been superior will be excused from the course; others will be required to take two, three or four hours, as their needs demand. All who receive a grade of A in course 1 are excused from course 2.

Both courses 1 and 2 are repeated in the following semester.

3-4. FRESHMAN COMPOSITION. Two credits per semester. First semester of freshman and second semester of sophomore year. Associate Professor MILLIMAN in charge.

An adaptation of course 1-2 for students in the College of Engineering. No students will be excused from the course, but a section will be provided for those whose training has been exceptionally good.

5-6. FRESHMAN COMPOSITION. Two credits per semester. Mr.

For students in the College of Forestry.

9-10. SUB-FRESHMAN COMPOSITION. Without credit. First semester.

A course designed to meet the needs of those whose training in composition is inadequate.

51-52. ADVANCED COMPOSITION. One to three credits per semester. Admission to sections in advanced composition is subject to the approval of the instructors.

Section A. Three credits. Associate Professor MILLIMAN.

A course in magazine-writing. Articles in current magazines are studied as models for short and long themes on timely subjects.

Section B. Three credits. Mr. CHITTICK.

A course in informal essay-writing. Material from the English essays, contemporary and earlier, is used for study.

Section C. Three credits. Assistant Professor Cox.

A course in practical criticism, designed to give basis and direction to critical judgments on literature and art.

Section D. One credit. Professor PARRINGTON.

A study of the principles of English versification, with some consideration of present-day poetry, and practice in verse-writing.

101-102. SHORT STORY. (Journalism 111-112.) Three credits per semester. Laboratory deposit, \$2.00. Prerequisite, junior or senior standing; open to sophomores with permission. Mr. AGNEW.

A critical appreciation of the short story and its place in literature, with practice in composition. (For further description see department of journalism.)

II. LANGUAGE

Primarily for juniors and seniors

121-122. HISTORICAL ENGLISH GRAMMAR. Two credits per semester. Assistant Professor COX.

A study of the origin and development of the English language, with special reference to the vocabulary, construction, and pronunciation of modern English.

123-124. OLD AND MIDDLE ENGLISH. Three credits per semester. Assistant Professor GARRETT.

The first semester is devoted to the study of the elements of Old English grammar and to the reading of easy texts; the second semester is given over to a rapid and extensive reading in Middle English.

III. INTRODUCTORY COURSES IN ENGLISH LITERATURE

Primarily for freshmen and sophomores

21-22. FRESHMAN LITERATURE. Three credits per semester. Assistant Professor GARRETT, Mr. CHITTICK, and Mr. STIDSTON.

Literature dealing with the social, educational, scientific and religious questions of the day. Informal discussions, with papers. Intended primarily for freshmen who have been excused from all or part of the required course in composition.

71-72. SOPHOMORE LITERATURE. Three credits per semester. Mr. SAWYER.

A study of literary types; poetry, drama, essay, and novel.

73-74. CONTEMPORARY LITERATURE. Three credits per semester. Assistant Professor DARBY and Mr. CHITTICK.

The reading and discussion of significant works of the past thirty years.

IV. ADVANCED COURSES IN ENGLISH LITERATURE

A. HISTORICAL DEVELOPMENT OF ENGLISH LITERATURE

Primarily for juniors and seniors

The several courses grouped below are to be considered merely as convenient divisions of the body of English literature. It is urged that the students should conceive of the field as a whole, and plan his elections so as to read through as large a part of the entire field as possible.

*131. ENGLISH LITERATURE FROM ALFRED TO CHAUCER. Two credits. First semester. Assistant Professor GARRETT.

*132. ENGLISH LITERATURE FROM CHAUCER TO SHAKESPEARE. Two credits. Second semester. Assistant Professor GARRETT.

133-134. MEDIEVAL LITERATURE AND MEDIEVAL REVIVAL. Two credits per semester. Assistant Professor GARRETT.

In the first semester the life and ideals of the middle ages are studied through representative texts. In the second semester the revival of interest in the middle ages is traced from the time of Walpole to the present.

135-136. MAIN TENDENCIES IN ENGLISH LITERATURE FROM 1590 to 1900. Three credits per semester. Professor PARRINGTON.

A study in national ideals, with a consideration of significant literary figures and works.

137-138. ENGLISH LITERATURE IN THE SEVENTEENTH CENTURY. Two credits per semester. Associate Professor BENHAM.

139-140. ENGLISH LITERATURE IN THE EIGHTEENTH CENTURY. Three credits per semester. Assistant Professor DARBY.

A study of the literary and social movements of the period.

141-142. SOCIAL IDEALS IN ENGLISH LITERATURE. Three credits per semester. Associate Professor BENHAM.

A study of model commonwealths, and of such other literature as illustrates the growth of English social and economic thought.

B. AMERICAN LITERATURE

161. EARLY NINETEENTH CENTURY LITERATURE IN AMERICA. Three credits. First semester. Professor PARRINGTON.

A study in national ideals. The course will deal with the literature of the Constitution, early poetry, fiction, and essays, and the controversy over slavery.

162. MIDDLE NINETEENTH CENTURY LITERATURE IN AMERICA. Three credits. Second semester. Professor PARRINGTON.

A study primarily in the New England school and Whitman, with some consideration of other writers.

* Not offered in 1916-17.

163. AMERICAN LITERATURE FROM 1870 TO 1890. Two credits. First semester. Professor PARRINGTON.

An introduction to current literary ideals and tendencies in America, as exemplified particularly by Twain, Howells, Lanier and Riley.

164. AMERICAN LITERATURE FROM 1890 TO 1916. Two credits. Second semester. Professor PARRINGTON.

A consideration of our recent literary output, exclusive of the drama, with the emphasis laid upon tendencies of thought.

165. GREAT AMERICAN WRITERS. Two credits. First semester. Associate Professor MILLIMAN.

A critical study of the works of Emerson, Whitman, Hawthorne, and Poe.

166. GREAT AMERICAN WRITERS. Three credits. Second semester. Associate Professor MILLIMAN.

A critical study of the works of Longfellow and Lowell.

C. TYPES, AUTHORS, AND SPECIAL STUDIES COURSES

171. BROWNING. Three credits. First semester. Professor PADDELFORD.

A study of Browning as an artist, and as an intellectual and spiritual force.

172. SHAKESPEARE. Three credits. Second semester. Professor PADDELFORD.

An attempt primarily through the study of Shakespeare to catch the spirit of the English Renaissance.

173. THE GEORGIAN POETS. Three credits. First semester. Assistant Professor DARBY.

A study of the English romantic movement: Wordsworth, Coleridge, Shelley, Keats and Byron.

174. THE VICTORIAN POETS. Three credits. Second semester. Assistant Professor DARBY.

A study of English poetry since 1830.

175. VICTORIAN ESSAYISTS. Two credits. First semester. Assistant Professor COX.

Studies in Carlyle and Ruskin.

176. VICTORIAN ESSAYISTS. Two credits. Second semester. Assistant Professor COX.

Studies in Arnold and Newman.

177-178. **THE NOVEL.** Three credits per semester. Associate Professor MILLIMAN.

A study of the movements in English prose fiction, with an analysis of some of the principal works, and a discussion of the problems in ethics and esthetics involved.

179-180. **THE ENGLISH DRAMA.** Three credits per semester. Mr. HARRISON.

A study of representative examples of English Drama of various periods from the beginnings to the present.

181-182. **GENERAL LITERATURE.** Three credits per semester. Assistant Professor JOHANSON.

Studies in representative European writers.

183-184. **TEACHER'S COURSE.** Two credits per semester. Required of major students who wish the recommendation of the department for the normal diploma. Assistant Professor GARRETT and Mr. CHITTICK.

A consideration of methods and problems in the teaching of English in the high school, with practice in teaching.

191-192. **SENIOR CONFERENCE.** One-half credit per semester. Assistant Professor JOHANSON.

Individual conferences with senior major students for the purpose of effecting a correlation of studies, and for guidance in original investigation. Each student is expected to meet the instructor in a conference of at least a half hour each week.

V. GRADUATE WORK

Department Committee on Graduate Work: Cox, BENHAM, GARRETT, DARBY.

Graduate work is usually conducted by means of seminars. The time devoted to the meetings is indicated in each case, but the number of credits a student may elect in a given seminar varies from one to six at option. In every case, however, the number elected must be indicated at the time of enrollment.

201-202. **ENGLISH LITERARY HISTORY.**

*A. **THE MEDIEVAL PERIOD.** From the beginnings to 1550. Assistant Professor Cox.

B. **ENGLISH LITERATURE FROM 1550-1660.** Professor PADEFORD. For 1916-1917 the subject matter will be the Tudor and Jacob-

* Not offered in 1916-17.

ean drama. The first semester will be given up to the study of the general history of this drama and to the reading of a large number of plays; the second semester to the detailed study of problems connected with the drama.

C. ENGLISH LITERATURE FROM 1660-1830. Assistant Professor DABBY.

The work of this seminar is conducted by means of individual conferences. Each student selects his own reading in this field. Suggested readings for 1916-1917: Milton and the Puritans; The Queen Anne classicists, Dr. Samuel Johnson and his circle, the eighteenth century novel, the revolutionary period.

211-212. AMERICAN LITERATURE. Professor PARRINGTON.

The field of this work is determined by the wishes of the class. During the past two years the period from 1890-1914 has been studied.

221-222. MODERN ENGLISH LITERATURE. Associate Professor BENHAM.

The emphasis is placed on nineteenth century prose with a view to determining, if possible, the influence of the industrial revolution on modern English literature.

231-232. COMPARATIVE LITERATURE.

A. THEORIES OF POETRY AND CRITICISM. Assistant Professor COX.

Readings for background in esthetic, philosophic, and poetic theories from Plato and Aristotle down to the present. Special investigations in tragedy and comedy, lyric and narrative poetry.

B. RENAISSANCE TYPES IN ENGLAND, FRANCE AND ITALY. Professor PADELFOED.

A review of the history of the Renaissance and the Reformation; followed by a comparative study of the more notable Renaissance literature in England, France and Italy.

241-242. THE ENGLISH LANGUAGE.

A. OLD AND MIDDLE ENGLISH. Assistant Professor GARRETT.

For the year 1916-1917 the works of Chaucer will be studied.

B. LINGUISTICS. Assistant Professor GARRETT.

The history of English dialects from the eighth century down to the present time.

251. RHETORIC. Two credits. First semester. Associate Professor MILLIMAN.

A study of the elements of style in thought, unit, rhetorical foot, tone color, suppressed predication, and sentence shortening.

261-262. THE TECHNIQUE OF THE DRAMA. Three credits per semester. Mr. HARRISON.

A course in the practice of dramatic composition, together with the study of dramatic technique. Open to undergraduates with the permission of the instructor.

FRENCH AND ITALIAN

(Denny Hall)

PROFESSOR FREIN, ASSOCIATE PROFESSOR PATZER, ASSISTANT PROFESSORS ATKIN, RATTI, HELMLINGE AND SBEDICO; MR. WHITTLESEY, MR. GUERARD.

REQUIREMENTS OF THE DEPARTMENT

Courses 5-6, 7-8, 9, and 117-118 are required of majors and of all who wish to be recommended as teachers.

I. FRENCH

FOR UNDERGRADUATES

1-2. ELEMENTARY. Four credits per semester. Assistant professors and instructors.

As far as possible French will be used in class from the beginning. A few easy texts will be read. One of the sections, reciting at 9 o'clock, will be conducted especially for those whose purpose is merely to acquire a reading knowledge of French.

Course 1 is repeated the second semester.

2-3. ADVANCED FIRST YEAR. Four credits per semester. Prerequisite, one semester of French in the University, or one year in the high school. Those who have had three semesters of French in the high school should enter course 3. Assistant professors and instructors.

3-4. READING AND SYNTAX. Four credits per semester. Prerequisite 2, or three semesters in the high school. Assistant professors and instructors.

Review of grammar, easy composition, reading of several texts. Course 4 is repeated in the first semester.

This course may be entered by those who have had two years of French in high school and who do not intend to major

in the modern languages. Those who wish to major in the modern languages should enter course 5-6.

5-6. **ADVANCED READING.** Three credits per semester. Three sections. Prerequisite, 4. Assistant professors.

Reading of more advanced modern texts and a few of the best plays of Corneille, Molière and Racine.

Course 5 is repeated the second semester for those who finish course 4 in February, and for those who enter at that time with three years of French in the high school.

7-8. **COMPOSITION AND CONVERSATION.** Three credits per semester. Assistant Professors RATTI and HELMLINGE.

9-9. **PHONETICS.** Two credits. Either semester. Prerequisite, 1. Assistant Professor ATKIN.

This course is intended to furnish the student an opportunity to acquire a reasonably accurate pronunciation, based upon rules which will give him self-assurance in reading ordinary French. Those who have not been trained in phonetics in the high school should enter this course.

11-12. **MASTERPIECES OF FRENCH LITERATURE.** Two credits per semester. No prerequisite. Professor FREIN.

This course is planned especially for those who have been unable to study French literature in the original texts. It will be given in English and some of the masterpieces will be assigned to be read in the best English translations. This course is intended to give a general survey of French literature, with special emphasis placed upon the important works.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

101-102. **THE FRENCH NOVEL.** Two credits per semester. Prerequisite, 6. Assistant Professor HELMLINGE.

History of the French novel from its beginning. Some of the most representative novels will be read in class, and others assigned for outside reading.

103-104. **LYRIC POETRY.** Two credits per semester. Prerequisite, 6. Assistant Professor HELMLINGE.

History of lyric poetry. Considerable attention paid to the structure of modern forms of lyric poetry. Canfield's French Lyrics.

105-106. THE FRENCH DRAMA. Two credits per semester. Prerequisite, 6. Associate Professor PATZER.

History of the drama from its origin. Some of the masterpieces are read in class, and some are assigned for individual reading and report.

107-108. THE SHORT STORY. Two credits per semester. Prerequisite, 6. Assistant Professor ATKIN.

History of the development of the French short story. Reading of some of the best short stories, both in class and for individual assignments.

111-112. HISTORY OF THE FRENCH LITERATURE OF THE NINETEENTH CENTURY. Two credits per semester. Prerequisite, 6. Assistant Professor RATTI.

Lectures in French. Some of the masterpieces assigned for individual reading and report.

*113-114. HISTORY OF THE FRENCH LITERATURE OF THE EIGHTEENTH CENTURY. Two credits per semester. Prerequisite, 6.

*115-116. HISTORY OF THE FRENCH LITERATURE OF THE SEVENTEENTH CENTURY. Two credits per semester. Prerequisite, 6.

Lectures in French; assigned reading.

117-118. TEACHERS' COURSE. Two credits per semester. Prerequisite, 6 and 8. Professor FREIN.

Special emphasis on the methods of teaching French pronunciation. Oral and written exercises. Review of grammar, with students conducting the recitations.

FOR GRADUATES

201-202. HISTORY OF THE FRENCH LITERATURE OF THE SIXTEENTH CENTURY. Two credits per semester. Prerequisite, 6. Associate Professor PATZER.

Lectures in French. Some texts of the sixteenth century will be assigned for outside reading, and some will be read in class. The French Renaissance will be compared with that of other countries.

203-204. MIDDLE FRENCH. Two credits per semester. Professor FREIN.

Lectures on the history of the fourteenth and fifteenth centuries will be given in French. Some texts will be read in class,

and others will be assigned to be read out of class and reports made to the class. Course conducted in French.

205-206. OLD FRENCH READINGS. Four credits per semester. Professor FREIN.

Elements of Old French grammar, and translation from Old French into modern French of some of the texts in Bartsch, Chrestomathie de l'Ancien Français, and a few of the old texts will be read in complete editions.

207-208. HISTORY OF OLD FRENCH LITERATURE. Two credits per semester. Professor FREIN.

Open only to those who have a reading knowledge of Old French. Those who have had course 203-204 will ordinarily be prepared to follow the work. Course given in French.

II. ITALIAN

FOR UNDERGRADUATES

1-2. ELEMENTARY. Four credits per semester. No student will be allowed to begin Italian and French (or Spanish) the same year. Dr. SBEDICO.

Grammar and reading.

3-4. READING AND SYNTAX. Two credits per semester. Dr. SBEDICO.

Modern texts will be read. Constant practice in conversation.

GEOLOGY

(Office, Science Hall)

PROFESSOR LANDES,* ASSISTANT PROFESSORS SAUNDERS, WEAVER AND CULVER, MR. LEIGHTON, MR. PACKARD AND MR. SALISBURY.

REQUIREMENTS OF THE DEPARTMENT

(a) For the required 8 credits in biological science in the Colleges of Liberal Arts and Science: Courses 1-2, or 11-12, or 12 and 2.

(b) For a major: 24 credits in geology with 24 additional credits in the College of Science. Not more than 40 credits may be counted in the major department.

(c) For a teacher's certificate: The same as for a major, or the teacher's course in Science. It is recommended that those

* Absent on leave, 1915-16.

preparing to teach physical geography in the high school, or those entering the second semester, should take courses 11-12 instead of 1-2.

COURSES

1-2. GENERAL. Four credits per semester. Three lectures and one laboratory period per week, with occasional half day field trips. Laboratory fee, \$1.00. Assistant Professors SAUNDERS and CULVER.

The fundamental principles of structural, dynamic and historical geology.

3. GEOLOGY FOR ENGINEERING AND MINING STUDENTS. Four credits. Either semester. Elective for freshmen. Required for sophomores. Three class periods and one laboratory period. Laboratory fee, \$1.00. Assistant Professor CULVER.

General geological principles with their special application to engineering and mining problems.

6. GEOLOGY FOR FORESTRY STUDENTS. Four credits. Second semester. Laboratory fee, \$1.00. Assistant Professor CULVER.

11. CLIMATOLOGY. Four credits. First semester. Three recitations and one laboratory period. Laboratory fee, \$1.00. Assistant Professor SAUNDERS and Mr. SALISBURY.

A general consideration of the climatic elements of the atmosphere, and a study of the climate of Washington and of the United States.

12. PHYSIOGRAPHY. Four credits. Second semester. Three recitations and one laboratory period. Field trips. Laboratory fee, \$1.00. Assistant Professor SAUNDERS.

A study of the surface features of the earth with special reference to their origin, development, classification, and relation to geologic structure.

16. ECONOMIC GEOGRAPHY OF WASHINGTON. Two credits. Second semester. Two lectures, with quiz on required reading. Professor LANDES.

A study of economic and industrial Washington based on geological and climatic conditions.

18. GEOGRAPHY OF SOUTH AMERICA. Two credits. Second semester. Lectures, readings and quiz. Assistant Professor SAUNDERS.

A study of industrial and commercial relations in the different countries of South America based on physiographic and climatic conditions.

21. **COMMON MINERALS AND ROCKS.** Three credits. First semester. Two lectures and one laboratory period. Laboratory fee, \$1.00. Assistant Professor CULVER.

An examination and study of the physical properties of the more common minerals and rocks with field trips to local outcrops.

22. **MINERALOGY.** Four credits. Second semester. Two lectures and two laboratory periods. For engineering and mining students. Laboratory fee, \$2.00. Prerequisite, one year of college chemistry. Assistant Professor CULVER.

A descriptive and determinative study of the minerals, with blowpipe analysis.

32. **GENERAL PALEONTOLOGY.** Two or three credits. Second semester. Two lectures with one laboratory period (optional for credit). Prerequisite, some knowledge of general geology. Assistant Professor WEAVER.

A brief survey of the prehistoric animal and plant life of the earth in relation to existing forms.

103-104. **ADVANCED HISTORICAL GEOLOGY.** Two credits per semester. Two lectures with assigned reading and laboratory study. May be taken as a semester course or year course. Prerequisite, geology 1-2, or 12, or equivalent work. Assistant Professor WEAVER.

Study of continental evolution, including history of sedimentation, vulcanism, earth movements, and geographic changes in North America (first semester); Eurasia (second semester).

105. **GLACIAL GEOLOGY.** Two credits. First semester. Two lectures and laboratory study of different regions. Prerequisite, geology 1 or 12, or equivalent work.

The characteristics of glaciers and the geological work they accomplish, and a study of continental glaciation.

107. **GEOLOGY OF WASHINGTON.** Two credits. First semester. Two lectures with assigned readings and laboratory study. Prerequisite, some knowledge of general geology or physiography. Professor Landes.

A history of the geological development of the state and its different physiographic regions.

***111. PHYSIOGRAPHY OF THE UNITED STATES.** Three credits. First semester. Three lectures with assigned laboratory study. Laboratory fee, \$1.00. Prerequisite, geology 1 or 12, or equivalent course. Assistant Professor SAUNDERS.

The development of the physiographic features of the United States and the influence these features have exerted on the history and commercial growth of the country.

113. PHYSIOGRAPHY OF EUROPE. Three credits. First semester. Three lectures with assigned laboratory study. Laboratory fee, \$1.00. Prerequisite, geology 1 or 12, or equivalent work. Assistant Professor SAUNDERS.

The development of the physiographic regions of Europe and the influence the larger features have exerted on the development and history of the country.

121. PETROLOGY. Three credits. First semester. A special course for coal mining men in the College of Mines. Laboratory deposit, \$2.00. Prerequisite, geology 3 and 22. Assistant Professor WEAVER or CULVER.

123. OPTICAL CRYSTALLOGRAPHY. Four credits. First semester. Two lectures and two laboratory periods. Prerequisite, geology 1-2, or 3, or 12, college physics and college chemistry. Laboratory fee, \$2.00. Assistant Professor WEAVER.

Practice in the microscopic determination of crystals and artificial products by optical methods.

124. PETROGRAPHY. Four credits. Second semester. Two lectures and two laboratory periods. Prerequisite, geology 22 and 123. Laboratory fee, \$2.00. Assistant Professor WEAVER.

A study of the distinguishing characteristics of the different groups and species of rocks, with practice in their determination by modern petrographical methods.

125-126. FIELD WORK FOR MINING STUDENTS. Credits to be arranged up to three. One credit for eight field days with written report. Prerequisite, 2 or 3 and 21 or 22 (124 also preferred). Assistant Professor WEAVER.

127-128. ECONOMIC GEOLOGY. Three credits per semester. Three lectures and discussion of papers. Prerequisite, for 128, geology 3, 22, 124. Professor LANDES.

* Not offered in 1916-17.

A study of the origin and extent of economic deposits of non-metals (first semester), metals (second semester). Their production and use.

131. PALEONTOLOGY. Four credits. First semester. Three lectures and one laboratory period. Prerequisite, 2 or 3. Assistant Professor WEAVER.

A laboratory study of fossil invertebrates with their geologic and geographic distribution.

133. PALEOGEOGRAPHY OF THE TERTIARY PERIOD. Two credits. First semester. Prerequisite, geology 2. Assistant Professor WEAVER.

A comparative study of the geological history of the continents and the development of life during the Tertiary in its world-wide application.

201-202. FIELD WORK or advanced work in general geology. Credits and hours to be arranged. Professor LANDES, Assistant Professors SAUNDERS and CULVER.

211-212. RESEARCH OR ADVANCED WORK IN PHYSIOGRAPHY. Credits and hours to be arranged. Assistant Professor SAUNDERS.

221-222. RESEARCH OR ADVANCED WORK IN PETROGRAPHY, OR ECONOMIC GEOLOGY. Credits and hours to be arranged. Assistant Professor WEAVER.

231-232. RESEARCH OR ADVANCED WORK IN PALEONTOLOGY. Credits and hours to be arranged. Assistant Professor WEAVER.

SPECIAL SHORT COURSES

S. C. 1. FOREST GEOLOGY. A course of twenty lectures on general geology given in January, February and March, to the students in the short course in the College of Forestry. Assistant Professor SAUNDERS.

S. C. 2. MINERALOGY. Instruction and practice in blow-pipe analysis, with lectures upon the common minerals, and practice in the identification of minerals by field tests. Twice a week. Deposit, two dollars. Assistant Professor CULVER.

S. C. 3. ELEMENTS OF GEOLOGY. Lectures on the elements of geology, the common varieties of rock, metalliferous veins and ore deposits, etc. Twice a week. Assistant Professor CULVER.

GERMAN

PROFESSOR MEISNEST; ASSISTANT PROFESSORS BOETZKES, HOFF AND ECKELMAN; MR. ERNST, DR. TRESSMANN, DR. ROLOFF, MR. CAMPION.

REQUIREMENTS OF THE DEPARTMENT

For a major: 24 to 40 credits, including at least two of the following courses: 101, 102, 103, 104.

For the normal diploma: the same as for a major including course 111-112.

Students desiring the recommendation of the department to teach German must pass a special oral and written examination in pronunciation, grammar, conversation and composition. They are advised to take courses 17-18, 111-112.

Credit is allowed for either semester in any course except 1-2.

FOR UNDERGRADUATES

1-2. FIRST YEAR. Four credits per semester. For beginners.

Stage pronunciation, grammar, reading of easy prose and verse and conversation. Students entering the second semester with one year of German in the high school may take course 2. Two semesters must be completed before credit is allowed.

1. FIRST YEAR. Four credits. Second semester. For beginners.

2-3. ADVANCED FIRST YEAR. Four credits per semester. Prerequisite, one semester or one year high school.

Continuation of grammar, reading of modern prose, conversation.

3-4. SECOND YEAR. Four credits per semester. Prerequisite, 2 or two years high school.

Pronunciation, review of grammar, modern prose, at least one drama by Schiller, Goethe or Lessing during the second semester, conversation and composition.

5-6. SECOND YEAR. Four credits per semester. Prerequisite, same as 3-4. Primarily for students in science, engineering and forestry. Two sections, the one for the engineers continuing for the first semester only. Dr. ROLOFF.

First semester: review of grammar, modern prose and drama, conversation. Second semester: introduction to scientific German and monographs.

7-8. **ADVANCED SECOND YEAR.** Four credits per semester. Prerequisite, 3 or three years high school. Assistant Professors **BOETZKES** and **HOFF**.

Schiller's *Jungfrau von Orleans*, Scheffel's *Trompeter von Saekkingen*, modern prose and drama.

9. **SCHILLER.** Three credits. First semester. Prerequisite, 4 or four years high school. Dr. **TRESSMANN** and Mr. **CAMPION**. Life and works. *Kabale und Liebe* and *Wallenstein*. *Braut von Messina*.

10. **GOETHE.** Three credits. Second semester. Prerequisite, 4 or four years high school. Assistant Professor **HOFF**, Dr. **TRESSMANN**.

Life and works. *Goetz von Berlichingen*, *Egmont*, *Tasso*, and *Iphigenie*.

11-12. **RECENT WRITERS.** Three credits per semester. Prerequisite, 4 or four years high school. Mr. **ERNST**.

Social problems as represented in the works of Hauptmann, Sudermann, Fulda, Wolzogen, Lienhard, Schnitzler, Paul Ernst.

13-14. **GERMAN PROSE.** Two credits per semester. Prerequisite, 4. Dr. **TRESSMANN**.

First semester: Rapid reading of descriptive, biographical and historical texts and monographs. Second semester: Pedagogical and philosophical writings. This course is primarily intended for students majoring in other departments who need German as a tool for their work. Each student pursues some private reading in his special field under the direction of his instructor and major professor.

15-16. **SCIENTIFIC GERMAN.** Two credits per semester. Prerequisite, 4. Dr. **ROLOFF**.

Scientific essays, monographs and technical periodicals. Each student does private reading in his own special field under the guidance of the instructor and the major professor.

17-18. **CONVERSATION AND COMPOSITION.** Three credits per semester. Prerequisite, 4. Professor **MEISNEST** and Assistant Professor **HOFF**.

Review of grammar and syntax in German, oral and written reproductions, letter writing and themes.

19. GERMAN PRONUNCIATION. Two hours a week. One credit. Either semester. Prerequisite, 2. Professor MEISNEST.

General differences between German and English pronunciation; a systematic study of the nature, production and classification of the German speech-sounds; practice in the stage pronunciation and expressive reading. Mostly class work.

21-22. GERMAN INSTITUTIONS. Two credits per semester. Prerequisite, 4. Assistant Professor BOETZKES.

A study of the main cultural movements and institutions in Germany.

23-24. MODERN NOVELS. Two credits per semester. Prerequisite, 4. Dr. ROLOFF.

Sudermann, Keller, C. F. Meyer, Freytag, Hauff, Ludwig.

*25-26. MODERN DRAMA. Two credits per semester. Prerequisite, 4. Dr. ROLOFF.

Rapid reading course. Grillparzer, Hebbel, Sudermann and Hauptmann.

27-28. GERMAN CLASSICS IN ENGLISH TRANSLATION. Two credits per semester. No prerequisite. Not open to majors in German. Mr. ERNST.

First semester: The drama of the nineteenth century. Second semester: Wagner's "word-tone" dramas.

FOR UNDERGRADUATES AND GRADUATES

101. HISTORY OF GERMAN LITERATURE. Three credits. First semester. Assistant Professor ECKELMAN.

A general survey for students specializing in German.

102. LYRICS AND BALLADS. Three credits. Second semester. Assistant Professor ECKELMAN.

Characteristic lyrics and ballads of Goethe, Schiller, Uhland, Gelbel, Moerike.

103. LESSING. Three credits. First semester. Professor MEISNEST.

Life and works. Early dramas, Emilia Galotti, Nathan der Weise, Hamburgische Dramaturgie or Laokoon.

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104. **GOETHE'S FAUST, PARTS I AND II.** Three credits. Second semester. Professor MEISNEST.

Interpretation, genesis, plan and purpose of the drama. Faust legend and Faust theme in literature.

111-112. Two credits per semester. Professor MEISNEST.

First semester: Phonetics. General differences between German and English pronunciation, the organs of speech, a systematic study of the nature, production and classification of the German speech-sounds, drill in the stage pronunciation, practice in oral expression and reading, simple laboratory experiments and exercises.

Second semester: Methods of Teaching German. Review of grammar, courses of study for high schools, text-books and aids in teaching, observation and some practice teaching in the University and city high schools.

FOR GRADUATES

201-202. **GOETHE'S LYRICS AND LETTERS.** Two to four credits per semester. Professor MEISNEST.

An interpretative study and analysis of Goethe's lyrics and letters, a study of verse-forms, rhythm and meter.

*203-204. **STORM AND STRESS PERIOD.** Two to four credits per semester. Professor MEISNEST.

*205-206. **ROMANTIC SCHOOL.** Two to four credits per semester. Professor MEISNEST.

207-208. **NINETEENTH CENTURY.** Two to four credits per semester. Assistant Professor ECKELMAN.

Study of the drama and novel. Kleist, Grillparzer, Hebbel, Ludwig, Raabe, Keller, Storm, C. F. Meyer.

*209-210. **INTER-RELATIONS OF GERMAN AND ENGLISH LITERATURE.** Two to four credits per semester. Professor MEISNEST.

First semester: Shakespeare in Germany and his influence on German literature. Second semester: The influence on German literature of Milton, Young, Addison, Ossian, Pope, Thomson, Swift, Richardson, Fielding, Sterne and Goldsmith.

251-252. **HISTORY OF THE GERMAN LANGUAGE.** Two credits per semester. Dr. TRESSMANN.

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A study of the origin and development of the German language, historical German grammar, formation and derivation of words.

*253-254. MIDDLE HIGH GERMAN. Three credits per semester. Assistant Professor HOFF.

*255-256. OLD HIGH GERMAN. Two credits per semester. Assistant Professor HOFF.

257-258. GOTHIC. Two credits per semester. Assistant Professor HOFF.

II. RUSSIAN

*1-2. First year. Two credits per semester. Assistant Professor HOFF.

Elementary grammar, pronunciation, reading, and conversation.

GREEK

PROFESSOR HAGGETT, ASSOCIATE PROFESSOR SIDEX, AND ASSISTANT PROFESSOR DENSMORE.

REQUIREMENTS OF THE DEPARTMENT

For a major, at least 24 credits chosen from courses 3 to 108. The following courses may be counted toward the requirement of one year of ancient language and literature:

- (a) Greek, 1-2 or 3-4.
- (b) Latin 1-2 or 3-4.
- (c) Greek civilization and Greek literature. (Greek 5 and 6.)
- (d) Greek civilization and Roman civilization. (Greek 5 and Latin 11.)
- (e) Greek literature and Roman literature. (Greek 6 and Latin 13.)
- (f) Roman civilization and Roman literature. (Latin 11 and 13.)
- (g) Oriental literature—Persian and Indian. (See department of Oriental literature.)

1-2. ELEMENTARY GREEK. Four credits per semester. Assistant Professor DENSMORE. Two sections.

A. Beginning book and Anabasis.

B. A new course based on the elements of grammar and the early practice in translation from easy passages in Plato, Herod-

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otus, Menander, the Anacreontics, Aristophanes. Designed especially for those who do not expect to major in the classics.

3-4. HOMER-PLATO. Three credits per semester. Prerequisite, 1-2. Professor HAGGETT.

Selections from the Odyssey; Plato's Apology, Crito, and parts of the Phaedo.

5. GREEK CIVILIZATION. Three credits. Either semester. Primarily for freshmen and sophomores. A knowledge of the Greek language is not required. To be followed by Greek 6 or Latin 11. Assistant Professor DENSMORE.

Part of the time will be devoted to the history of the Greek peoples, the remainder to their life and art, under such topics as (a) mythology and religion, (b) public and private life, (c) art and archaeology. Lectures (illustrated by photographs and slides) and collateral reading.

6. HISTORY OF GREEK LITERATURE. Three credits. Either semester. Associate Professor SIDEX and Assistant Professor DENSMORE.

Text-book, lectures, and readings from English translations, with assignments of selected work for special study and periodic written tests. Prerequisite, Greek 5 or at least two years of ancient language. A knowledge of the Greek language is not required. This course is intended to be followed by Latin 13.

7. GREEK HISTORY. Three credits. First semester. See History 17.

FOR JUNIORS, SENIORS AND GRADUATES

101-102. DRAMATIC POETRY. Two credits per semester. Prerequisite, 3-4. Assistant Professor DENSMORE.

Selected plays from Euripides, Sophocles, and Aristophanes.

*103. LYRIC POETRY. Two credits. First semester. Prerequisites, 3-4. Professor HAGGETT.

Selections from the elegaic, iambic, and melic poets.

*104. ORATORY. Two credits. Second semester. Prerequisite, 3-4. Professor HAGGETT.

Selections from Lysias and Demosthenes.

105. EPIC POETRY. Two credits. First semester. Prerequisite, 3-4. Professor HAGGETT.

Rapid readings of selections from Homer and Hesiod.

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106. HISTORICAL PROSE. Two credits. Second semester. Prerequisite, 3-4. Professor HAGGETT.

Selections from Herodotus and Thucydides.

107-108. ADVANCED READING. Three credits per semester. Prerequisite, 101-102. Professor HAGGETT.

Rapid reading of the entire work (or a considerable portion) of some one author, or extensive work in some one department of Greek literature.

109. GREEK ARCHAEOLOGY AND ART. Two credits. First semester. Knowledge of the Greek language is not required. Professor HAGGETT.

After a brief survey of the results of archaeological discoveries up to the present time, the main work of the course will be devoted to a discussion of some of the best examples of Greek architecture, sculpture and vase painting. The discussions will be illustrated by photographs and lantern slides.

110. GREEK POETRY IN ENGLISH TRANSLATION. Two credits. Second semester. Knowledge of the Greek language is not required. Professor HAGGETT.

Lectures, assigned readings and discussions.

HISTORY

(Office, Denny Hall)

PROFESSORS MEANY AND RICHARDSON; ASSOCIATE PROFESSORS
MC MAHON AND BOWMAN; DR. LUTZ; MR. DAVID; TEACHING
FELLOWS BROWN AND HOLLINGSWORTH.

REQUIREMENTS OF THE DEPARTMENT

The eight-hour requirement in History may be satisfied by one of the following courses:

MEDIEVAL AND MODERN EUROPEAN HISTORY (1-2). It is desirable that this course be selected in fulfillment of the history requirement and that it be taken in the freshman year. Students who enter the University in the second semester may enter this course in the second section provided (4), with the understanding that they will take the first semester's work in the following year (3). Juniors and seniors will receive only half credit.

HISTORY OF THE UNITED STATES (7-8). Primarily for sophomores; not open to freshmen except in the case of students in

the Law School, or students who are taking work in the College of Liberal Arts to satisfy requirements for entrance to the Law School.

ENGLISH POLITICAL HISTORY (5-6). Primarily for sophomores and juniors; not open to freshmen except those specified in (b) below. To this course, however, course 1-2 is a prerequisite except in the case of (a) students admitted to advanced standing from other colleges and universities; (b) students in the Law School or students who are taking work in the colleges of Liberal Arts and Science to satisfy requirements for entrance to the Law School; (c) majors in English literature and in political science; (d) students who receive the special permission of the instructor in charge of the course.

FOR A MAJOR at least eight credits shall be obtained in the most advanced undergraduate courses. Course 1-2 is required of all history majors.

It is recommended that all history majors shall take, in excess of the 24 history credits and of the credits formally required in various other departments for graduation, additional work in history, political and social science, philosophy, modern languages, and English literature. Medieval Latin is desirable for those who intend to study history for advanced professional purposes.

PROSPECTIVE TEACHERS of history as a major subject in high schools who desire the recommendation of the department of history, as a department, must show to the satisfaction of the department that they are acquainted with the elementary facts requisite for the teaching of all history courses taught in the high schools of the state, and that they have specialized knowledge in their chosen field.

Courses 17 and 18 are open to all, without prerequisite; courses 7-8 and 29-30 are open, without prerequisite, to sophomores, juniors and seniors. Courses 105-164 inclusive are open to juniors, seniors and graduate students; but for prerequisites to some of these, see statement of the course. Courses 185-190 inclusive are open to sophomores, juniors, seniors and graduate students, without prerequisites. Seniors are admitted, by permission, to courses 205-228 inclusive.

1-2. MEDIEVAL AND MODERN EUROPEAN HISTORY. Four credits per semester. Associate Professor BOWMAN, DR. LUTZ.

A general survey of the political, economic and social development of the principal medieval and modern European peoples down to the present time.

3-4. **MEDIEVAL AND MODERN EUROPEAN HISTORY.** Four credits per semester. An adaptation of 1-2 for students who enter the University in the second semester. Dr. LUTZ.

5-6. **ENGLISH POLITICAL HISTORY.** Four credits per semester. Open to sophomores, juniors, seniors, and certain classes of freshmen. See requirements. Professor RICHARDSON.

A study of the political, social and intellectual development of the English people from the Saxon conquest to the end of the nineteenth century. Economic developments also receive attention.

7-8. **HISTORY OF THE UNITED STATES.** Four credits per semester. Open to sophomores, juniors, seniors, and certain classes of freshmen. See requirements. Associate Professor McMAHON.

A general survey with emphasis upon political history. Lectures, text-book, collateral reading and topics.

17. **HISTORY OF GREECE.** Three credits. First semester. Associate Professor SIDEY.

A general survey of Greek history from the earliest times to the Roman conquest, including some account of the eastern sources of the civilization and of the spread of Hellenism.

18. **HISTORY OF ROME.** Three credits. Second semester. Associate Professor SIDEY.

A survey of Roman history to the fall of the Western Empire. Attention is given to the development of Roman institutions and law.

29-30. **MAKERS OF THE NATION.** Two credits per semester. Professor MEANY.

Lectures on the lives of leading Americans with relation to the historic development of their times.

FOR JUNIORS AND SENIORS

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

105-106. **ENGLISH CONSTITUTIONAL HISTORY.** Three credits per semester. Open to juniors and seniors who have taken or are

taking 5-6, and to pre-law students with consent of the instructor. Professor RICHARDSON.

The development of the legal and governmental institutions of the English people to the present time.

109. HISTORY OF THE MIDDLE AGES. Three credits. First semester. Prerequisite, 1-2. Associate Professor BOWMAN.

An advanced course dealing with economic and social developments.

112. MEDIEVAL CIVILIZATION. Three credits. Second semester. Prerequisite, 1-2. Associate Professor BOWMAN.

A study of the medieval civilization and culture down to the thirteenth century.

115. THE RENAISSANCE. Three credits. First semester. Prerequisite, 1-2. Associate Professor BOWMAN.

A study of the origin and development of the Renaissance and its spread among the European peoples.

116. THE REFORMATION. Three credits. Second semester. Prerequisite, 1-2. Associate Professor BOWMAN.

A study of the origin and development of the Reformation, and of its spread among the European peoples.

121-122. PRUSSIA AND NORTHERN EUROPE. Two credits per semester. Prerequisite, 1-2. Professor RICHARDSON.

This course deals with Sweden as a great power, its rise, progress, and decline; the rise of Russia and Prussia; the partition of Poland; and the beginnings of the Eastern question. Special attention is paid to the economic, political and military development of the Prussian state from its foundation to the acquisition of world-power by Frederick the Great.

*123-124. HISTORY OF FRANCE FROM THE REFORMATION TO THE FRENCH REVOLUTION. Professor RICHARDSON.

*127-128. HISTORY OF ENGLAND SINCE THE ACCESSION OF GEORGE III. Two credits per semester. Prerequisite, 1-2 or 5-6. Dr. LUTZ.

129. THE FRENCH REVOLUTION AND NAPOLEONIC ERA. Three credits. First semester. Prerequisite, 1-2. Dr. LUTZ.

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; con-

* Not offered in 1916-17.

temporary 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.

130. EUROPE SINCE 1814. Three credits. Second semester. Prerequisite, 1-2. Dr. LUTZ.

Mainly political, introductory to European politics of the present time. The course deals with the fundamental principles and policies of the Era of Reaction under Metternich and the subsequent triumph of liberalism. The chief emphasis is laid upon the establishment of constitutional government and national unity in Germany, Italy and the other states of Western Europe, and upon the careers of great leaders, notably Bismarck and Cavour.

*131-132. EUROPE SINCE 1870, AND CONTEMPORARY EUROPE. Two credits per semester. Prerequisite, 1-2. Dr. LUTZ.

135-136. THE DEVELOPMENT OF INTERNATIONAL ARBITRATION AND CONCILIATION. Two credits per semester. Dr. LUTZ.

*139-140. ECONOMIC AND SOCIAL HISTORY OF THE AMERICAN COLONIES. Associate Professor McMAHON.

143. HISTORY OF THE UNITED STATES, 1787-1828. Three credits. First semester. Associate Professor McMAHON.

144. HISTORY OF THE UNITED STATES, 1828-1860. Three credits. Second semester. Associate Professor McMAHON.

147. CIVIL WAR AND RECONSTRUCTION. Three credits. First semester. Associate Professor McMAHON.

A general study of the Civil war and the period of reconstruction.

148. THE HISTORY OF NATIONAL DEVELOPMENT. Three credits. Second semester. Associate Professor McMAHON.

A continuation of course 147, in which the development of the American nation will be traced from the close of the reconstruction period to the present time.

153. SPAIN IN AMERICA. Three credits. First semester. Professor MEANY.

* Not offered in 1916-17.

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.

154. DEVELOPMENT OF THE PACIFIC. Three credits. Second semester. Professor MEANY.

History of the countries bordering upon the Pacific ocean, with special reference to the changes now in progress of development.

157-158. HISTORY OF AMERICAN DIPLOMACY. Two credits per semester. Professor MEANY.

A study of the treaties and foreign policy of the United States. Open to those who have taken a narrative course in American history.

163-164. NORTHWESTERN HISTORY. Two credits per semester. Professor MEANY.

From the earliest voyages to the settlement and organization of the territories.

185. THE HISTORY AND LITERATURE OF CHINA. Two credits. First semester. Professor GOWEN.

190. THE HISTORY AND LITERATURE OF JAPAN. Two credits. Second semester. Professor GOWEN.

195. METHODS OF TEACHING HISTORY. Two credits. First semester. Required of advanced students who expect to teach history. Associate Professor McMAHON.

Text-books, assigned readings, courses of study and methods of presentation will be considered.

GRADUATE COURSES

*205-206. HISTORIOGRAPHY. One credit per semester. Open to graduate students and to seniors by permission. Associate Professor BOWMAN.

A study of the general history of the writing of history.

209-210. METHODS OF HISTORICAL RESEARCH AND CRITICISM. One credit per semester. Professor RICHARDSON.

213-214. SEMINAR IN EUROPEAN HISTORY. Two credits per semester. Associate Professor BOWMAN.

* Not offered in 1916-17.

217-218. SEMINAR IN ENGLISH HISTORY. Two to four credits per semester. Open to graduates and a few seniors by permission. Professor RICHARDSON.

A graduate course which lays more stress upon the constitutional than upon the political side of the subject. The course will deal with topics in the Tudor and Stuart period, and with the antecedents of the Puritan Revolution.

*221-222. SEMINAR IN AMERICAN HISTORY. Two credits per semester. Associate Professor McMAHON.

This course is primarily for graduates or other advanced students who may be admitted by permission.

227-228. JOINT SEMINAR. Two credits per semester. Open to graduate students and to a limited number of seniors on recommendation of their major professors. Professors MEANY, SMITH and CONDON.

Designed for study and reports upon the problems in the historical, political, and legal developments of the State of Washington and the Pacific Northwest.

HOME ECONOMICS

(Office, Home Economics Building)

PROFESSOR RAITT; ASSISTANT PROFESSORS DENNY AND JUDY; MISS ROTHERMEL, MISS ELLIOTT, AND MISS HEVERLO.

Courses pertaining to the home are offered as part of a liberal education, as vocational training, and for the purpose of preparing teachers of home economics for high schools and colleges.

Students who major in other departments of the University may elect a maximum of 24 credits in the department of home economics.

Students in the College of Science may major in the department of home economics and will receive the degree of bachelor of science.

Students in the College of Liberal Arts may major in the department of home economics and will receive the degree of bachelor of arts.

Students who expect to teach should follow the prescribed course which leads to the degree of bachelor of science in home

* Not offered in 1916-17.

economics. Graduates of the girls' manual arts course prescribed by the state board of education are admitted to this course without condition.

FOR UNDERGRADUATES

1-2. GENERAL COURSE. Three credits per semester. (May be taken as a semester or a year course). No prerequisites. Laboratory deposit, \$3. Professor RAITT, Assistant Professor DENNY, Miss ROTHERMEL, Miss HEVERLO.

This course is planned for those students who will elect no other work in this department. It will include consideration of the selection, decoration and furnishing of the house. The organization of the household. The principles of food selection and preparation. Elements of nutrition. A study of textiles and clothing. Home care of the sick.

4. FOODS—PRINCIPLES AND PRACTICE OF FOOD PREPARATION. Two credits. Either semester. Prerequisite or parallel, chemistry, 5. Laboratory deposit, \$4. Miss ROTHERMEL, Miss HEVERLO.

Nature and use of food. Changes produced by heat, cold and fermentation upon typical food materials. Practice in fundamental cooking processes.

5. FOODS—SELECTION AND PREPARATION. Four credits. Either semester. Prerequisite, home economics 4 or two years high school domestic science; chemistry 5. Prerequisite or parallel, chemistry 6. Laboratory deposit, \$4. Miss ROTHERMEL, Miss HEVERLO.

Continuation of course 4. Economic aspect of, selection and preparation of food. Production and manufacture of food, its nutritive value. Two lectures and two laboratory periods.

7. CLOTHING—PRINCIPLES OF HAND AND MACHINE SEWING. Two credits. Either semester. Laboratory deposit, \$1. Assistant Professor DENNY, Miss HEVERLO.

Use and care of machines. Study of materials and design. Principles of construction. Comparison of home-made and commercial clothing. Problem, garment making.

11-12. NEEDLEWORK. Two credits per semester. (May be taken as a semester or a year course.) Prerequisite 7 and Fine Arts III-3. Laboratory deposit, \$1. Assistant Professor DENNY.

History and art of needlework, history of lace. Problems: Marking of household linens, decorative stitches, fine mending. Consult instructor before electing.

20. **LAUNDERING AND DYEING.** Two credits. First semester. Prerequisite, chemistry 5-6. Laboratory deposit, \$2. Miss HEVERLO.

Principles and processes of laundering and dyeing.

25. **TEXTILES.** Three credits. Either semester. Prerequisite, chemistry 5-6. Laboratory deposit, \$1. Assistant Professor DENNY.

Evolution of spinning and weaving. Study of wool, cotton, silk, linen, and minor textile fibers from raw product to finished material, including hygienic, economic and aesthetic considerations. Laboratory work in the identification of fabrics. Physical, chemical and microscopic tests. Two lectures per week.

31. **GENERAL SURVEY.** Two credits. First semester. Professor RAITT.

The social, economic and educational function of the household, traced from primitive ages to modern times. Modern movements that affect the home. The functions and ideals of the home. The home economics movement. Two lectures per week.

32. **ECONOMICS OF CLOTHING.** Three credits. First semester. Elective. Assistant Professor DENNY.

The evolution of dress, its economic and psychological importance. Hygienic and artistic consideration in clothing. Comparative study of factory made, modiste and home-made clothing. Clothing budgets for various classes and incomes. Economic and sociological phases of the clothing industry. Three lectures per week.

33. **COSTUME DESIGN.** Two credits. First semester. Prerequisite, Fine Arts III-3. Assistant Professor JUDY.

Development of fashion from ancient times to the present with emphasis upon the best art periods. Study of historic textiles. Designing of costumes based upon this historic study and the principles of design and color harmony.

35. **ADVANCED COSTUME DESIGN.** Continuation of course 33. Two credits. Second semester. Prerequisites, Fine Arts III-3, home economics 33. Assistant Professor JUDY.

Modification of extreme fashions. Choice of design and color to meet requirements of the individual.

51. **FOODS—COMPARATIVE STUDIES OF FOOD MATERIALS AND COOKING PROCESSES.** Two credits. Either semester. Prerequisite, home economics 5. Laboratory deposit, \$4. Miss ROTHERMEL.

Consideration of possible variations in fuels, utensils, methods and materials with reference to economy of time and labor and to nutritive value.

53. **NUTRITION—DIETETICS.** Four credits. First semester. Prerequisites, home economics 5, chemistry 5, chemistry 144. Laboratory deposit, \$3. Professor RAITT.

Principles of human nutrition. Application to needs of individuals and groups under varying conditions. Dietary standards. Methods of computing dietaries. Two lectures and two laboratory periods per week.

54. **NUTRITION—ELEMENTARY DIETETICS.** Four credits. Second semester. Prerequisite or parallel, chemistry 5-6, home economics 4. Laboratory deposit, \$3. Professor RAITT.

Functions and nutritive value of food. The fate of the food-stuffs in the body. Dietary standards. Computing of dietaries. Infant feeding. Two lectures and two laboratory periods per week. The course is designed for those students who wish to obtain a practical knowledge of nutrition as part of a liberal education, but who are not preparing to teach the subject.

55. **HOME NURSING.** Two credits. First semester. Prerequisites, home economics 4 and 53 or 54. Laboratory deposit, \$2. Miss ROTHERMEL.

Emergencies, first aid, and simple procedure in home care of the sick. Planning and serving meals adapted to the needs of the sick and convalescent. One lecture and one laboratory period per week.

56. **NUTRITION.** Two credits. Second semester. Prerequisite, home economics 53. Professor RAITT.

Study of the development of the science of nutrition. Review of present status. Original sources. Library research. Two lectures per week.

57. **SPECIAL FOOD PROBLEMS.** Three credits. First semester. Prerequisite, home economics 53 or 54. Laboratory deposit, \$1. Professor RAITT.

Marketing, cold storage, dietaries, adulterations, preservatives. A consideration of food habits. Three lectures.

59. **FOODS—LUNCH AND TEA ROOM MANAGEMENT.** Three credits. Either semester. Prerequisites, home economics 5, and 53 or 54. Miss ELLIOTT.

Planning of menus, preparation of food in large quantities, marketing, plans and equipment for lunch rooms.

61. **CLOTHING—SELECTION AND CONSTRUCTION.** Four credits. Either semester. Prerequisite, home economics 7, or two years high school, Fine Arts III-3. Laboratory deposit, \$1.50. Assistant Professors DENNY and JUDY.

Economic, hygienic and aesthetic aspects of dress. Adaptation of patterns, drafting. One lecture per week. Problem: shirt waists, simple gowns.

63-64. **CLOTHING.** Three credits per semester. Prerequisite, 61, Fine Arts III-5. Laboratory deposit, \$1. Assistant Professor JUDY.

Problem: Lined dresses, draping. Consult instructor before electing.

66. **CLOTHING.** Two credits. Either semester. Prerequisite, 7, Fine Arts III-3. Laboratory deposit, \$1. Assistant Professor JUDY.

Study of millinery trade conditions. Consideration of materials, suitability and cost. Problem: Designing and drafting patterns for hats. Construction of types of frames. Coverings and trimmings.

72. **HOME DECORATION.** Three credits. Second semester. Prerequisite, Fine Arts III-3. Three laboratory periods per week. Laboratory deposit, \$2. Assistant Professor DENNY.

Study of color, space and line, and their application to home decoration. Economic and artistic problems of furnishing.

74. **HOUSEHOLD MANAGEMENT.** Three credits. Second semester. Prerequisites, home economics 53 or 54 and political science 4. Professor RAITT.

Organization of the household. The budget and its apportionment. Housewifery. Application of the principles of scientific management to the household.

81-82. **TEACHERS' COURSE.** Two credits per semester. Prerequisite, 5, 53, 61, 72, 74. Professor RAITT, Assistant Professor DENNY.

Curricula, methods of teaching, and equipment. Organization of courses of study in foods, nutrition, textiles, clothing, and

the home. Adaptation to different grades and types of schools. Practice teaching.

FOR GRADUATES

200. SPECIAL FOOD PROBLEMS. Three credits. Second semester. Prerequisites, home economics 5, 51, 53, 57; chemistry 33 and 113. Professor RAITT.

Investigation of local food products.

202. SEMINAR. Four credits. Either semester. Prerequisite, thirty credits in home economics including 81-82. Professor RAITT.

A study of the present status of home economics education with special attention to the work in the elementary and high schools of the State of Washington.

203. RESEARCH. Either semester. Credits to be arranged. Miss ROTHERMEL.

Investigations of recent discoveries in the biological or physical sciences of immediate value to the housewife and consideration of methods for their utilization.

HYGIENE

(See Physical Education)

ITALIAN

(See French)

JOURNALISM

(Education Building)

PROFESSOR KANE, ASSISTANT PROFESSORS KENNEDY AND WHITE;

MR. AGNEW, AND DEAN JOHN T. CONDON, OF THE

SCHOOL OF LAW.

Men and women planning to go into newspaper work are provided with a course of study especially designed to help to qualify them for journalism. Practical journalism is studied, the studies following as closely as feasible the work in a newspaper office. Every effort is made to reproduce as faithfully as possible within the limits of a collegiate curriculum the conditions under which newspapers are produced. To this end certain equipment is maintained, certain methods practiced, and certain relations induced.

A well-equipped printing department, organized on efficiency principles, offers a wide range of laboratory function for the stu-

dents of journalism. The University of Washington Daily's staff is open to the competitive efforts of the students. The department receives a daily telegraphic report through the United Press Associations' service, and a specimen daily report once a week from the Associated Press. These are utilized for practice in editing, copy-reading, head-writing and re-writing. Through the courtesy of the Seattle Times, the department has access to one page of the Sunday edition, the material for which is written and edited and made up by students in the department. Such of the product of the editorial writing class as is of a general nature is submitted for criticism to the managing editor of the Tacoma Tribune, and he selects for use in that newspaper such of the editorial matter as is suited to his medium. The juniors and seniors have opportunity to serve on actual assignments from the city editors of the Seattle Post-Intelligencer, Times, and Star. The students of short-story and of features frequently receive assignments to write for the Seattle Town Crier, and regular departments of fine arts, society, and sport are supplied in that weekly by students. All the leading dailies and weeklies of the state have regular correspondents, most of them chosen from the ranks of the students of journalism, to cover the news of the University; other state and Northwest newspapers unable to maintain regular correspondents are supplied by a volunteer corps made up of students of journalism. The instructional staff of the department is supplemented by nonresident lecturers, who are in active newspaper work, in the different departments of newspaper production and direction.

The work in journalism is arranged in a set course. It is divided into editorial and advertising and business administration sections. This division is made to permit of specialization by the student on those studies which contribute most directly toward qualifying him for the phase of newspaper work which he intends to enter. The student who contemplates entering the editorial room of the newspaper to begin as a reporter, with the hope of working up to one of the executive or editorial writing positions, will take the editorial section of the course. The student who intends to enter the business office of the newspaper, to begin as advertising solicitor or circulation assistant, will take the advertising and business administration section. Both sections begin with the same study—the Elements of Journalism—then diverge into specialization, and return to meet in a general

study of newspaper policy and the institution of the newspaper. Within the editorial section there are some electives which allow for finer specialization, between the capacity for editing and making-up and the capacity for writing.

The set course, without regard for this division into sections, requires the student to present for graduation with the degree of bachelor of arts 128 credits, plus the usual eight credits required in military science or physical education. The student is required to designate his major in the department, and his election as between the divisions at the beginning of the sophomore year. The minimum number of credits which a student may present in journalistic studies for the satisfaction of the major is 36, and the maximum number of credits in journalistic studies which he may present for graduation with the degree of bachelor of arts is 36. If the student wishes to take more journalistic studies than those which total 36 credits, he may take them, but the credit earned in them will not apply toward a bachelor of arts degree.

In arranging this curriculum such reinforcing subjects were prescribed as are most profitable in developing that broad scholarship, which, in addition to his technical training, will help the graduate to meet the requirements of modern newspaper work. These subjects seek especially to familiarize the student with social, political and industrial conditions of the times.

No deviation from the requirements established for the bachelor of arts degree, except those indicated in the set course, will be permitted, and the system of prerequisites adopted for the journalistic studies will be adhered to rigidly in the interest of class efficiency.

The curriculum will be found on page 76.

1-2. **ELEMENTS OF JOURNALISM.** Three credits per semester. Laboratory deposit, \$2.00. Professor KANE.

Reporting; definition and study of the news story and the feature story; general survey of field, with some consideration of news sources and services; assignments, required reading. Journalism 7-8 required in conjunction.

3-4. **EDITING.** Three credits per semester. Laboratory deposit, \$2. Prerequisite, journalism 1-2 and 7-8. Assistant Professor WHITE.

Copy reading; head writing; evaluation of news; advanced news and feature story; correspondence, with special attention to the preparation of queries and the handling of district, state or sectional news. Special editions, sport extras, "society," and other departmental concerns. Assignments, required reading. The United Press daily telegraphic report and a specimen Associated Press daily report once a week is furnished for the especial use of this class.

OPEN TO JUNIORS AND SENIORS

101. **FEATURES.** Two credits. First semester. Laboratory deposit, \$2. Prerequisite, journalism 1-2, 7-8. Assistant Professor WHITE.

Study of the writing, illustrating and arranging of advanced feature stories, with especial attention to the Sunday illustrated section. Includes necessarily consideration of the general "magazine" features of the newspaper, their composition and arrangement for publication. Assignments and required reading. Elective.

102. **EXCHANGES AND SYNDICATE MATTER.** Two credits. Second semester. Laboratory deposit, \$2.00. Prerequisite, journalism 1-2, 3, 7-8. Assistant Professor WHITE.

Study of the work of the exchange editor; handling of "grapevine" and "miscellany"; syndicated stories; selection and treatment of "art"; assignments and required reading. Elective.

103. **HISTORY AND PRINCIPLES OF JOURNALISM.** Two credits. First semester. Laboratory deposit, \$2.00. Assistant Professor WHITE.

A study of the development of journalism; the services performed by the press in different periods, and its standards and ideals in each such period; the part taken by the newspaper in large social and political movements. Inseparable from this is a review of the lives of those individual editors and publishers who have left their impress on journalism. Thesis. Elective.

104. **NEWSPAPER JURISPRUDENCE.** Two credits. Second semester. Prerequisite, journalism 1-2, 3-4. Dean CONDON.

Elementary law bearing on the business of newspaper production; libel, copyright laws; postal regulations; laws governing publication of advertisements; Federal statutes requiring publicity as to ownership, circulation, etc.

105-106. EDITORIAL. Three credits per semester. Laboratory deposit, \$2.00. Prerequisite, journalism 1-2, 3-4, 7-8. Professor KANE.

News interpretation; study of the editorial styles of leading daily and weekly publications; close consideration of current tendencies and movements in politics, science, literature and art, with an attempt to trace their origins and determine their influence. Practice in the writing of editorials; preparation of weekly resume of the news.

107-108. NEWSPAPER POLICY. Three credits per semester. Laboratory deposit, \$2.00. Prerequisite, journalism 1-2, 3-4, 104, 105-106, 7-8, and one of the elective courses, 101, 102, 103, 111-112, or, if student of advertising, journalism 1-2, 5-6, 115-116, 7-8, 121-122. Professor KANE.

Definition; formulation of a general policy; expression of such policy in specific applications; consideration of the policies (so far as they are manifest) of leading dailies and weeklies; "campaigns." Assignments. Required reading.

109-110. THE NEWSPAPER. Two credits per semester. Prerequisite, the same as for 107-108. Professor KANE.

111-112. THE SHORT STORY. Three credits per semester. Laboratory deposit, \$2.00. Prerequisite, junior or senior standing; open to sophomores with permission. Mr. AGNEW.

A critical appreciation of the short story and its place in literature. Consideration of story material and dramatic narrative, with reference to the market for brief fiction, to meet the requirements of magazine editors. Reading of representative stories, forming of plots, and writing of short stories. Elective.

***113-114. CARTOONING AND ILLUSTRATING.** Two credits per semester. Prerequisite, journalism 1-2, 7-8. Mr. _____.

ADVERTISING

5-6. PRINCIPLES OF ADVERTISING. Three credits per semester. Laboratory deposit, \$2.00. Prerequisites, journalism 1-2, 7-8. Mr. AGNEW.

Economic factors of advertising and the place of advertising in the systems of distribution. Establishing associations between the commodity and the buyer and making them dynamic. Prep-

* Not offered in 1916-17.

aration of copy, and principles of display and adaptation to mediums.

115-116. **ADVANCED ADVERTISING.** Two credits per semester. Laboratory deposit, \$2.00. Prerequisites, journalism 1-2, 7-8, 5-6. Mr. AGNEW.

The business of merchandising, various methods of distribution, price maintenance, trade mark, disposal of advertising costs, and problems of financial advertising, transportation, insurance, and municipal publicity campaigns.

117-118. **GENERAL ADVERTISING.** Two credits per semester. Open to Commerce and Forestry students. Mr. AGNEW.

This course is designed for the consideration of such advertising problems as would come to the manager of a business, and includes principles of display, methods of distribution, trade marks, mediums and agency service.

119. **NEWSPAPER ADMINISTRATION.** Three credits. First semester. Prerequisite, journalism 1-2, 5-6, 7-8, 115-116, 121-122. Mr. AGNEW.

The field of daily, weekly and trade journal. Equipment. Mechanical arrangement of paper. Files. Organization. News sources.

120. **NEWSPAPER REVENUE.** Three credits. Second semester. Prerequisite, journalism 1-2, 5-6, 7-8, 115-116, 119, 121-122. Mr. AGNEW.

Advertising. Circulation. Commercial printing department.

PRINTING

7-8. **THE MECHANICS OF PRINTING.** One credit per semester. One lecture and two laboratory hours a week. Laboratory deposit, \$2.00. Assistant Professor KENNEDY.

Instruction in faces and type value in relation to heads and advertising. Proof reading. Printer's technical terms. History and use of paper. Engravings. Practice.

OPEN TO JUNIORS AND SENIORS

121-122. **BUSINESS ADMINISTRATION.** Two credits per semester. Two lectures and one laboratory hour a week. Laboratory deposit, \$2.00. Assistant Professor KENNEDY.

Cost finding. Estimating. Simplified accounting. Office management. Buying and selling. Efficiency. These subjects are

intended for students who enter the newspaper field with the prospect of becoming owners, publishers, managers, and the work is confined to the printing profession. These courses are to be taken in conjunction with courses as indicated in editorial and advertising studies. Prerequisite, journalism 1-2, 5-6, 7-8. This course is elective except as required.

LATIN

(Office, Denny Hall)

PROFESSOR THOMSON, ASSOCIATE PROFESSOR SIDEX, ASSISTANT
PROFESSOR CLARK.

REQUIREMENTS FOR A MAJOR

1. Four years of preparatory Latin.
2. One year of Greek. Students are strongly urged to present at least two.
3. Courses 3, 4, 5, 6, 106, 107-108 and others to the amount of at least four credits.

For the normal diploma, with Latin as a major, courses 3, 4, 5, 6, 103-104, 106, 107-108 must be taken.

The requirement of one year's work in Ancient Language and Literature may be satisfied by:

- (a) Any two of the following:

Greek literature (Gr. 6),
Greek civilization (Gr. 5),
Roman literature (Lat. 13),
Roman civilization (Lat. 11); or

- (b) Latin 1, 2, or 3, 4; or

- (c) Greek 1, 2, or 3, 4; or

- (d) Oriental literature—Persian and Indian.

1. INTERMEDIATE READING. Three credits. First semester. Open to students who have had two (or three) years of high school Latin. Assistant Professor CLARK.

Rapid review of forms and syntax; reading of a considerable amount of simple Latin prose. This course is intended, (1) to meet the needs of students who wish a reading knowledge of easy Latin as an aid to work in other subjects, *e. g.*, history; (2) to give such a knowledge of forms and vocabulary as shall prove serviceable to students of English and the modern foreign languages, particularly French and Spanish.

2. A continuation of Course 1. Three credits. Second semester. Assistant Professor CLARK.

These two courses together will satisfy the requirement of one year's work in Ancient Language and Literature.

3. CICERO, De Senectute. SALLUST, Catiline. Four credits. First semester. Professor THOMSON.

4. PLAUTUS, Captivi and Trinummus. TERRENCE, Andria. Four credits. Second semester. Professor THOMSON.

5. CATULLUS, HORACE, OVID. Three credits. First semester. Prerequisite, 3, 4. Associate Professor SIDEY.

6. TACITUS, Germania. LIVY, Book I. Three credits. Second semester. Prerequisite, 3, 4. Associate Professor SIDEY.

JUNIORS, SENIORS AND GRADUATES

101. PLINY, Letters. MARTIAL, Epigrams. Two credits. First semester. Prerequisite, 5, 6. Professor THOMSON.

102. JUVENAL, Satires. Two credits. Second semester. Prerequisite, 5, 6. Professor THOMSON.

TEACHERS' COURSE

103-4. TEACHERS' COURSE. Three credits per semester. Prerequisite or concurrent, 5-6. Associate Professor SIDEY.

Selected portions of Caesar, Bell. Gall. V-VII and Bell. Civile; Suetonius, Julius Caesar; Cicero's Letters; Vergil, Bucolics and Georgics; Ancient Lives of Vergil. Review of the Caesar, Cicero and Vergil usually read in high schools. Methods of teaching Latin and discussion of the problems likely to arise in the classroom. Teaching by members of the class, under the supervision of the instructor. Visits to schools where Latin is taught and reports on the teaching observed.

106. ROMAN ANTIQUITIES. Two credits. Second semester. For classical majors. Associate Professor SIDEY.

FOR GRADUATES

201. LUCRETIVS, Books I and III. CICERO, De Finibus I and II. Two credits. First semester. Professor THOMSON.

202. VERGIL, Georgics and Aeneid VII-XII. Two credits. Second semester. Professor THOMSON.

203. **MEDIEVAL LATIN.** Einhard's Life of Charlemagne, Bede's History of England. Two credits. First semester. Associate Professor **SIDEX**.

204. **TACITUS**, History I, II. Two credits. Second semester. Associate Professor **SIDEX**.

205. **LATIN OF THE EMPIRE.** Gudeman's Selections. Two credits. First semester. Professor **THOMSON**.

206. **TACITUS**, Dialogus; **QUINTILIAN**, Book I. Two credits. Second semester. Professor **THOMSON**.

OPEN TO ALL STUDENTS

11. **ROMAN CIVILIZATION.** Three credits. Either semester. Assistant Professor **CLARK**.

This course is designed to give a clear notion of the part played in history by the Romans and to set forth their contributions to civilization in general. A general survey of Roman history will serve as a basis for the discussion of the religious, political and legal systems of the Romans, their literature and art, and their family life. Lectures (illustrated, when possible, by slides) and collateral reading.

13. **HISTORY OF ROMAN LITERATURE.** Three credits. Either semester. Prerequisite, two years of Latin. Associate Professor **SIDEX**, Assistant Professor **CLARK**.

Fowler's Latin Literature, supplemented by lectures and collateral reading. Illustrative selections from English versions of the more important authors.

16. **ROMAN HISTORY.** See History 18. Associate Professor **SIDEX**.

17-18. **ROMAN LAW.** Four credits per semester. (Law Latin and selections from Roman Law). Primarily for prospective law students. Prerequisite, two years of preparatory Latin. Professor **THOMSON**.

107-108. **LATIN PROSE COMPOSITION.** Two credits per semester. Required of Latin majors and those who intend to teach Latin. Prerequisite, four years of preparatory Latin. Assistant Professor **CLARK**.

27. **ROMAN ART.** Two credits. Second semester. To follow Greek 109. Associate Professor **SIDEX**.

A study of the more important remains of Roman architecture and sculpture, together with lectures on Pompeii, Roman

numismatics and the minor arts. This course is intended especially for students in Fine Arts.

LAW

(Office, Law Building)

153-154. BUSINESS LAW. Three credits per semester. Huffcut's elements of business law and Bay's cases on commercial law. Assistant Professor COCKERILL.

No law credit is given for this course.

158. NEWSPAPER JURISPRUDENCE. Two credits. Second semester. Prerequisite, journalism 1-2, 3-4 or journalism 1-2, 5-6, 7-8. Dean CONDON.

General principles of business law as applied to newspapers. Contempt; libel and copyright laws; laws governing publication of advertisements; Federal statutes requiring publicity as to ownership, circulation, etc. No law credit is given for this course.

LIBRARY ECONOMY

(Office, The Library)

PROFESSOR HENRY, ASSOCIATE PROFESSOR SMITH, MISS HUBBARD,
MISS ASHLEY.

The department of library economy seeks to give such instruction and practice in all essential lines of library activity as will enable a capable student to enter as an assistant in any large library or as librarian of a small library.

In this curriculum librarianship is the central idea and such lines of academic scholarship are made preparatory and collateral to it as will give at once a liberal education and the best undergraduate preparation for library service.

The library courses extend through the junior and senior years and consist of five recitations per week through the four semesters and six laboratory, or practice, hours per week through the last three semesters. In the junior year the class meets on M. T. W. Th. F. at 10 o'clock; in the senior year it meets on the same days at 8 o'clock. One-fourth of the senior practice is in the Seattle Public Library, largely in the branches. Upon the completion of this curriculum the degree of Bachelor of Arts is granted. A limited number of graduate students may be ad-

mitted, completing the work in one year by devoting their entire time to it.

Students taking the library curriculum must offer for entrance the requirements for admission to any group of the College of Liberal Arts or the College of Science and must have completed the first two years of the curriculum before being admitted to any course in library economy.

The curriculum for the freshman and sophomore years includes all the prescriptions for the bachelor of arts degree, within those years, so that if at the end of the sophomore year a student wishes to major in some other subject the change can be made without loss. Also by this arrangement a student who has not elected the library economy curriculum until the beginning of the junior year may make the election then if desired.

A student offering for entrance one or more years of high school credit in any of the sciences offered in the freshman year of this curriculum will be expected to pursue one of the other two sciences for the year.

No student will be admitted to the junior year of this curriculum who has not completed the equivalent of at least sixteen college credits in German and eight college credits in French. The curriculum is open only to students majoring in library economy. For definite outline see page 77.

MATHEMATICS AND ASTRONOMY

(Office, Science Hall)

I. MATHEMATICS

PROFESSOR MORITZ, ASSOCIATE PROFESSORS MORRISON AND BOOTHBOYD,
ASSISTANT PROFESSORS GAVETT, CARPENTER AND NEIKIRK;
DRS. BELL, SMAIL, WEAR AND KUSCHKE.

REQUIREMENTS OF THE DEPARTMENT

For a major in mathematics, 24 credits, including 15-16 (or 18), 34, and one of the courses 111-112 to 121-122, inclusive.

Candidates for the normal diploma must complete 124 in addition to the courses required for a major in mathematics.

The mathematics requirement for students offering $2\frac{1}{2}$ units of mathematics for entrance may be satisfied by any of the following courses, 11-12, 13, 15-16, 18, 19-20, 21-22, 23-24, 25-26, 28; students offering 2 units of mathematics for entrance may satisfy

the mathematics requirement by any one of the courses 7-8, 9, 19-20, 21-22, 23-24, 25-26, 28, provided, however, that the combined number of credits which any one student may earn in all of the above courses may not exceed eight. The department reserves the right to withdraw any of the above courses should there be an inadequate number of registrations.

COURSES FOR UNDERGRADUATES

FOR STUDENTS IN LIBERAL ARTS, SCIENCE, PHARMACY, EDUCATION,
AND LAW.

1-2. SOLID GEOMETRY. Two credits per semester. Prerequisite, plane geometry.

4. SOLID GEOMETRY. Three credits. Second semester. Prerequisite, plane geometry.

7-8. ALGEBRA AND TRIGONOMETRY I. Two credits per semester. Prerequisite, one year of plane geometry, one year of elementary algebra.

This is a combination course of algebra and trigonometry to satisfy the mathematics requirement for students who offer two units of mathematics for entrance. Students who offer two and one-half units of mathematics for entrance should register for course 11-12, or 13.

9. ALGEBRA AND TRIGONOMETRY I. Four credits. First semester. Same as 7-8.

10. ALGEBRA AND TRIGONOMETRY II. Four credits. Second semester. Prerequisite, 7-8, or 9.

For students who, having completed 7-8 or 9, wish to continue their work in mathematics. The completion of this course admits students to 31.

11-12. PLANE TRIGONOMETRY. Two credits per semester. Prerequisites, one year plane geometry, one and one-half years elementary algebra.

This course offers on the one hand a review of many of the essential principles and methods of arithmetic, algebra and geometry, and on the other introduces the student to a variety of new concepts and processes which are indispensable to a scientific study of a large number of arts and sciences, such as surveying, engineering, navigation, architecture, physics, astronomy and all the higher branches of mathematics.

13. PLANE TRIGONOMETRY. Four credits. Either semester. Same as 11-12.

15-16. COLLEGE ALGEBRA. Two credits per semester. Prerequisite, same as 11-12.

Designed either for those who wish to continue their mathematical work, or for those who wish a more complete view of elementary algebra. A continuation of high school algebra; including mathematical induction, permutations, combinations, and the elements of probabilities, infinite series, determinants, indeterminate coefficients and elements of the theory of equations.

18. COLLEGE ALGEBRA. Four credits. Second semester. Same as 15-16.

19-20. COLLEGE MATHEMATICS. Four credits per semester. Prerequisites, same as 7-8.

This course is designed for students who wish to become acquainted with the concepts, methods and purposes of modern mathematics through the calculus, but are unable to devote to it the time necessary to master the technique of this vast science. The last three weeks of the course are given to lectures on nineteenth century problems, such as the squaring of the circle, higher dimensions, the fourth dimension, non-euclidean geometrics, systems of postulates.

21-22. MATHEMATICAL THEORY OF INVESTMENT. Four credits per semester. Prerequisites, same as 7-8. Primarily for students in commerce.

The first semester is devoted to a study of preliminary processes of algebra, including progressions, limits, series, logarithms and graphs. The main part of the course deals with the application of this preliminary work to problems of compound interest, annuities, amortization, bonds, sinking funds, depreciation, and building and loan associations. Some of the simpler problems in life insurance are studied.

23-24. ELEMENTARY SYNTHETIC GEOMETRY. Two credits per semester. Prerequisite, same as 7-8.

A study of the relations of geometric forms by modern methods. The work will be conducted by purely geometric processes, with very little algebra used. Both the method of

treatment of geometry, and the subject-matter of the course will be different from that of high school geometry.

25-26. DESCRIPTIVE GEOMETRY. Two credits per semester. Prerequisite, same as 7-8.

The principles of descriptive geometry lie at the basis of those forms of drawing in which objects are represented by their projections. The subject will be treated from the mathematical standpoint. Problems of the point, line, plane, surfaces of single and double curvature, warped surfaces, tangents, and intersections will be analyzed, solved and carefully drawn.

28. ELEMENTS OF STATISTICAL METHODS. Four credits. Second semester. Prerequisites, same as 7-8.

A study is made of data obtained by observation, enumeration or estimate, and their application to interpreting social or natural phenomena. The course deals with the methods of gathering material, analysis of the material collected, and comparison of variables; tabulation, diagrams, dispersion, skewness and correlation; calculating devices, use of logarithms and tables. The course will be valuable to students of economics, sociology and biology or any other subject requiring the scientific handling of data.

31. ANALYTICAL GEOMETRY. Three credits. First semester. Two sections. Prerequisite, 11-12 or 10.

A thorough study of the elements.

32. DIFFERENTIAL AND INTEGRAL CALCULUS. Three credits. Second semester. Two sections. Prerequisite, 31.

This is only a half course and should be followed by 33.

33. DIFFERENTIAL AND INTEGRAL CALCULUS. Three credits. First semester. Continuation of 32. Professor MORITZ.

34. DIFFERENTIAL AND INTEGRAL CALCULUS. Three credits. Second semester. Continuation of 33. Professor MORITZ.

101. SPHERICAL TRIGONOMETRY. Two credits. First semester. Prerequisite, 11-12 and 1-2, or 51. Dr. WEAR.

102. SOLID ANALYTICAL GEOMETRY. Two credits. Second semester. Prerequisite, 31 and 1-2. Dr. WEAR.

FOR STUDENTS IN THE COLLEGES OF ENGINEERING, MINES, AND
FORESTRY

1-2. SOLID GEOMETRY. Two credits per semester. Prerequisite, plane geometry.

Required during the freshman year of all students in the colleges of Engineering, Forestry and Mines who do not offer solid geometry for admission.

4. SOLID GEOMETRY. Three credits. Second semester. Same as 1-2.

51. TRIGONOMETRY AND ALGEBRA. Four credits. First semester. Prerequisite, same as 11-12.

Primarily for students in the colleges of Engineering, Forestry, and Mines. The elements of plane trigonometry and supplementary work in algebra equivalent to one hour per week.

52. ANALYTICAL GEOMETRY AND ALGEBRA. Four credits. Either semester. Prerequisite, 51.

Primarily for students in the colleges of Engineering, Forestry, and Mines. The elements of analytical geometry and supplemental work in algebra equivalent to one hour per week.

55-56. FORESTER'S COURSE. Four credits per semester. Prerequisite, same as 11-12. Assistant Professor GAVETT.

A year's course in numerical and graphic methods, solution of plane triangles, the elements of coordinate geometry, and derivatives and integrals with applications to problems involving maxima and minima, rectifications, quadratures and cubatures.

61. CALCULUS FOR ENGINEERS. Four credits. Either semester. Prerequisite, 52.

62. CALCULUS FOR ENGINEERS. Four credits. Either semester. Continuation of 61.

151. APPLICATIONS OF THE CALCULUS FOR ENGINEERS. Two credits. Either semester. Prerequisite, 62.

FOR UPPERCLASSMEN AND GRADUATES

111-112. APPLICATIONS OF MATHEMATICS TO PHYSICS. Two credits per semester. Prerequisite, 34 or 62. Dr. BELL.

The object of this course will be to give the student mathematical knowledge sufficient to enable him to read the easier classical memoirs and treatises in which mathematics is applied to physics, and at least two such memoirs, to be selected jointly

by the class and instructor, will be read. The first part of the course, proceeding from a review of Fourier's Theorem to a study of line, surface and volume integrals and the theorems of Green, Gauss, Stokes, Kelvin, and the equations of Laplace and Poisson, will consider some of their various physical interpretations. The more important differential equations of the subject, and their solutions under given conditions will be derived and studied. The second part will be concerned with statistical methods as applied by Maxwell to physics.

113-114. ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS. Two credits per semester. Prerequisite, 34 or 62. Assistant Professor NEIKIRK.

Introductory course. Solutions of the equations of the first and second order. Determination of constants of integration from initial conditions. Application to physics, chemistry and astronomy.

115-116. VECTOR ANALYSIS. Four credits per semester.

117-118. PROJECTIVE GEOMETRY. Two credits per semester. Prerequisite, two years of college mathematics. Assistant Professor CARPENTER.

*119-120. NON-EUCLIDEAN GEOMETRY. Two credits per semester. Prerequisite, two years of college mathematics. Assistant Professor GAVETT.

*121-122. THEORY OF FUNCTIONS OF A REAL VARIABLE. Two credits per semester. Prerequisite, 34 or 62. Dr. SMALL.

Rational and irrational numbers, the general function concept, continuity, integrability, and differentiability of functions, discontinuous functions, infinite series and products, series of functions, uniform convergence, multiple series, definite integrals, curvilinear integrals.

124. TEACHER'S COURSE. Four credits. Second semester. Prerequisite, 34. Required of those who make mathematics their major study and who are applicants for the teacher's certificate. Assistant Professor CARPENTER.

* Not offered in 1916-17.

FOR GRADUATES

201-202. MODERN GEOMETRY. Three credits per semester. Must be accompanied or preceded by 117-118. Associate Professor MORRISON.

An introductory course in modern analytical geometry of two and three dimensions.

*203-204. DIFFERENTIAL GEOMETRY. Three credits per semester. Prerequisite, 34 or 64. Associate Professor MORRISON.

*205. THEORY OF EQUATIONS. Three credits. First semester. Prerequisite, 34 or 64. Professor MORITZ.

*206. MODERN ALGEBRA. Three credits. Second semester. Prerequisite, 205. Professor MORITZ.

207-208. INFINITE SERIES. Three credits per semester. Prerequisite, 15-16, and 34. Professor MORITZ.

Convergence of infinite series and infinite products. The binomial, exponential, logarithmic, and trigonometric series for complex values of the variable. Summation and transformation of series. Power series, hypergeometric series and Fourier series.

*209-210. ALGEBRAIC INVARIANTS AND COVARIANTS. Two credits per semester. Prerequisite, 23. Dr. WEAR.

211-212. FOUNDATIONS OF MATHEMATICS. Two credits per semester. Prerequisite, 34. Dr. WEAR.

213-214. THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. Two credits per semester. Prerequisite, 33 and 34. Dr. SMALL.

215-216. ANALYTICAL MECHANICS. (See astronomy 105-106.) Two credits per semester. Associate Professor BOOTHROYD.

251-252. MATHEMATICAL JOURNAL AND RESEARCH CLUB. Meets on the second Tuesday of each month in Science building, room 2, at 8 p. m. The club consists of advanced students and teachers in the department of mathematics. The purpose of the club is primarily to discuss the research work carried on by members of the club, and secondarily to review important recent mathematical literature.

* Not offered in 1916-17.

II. ASTRONOMY (The Observatory)

PROFESSOR MORITZ, ASSOCIATE PROFESSOR BOOTHROYD

The work in astronomy is planned for three classes of students: (a) Those who desire some knowledge of astronomy as a part of a liberal education; (b) engineers and others who need some knowledge of astronomy as a part of their technical training; and (c) those who wish to pursue the subject more intensively than either of the other classes.

GRADUATION REQUIREMENT

Course 1-2 and 3-4 taken together fulfil the eight credits of physical science required for graduation of students in the colleges of Liberal Arts and Science.

REQUIREMENTS FOR A MAJOR IN ASTRONOMY

Twenty-four credits. Reinforcing subjects of not more than 32 credits selected from mathematics, physics, chemistry, and geology are recommended.

1-2. GENERAL ASTRONOMY. Two credits per semester. Two hours per week lectures and recitations. Associate Professor BOOTHROYD.

3-4. LABORATORY ASTRONOMY. Two credits per semester. Four hours per week laboratory work. Laboratory deposit, \$1. Must be accompanied or preceded by 1-2. Associate Professor BOOTHROYD.

Since in the work covered by courses 1-2 and 3-4 the aim is to give a clear conception of the development of the scientific method as well as a comprehensive view of the astronomy of today, these courses are especially desirable for those who contemplate a scientific career, as well as a necessary requirement for a liberal education. They are required of all students majoring in astronomy and are strongly recommended for engineers and for majors in mathematics, physics, geology and chemistry. The six-inch equatorial telescope and other equipment of the observatory will be used for illustration and demonstration.

FOR UNDERGRADUATES AND GRADUATES

101. **ELEMENTARY PRACTICAL ASTRONOMY.** Four credits. First semester. Prerequisite, mathematics 11-12 or its equivalent and must be preceded or accompanied by mathematics 31 or its equivalent. Associate Professor BOOTHROYD.

After mastering the elements of the subject, they are applied to the problems of determination of time, latitude, longitude and azimuth with the sextant and surveyor's transit. The student becomes acquainted in this work with the use of the astronomical transit, clock and chronograph. Especially desirable for navigators and for civil, electrical and mining engineers.

102. **ELEMENTARY GEODESY.** Four credits. Second semester. Prerequisite, astronomy 101 and preceded or accompanied by mathematics 62 or its equivalent. Associate Professor BOOTHROYD.

Precise surveying methods and elements of geodesy, mapping and map projection. This course is planned especially for engineers who desire a knowledge of precise surveying methods such as are used in the survey of the larger cities, in geodetic surveying and in all survey work where a high degree of accuracy is necessary. As much practice in precise surveying methods will be given as the time permits.

103-104. **ADJUSTMENT OF OBSERVATIONS.** One credit per semester. Prerequisite, astronomy 102. Associate Professor BOOTHROYD.

105-106. **ANALYTICAL MECHANICS.** Two credits per semester. Prerequisite, mathematics 34. Associate Professor BOOTHROYD.

*107-108. **CELESTIAL MECHANICS.** Two credits per semester. Prerequisite, astronomy 1-2, 3-4, 105-106, and mathematics 113-114. Associate Professor BOOTHROYD.

201-202. **ADVANCED ASTRONOMY.** Two credits per semester. Associate Professor BOOTHROYD.

This work may be taken along any one of three lines as follows: (1) Astro-physics. Prerequisite, astronomy 1-2, 3-4, physics 101, mathematics 33-34. (2) Practical astronomy. Prerequisite, astronomy 103-104, mathematics 33-34. (3) Theoretical astronomy. Prerequisite, astronomy 107-108.

* Not offered in 1916-17.

MILITARY SCIENCE AND TACTICS

(Office, The Armory)

WILLIAM T. PATTEN, CAPTAIN, U. S. A., RETIRED, COMMANDANT.

A course of two years in military training is required. All able-bodied male students (except those from foreign countries, not intending to become naturalized) must take the course which by regulation of the University is required during the first and second year. Three hours a week are devoted to military training, for which two credits are given each semester.

ORIENTAL HISTORY, LITERATURE AND LANGUAGES

(Office, Denny Hall)

PROFESSOR GOWEN

The requirement of one year's work in ancient language and literature may be satisfied by courses 101 and 102. Courses 1 and 2 count for credits in the department of history, and 3-4 in the department of philosophy. Courses 103-104 and 105-106 are for juniors, seniors and graduates.

1. THE HISTORY AND LITERATURE OF CHINA. Two credits. First semester. The same as history 185.

2. THE HISTORY AND LITERATURE OF JAPAN. Two credits. Second semester. The same as history 190.

3-4. HISTORY OF RELIGION. Two credits per semester.

First semester, primitive religious ideas, ghost worship, nature worship, divination, the religions of the Euphrates Valley, China, Japan, India, and Persia. Second semester, Judaism, Mohammedanism, and Christianity.

101. THE LITERATURE OF INDIA. Three credits. First semester.

102. THE LITERATURE OF PERSIA. Three credits. Second semester.

103-104. SANSKRIT. Four credits per semester. Hours to be arranged.

105-106. SEMITIC LANGUAGES. Four credits per semester. Hours to be arranged.

Section 1. HEBREW (for beginners).

Section 2. HEBREW (advanced) or ARABIC.

107. THE LITERATURE OF THE HEBREW PEOPLE. One credit. First semester.

The formation of the Old Testament canon, summary of Hebrew history, the Torah, the prophetic order and literature, the poetry of Israel, the Wisdom books, post-exilic reorganization, apocryphal and apocalyptic books.

PHILOSOPHY AND PSYCHOLOGY

(Office, Denny Hall)

PROFESSOR SAVERY, PROFESSOR SMITH, DR. DUCASSE, MR. WILCOX,
DR. GUTHRIE, DR. GIVLER, MISS WILKINSON.

Prospective majors are urged to take courses in the department in their sophomore year if possible. Students may major in either philosophy or psychology.

The liberal arts or the science requirements in this department may be satisfied by eight credits in the following courses: philosophy 1, 2, 3, 105-106, 121-122, 123-124, psychology 1, 101, 102, 103-104; or the entire requirement may be satisfied by philosophy 101-102.

Philosophy 1, 2, 3, and psychology 1 are suited to arts-law students.

Psychology 1 is a prerequisite to the study of education, unless the student has taken elsewhere general psychology.

Philosophy 101-102 is the best introduction to philosophy.

Freshmen are not admitted to courses except by consent of instructors.

I. PHILOSOPHY

1. INTRODUCTION TO PHILOSOPHY. Four credits. First semester. Professor SAVERY, Dr. DUCASSE and Dr. GUTHRIE.

An elementary study of the main problems of philosophy.

2. ELEMENTS OF ETHICS. Four credits. Either semester. Professor SAVERY and Dr. GUTHRIE.

Study of value, the good, duty, virtue. Application of ethical principles to problems of economic life, government, law, art and religion. Three lectures, two discussion hours.

3. ELEMENTS OF LOGIC. Four credits. Either semester. Primarily for arts-law students. Dr. DUCASSE.

The logical structure of an action at law. The ways of logically establishing or invalidating any statement illustrated

at length, considerable drill being given in the various processes of proof and disproof. The logic of testimony, circumstantial evidence, pleas of guilty with extenuating circumstances, special pleading, etc. Stress will be laid throughout on the practical rather than on the theoretical side of logic.

101-102. HISTORY OF PHILOSOPHY. Four credits per semester. Dr. GUTHRIE.

Ancient, medieval and modern. The views of the classical philosophers on the nature of the universe and man, the values of life, the ideal form of society, the origin and limits of knowledge, the relation of the individual to the world, etc. Portions of the most important works of the greater philosophers will be read. Some of the more recent philosophical movements, such as pragmatism and neo-realism will be very briefly touched upon at the end of the course.

103-104. PRINCIPLES OF PHILOSOPHY. Three credits per semester. Prerequisite, 8 credits in philosophy. Professor SAVERY.

A course in systematic philosophy. (1) The meaning and tests of truth, with special reference to pragmatism. (2) The construction of a theory of the universe, including an account of the nature of the human self, its relation to the body, the nature of matter, the problem of the freedom of the will. Study of idealism. (3) The foundation of morality, pessimism and optimism, the evolution and destiny of man.

105-106. PHILOSOPHY OF SCIENCE. Two credits per semester. Prerequisite, 1 or 101-102. Professor SAVERY.

An account of scientific method; and of the fundamental laws and concepts of the sciences—mathematical, physical and biological. Interpretation of the scientific view of the world and its place in the human economy. Primarily for majors in science.

107-108. HISTORY OF RELIGION. Two credits per semester. Professor GOWEN.

First semester, primitive religious ideas, ghost worship, nature worship, divination, the religions of the Euphrates Valley, China, Japan, India, and Persia. Second semester, Judaism, Mohammedanism, and Christianity.

*109-110. PHILOSOPHY OF RELIGION. Two credits per semester. Prerequisite, one course. Professor SAVERY.

111-112. **PHILOSOPHY IN ENGLISH LITERATURE OF THE NINETEENTH CENTURY.** Two credits per semester. Prerequisite, one course previous or concurrent. Alternates with 113-114 as requirement for seniors in library training course. Professor SAVERY.

Conceptions of the universe, evolution, the destiny of man, the individual and social ideal in Wordsworth, Shelley, Emerson, Browning, Tennyson, Fitzgerald's Omar Khayyam, James Thompson, Arnold, Swinburne, Meredith and Whitman. An account of the social ideals of Carlyle, Ruskin, Morris, Shaw, Dickinson, Wells and Chesterton.

*113-114. **PHILOSOPHY IN THE MODERN DRAMA.** Two credits per semester. Prerequisite, one course previous or concurrent. Alternates with 111-112 as requirement for seniors in Library Training course. Associate Professor BENHAM.

115-116. **ESTHETICS.** Two credits per semester. Required for seniors in music. Dr. GIVLER and Dr. DUCASSE.

The origin and motives of art, and the esthetic principles of architecture, sculpture, painting, music, poetry, the drama, and the decorative arts. The nature of beauty, the sublime, the comic, the tragic. Standards of criticism. Social and democratic theories of art.

118. **ADVANCED LOGIC.** Two credits. Second semester. Prerequisite, 3 or analytical geometry and calculus. Dr. GUTHRIE.

The development of symbolic logic and the logic of mathematics, with a discussion of logical theory.

*121-122. **PLATO AND ARISTOTLE.** Two credits per semester. Prerequisite, 1, or 101-102. Dr. GUTHRIE.

123-124. **CONTEMPORARY PHILOSOPHY.** Two credits per semester. Prerequisite, 1 or 101-102. Dr. GUTHRIE.

Readings from authors representing the main tendencies in contemporary philosophy, including Haeckel, Mach, Bradley, Royce, Bergson, James, Dewey, Poincare, Russell, and the American neo-realists.

125-126. **SEMINAR IN LOGIC.** Two or three credits per semester. Prerequisite, 3. Dr. DUCASSE.

The course is a direct continuation of the elements of logic.

* Not offered in 1916-17.

II. PSYCHOLOGY

1. GENERAL PSYCHOLOGY. Four credits. Either semester. Required for all courses in education. Laboratory deposit, \$2. Dr. GIVLER and Mr. WILCOX.

The facts and laws of consciousness and behavior and their connection with the nervous system. Three lectures, one recitation, one laboratory period.

2. PRACTICAL PSYCHOLOGY. Three credits. Second semester. No prerequisite. Required of sophomores in two-year commerce course. Dr. GIVLER.

An elementary course in general psychology with practical applications.

101. PHYSIOLOGICAL PSYCHOLOGY. Four credits. First semester. Prerequisite, 1. One lecture, one recitation, two laboratory periods. Laboratory deposit, \$1.00. Mr. WILCOX.

The structure and function of the nervous system in relation to consciousness and behavior. Dissection and microscopic study of the human brain, spinal cord, and sense organs.

102. EXPERIMENTAL PSYCHOLOGY. Four credits. Second semester. Prerequisite, 1. One lecture, one quiz, and six laboratory hours. Laboratory deposit, \$1.00. Mr. WILCOX.

Students completing this course receive training in laboratory methods, are made familiar with all the more important kinds of psychological apparatus and perform many of the classical experiments in psychology. On the completion of this course and psychology 112, they are prepared for research.

103-104. PRINCIPLES OF PSYCHOLOGY. Three credits per semester. Prerequisite, 1. Mr. WILCOX and Dr. GIVLER.

An advanced course in general psychology. James' Principles of Psychology will be used as a text. Some account of the history of psychology will be given. Students are advised to precede this by physiological or experimental psychology.

105. ANIMAL BEHAVIOR. Three credits. First semester. Prerequisite, 1. Professor SMITH.

This course is an analytic study of the behavior of lower animals. The principles of experimentation in this field will be determined. The various conceptions of mechanism and vitalism will be considered in their relation to genetic psychology.

107. APPLIED PSYCHOLOGY. Two credits. First semester. Prerequisite, 1. For seniors in commerce. Dr. GIVLER.

The application of the principles of psychology to problems of personal efficiency in business. The student will select and develop a problem of permanent interest to himself.

108. EDUCATIONAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 1. Dr. GIVLER.

The psychological basis of education. Perception, the learning process, practice, memory, habit, judgment, attention, and motor functions, with reference to age, sex, race, and individual differences.

110. ABNORMAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 1. For pre-medical students, and others by permission of instructor. Mr. WILCOX.

Sleep, dreams, hypnotism, mediumship, possessions, hallucinations, motor automatisms, double personality and the subconscious.

112. CHILD PSYCHOLOGY. Three credits. Second semester. Prerequisite, 1. Professor SMITH.

A study of mental development from infancy to adult age. The course will include the following subjects: The starting point of mental life, the behavior of the newborn, the nature and occurrence of instincts throughout childhood, individual differences, the analysis of temperament, the psychology of learning, heredity. The mind of the child will be examined in the light of systematic psychology with the purpose of giving the student some scientific understanding of childhood.

113. PSYCHOLOGY OF EXCEPTIONAL CHILDREN. Three credits. First semester. Prerequisite, 1. Professor SMITH.

The nature and cause of mental defects and peculiarities of children, with special reference to methods of diagnosis and to physical pathology.

114. METHODS OF MENTAL AND PHYSICAL TESTS AND METHODS OF MEASUREMENT. Two credits. Second semester. Prerequisite, 1. Laboratory fee, \$1. Professor SMITH and Miss WILKINSON.

Laboratory course with conferences. Students will be given extensive training in applying tests for general intelligence and for mental analysis. The principles of experimental procedure, methods of measurement, and statistical treatment of results form a major part of this course. The course is essential to work in

clinical psychology and is advised as preparatory to all other laboratory research in this department.

201-202. RESEARCH IN PSYCHOLOGY. Either semester. Pre-requisite, 102. Professor SMITH.

Opportunity for original investigation.

PHYSICAL EDUCATION

(Office, the Gymnasium)

DR. HALL, DIRECTOR FOR MEN, MISS MERRICK, DIRECTOR FOR WOMEN,
MISS JOHNSON, MISS EASTMAN, MR. CONNIBEAR, MR. SEXSMITH.

REQUIREMENTS FOR GRADUATION

The requirements in physical education for the several schools are as follows:

Colleges of Liberal Arts, Science, Engineering, and Forestry: courses 1-2, 51-52.

College of Pharmacy, B. S.: courses 1-2, 51-52.

College of Pharmacy, Ph. C.: course 1-2.

The requirements in physical education for all able-bodied men are satisfied by an equal number of credits in the department of military science and tactics.

REQUIREMENTS FOR A MAJOR

The completion of twenty-four hours, exclusive of courses 1-2, 51-52.

Courses 1-2 and 51-52 are prerequisite for all advanced courses except 103.

Zoology 5-6 and 9-10 are prerequisite for courses 151-152, 153 and 154 and should be completed during the first two years.

Students wishing to major in physical education should begin the work in their freshman year. It is quite difficult to begin later on account of the prerequisite courses in the first two years. The suggestive curriculum on page 91 should be carefully followed.

I. HYGIENE

All freshmen are required to complete a given amount of hygiene during their freshman year. This is carried out as a part of physical education and military science and tactics.

MEN

HYGIENE. First semester. Director HALL.

WOMEN

HYGIENE. First semester.

HYGIENE. Second semester. Director HALL.

II. PHYSICAL EDUCATION

Courses 1 and 51 for men 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 in-door training.

Courses 2 and 52 are similarly divided by March 15th. The second period is devoted to out-of-door work.

After a physical examination given to each woman entering college, the gymnasium work is assigned to meet the needs of the individual. There are special corrective classes for those who are not able to do the general work.

Upon approval by the director training on athletic teams may be substituted by a limited number, for required courses.

Courses 1-2, 51-52, for both men and women, must be taken during the freshman and sophomore years unless deferred by the director and dean.

To be eligible to compete in the various athletic contests every student must pass a satisfactory physical examination and have practiced at least thirty days.

A uniform gymnasium suit, including shoes, are necessary. They may be purchased after entering college.

1-2. CALISTHENICS AND ATHLETICS. Two credits per semester. Introductory course for first year men. Director HALL, Mr. SEXSMITH.

1-2. GYMNASTICS. Two credits per semester. Introductory course for first year women. Director MERRICK, Miss EASTMAN, Miss JOHNSON.

51-52. GYMNASTICS AND ATHLETICS. Two credits per semester. For second year men. Director HALL, Mr. SEXSMITH.

51-52. GYMNASTICS AND ATHLETICS. Two credits per semester. For second year women. Director MERRICK, Miss EASTMAN, Miss JOHNSON.

101-102. METHODS AND PRACTICE TEACHING. Three credits per semester. Director MERRICK and instructors.

A study of the various methods and systems of physical training; their application and adaptability to different ages and conditions. One recitation and six laboratory hours per week.

104. HYGIENE: EMERGENCIES. Two credits. Second semester. Director HALL.

Especially accidents that may arise on athletic fields, on public playgrounds or in the gymnasium.

*107. PLAYGROUNDS AND RECREATION. Two credits. First semester. Miss EASTMAN.

*108. PLAYGROUNDS AND RECREATION. A continuation of course 107. Two credits. Second semester. Miss EASTMAN.

Their practical application to various ages. Their organization and management. The training of playground leaders.

109. FOLK AND ESTHETIC DANCING. Two credits. First semester. Instructors.

110. FOLK AND ESTHETIC DANCING. Two credits. Second semester. A continuation of 109. Instructors.

*111-112. ADVANCED GYMNASTIC EXERCISES, WITH APPARATUS. Two credits per semester. Six laboratory hours per week. For majors only.

113. SUPERVISION OF ATHLETICS. One credit per semester. Three laboratory hours per week. Departmental instructors.

Instruction in coaching girls' athletic sports; field hockey, swimming, crew, basketball, baseball, track and tennis.

151-152. KINESIOLOGY AND ORGANIZATION. Two credits per semester. Prerequisites, zoology 5-6. Mr. SEXSMITH and instructors.

153. PHYSICAL EXAMINATIONS AND ANTHROPOMETRY. Four credits. First semester. Director HALL, Miss JOHNSON.

*154. CORRECTIVE GYMNASTICS AND PRESCRIPTION OF EXERCISE. Two credits. Second semester. Director HALL.

* Not offered in 1916-17.

PHYSICS

(Office, Basement, Denny Hall)

PROFESSOR OSBORN, ASSISTANT PROFESSORS BRAKEL AND ANDERSON;
MR. GILBREATH, DR. LESTER, AND TEACHING FELLOWS.

The following order of election of courses for Arts and Science students is suggested: 1, 2, 3, 5, 7, 9, 4, 101, 103, 104 or 105.

(a) PRIMARILY FOR STUDENTS IN ARTS AND SCIENCE

1-2. GENERAL PHYSICS. Four credits per semester. Two lectures, one quiz and one laboratory period. Prerequisite, high school physics. Professor OSBORN.

3. THEORETICAL MECHANICS. Three credits. First semester. Prerequisite, 1-2 and trigonometry. Assistant Professor ANDERSON.

An elementary mathematical discussion of the subject with special emphasis on the physical interpretation.

4. ELECTRICITY AND MAGNETISM. Four credits. Second semester. Three class periods and one laboratory period. Prerequisites, physics 1-2, mathematics, 4 hours. Assistant Professor BRAKEL.

This course is planned with a view to familiarize the student with the more important experimental and theoretical aspects of the subject.

5. HISTORY OF MECHANICS. One credit. First semester. To accompany 3. Assistant Professor ANDERSON.

A course taking up the biography of some of the great physicists and the historical development of some of the chief concepts in mechanics.

7. SPECIAL PROBLEMS. One credit. First semester. A three-hour laboratory period. To accompany 3. Assistant Professor ANDERSON.

Selected problems in mechanics will be assigned.

9. HEAT. Three or four credits. First semester. Prerequisites, 1 and 2, mathematics, 8 hours. Three class periods and one laboratory period. May be taken without laboratory work for three credits. Dr. LESTER.

An experimental and theoretical treatment of the subject.

101. **LIGHT.** Four credits. First semester. Three class periods and one laboratory period. Prerequisite, 3. Professor OSBORN.

An elementary discussion of reflection, refraction, interference and spectroscopy with the emphasis on the physical interpretation and the historical development of the wave theory.

103. **PHYSICS OF A. C. AND D. C. CIRCUITS.** Four credits. Second semester. Prerequisites, 4 or 92. Three class periods and one laboratory period. Assistant Professor BRAKEL.

A study of the fundamental principles of direct and alternating currents and the development of methods for the solution of practical problems.

*104. **VIBRATORY PHENOMENA AND SOUND.** Four credits. Second semester. Prerequisites, 3 and calculus. Professor OSBORN.

The course takes up the development and discussion of the mathematical expressions for wave motions, and various types of vibrations.

105. **HIGH TEMPERATURE THERMOMETRY.** Two credits. First semester. Prerequisite, 9. One class and one laboratory period. Dr. LESTER.

*107-108. **ILLUMINATION.** Two credits per semester. Prerequisite, 101. Professor OSBORN.

110. **ELECTRO-CHEMISTRY AND THEORIES OF E. M. F.** Three credits. Second semester. Prerequisite, 4 or 92, and chemistry, 8 hours. Assistant Professor BRAKEL.

111-112. **TEACHER'S PHYSICS.** Two credits per semester. Open only to seniors. Prerequisite, not less than 12 hours of physics and 24 hours of other science. Professor OSBORN.

SPECIAL COURSES

51-52. **MECHANICS, SOUND AND MUSIC.** Four credits per semester. Three recitations and one laboratory period. For Fine Arts students. Assistant Professor ANDERSON.

53-54. **PHOTOGRAPHY FOR AMATEURS.** Two credits per semester. One class and one laboratory period. Prerequisite, a year of elementary physics or chemistry. Dr. LESTER.

* Not offered in 1916-17.

FOR GRADUATES

201-202. DYNAMICS. Two credits per semester. Prerequisite, 3 and calculus. Assistant Professor ANDERSON.

A rigorous mathematical treatment of the fundamentals.

203-204. THEORETICAL ELECTRICITY AND MAGNETISM. Two credits per semester. Prerequisite, 4, and calculus. Assistant Professor BRAKEL.

A rigorous mathematical treatment of the fundamentals.

206. ADVANCED OPTICS. Two credits. Second semester. Prerequisite, 101, and calculus. Professor OSBORN.

Polarization phenomena and modern theories of light.

207-208. THERMODYNAMICS AND KINETIC THEORY OF GASES. Two credits per semester. Two class periods. Prerequisite, 3, 9, and calculus. Assistant Professor ANDERSON.

209. ELECTRON THEORY. Two credits. First semester. Prerequisite, 4. Assistant Professor ANDERSON.

The important researches leading to the electron theory are presented, and the application of the theory in explaining the facts of electrostatics, electrical and thermal conduction, magnetism, and chemical valency is considered.

210. ELECTRON THEORY. Two credits. Second semester. Prerequisite, 209, and calculus. Assistant Professor ANDERSON.

A mathematical treatment of the electron theory of conduction, thermal and electrical, optical phenomena, atomic structure, etc.

211-212. SEMINAR. Credits to be arranged. For senior majors and graduate students.

213-214. INVESTIGATION. Credits to be arranged. Any student who can show that he is qualified may undertake original investigation under the direction of one of the instructors.

Of courses 200 to 214, not over eight hours per semester will be offered. Laboratory deposit is \$2.50 per semester for all laboratory courses.

(b) PRIMARILY FOR STUDENTS IN APPLIED SCIENCE

*87. ACOUSTICS AND ILLUMINATION. Four credits. First semester. Prerequisite, college physics, 8 hours. Professor OSBORN and Assistant Professor ANDERSON.

For students in architecture.

* Not offered in 1916-17.

89. PHYSICS OF THE HOME. Four credits. Either semester. Three class periods and one three-hour laboratory. Prerequisite, high school physics. Professor OSBORN.

A course for students in domestic science.

92. ELECTRICAL MEASUREMENTS. Two credits. Either semester. Prerequisite, 98. Two laboratory periods. Assistant Professor BRAKEL.

93-94. GENERAL PHYSICS. Four credits per semester. Prerequisites, high school physics and trigonometry. Dr. LESTER.

This course is an abridgment of 97 and 98 and is open only to students in forestry, pharmacy and medicine. Three class periods and one laboratory period.

95. PHYSICS MEASUREMENTS. Two credits. Either semester. Taking 97. Mr. GILBREATH.

96. PHYSICS MEASUREMENTS. One credit. Either semester. Taking 98. Mr. GILBREATH.

97. MECHANICS, WAVE MOTION AND LIGHT. Four credits. Either semester. Prerequisite, high school physics and mathematics, 8 hours. Assistant Professors BRAKEL and ANDERSON.

98. ELECTRICITY AND HEAT. Four credits. Either semester. Prerequisite, 97. Assistant Professors BRAKEL and ANDERSON.

NOTE.—The laboratory deposit is \$6.00 per year for courses 92, 95, 96, and \$2.50 per semester for 87, 89, 93-94.

POLITICAL AND SOCIAL SCIENCE

(Office, Denny Hall)

PROFESSORS J. ALLEN SMITH AND BEACH; ASSISTANT PROFESSORS
CUSTIS, BERGLUND, H. E. SMITH, AND MC MAHON; DR. JAMES,
MR. LAUBE, MR. AKERMAN, MR. MACAULAY.

The work of the department covers the allied fields of (1) Government, (2) Economics and Commerce, (3) Sociology. The courses given in each of these fields are as follows: Government, 51 to 80, and 151 to 180; Economics and Commerce, 1 to 50, and 101 to 150; Sociology, 81 to 100, and 181 to 200. A few of the courses may be considered as belonging to more than one of the three fields.

The general requirement of six credits in Political and Social Science may be satisfied by courses 1-2, 81 and 82, 51 and 52,

or 3 and any other three-hour course in Economics for which 3 is prerequisite.

INSTRUCTIONS TO STUDENTS MAJORING IN THE DEPARTMENT

Courses 1-2, 3, 51-52, 81-82, 4, 5, 6, 7-8, are considered elementary, the remainder being termed advanced. Students majoring in the department must take at least one-half their major work from the advanced group.

Unless specially sanctioned by the enrolling officer, with the approval of the head of the department, students must select one-half their major work from one of the following fields: Government, Economics, Sociology, or Commerce.

OPEN TO FRESHMEN, SOPHOMORES, JUNIORS AND SENIORS

1-2. **ELEMENTS OF ECONOMICS.** Three credits per semester. Assistant Professors McMAHON, BERGLUND and H. E. SMITH; Mr. AKERMAN.

A study of the principles of economics and of economic problems.

3. **ELEMENTS OF ECONOMICS.** Three credits. Either semester. Dr. JANES, Mr. LAUBE, Mr. AKERMAN, and Mr. MACAULAY.

4. **STANDARDS OF LIVING.** Two or three credits. Second semester. Prerequisite, Economics 1-2 or 3. Assistant Professor McMAHON.

A study of the consumption of wealth with reference to the household and other economic units.

5. **COMMERCIAL GEOGRAPHY.** Three credits. First semester. Dr. JANES.

An elementary study of the geographic basis of modern commerce, including such subjects as the location, classification and transformation of raw materials, the description of trade routes and the varieties and control of natural powers.

6. **ECONOMIC HISTORY OF THE UNITED STATES.** Three credits. Second semester. Prerequisite, 1-2 or 3. Assistant Professor BERGLUND.

A study of the industrial development and financial policies of the United States from the colonial period to the present time.

7-8. **ACCOUNTING.** Three credits per semester. Prerequisite, 1-2 or 3. Must be taken the full year to receive credit. Assistant Professor H. E. SMITH.

The theory of debits and credits as applied to the keeping of single entry and double entry books. Theory of assets, liabilities and proprietorship. The nature of individual accounts as of persons, various assets, expenses, notes, interest and discount, loss and gain. Various books of original entry and columnar books. Preparation of simple balance sheets, trading, and profit and loss statements. Statement of affairs and deficiency accounts. Practice is given in working out complete and comprehensive series of transactions.

51. AMERICAN GOVERNMENT (NATIONAL). Three credits. First semester. Professor J. ALLEN SMITH.

52. AMERICAN GOVERNMENT (STATE AND LOCAL). Three credits. Second semester. Prerequisite, 51. Professor J. ALLEN SMITH.

81. ELEMENTS OF SOCIOLOGY. Three credits. First semester. Juniors, seniors and graduates are advised to take course 181-182 rather than 81-82. Professor BEACH.

82. SOCIAL PROBLEMS. Three credits. Second semester. Prerequisite, 81. Professor BEACH.

OPEN TO JUNIORS AND SENIORS

101. TRANSPORTATION. Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor CUSTIS.

Primarily a study of railway transportation in the United States.

102. HISTORY OF COMMERCE AND COMMERCIAL POLICIES. Three credits. Second semester. Prerequisites, 1-2 or 3. Assistant Professor BERGLUND.

103. LIFE INSURANCE. Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor H. E. SMITH.

The purpose and importance of life insurance; kinds of companies and policies, mortality tables, calculation of premium and reserve, loading, investment of insurance funds, relation to public welfare, business organization of companies, buying and selling insurance.

104. PROPERTY INSURANCE. Three credits. Second semester. Prerequisite, 1-2, or 3. Assistant Professor H. E. SMITH.

The importance of property insurance in modern business, hazards, principles and difficulties of rating, business organization and finance.

105. STATISTICS. Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor BERGLUND.

A study of statistical forms and methods of compiling statistical data with application to industrial, commercial and social life.

*151. COLONIAL GOVERNMENT. Two credits. First semester.

A study of the systems of colonial government and administrations.

152. MUNICIPAL GOVERNMENT. Two credits. Second semester. Prerequisite, 1-2, 3, 81, or 51. Professor J. ALLEN SMITH.

OPEN TO JUNIORS, SENIORS AND GRADUATES

106. INDUSTRIAL ORGANIZATION. Three credits. Second semester. Prerequisite, 1-2 or 3. Assistant Professor CUSTIS.

A study of modern industry with special reference to trusts and "industrial" monopolies. This course is practically a continuation of 101 (Transportation), but may be taken by students who have not taken that course.

107. PUBLIC FINANCE. Three credits. First semester. Prerequisite, 1-2 or 3. Mr. LAUBE.

Public expenditures, financial administration, taxation, public debts.

108. FINANCIAL HISTORY OF THE UNITED STATES. Three credits. Second semester. Prerequisite, 1-2 or 3. Mr. LAUBE.

The main lines of our financial development, including our monetary and banking history.

109. MONEY AND BANKING. Three credits. First semester. Prerequisites, 1-2 or 3. Assistant Professor CUSTIS.

Deals chiefly with the systems of money and banking prevailing in different countries, especially the United States, and with international exchange.

110. INTERNATIONAL EXCHANGE. Three credits. Second semester. Prerequisite, 109. Assistant Professor H. E. SMITH.

A study of the instruments and methods by which international exchanges are effected, and an analysis of the financial and political principles and consequences involved.

111. DOMESTIC AND FOREIGN MARKETS. Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor BERGLUND.

A study of the forces determining the movement of commodities from producing areas to consuming centers, organizations for marketing products at home and abroad and combinations formed for the control of the market.

112. THE TRADE OF THE PACIFIC. Three credits. Second semester. Prerequisites, 5, and 1-2 or 3. Dr. JANES.

A study of lines and conditions of the trade of the Pacific, with special reference to the commercial relation of the Pacific Northwest with the Orient and with South American countries.

113. THE DEVELOPMENT OF INDUSTRIAL SOCIETY. Three credits. First semester. Prerequisite, or concurrent, 1-2 or 3. Assistant Professor BERGLUND.

114. MODERN TARIFF SYSTEMS. Two credits. Second semester. Prerequisite, 1-2 or 3. Assistant Professor BERGLUND.

115. WATER TRANSPORTATION. Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor ———

A study of the economics of water transportation, with special reference to the United States, including a consideration of line and bulk traffic, the relations between industrial concerns, rail carriers, and water carriers, the problems of port terminals, and the development in international trade of shipping rings.

116. CORPORATION FINANCE. Three credits. Second semester. Prerequisite, 6 hours in economics. Assistant Professor CUSTIS.

117-118. ADVANCED ACCOUNTING AND AUDITING. Three credits per semester. Prerequisite, 7-8. Must be taken full year to receive credit. Assistant Professor H. E. SMITH.

Principles of higher accounting, including the use of columnar books, valuation of the various items of the balance sheet, classification of accounts, depreciation and appreciation, bad and doubtful debts; reserves, sinking fund, good will, cost accounting, accounting of institutions and municipalities, study of financial reports of corporations. Auditing, qualifications, duties and responsibilities of public auditor, procedure in proper conducting of an audit, preparation of accounts for an audit, examination of books, auditor's certificate and report. Problems in higher accounting and auditing. (Given every other year, alternating with Insurance 103-104.)

***119. LABOR PROBLEMS.** Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor McMAHON.

This course covers the topics of strikes, trade unions, employers' associations, arbitration, immigration, child labor.

120. LABOR LEGISLATION. Three credits. Second semester. Prerequisite, 119. Assistant Professor McMAHON.

American and foreign. A study of wages, hours, accidents, industrial hygiene.

121. THE LABOR MOVEMENT IN EUROPE. Three credits. First semester. Given in alternate years with 119. Assistant Professor McMAHON.

***123-124. PRINCIPLES OF ECONOMICS.** Three credits per semester. Prerequisite, 6 hours in Economics. Mr. AKERMAN.

A study of the production, distribution, exchange, and consumption of wealth with special reference to present-day problems.

125-126. HISTORY OF ECONOMIC THOUGHT. Three credits per semester. Mr. AKERMAN.

An introduction to the study of the development of economic theory, the main emphasis being placed upon the mercantillists, the physiocrats, and the British classical school.

153-154. POLITICAL THEORIES. Two credits per semester. Prerequisite, six credits in Government. Professor J. ALLEN SMITH.

A study of the political ideas that have influenced constitutional development and legislation in England and the United States.

155. THE GOVERNMENT OF ENGLAND. Two credits. First semester. Prerequisite, six credits in Government. Professor J. ALLEN SMITH.

156. PUBLIC INTERNATIONAL LAW. Two credits. Second semester. Dr. JANES.

The history and development of public international law.

157-158. JOINT SEMINAR. Two credits per semester. Professors J. ALLEN SMITH, CONDON and MEANY.

Designed for study and reports upon the problems in the historical, political and legal development of the state of Washington and the Pacific Northwest.

*159. COMPARATIVE GOVERNMENT. Two credits. First semester. Prerequisite, six credits in Government. Professor SMITH.

A study of the chief features of the governmental systems of the countries of central and western Europe.

Courses 155 and 159 are given in alternate years.

*161-162. POLITICAL PROBLEMS. Two credits per semester. Prerequisite, six credits in Government. Professor J. ALLEN SMITH.

The theory of the separation of powers, political parties and limited government, the United States Supreme Court and democracy, division of functions between central and local government, recent tendencies in governmental organization. Courses 153-154 and 161-162 are given in alternate years.

181-182. PRINCIPLES OF SOCIOLOGY. Three credits per semester. Professor BEACH.

A study of the principles underlying the organization and development of society.

183. SOCIAL AMELIORATION. Three credits. First semester. Prerequisites, 6 hours in sociology. Professor BEACH.

A study of the attempt of society under the present industrial system, to effect improvement in the life of the less fortunate classes.

*184. SOCIAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 6 hours in sociology. Professor BEACH.

The growth and nature of custom and convention and the formation of public opinion. It is desirable that the student should have had a course in general psychology. Courses 184 and 186 are given in alternate years.

186. THE FAMILY. Three credits. Second semester. Prerequisite, 6 hours in sociology. Professor BEACH.

187-188. SOCIAL RESEARCH. Two or three credits per semester. Time to be arranged. Professor BEACH.

This course is intended to afford opportunity for investigation of special social problems. It is open only to graduates or advanced students, and in each case consent of the instructor is necessary.

OPEN TO GRADUATES

201-202. SEMINAR IN POLITICAL AND SOCIAL SCIENCE. Two credits per semester.

Primarily for graduate students majoring in the department.

PUBLIC SPEAKING AND DEBATE

(Office, Denny Hall)

PROFESSOR GORSUCH AND PROFESSOR PRIEST.

For a major, twenty-four credits, eight credits of which must be taken in freshman composition. Not more than sixteen credits in this department may be counted toward the A. B. degree.

FOR FRESHMEN AND SOPHOMORES

1-2. PRACTICAL PUBLIC SPEAKING. Three credits per semester. Professor GORSUCH.

An introductory course. Two sections are offered the first semester; one section the second semester. Principles of public speaking are studied and short, original talks are prepared and delivered. The aim of the course is to accustom students to think while standing before the audience and to use definite means for definite purposes. Clear statement, sound argument, effective presentation, and development of will and personality are sought.

1. PRACTICAL PUBLIC SPEAKING. Three credits. Second semester. Professor GORSUCH.

3-4. ARGUMENTATION. Three credits per semester. Professor PRIEST.

5-6. DRAMATIC READING. Two credits per semester. Professor GORSUCH.

Several plays, classical and modern, are studied and read aloud.

7-8. ADVANCED ARGUMENTATION AND DEBATING. Two credits per semester. Prerequisites, participation in inter-collegiate debate as principal or alternate, argumentation 3-4, or consultation with the instructor. Professor PRIEST.

Intended for those who wish to take part in inter-collegiate debating. A laboratory course in the preparation and delivery of formal debates.

101. ADVANCED READING. Two credits. Either semester. Professor GORSUCH.

Required of English majors who expect to teach, unless excused. Principles of vocal interpretation and practice in oral reading.

SCANDINAVIAN

(Law Building)

PROFESSOR VICKNER

FOR UNDERGRADUATES

1-2. SWEDISH LANGUAGE. Four credits per semester. Grammar and reading. Composition and oral exercises.

3-4. NORWEGIAN-DANISH LANGUAGE. Four credits per semester.

Grammar and reading. Composition and oral exercises.

5-6. NORWEGIAN-DANISH LITERATURE. Two credits per semester.

Representative authors are read in connection with a general survey of the Norwegian-Danish literature.

7-8. SWEDISH LITERATURE. Two credits per semester.

Representative authors are read in connection with a general survey of the Swedish literature.

101-102. READING COURSE IN NORWEGIAN AND SWEDISH. One credit per semester.

Especially adapted for students in the department of library economy. Special emphasis is laid on the acquisition of reading knowledge. Knowledge of the Scandinavian languages is not required.

103-104. MODERN SWEDISH LITERATURE. Two credits per semester.

Representative writers of the nineteenth and twentieth centuries are read, including Selma Lagerlöf, Strindberg, Fröding. Study of the culture and history of Sweden.

105-106. MODERN NORWEGIAN-DANISH LITERATURE. Two credits per semester.

Representative writers of the nineteenth and twentieth centuries are read, including Ibsen, Björnson, Kielland, Jacobsen, Drachmann. Study of the culture and history of Denmark and Norway.

107-108. STUDY OF MODERN SCANDINAVIAN AUTHORS IN ENGLISH TRANSLATION. One credit per semester.

A study of Ibsen and Strindberg the main feature of the course. Brief survey of Scandinavian culture and history.

109. SCANDINAVIAN CULTURE AND INSTITUTIONS. One credit. Either semester.

A lecture course dealing with the literature, art, and general social development of Scandinavia. One lecture a week and collateral reading. Knowledge of the Scandinavian languages is not required. This course might profitably be combined with 107.

FOR UNDERGRADUATES AND GRADUATES

201-202. OLD ICELANDIC. Two credits per semester.

Grammar, prose selections, poems from the Edda, lectures on Scandinavian mythology and antiquities, Scandinavian philology.

*203-204. HISTORY OF THE SWEDISH LANGUAGE. Two credits per semester.

FOR GRADUATES

205-206. SCANDINAVIAN LITERATURE IN THE NINETEENTH CENTURY. Two credits per semester.

Other graduate work with the consent of the head of the department.

SPANISH

(Denny Hall)

PROFESSOR OBER, ASSOCIATE PROFESSOR UMPHREY, ASSISTANT
PROFESSOR STRONG AND MR. SANTANDER.

For a major, 24 to 40 credits, including 55-56 and at least one year course of the second division. Course 151 is required of all those recommended as teachers.

For prerequisites, one year in high school is generally considered the equivalent of one semester in the University.

Students will please notice that either 51 or 61 is open to those who have completed 31-32, or its equivalent, and that 61 is prerequisite to all the advanced courses.

1-2. ELEMENTARY. Four credits per semester.

Course 1 is repeated in the second semester, and followed by course 2 which is repeated in the first semester.

31-32. INTERMEDIATE. Three credits per semester. Prerequisite, 2.

Grammar review, composition and conversation. Readings from Spanish newspapers, plays and novels. There will be sections for those wishing to specialize in commercial Spanish.

51-52. COMMERCIAL SPANISH. Three credits per semester. Prerequisite, 32. Professor OBER and Mr. SANTANDER.

Commercial terms. Business correspondence. Linguistic peculiarities of the different Spanish-American countries.

55-56. ADVANCED COMPOSITION AND CONVERSATION. Two credits per semester. Prerequisite, 32. Mr. SANTANDER.

61. OUTLINE HISTORY OF SPANISH LITERATURE. Three credits. First semester. Prerequisite, 32. Associate Professor UMPHREY. Selected texts, collateral reading, lectures.

62. SPANISH LITERATURE OF THE NINETEENTH CENTURY. Three credits. Second semester. Prerequisite, 32. Associate Professor UMPHREY.

FOR UNDERGRADUATES AND GRADUATES

131-132. SPANISH LITERATURE OF THE "SIGLO DE ORO." Two credits per semester. Prerequisite, 61. Professor OBER.

Selected texts, collateral reading, lectures. First semester, Cervantes. Second semester, Lope de Vega, Calderon, etc.

151. TEACHERS' COURSE. Two credits. First semester. Professor OBER.

161-162. THE NOVEL. Three credits per semester. Prerequisite, 61. Assistant Professor STRONG.

The origins of the Spanish novel and its development. Reading of selected texts; collateral reading and reports.

*163-164. THE DRAMA. Three credits per semester. Prerequisite, 61. Assistant Professor STRONG.

*171. LYRIC POETRY. Two credits. First semester. Prerequisite, 61. Associate Professor UMPHREY.

*172. THE SPANISH POPULAR BALLAD. Two credits. Second semester. Prerequisite, 61. Associate Professor UMPHREY.

* Not offered in 1916-17.

181, 182. SPANISH-AMERICAN LITERATURE. Two credits per semester. Prerequisite, 61. Associate Professor UMPHREY.

Representative writings of Spanish-American authors. Colateral reading and reports. Lectures.

185, 186. CONFERENCIAS EN ESPAÑOL ACERCA DE LAS REPÚBLICAS LATINO-AMERICANAS. One credit per semester. Mr. SANTANDER.

One lecture a week will be given Saturday morning and will be open to auditors as well as to regular students.

187, 188. THE LITERATURE AND ART OF SPAIN. One credit per semester. Associate Professor UMPHREY.

One lecture a week, in English. Open to auditors as well as to regular students.

189, 190. LATIN-AMERICAN CIVILIZATION, with special attention to art and literature. One credit per semester. Associate Professor UMPHREY.

One lecture a week, in English. Open to auditors as well as to regular students.

FOR GRADUATES

210-211. OLD SPANISH. Two credits per semester. Associate Professor UMPHREY.

History of Spanish literature to the sixteenth century. Reading of the Poema del Cid and selections from other early Spanish writings. Reports on special topics.

ZOOLOGY

(Science Hall)

PROFESSOR EMERITUS JOHNSON, PROFESSOR KINCAID, ASSISTANT
PROFESSOR E. VICTOR SMITH, MR. OSTERUD, DR. FASTEN,
MR. JOHNSON, MISS GILLE.

A laboratory deposit of \$2 is required for all courses except 14, 15 and 16.

1-2. ELEMENTS OF ZOOLOGY. Four credits per semester. Professor KINCAID, Mr. OSTERUD, Dr. FASTEN, Mr. JOHNSON, Miss GILLE.

A general review of zoological science.

Course 1 is repeated in the second semester.

3. PRE-MEDICAL ZOOLOGY. Four credits. First semester. For students entering upon a medical course. Dr. FASTEN.

5-6. VERTEBRATE ANATOMY. Four credits per semester. Prerequisite, 1-2. Mr. OSTERUD.

Comparative structure of vertebrates.

7. ELEMENTARY PHYSIOLOGY. Four credits. Either semester. Assistant Professor SMITH and Mr. JOHNSON.

A general survey of the structure and functions of the human body, designed especially for students in home economics, but open to others.

11-12. ICHTHYOLOGY. Two credits per semester. Prerequisite, 1-2. Professor KINCAID.

The classification and habits of food and game fishes.

14. FOREST ZOOLOGY. Two credits. Second semester. Professor KINCAID.

Habits and economic relations of typical forest animals. Especially for forestry students, but open to others.

15. ETHNOLOGY. Two credits. First semester. Professor KINCAID.

Origin, migration, distribution and customs of the races of man. Illustrated by lantern slides.

16. EVOLUTION AND EUGENICS. Two credits. Second semester. Professor KINCAID.

Lectures upon important biological problems related to organic evolution, including variation, selection, heredity and eugenics. Illustrated by stereopticon views.

101. NORMAL HISTOLOGY. Four credits. First semester. Prerequisite, 1-2. Mr. OSTERUD.

Mammalian histology, especially for pre-medical students, but open to others.

102. EMBRYOLOGY. Four credits. Second semester. Prerequisite, 1-2. Mr. OSTERUD.

Comparative developmental history of vertebrates. Especially for pre-medical students.

103-104. ADVANCED PHYSIOLOGY. Four credits per semester. Prerequisite, one year each of college chemistry, physics, and zoology. Assistant Professor SMITH.

Adapted to meet the needs of medical students.

105. NEUROLOGY. Four credits. First semester. Prerequisite, 101. Assistant Professor SMITH.

Comparative structure and genesis of sense organs and central nervous system.

107-108. PISCICULTURE. Two credits per semester. Prerequisite, 1-2 and 11-12. Assistant Professor SMITH.

The developmental history and artificial propagation of economic fishes.

109-110. GENERAL ENTOMOLOGY. Four credits per semester. Prerequisite, 2. Professor KINCAID.

The structure, classification, and economic relations of insects.

201-202. MUSEUM AND FIELD WORK. Four credits per semester. Prerequisite, at least two years of zoology. Professor KINCAID.

Systematic investigation of the local fauna, including studies based upon material in the state museum.

203-204. RESEARCH. Credits to be arranged. Either semester. Students capable of carrying on independent research will be allowed to do so under the direction of the instructors in charge.

COLLEGE OF ENGINEERING

FACULTY

HENRY SUZZALLO, PH. D. (Columbia), PRESIDENT.

ALMON HOMER FULLER, M. S., C. E. (Lafayette), Professor of Civil Engineering; DEAN.

*HORACE G. BYERS, PH. D. (Johns Hopkins), Professor of Chemistry.

FREDERICK MORGAN PADELFORD, PH. D. (Yale), Professor of English.

FREDERICK ARTHUR OSBOEN, PH. D. (Michigan), Professor of Physics and Director of the Physics Laboratories.

ROBERT EDOUARD MORITZ, PH. D., PH. N. D. (Strassburg), Professor of Mathematics and Astronomy.

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

EVERETT OWEN EASTWOOD, B. S., C. E., M. A. (Virginia), Professor of Mechanical Engineering.

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

HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.

JOHN WEINZIRL, PH. D. (Wisconsin), Professor of Bacteriology.

WILLIAM FRANKLIN ALLISON, B. S., C. E. (Cornell), Professor of Municipal and Highway Engineering.

WILLIAM TAYLOR PATTEN, Captain, U. S. A., Retired, Professor of Military Science and Tactics.

SAMUEL LATIMER BOOTHBOYD, M. S. (Colorado), Associate Professor of Astronomy and Mathematics.

GEORGE SAMUEL WILSON, B. S. (Nebraska), Associate Professor of Mechanical Engineering.

CHARLES W. HARRIS, C. E. (Cornell), Assistant Professor of Civil Engineering.

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

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

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

* Absent on leave, second semester 1915-16.

- ORVILLE PORTER COCKERILL, LL. B. (Ohio), Assistant Professor of Law.
- ABRAHAM BERGLUND, PH. D. (Columbia), Assistant Professor of Economics.
- HOBACE JAMES MACINTIRE, M. M. E. (Harvard), Assistant Professor of Mechanical Engineering.
- JOHN WILLIAM MILLER, B. S., C. E. (Nebraska), Assistant Professor of Civil Engineering.
- CHARLES E. NEWTON, E. M. (Michigan School of Mines), Assistant Professor of Civil Engineering.
- FRANK M. WARNER, B. S. (M. E.), (Wisconsin), Assistant Professor of Engineering Drawing.
- FREDERICK KARL KIRSTEN, B. S. (E. E.), (Washington), Assistant Professor of Electrical Engineering.
- SAMUEL THOMAS BEATTIE, Instructor in Woodwork.
- SANDY MORROW KANE, Instructor in Metalwork.
- LEWIS IRVING NEIKIRK, PH. D. (Pennsylvania), Instructor in Mathematics.
- HARLAN LEO TRUMBULL, PH. D. (Chicago), Instructor in Chemistry.
- SAMUEL HERBERT ANDERSON, PH. D. (Illinois), Instructor in Physics.
- LESLIE FORREST CURTIS, B. S. (Tufts), Instructor in Electrical Engineering.
- THOMAS WITHERS, C. E. (Virginia), Instructor in English.
- CHARLES CULBERTSON MAY, B. S. (C. E.), (Washington), Instructor in Civil Engineering.
- EDWIN LEONARD STRANDBERG, B. S. (C. E.), (Washington), Instructor in Civil Engineering.
- WILLIAM E. DUCKERING, B. S. (C. E.), (Washington), Instructor in Civil Engineering.
- CHARLES PAUL KUSCHKE, PH. D. (California), Instructor in Mathematics.
- HARRY KELLY RUBEY, B. S. (C. E.), (Illinois), Instructor in Civil Engineering.
- MORRIS MORGAN LEIGHTON, M. S. (Iowa), Instructor in Geology.
- CHAUNCEY WERNECKE, B. S. (C. E.), (Washington), Instructor in Civil Engineering.
- CHARLES EVAN FOWLER, M. Am. Soc. C. E., Lecturer on Specifications and Bridge Construction.

CURRICULA

The College of Engineering offers two four-year curricula in each of the departments of chemical, civil, electrical and mechanical engineering. One of these leads to the degree of bachelor of science in the respective branches of engineering, as B. S. in civil engineering. The other is offered to meet the need for a broader foundation of general training than is possible in the regular four-year curricula. This curriculum in each department leads to the degree of bachelor of science (B. S.), and is followed by a year of graduate work which, under the University regulations for advanced degrees, leads to the degree of master of science in the respective lines.

Thus in five years it will be possible to cover all of the subjects in a regular engineering curriculum and add nearly a year's work in general training and a certain amount of advanced engineering work. This should insure greater efficiency in all of the work as well as broaden the general education.

The freshman work in the several departments is identical, thus making it possible for a student to delay the definite choice until the beginning of the sophomore year.

All freshman and much sophomore work will be repeated each semester. Additional courses will be repeated whenever practicable, provided the demand is sufficient to warrant full sections, but not for less than six students. Thus freshmen may enter in February with the assurance of continuity of work for at least two years. This plan provides a possibility for taking some desirable elective courses for a semester, or for engaging in practical work for a semester and a summer consecutively before completing the curriculum.

DEGREE WITH HONORS

A degree with honors in engineering may be conferred upon any student of the College of Engineering who, upon recommendation of the engineering faculty, of the honors committee and upon vote of the University faculty, may be declared worthy of unusual distinction.

ADVANCED DEGREES

The degree of master of science in civil engineering (M. S. in C. E.), master of science in electrical engineering (M. S. in E. E.),

master of science in mechanical engineering (M. S. in M. E.), and master of science in chemical engineering (M. S. in Ch. E.), respectively, will be conferred upon those who complete the year of graduate work following the respective curriculum leading to the degree of bachelor of science and maintain a grade of A, B, or C in all subjects, pass a formal examination open to all members of the faculty, and submit a satisfactory thesis.

The degree of master of science in the various departments of engineering, as indicated in the preceding paragraph, will be conferred upon graduates of this college, or other engineering colleges of recognized standing, who complete a year (32 credit hours) of graduate work, including a satisfactory thesis, with the grade of A, B or C. The candidate must also pass a formal examination open to all members of the faculty. The selection of work for this degree must, in each case, be approved by the head of the department in which the student majors.

The professional degrees, civil engineer (C. E.), electrical engineer (E. E.), and mechanical engineer (M. E.), will be conferred in two years on graduates of this college holding the degree (M. S.) and in three years on those with (B. S.) in their respective lines, who give evidence of having been engaged continuously in acceptable engineering work and who present satisfactory theses.

THESIS

The graduating thesis will consist of research or design in some branch of engineering, or the review of some existing construction. The subject must be approved by the professor in charge of the department under which it is classified, not later than the first of January in the senior year.

GOVERNMENT TIMBER TESTING SERVICE

The United States government through its forest service has located at the University of Washington a government timber testing station. Three timber testing engineers of the forest service are stationed here, and actual work in the investigation of the mechanical properties of Northwest timber is regularly carried on. The structural materials testing laboratory is used jointly for this work and for University instruction and investigation.

***ADMISSION TO FRESHMAN STANDING**

A student must offer for admission to freshman standing in the University, fifteen units by examination or by certificate from an accredited school from which he has graduated. The fifteen units must include the following combinations:

3 units of English.

2 units of mathematics (or 3 units if desired).

3 units selected from one of the following groups (or 2 units, if 3 units of mathematics are presented).

(a) Latin and Greek (not less than 2 units of Latin, or 1 of Greek will be counted).

(b) Modern foreign language (at least 2 units in *one* language; not less than one unit will be counted in any language).

(c) History, civics, economics (at least one unit to form a year of consecutive work in history).

(d) Physics, chemistry, botany, zoology, general biology, physical geography, geology, physiology. (Not less than one unit will be counted in physics, chemistry, or general biology. No science will be counted as applying on this requirement unless it includes a satisfactory amount of laboratory work.)

2 units in subjects represented in the above groups (a)-(d).

5 units selected from any subjects accepted by an approved high school for its diploma; not more than 4 units, however, may be in vocational subjects.

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University, it is recommended that a student expecting to enter the College of Engineering should elect his work from the groups (a) to (d), so as to offer the following subjects:

Advanced algebra $\frac{1}{2}$ unit

Solid geometry $\frac{1}{2}$ unit

Physics 1 unit

If he shall not have included these subjects in his high school elections, it will be necessary for him to take them in the University in addition to the prescribed curriculum, except that, as

* More detailed information concerning admission is furnished on pages 43-46.

far as practicable, they may be taken in lieu of the three hours freshman elective.

Students entering the college of engineering must have a *working knowledge* of the fundamentals of arithmetic, algebra and geometry. It is therefore desirable for the student to review his preparatory mathematics *just before entering college*. By such a step much time will be saved and the work of the college will be rendered far more valuable to him.

CURRICULUM IN CHEMICAL ENGINEERING

Leading to the degree of Bachelor of Science in Chemical Engineering.

(For description of each subject, see page 20, and following.)

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
	Credits		Credits
Math. 51 (trigonometry and algebra).....	4	Math. 52 (analytical geometry).....	4
Chem. 1 or 21 (general)....	4	Chem. 2 or 22 (general)....	4
C. E. 1 (drawing).....	2	C. E. 6 (drawing).....	4
Engl. 3.....	2	C. E. 20 (surveying).....	4
Elective (restricted).....	3	M. E. 2 (shop).....	2
M. E. 1 (shop).....	2	Mil. Sci.	2
Mil. Sci.	2		
	15+4		16+4

Freshman Electives:

Continuation of the foreign language studied in the high school, 4 credits; Political Science 3, 3 credits; History, 4 credits; Political Science 81, 3 credits; Geology 3, 4 credits; or any course approved by the head of the department.

SOPHOMORE YEAR

Math. 61 (calculus).....	4	Math. 62 (calculus).....	4
Physics 95, 97.....	6	Physics 96, 98.....	5
Chem. 43 (qualitative)....	4	M. E. 82 (steam).....	2
C. E. 11 (drawing).....	2	Chem. 101 (quantitative)...	4
M. E. 53 (shop).....	2	English 4.....	2
Mil. Sci.	2	M. E. 54 (shop).....	2
	16+4	Mil. Sci.	2
			17+4

JUNIOR YEAR

C. E. 181 (mechanics).....	4	M. E. 90 (machine design)...	3
Chem. 31 (organic).....	4	Chem. 32 (organic).....	4
Chem. 121 (industrial)....	4	Chem. 122 (industrial).....	4
E. E. 105.....	4	M. E. 140 (experimental)...	2
	16	Elective	4
			17

SENIOR YEAR

Chem. 201 (physical).....	5
Metallurgy 101	4
M. E. 115 (chemical machinery)	2
Elective	5

16

Chem. 204 (electro).....	4
Thesis	4
Elective	8

16

Junior and Senior Electives:

Chemistry 133 (sanitary chemistry), 8 credits; Geology 8, 22, 8 credits; Bacteriology 103, 104, 8 credits; Civil Engineering 142 (hydraulics), 4 credits; Political Science 1-2, 6 credits; Civil Engineering 167 (structural materials), 3 credits; Civil Engineering 154, 3 credits; Chemistry 202 (advanced physical), 4 credits; Chemistry 102 (advanced quant.), 4 credits; Chemistry 231 and 232 (advanced organic), 8 credits; Chemistry 221 and 222 (theory), 4 credits; Foreign Language, 4 credits; Law, 2 credits; Political and Social Science 81-82 or 181-182, 6 credits; Mathematics 151, 2 credits; Political Science 111 and 112, 6 credits.

CURRICULUM IN CHEMICAL ENGINEERING

Leading to the Degree of Bachelor of Science and to the Degree of Master of Science in Chemical Engineering.

Requirements for the B. S. degree:

Credits

Mathematics 51, 52, 61, 62.....	16
Civil Engineering 1, 6, 11.....	8
English 51, 52.....	4
Physics 95, 96, 97, 98.....	11
Civil Engineering 20, 181.....	8
Chemistry 1, 2, 43 (or 21, 22, 43).....	12
Mechanical Engineering 1, 2, 53, 54, 82, 90.....	5 + 8
Military Science 1, 2, 3, 4.....	+ 8

Electives:

Prescribed from junior and senior electives.....	24
From the department of chemistry.....	20
General	20

128+16

NOTE.—A maximum of 48 credits from the department of chemistry will be allowed for the B. S. degree.

Requirements for M. S. in Ch. E. degree:

(a) The degree of B. S. in chemical engineering or the degree of B. S. as above.

(b) The completion of the following supplemental work:

	Credits
Chemistry 221 and 222.....	4
Thesis	8
Elective	20

CURRICULUM IN CIVIL ENGINEERING

Leading to the Degree of Bachelor of Science in Civil Engineering.

(For description of each subject, see page 220, and following.)

FRESHMAN YEAR

FIRST SEMESTER	Credits	SECOND SEMESTER	Credits
Math. 51 (trigonometry and algebra)	4	Math. 52 (analytical geometry)	4
Chem. 1 or 21 (general)	4	Chem. 2 or 22 (general)	4
English 3	2	C. E. 6 (drawing)	4
C. E. 1 (drawing)	2	C. E. 20 (surveying)	4
Elective (restricted)	3	M. E. 2 (shop)	2
M. E. 1 (shop)	2	Mil. Sci.	2
Mil. Sci.	2		
	15+4		16+4

Freshman Electives:

Continuation of the foreign language studied in the high school, 4 credits; Political Science 3, 3 credits; History, 4 credits; Political Science 81, 3 credits; Geology 3, 4 credits; or any course approved by the head of the department.

SOPHOMORE YEAR

Math. 61 (calculus)	4	Math. 62 (calculus)	4
Physics 95, 97	6	Physics 96, 98	5
Geology 3	4	Chem. 51 (engineering)	3
C. E. 11 (drawing)	2	English 4	2
Mil. Sci.	2	C. E. 14 (drawing)	1
	16+2	C. E. 22 (surveying)	2
		Mil. Sci.	2
			17+2

Surveying in summer camp between the sophomore and junior years 6 weeks, 6 credits, beginning with the summer of 1916.

JUNIOR YEAR

Math. 151 (calculus)	2	C. E. 112 (railway construction)	2
C. E. 15 (drawing)	1	C. E. 132 (mechanics)	3
C. E. 105 (office work)	2	C. E. 138 (masonry construction)	5
C. E. 111 (railway operation)	2	C. E. 142 (hydraulics)	4
C. E. 131 (mechanics)	4	*Elective	3
C. E. 122 (highways)	2		
E. E. 105	4		
	17		17

* The electives in the junior year are restricted in the consideration of the head of the department. The following subjects are suggested: Political science, general bacteriology, a continuation of language, philosophy, logic, ethics.

SENIOR YEAR

C. E. 147 (hydraulic power)	3	C. E. 154 (sanitary)	3
C. E. 153 (water supply and irrigation)	3	C. E. 162 (bridges)	3
C. E. 161 (bridges)	4	Law 180	2
C. E. 167 (structural ma- terials)	3	Thesis or elective	3
Elective	4	Elective	4
	<hr/> 17		<hr/> 15

The senior electives will be chosen with the consent of the class adviser from the following groups:

GROUP 1

FIRST SEMESTER Credits	SECOND SEMESTER Credits
Astronomy 101 (elementary practical astronomy)	Astronomy 102 (elementary geodesy)
4	4

GROUP 2

Civil Engineering 125 (high- way construction)	Civil Engineering 126 (city streets and pavements)
4	2
	Chemistry 136 (road ma- terials)
	2

GROUP 3

Civil Engineering 135 (ad- vanced mechanics)	Civil Engineering 164 (high- er structures)
4	4

GROUP 4

Civil Eng. 157 (water supply and irrigation design)	Civil Engineering 158 (sani- tary engineering design)
2	2
Chemistry 133 (sanitary chemistry)	Bacteriology 110
3	2

GROUP 5

Civil Engineering 115 (rail- way transportation)	Civil Engineering 116 (tun- neling and track elevation)
2	2
Electrical Engineering 170 (electric railways)	Civil Engineering 118 (yards and terminals)
3	2

GROUP 6

Eight credits of advanced work in any department in the University approved by the head of the department of civil engineering.

CURRICULUM IN CIVIL ENGINEERING

Leading to the Degree of Bachelor of Science and to the Degree of
Master of Science in Civil Engineering.

Requirements for the B. S. degree:

	Credits
Math. 51, 52, 61, 62, 151.....	18
Chemistry 1, 2, 41, 51 (or 21, 22, 51, plus elective) ..	15
Physics 95, 96, 97, 98.....	11
Geology 1, 2.....	8
Political Science	6
English 3, 4.....	4
Electrical Engineering 105, 122.....	8
Mechanical Engineering 1, 2, 82, 90.....	5+ 4
Civil Engineering 1, 6, 11, 20, 22, 105, 111, 112, 122, 131-132, 138, 142.....	38
*Surveying in summer camp 6 weeks.....	+ 6
Elective Group A.....	17
Military Science 1, 2, 3, 4.....	+ 8
	<hr/> 130+18

Requirements for the M. S. in C. E. degree:

	Credits
Civil Engineering 147, 153, 154, 161-162, 167.....	19
Law 180	2
Thesis	3
Elective Group B.....	8
	<hr/> 32

GROUP A—ELECTIVES

Continuation of a foreign language—8, 12 or 16 credits;
bacteriology, chemistry, geology, history, mathematics, philos-
ophy, physics, political and social science, mechanical and
electrical engineering.

GROUP B—ELECTIVES

Same as arranged for degree of B. S. in C. E.

* To follow Course 22 and to precede Course 105.

CURRICULUM IN ELECTRICAL ENGINEERING

Leading to the Degree of Bachelor of Science in Electrical Engineering. 205 1/2

(For description of each subject, see page 220, and following.)

FRESHMAN YEAR

FIRST SEMESTER	Credits	SECOND SEMESTER	Credits
Math. 51 (trigonometry and algebra)	4	Math. 52 (analytical geometry)	4
Chem. 1 or 21 (general)	4	Chem. 2 or 22 (general)	4
C. E. 1 (drawing)	2	C. E. 6 (drawing)	4
English 3	2	C. E. 20 (surveying)	4
*Elective (restricted)	8	M. E. 2 (shop)	2
M. E. 1 (shop)	2	Mil. Sci.	2
Mil. Sci.	2		
	15+4		16+4

*Freshman Electives:

Continuation of the foreign language studied in the high school, 4 credits; Political Science 3, 3 credits; History, 4 credits; Political Science 81, 3 credits; Geology 3, 4 credits; or any course approved by the head of the department.

SOPHOMORE YEAR

Math. 61 (calculus)	4	Math. 62 (calculus)	4
Physics 95, 97	6	Physics 96, 98	5
C. E. 11 (drawing)	2	M. E. 90 (machine design)	3
M. E. 81 (mechanism)	2	English 4	2
Chem. 51 (engineering)	3	M. E. 82 (steam)	2
M. E. 53 (shop)	2	M. E. 54 (shop)	2
Mil. Sci.	2	Mil. Sci.	2
	17+4		16+4

JUNIOR YEAR

E. E. 101	3	E. E. 103	3
E. E. 102 (dynamo laboratory)	2	E. E. 104 (dynamo laboratory)	3
C. E. 131 (mechanics)	4	C. E. 132 (mechanics)	3
M. E. 91 (machine design)	2	C. E. 142 (hydraulics)	4
Math. 151 (calculus)	2	M. E. 140 (experimental)	2
Political Science 3	3	Physics 92	2
	16		17

SENIOR YEAR

E. E. 161 (alternating currents)	4	E. E. 164 (alternating currents)	4
E. E. 163 (alternating currents laboratory)	3	E. E. 166 (alternating currents laboratory)	3
E. E. 151 (dynamo design)	2	E. E. 196 (thesis)	3
E. E. 195 (thesis)	1	Elective (restricted)	6
Elective (restricted)	6		
	16		16

GROUP A

Mathematics 113-114; E. E. 131, 132, 141, 152, 170, 174, 176, 195, 196, 201, 202, 211, 212; C. E. 22, 145, 167; M. E. 141, 179, 183, 188.

GROUP B

Political and social science, law, history, and advanced courses in English and foreign languages.

CURRICULUM IN ELECTRICAL ENGINEERING

Leading to the Degree of Bachelor of Science, and to the Degree of Master of Science in Electrical Engineering.

(For description of each subject, see page 220, and following.)

<i>Requirements for the B. S. degree:</i>	Credits
Mathematics 51, 52, 61, 62, 151.....	16
Chemistry 1, 2, 41 (or 21, 22, 51, plus elective)....	12
Physics 95, 96, 97, 98:.....	11
English 3, 4.....	4
Political Science 3.....	3
Mechanical Engineering 1, 2, 53, 54, 81, 82, 90, 91..	9+ 8
Electrical Engineering 101, 102, 103, 104, 151, 161, 163	22
Civil Engineering 1, 6, 11, 20, 131-132, 142.....	23
Military Science	+ 8
From Group A.....	10
Elective	16
	<hr/> 128+16

<i>Requirements for the M. S. in E. E. degree:</i>	Credits
(a) For students having completed the B. S. course.	
E. E. 164, 166, 201, 202.....	10
Thesis	4
*From Group A.....	8
*Elective	10
	<hr/> 32
(b) For students having completed the B. S. in E. E. course.	
E. E. 201, 202.....	4
Thesis	4
*From Group A.....	8
*Elective	16
	<hr/> 32

Electives:

The student must elect at least 8 credits from Group A. It is recommended that 4 credits be elected from Group B. The choice of electives must in all cases be approved by the head of the department.

CURRICULUM IN MECHANICAL ENGINEERING

Leading to the Degree of Bachelor of Science in Mechanical Engineering.

(For description of each subject, see page 220, and following.)

FRESHMAN YEAR

FIRST SEMESTER Credits		SECOND SEMESTER Credits	
Math. 51 (trigonometry and algebra)	4	Math. 52 (analytical geometry)	4
Chem. 1 or 21 (general)	4	Chem. 2 or 22 (general)	4
C. E. 1 (drawing)	2	C. E. 6 (drawing)	4
English 8	2	C. E. 20 (surveying)	4
*Elective	3	M. E. 2 (shop)	2
M. E. 1 (shop)	2	Mil. Sci.	2
Mil. Sci.	2		
	<hr/> 15+4		<hr/> 16+4

**Freshman Electives:*

Continuation of the foreign language studied in the high school, 4 credits; Political Science 3, 3 credits; History, 4 credits; Political Science 81, 8 credits; Geology 3, 4 credits; or any course approved by the head of the department.

SOPHOMORE YEAR

Math. 61 (calculus)	4	Math. 62 (calculus)	4
Physics 95, 97	6	Physics 96, 98	5
M. E. 81 (mechanism)	2	M. E. 90 (machine design) ..	3
Chem. 51 (engineering)	3	English 4	2
C. E. 11 (drawing)	2	M. E. 82 (steam)	2
M. E. 53 (shop)	2	M. E. 54 (shop)	2
Mil. Sci.	2	Mil. Sci.	2
	<hr/> 17+4		<hr/> 16+4

JUNIOR YEAR

M. E. 128 (engines and boilers)	2	C. E. 132 (mechanics)	3
C. E. 131 (mechanics)	4	E. E. 122 (alternating currents)	4
E. E. 101, 102	5	C. E. 142 (hydraulics)	4
M. E. 91 (machine design) ..	2	M. E. 124 (engine and boiler design)	3
M. E. 141 (experimental)	3	M. E. 126 (valve gears)	2
Math. 151 (calculus)	2	M. E. 106 (machine work) ..	2
M. E. 105 (machine work) ...	2		
	<hr/> 18+2		<hr/> 16+2

SENIOR YEAR

C. E. 145 (hydraulic motors) 2	M. E. 188 (gas engines)..... 2
M. E. 101 (special machinery design)..... 2	M. E. 102 or 201..... 2
M. E. 179 (steam turbines) .. 2	M. E. 180 (refrigeration) ... 2
M. E. 183 (thermodynamics) 2	M. E. 182 (heating and vent- ilating) 2
C. E. 187 (structural ma- terials)..... 3	M. E. 184 (power plants) ... 2
M. E. 151 (experimental) ... 2	M. E. 152 (experimental) ... 2
*Electives 3	*Elective 4
16	16

CURRICULUM IN MECHANICAL ENGINEERING

Leading to the Degree of Bachelor of Science and to the Degree of
Master of Science in Mechanical Engineering.

<i>Requirements for the B. S. degree:</i>	Credits
Mathematics 51, 52, 61, 62, 151.....	18
Chemistry 1, 2, 41, 51 (or 21, 22, 51, plus elective) ..	15
English 3, 4.....	4
Physics 95, 96, 97, 98.....	11
Civil Engineering 1, 6, 11, 20, 131, 132, 142, 145...	25
Electrical Engineering 101, 102, 122.....	9
Mechanical Engineering 81, 82, 90, 91, 101, 123, 124, 126, 141, 151, 183, 184.....	28
*Elective	18
Mechanical Engineering 1, 2, 53, 54, 105, 106.....	12
Military Science	8
	128+20
<i>Additional Requirements for the M. S. in M. E. degree:</i>	Credits
Mechanical Engineering 102, 152, 179, 180, 182, 188, 201, 203	16
*Elective	12
Thesis	4
	32

* Electives must be approved by the head of the department.

DEPARTMENTS OF INSTRUCTION**CHEMISTRY****(Bagley Hall)**

**PROFESSORS BYERS AND BENSON, ASSOCIATE PROFESSOR DEHN,
ASSISTANT PROFESSOR ROSE, DR. TRUMBULL, DR. BELL,
DR. LANGDON AND MRS. ROSE.**

1. GENERAL CHEMISTRY. Four credits. Either semester. Two lectures and six laboratory hours per week. Professor BYERS, Assistant Professor ROSE, Instructors and Assistants.

This course is designed to meet the needs of students who come from accredited schools in which chemistry is not required.

2. GENERAL CHEMISTRY. Four credits. Either semester. A continuation of 1.

21. GENERAL CHEMISTRY. Four credits. Either semester. Two lectures and six laboratory hours per week. This course is open to students who have had a year of chemistry in an accredited high school. Professor BYERS, Dr. TRUMBULL, Dr. LANGDON, and Assistants.

22. GENERAL CHEMISTRY. Four credits. Either semester. A continuation of 21. Professor BYERS, Dr. TRUMBULL, Dr. LANGDON, and Assistants.

The laboratory work is an elementary course in qualitative analysis.

31. ORGANIC CHEMISTRY. Four credits. First semester. Prerequisite, 22 or its equivalent. Associate Professor DEHN.

Introductory course in organic chemistry, consisting of three lectures per week and four hours' laboratory work, on the preparation and testing of representative compounds.

32. ORGANIC CHEMISTRY. Four credits. Second semester. Associate Professor DEHN.

A continuation of 31.

41. ELEMENTARY QUALITATIVE ANALYSIS. Four credits. Either semester. Two lectures and six laboratory hours per week. Mrs. ROSE.

This course is designed to follow chemistry 1 and 2, and is open to election to those students in the College of Engineering who have not presented high school chemistry for entrance.

43. **ADVANCED QUALITATIVE ANALYSIS.** Four credits. First semester. Professor BYERS.

Lectures on theory of solution as applied to analytical work. Laboratory work on the analysis of alloys and minerals.

51. **ENGINEERING CHEMISTRY.** Three credits. Either semester. Prerequisite, 22 or its equivalent. Professor BENSON.

A course in the chemistry of engineering materials. Designed for sophomore engineers.

101. **QUANTITATIVE ANALYSIS.** Four credits. Either semester. Twelve laboratory hours and 1 recitation per week. Dr. BELL.

The technique of gravimetric and volumetric analysis.

102. **QUANTITATIVE ANALYSIS.** Four credits. Either semester. A continuation of 101. Dr. BELL.

Mineral analysis and special and analytical processes.

121. **INDUSTRIAL CHEMISTRY.** Four credits. First semester. Prerequisite, chemistry 101. Professor BENSON.

A course designed primarily for chemical engineers, and dealing with a detailed study of chemical industries.

122. **INDUSTRIAL CHEMISTRY.** Four credits. A continuation of 121.

133. **SANITARY CHEMISTRY.** Three credits. First semester. Two lectures and one laboratory period. Professor BENSON.

A study of the materials and processes used in the purification of water and sewage and in sanitation.

135. **FOREST PRODUCTS.** Three credits. First semester. A course designed especially for students of forestry. Two lectures and one laboratory period. Professor BENSON.

A detailed study of the chemical processes involved in the utilization of wood.

*136. **ROAD MATERIALS.** Two credits. Second semester. One lecture and one laboratory period. Professor BENSON.

A course designed for students in civil engineering. Deals with the materials of, and methods for examination of, road binders, dust preventives, etc.

201. PHYSICAL CHEMISTRY. Five credits. First semester. Three lectures and two laboratory periods per week. Prerequisite, physics 1-2. Dr. TRUMBULL.

An elementary course, dealing with the fundamental theories of chemistry based upon physical measurements.

202. ADVANCED PHYSICAL CHEMISTRY. Four credits. Second semester. Two lectures and six laboratory hours per week. Prerequisite, 201 and differential calculus. Dr. TRUMBULL.

A course in chemical statics and dynamics with physical chemical measurements.

204. ELECTRO CHEMISTRY. Four credits. Second semester. Prerequisite chemistry 201. Professor BYERS and Dr. TRUMBULL.

The lecture course deals with the historical development of electro chemistry and the theories of voltaic and electrolytic cells. The laboratory work deals with the practical methods of electro analysis and electro synthesis and related processes.

221-222. CHEMICAL THEORY. Two credits per semester. Professor BYERS.

All graduate students registering in the Department of Chemistry are expected to take this course which deals with the historical development of the fundamental laws and theories.

231. ADVANCED ORGANIC CHEMISTRY. Four credits. First semester. Assistant Professor ROSE.

A review of the theories of organic chemistry with special reference to the volatile oils, dye stuffs, alkaloids, sugars, etc. Special laboratory work to be arranged.

232. ADVANCED ORGANIC CHEMISTRY. Four credits. Second semester. A continuation of 231. Assistant Professor ROSE.

241-242. JOURNAL COURSE. One credit per semester. Dr. LANGDON.

The course deals with the sources of information through the publications of various sorts and involves the preparation of abstracts of articles in English, French, German and other periodicals.

250. RESEARCH. Credit to be arranged. The work in research offered by the department consists of three types: first, thesis work for the Bachelor's Degree in chemical engineering. Such work may receive a maximum of six credits. Second, research work for the Master's Degree. This work is not neces-

sarily laboratory investigation, although the investigation of the literature is ordinarily supplemented by more or less practical development of the subject. Maximum credit, six hours. Third, research work for the Doctor's Degree. Maximum credit, thirty hours. Work for the Doctor's Degree may be carried on with any member of the staff of the department, on any topic; subject to the approval of the department.

CIVIL ENGINEERING

(Engineering Building)

PROFESSORS FULLER, MORE AND ALLISON; ASSOCIATE PROFESSOR HARRIS; ASSISTANT PROFESSORS MILLER, NEWTON AND WARNER; MR.

MAY, MR. STRANDBERG, MR. DUCKERING, MR. RUBEY, MR.

WERNECKE, MR. FOWLER.

1. ENGINEERING DRAWING. Two credits. Either semester. All freshman engineers. Prerequisite, plane geometry. Two three-hour laboratory periods. Assistant Professor WARNER, Mr. MAY, Mr. STRANDBERG, Mr. DUCKERING, Mr. RUBEY.

The use of instruments, freehand lettering, tracing.

6. ENGINEERING DRAWING. Four credits. Either semester. All freshman engineers. Prerequisite, solid geometry, drawing 1. Two recitations and two three-hour laboratory periods. Assistant Professor WARNER, Associate Professor HARRIS, Mr. STRANDBERG, Mr. RUBEY.

The elements of descriptive geometry, including the principles of shades, shadows and perspective. Practical problems.

11. ENGINEERING DRAWING. Two credits. Either semester. All sophomore engineers. Prerequisite, 6. Two three-hour laboratory periods. Assistant Professor WARNER.

Continuation of drawing 6. Problems and tracings.

14-15. ENGINEERING DRAWING. One credit per semester. All sophomore and junior civil engineers. Prerequisite, 11. One three-hour laboratory period. Assistant Professor WARNER, Mr. MAY.

Working drawings, including tracings.

20. ELEMENTARY PLANE SURVEYING. Four credits. Either semester. All freshman engineers. Prerequisite, math. 51 and C. E. 1. Laboratory deposit, \$3.00. Two recitations and two

three-hour laboratory periods. Assistant Professor MILLER, Mr. DUCKERING, Mr. RUBEY.

Adjustment of instruments, trigonometric computations, mapping of simple surveys, and a brief introduction to the U. S. system of public land surveying.

22. FIELD GEOMETRY AND CONSTRUCTION SUBVEYING. Two credits. Second semester. Sophomore C. E. Prerequisite, math. 52 and C. E. 20. Laboratory deposit, \$3.00. Two three-hour laboratory periods. Assistant Professor MILLER.

Theory of circular and parabolic curves. Staking out engineering work and the computation of earth work. Use of mass diagram and construction profiles.

27. MINE SURVEYING. Three credits. First semester. Sophomore mining engineers. Prerequisite, C. E. 20. Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Surface and underground practice. Observation for meridian. Topography. Mining claim surveys. Plane triangulation. Tunnel and vertical shaft work and connections. Mapping.

A trip of one or two days to a mine in the vicinity for the purpose of practice under operating conditions.

30. FOREST SURVEYING. (Short session in Forestry, first year. Jan.-Mar.). Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Engineering drawing, topographical and map drawing. Instructions and field practice in the use of the chain, hand compass, and Forest Service compass, hand level, clinometer and transit in direct application to the requirements of the U. S. Forest Service.

32. FOREST SURVEYING. (Short session in Forestry, second year, Jan.-Mar.). Laboratory deposit, \$3.00. Assistant Professor NEWTON, Mr. DUCKERING.

Traversing by various conventional methods, mining claim surveys, plane triangulation and topographical work. U. S. Public Land Subdivision.

38. MINE SURVEYING. (Short session in Mining, Jan.-Mar.). Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Instruction and field practice in the use of simple instruments for making surface and underground surveys. The elements of drawing, lettering, sketch mapping and field work. Judicial func-

tions of the mine surveyor and the rules governing mineral surveys.

55-56. **FOREST SURVEYING.** Six credits per semester. Sophomore and junior foresters. Prerequisites, math. 51 and forestry 3. Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Engineering lettering and map drawing. Chain, compass, transit and level surveying, with reference to work in forest. United States subdivision of public lands.

65-66. **MECHANICS.** Four credits per semester. For architects. Professor MORE.

*103. **SURVEYING CAMP.** Six credits. Six weeks following the second semester sophomore work. Class will start for camp immediately following the commencement in June. Required of all C. E. students, beginning with the summer of 1916. Prerequisites, C. E. 14 and 22. Assistant Professor MILLER and ———.

Railway and topographic surveying. Elementary triangulation and the use of the plane table and stadia. Precise measurement of short base lines with the steel tape. Railway preliminary and location surveys. Cross sectioning and referencing the line and making the necessary right of way surveys.

105. **SURVEYING OFFICE WORK.** Two credits. First semester. Junior C. E. Prerequisite, C. E. 103. Assistant Professor MILLER. Computations and maps of summer camp surveys.

107. **TOPOGRAPHY.** Four credits. First semester. Junior foresters and miners. Prerequisite, C. E. 55-56. Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Topographic surveys as applied to forestry and mining. Reconnaissance and sketch maps, and exercises in reading and adjusting triangulation systems. Filling in topographic details with plane table and transit. Beginning of elementary railroad surveying.

108. **LOGGING RAILROADS.** Four credits. Second semester. Junior foresters. Prerequisite, C. E. 107. Laboratory deposit, \$3.00. Assistant Professor MILLER.

Elementary railroad engineering including curves and earthwork and the economic location of logging railways. Cost estimates.

* See bulletin of information—Summer School of Surveying.

111. RAILWAY OPERATION. Two credits. First semester. Junior C. E. Prerequisites, 103, accompanied by 131. Assistant Professor MILLER.

Economics of the operation of railways from an engineering standpoint. Train weights and resistances, costs, etc. Maintenance of way and equipment.

112. RAILWAY CONSTRUCTION. Two credits. Second semester. Junior C. E. Prerequisite, 111. Assistant Professor MILLER.

The economics of railway location and the relation of location to operation. Contracts and specifications.

115. RAILWAY TRANSPORTATION. Two credits. First semester. Senior and graduate C. E. Prerequisite, 112. Assistant Professor MILLER.

The economics of railway transportation from an engineering standpoint. Traffic statistics and the choice of route and motive power.

116. TUNNELLING AND TRACK ELEVATION. Two credits. Second semester. Senior and graduate C. E. Prerequisite, 112. Assistant Professor MILLER.

The problems confronting the engineer in track elevation and the construction of subways.

118. YARDS AND TERMINALS. Two credits. Second semester. Senior and graduate C. E. Prerequisite, 112. Assistant Professor MILLER.

The design and operation of the large yards of modern railway organizations, and the control of trains by means of signaling and interlocking.

122. HIGHWAYS. Two credits. Second semester. Junior C. E. Professor ALLISON.

A general survey of the location, construction and maintenance of country roads and city streets, with special emphasis upon the construction of the cheaper roads; *i. e.* earth, sand, clay and gravel up to \$5,000 per mile.

125. HIGHWAY CONSTRUCTION. Four credits. First semester. Senior and graduate C. E. Prerequisite, 112 and 122. Professor ALLISON.

The economics of highway location, construction, and maintenance of the more permanent character, *i. e.* \$5,000 per mile and up. All standard laboratory tests of highway metals.

126. CITY STREETS AND PAVEMENTS. Two credits. Second semester. Senior and graduate C. E. Prerequisite, 125. Professor ALLISON.

A study of city streets and pavements, including estimates and inspection; also, a study of the manufacture and testing of materials of paving.

131-132. MECHANICS. Four credits first semester. Three credits second semester. Junior engineers. Prerequisite, mathematics 62, physics 97; 131 is repeated second semester. Professor MORE, Mr. MAY, Mr. DUCKERING, Mr. STRANDBERG.

Statics, dynamics and mechanics of materials.

135. ADVANCED MECHANICS. Four credits. First semester. Senior and graduate engineers. Prerequisite, C. E. 132 and 138. Professor MORE.

General theories of flexure, elasticity and least work, with applications.

138. MASONRY CONSTRUCTION. Five credits. Second semester. Junior C. E. Prerequisite, 15, and preceded or accompanied by 132. Professor MORE and Mr. MAY.

Foundations, piers, retaining walls, dams and arches. Reinforced concrete.

142. HYDRAULICS. Four credits. Second semester. Junior engineers. Prerequisite, 131. Associate Professor HARRIS and Mr. STRANDBERG.

Flow of water through pipes and orifices, over weirs and in open channels; energy, impulse and reaction of jets with application to impulse wheels. Review of hydrostatics.

143. HYDRAULICS. Four credits. First semester. Senior miners and chemical engineers. Prerequisite, C. E. 131. Associate Professor HARRIS.

Elements of hydraulics with application to industrial uses.

144. HYDRAULIC MINING. (Short session in Mining, Jan.-Mar.). Professor ALLISON.

A course of two lectures per week on theory and practice of hydraulic mining.

145. HYDRAULIC MOTORS. Two credits. First semester. Senior and graduate E. E. and M. E. Prerequisite, 142. Associate Professor HARRIS.

Development and theory of water wheels and turbine pumps; design of a reaction turbine.

147. **HYDRAULIC POWER.** Three credits. First semester. Senior and graduate C.E. Prerequisite, 142. Associate Professor HARRIS.

Stream flow, storage and generation of power. Development and theory of turbines, design of a spillway, penstock and turbines; test of an existing power plant.

153. **WATER SUPPLY AND IRRIGATION.** Three credits. First semester. Senior and graduate C.E. Prerequisite, 142. Professor ALLISON.

A study of the principal engineering operations necessary to secure suitable water supplies for cities and towns and water for irrigation. The purification of water supplies.

154. **SANITARY ENGINEERING.** Three credits. Second semester. Senior and graduate C.E. Prerequisite, 153. Professor ALLISON.

A study of the design and construction of sewerage systems, both combined and separate. Sewage treatment.

157. **WATER SUPPLY AND IRRIGATION PROBLEMS.** Two credits. First semester. Senior and graduate C.E. Professor ALLISON.

Supplementary to 153, with special problems and investigations.

158. **SEWAGE TREATMENT.** Two credits. Second semester. Senior and graduate C.E. and Ch.E. Professor ALLISON.

Supplementary to 154, with special problems in matters relating to public health.

161-162. **BRIDGES.** Four credits first semester. Three credits second semester. Senior and graduate C.E. Prerequisite, 138. Professor FULLER.

Stresses, design and deflection of simple trusses. Detail drawings. Estimates.

164. **HIGHER STRUCTURES.** Four credits. Second semester. Senior and graduate C.E. Prerequisite, preceded or accompanied by 161-162. Professor FULLER.

Primary and secondary stresses. Design.

167. **STRUCTURAL MATERIALS.** Three credits. First semester. Senior and graduate C.E. and M.E. and graduate E.E. Pre-

requisite, 132. Laboratory deposit, \$3.00. Professor FULLER and Mr. MAY.

An experimental study of the physical properties of materials of construction.

ELECTRICAL ENGINEERING

(Engineering Building)

PROFESSOR MAGNUSSON, ASSISTANT PROFESSORS LOEW AND KIRSTEN,
MR. CURTIS, MR. BURBANK AND MR. MC ROBBIE.

101. ELECTRICAL ENGINEERING. Three credits. Either semester. Junior E. E. and M. E. Prerequisite, Mathematics 62, physics 96, 98. Assistant Professor LOEW.

Theory of the electric and magnetic circuits; construction, operation and characteristics of direct current generators and motors.

102. DYNAMO LABORATORY. Two credits. Either semester. Junior E. E. and M. E. Prerequisite, Mathematics 62, physics 96, 98. Assistant Professor LOEW.

Laboratory work on direct current machinery to be taken in connection with 101.

103. ELECTRICAL ENGINEERING. Three credits. Either semester. Junior E. E. Prerequisite, E. E. 101 and 102. Assistant Professors LOEW and KIRSTEN.

Continuation of 101 in direct current machinery. Storage batteries. Regulation and control of direct current systems.

104. DYNAMO LABORATORY. Three credits. Either semester. Junior E. E. Prerequisite, E. E. 101 and 102. To be taken in connection with 103. Assistant Professor KIRSTEN.

Experimental work on direct current dyamo machinery and storage batteries.

105. ELECTRICAL ENGINEERING. Four credits. Either semester. Junior C. E. and Ch. E. Prerequisite, Mathematics 62, physics 96, 98. Assistant Professor KIRSTEN, Mr. CURTIS and Mr. BURBANK.

A short course giving the fundamental principles of direct currents with experimental tests on commercial dynamos and motors.

115. **ELEMENTARY ELECTRICAL ENGINEERING.** Four credits. First semester. (Night class.) Assistant Professor KIRSTEN.

The laws of the electric and magnetic circuits with application to direct current machinery without the use of advanced mathematics. For students having at least two years of practical experience with electrical machinery and appliances.

120. **ALTERNATING CURRENTS.** Four credits. Second semester. Electricians. (Night class). Prerequisite, E. E. 115. Assistant Professor KIRSTEN.

An introduction to alternating current theory with experimental work on alternating current machinery.

122. **ALTERNATING CURRENTS.** Four credits. Second semester. Junior M. E., C. E., Ch. E. and Mining. Prerequisite, E. E. 101 or 105. Assistant Professor LOEW.

A short course in alternating currents for non-electrical students.

131. **TELEPHONES.** Two credits. Either semester. Junior E. E. Prerequisite, E. E. 101 and 102, or 105. Mr. CURTIS.

Theory, construction and operation of telephone systems. Central station practice.

132. **TELEPHONES AND TELEGRAPHS.** Two credits. Second semester. Prerequisite, E. E. 131. Mr. CURTIS.

Details of automatic and manual switchboards. Testing and locating faults. Multiplex and wireless telegraphy. Railway signal systems.

135. **TELEPHONES.** Two credits. First semester. Electricians. (Night class). Mr. McROBBIE.

Principles of telephony. For students who have had at least two years' practical experience with telephone apparatus.

136. **TELEPHONES.** Two credits. Second semester. Electricians. (Night class). Mr. McROBBIE.

Continuation of E. E. 135.

141. **ELECTRIC LIGHTING.** Three credits. First semester. Senior E. E. Assistant Professor KIRSTEN.

Electric lamps. Commercial photometry. Adaptation of electric lighting to commercial requirements.

151. DYNAMO DESIGN. Two credits. First semester. Prerequisite, E. E. 103 and 104. Senior E. E. Assistant Professor LOEW.

Complete design of one direct current generator or motor.

152. DESIGN OF ELECTRICAL APPARATUS. Two credits. Second semester. Prerequisite, E. E. 151. Seniors in E. E. Assistant Professor LOEW.

Design of switchboards, transformers, alternators or alternating current motors.

156. METERS. Two credits. Second semester. Prerequisite, E. E. 103 and 104. Senior E. E.

Detail study of different types of meters and the problems arising in the measurements of electrical energy for various commercial requirements.

161. ALTERNATING CURRENTS. Four credits. First semester. Senior E. E. Prerequisite, E. E. 101, 102. Professor MAGNUSSON, Mr. BURBANK.

The theory of the generation of singlephase and polyphase currents. Energy storage in the magnetic and dielectric fields. Vector diagrams and the symbolic method of analysis. Power factors and the measurement of power. Hysteresis and eddy currents. Theory of the transformer, single phase and polyphase induction motors and alternators.

163. ALTERNATING CURRENT LABORATORY. Three credits. First semester. Prerequisite, E. E. 101, 102. Senior E. E. To be taken in connection with E. E. 161. Mr. CURTIS.

Experimental work on alternating current machinery.

164. ALTERNATING CURRENTS. Four credits. Second semester. Senior and graduate E. E. Prerequisite, E. E. 161, 163. Professor MAGNUSSON, Mr. BURBANK.

The theory of rotary converters, synchronous and commutator motors, and transmission lines. High tension phenomena. Commercial wave forms. Unbalanced and interlinked polyphase systems.

166. ALTERNATING CURRENT LABORATORY. Three credits. Second semester. Prerequisite, E. E. 161, 163. Senior and graduate E. E. To be taken in connection with E. E. 164. Mr. CURTIS.

A continuation of E. E. 163 with tests on rotary converters, synchronous and commutator motors and transmission lines.

170. **ELECTRIC RAILWAYS.** Three credits. First semester. Prerequisite, E. E. 103, 104 or 105. Seniors in E. E. and C. E. Mr. CURTIS.

Electrical equipment and rolling stock; roadbed; construction and operation of direct current, single phase, and polyphase systems.

174. **CENTRAL STATIONS.** Two credits. Second semester. Prerequisites, E. E. 161 and 163. Senior E. E. Mr. CURTIS.

Location, design and operation of electric central stations.

176. **POWER TRANSMISSION.** Two credits. Second semester. Prerequisites, E. E. 161 and 163. Senior and graduate E. E. Assistant Professor KIRSTEN.

Theory, design and operation of electric power transmission systems.

180. **RADIO ENGINEERING.** Three credits. Second semester. Senior and graduate E. E.

Natural oscillations of condenser circuits. Lineal, open and complex oscillators. Coupled circuits. Resonance. Transmitters. Undamped and quenched oscillations. Receivers. Propagation of waves over the earth's surface.

195-196. **THESIS.** One credit first semester. Three credits second semester. Senior and graduate E. E. Professor MAGNUSON, Assistant Professors LOEW and KIRSTEN, Mr. CURTIS.

After consultation with the head of the department each student selects a suitable topic for investigation. Reports of progress are made weekly to the instructor in charge of the work selected. A complete report of the semester's or year's work is typewritten and bound and a copy deposited in the University library.

201-202. **TRANSIENT ELECTRICAL PHENOMENA.** Two credits per semester. Prerequisite, E. E. 161, 163. Graduate E. E. Professor MAGNUSON.

The exponential law of simple transients. Single and double energy transients. Current oscillations and traveling waves. Natural period of transmission lines. Short circuit transients. Surges. Corona. Lightning phenomena.

211-212. **RESEARCH.** Four credits per semester. Graduate E. E. Professor MAGNUSON.

MECHANICAL ENGINEERING**(Engineering Building)**

**PROFESSOR EASTWOOD, ASSOCIATE PROFESSOR WILSON, ASSISTANT
PROFESSOR MACINTIRE, MR. BEATTIE, MR. KANE.**

81. MECHANISM. Two credits. Either semester. Sophomore and junior M. E. and E. E. Associate Professor WILSON.

A study of the operation of machines involving the transmission of forces and the production of determinate motions.

82. STEAM ENGINEERING. Two credits. Either semester. Junior M. E. and C. E.; junior and senior E. E.; sophomore and junior Ch. E. Professor EASTWOOD.

The various forms of steam apparatus used in modern power plants, considering the construction, use and reason for installing such apparatus.

90. MACHINE DESIGN. Three credits. Either semester. Sophomore and junior M. E., E. E., Ch. E. and junior C. E. Prerequisite, C. E. 11. Assistant Professor MACINTIRE.

A study of the design of machine details, giving practice in the application of modern formulae and manufacturers' standards.

91. MACHINE DESIGN. Two credits. Either semester. Sophomore and junior M. E. and E. E. Prerequisite, M. E. 90, preceded or accompanied by M. E. 81. Assistant Professor MACINTIRE.

A continuation of M. E. 90, consisting in the design of gearing, cone pulleys and belt transmission. Practice in tracing and blue-printing.

101. DESIGN OF SPECIAL MACHINERY. Two credits. First semester. Senior M. E. Prerequisite, M. E. 91 and C. E. 131. Assistant Professor MACINTIRE.

Special problems in the design of hoisting and pumping machinery.

102. ADVANCED MACHINE DESIGN. Two credits. Second semester. Senior and graduate M. E. Prerequisite, M. E. 101 and C. E. 132. Assistant Professor MACINTIRE.

Special problems in the design of machine tools, and automatic machinery.

115. **CHEMICAL MACHINERY.** Two credits. First semester. Senior Ch. E. Prerequisite, M. E. 90 and C. E. 131. Assistant Professor MACINTIRE.

Special problems in the design of chemical machinery.

123. **ENGINES AND BOILERS.** Two credits. First semester. Junior and senior M. E. Prerequisite, M. E. 82. Assistant Professor MACINTIRE.

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.

124. **ENGINE AND BOILER DESIGN.** Three credits. Second semester. Senior M. E. Prerequisite, M. E. 91, 123 and C. E. 132. Professor EASTWOOD.

One complete problem will be assigned for solution in the class room.

126. **VALVE GEARS.** Two credits. Second semester. Junior M. E. Prerequisite, M. E. 82 or 123. Associate Professor WILSON.

The theory and practice of designing the various kinds of valve gears for steam engines.

140. **EXPERIMENTAL ENGINEERING.** Two credits. Either semester. Junior and senior E. E., junior and graduate Ch. E. Prerequisite, preceded or accompanied by M. E. 82. Associate Professor WILSON.

Calibrations of thermometers, gages, indicator springs, etc. Friction and mechanical efficiency tests of the simple steam engine. One complete engine and boiler test with report.

141. **EXPERIMENTAL ENGINEERING.** Three credits. First semester. Junior and senior M. E. Same as M. E. 140 except an additional laboratory period is provided. Associate Professor WILSON.

151. **EXPERIMENTAL ENGINEERING.** Two credits. First semester. Senior M. E. Prerequisite, M. E. 141. Associate Professor WILSON.

A continuation of M. E. 140, involving more extended and complete investigations. Special attention is given to the theory involved and previous experiments. Gas and fuel analysis.

152. **EXPERIMENTAL ENGINEERING.** Two credits. Second semester. Senior and graduate M. E. Prerequisite, M. E. 151. Professor EASTWOOD and Associate Professor WILSON.

An advanced course in commercial testing.

153. **STEAM LABORATORY.** Two credits. First semester. Prerequisite, M. E. 82. Associate Professor WILSON.

Arranged especially for students in Forestry. Consists of two laboratory periods and is intended to familiarize the students with the fundamental equipment for steam generation and use. Practice will be given in the care and manipulation of the steam engine and boiler, and auxiliary apparatus.

179. **STEAM TURBINES.** Two credits. First semester. Senior and graduate M. E. and E. E. Prerequisite, M. E. 82. Professor EASTWOOD.

The theory, construction and design of steam turbines.

180. **MECHANICAL REFRIGERATION.** Two credits. Second semester. Senior and graduate M. E. Prerequisite, physics 96 and 98. Assistant Professor MACINTIRE.

The theory and application of mechanical refrigeration.

182. **HEATING AND VENTILATING.** Two credits. Second semester. Senior and graduate M. E. Prerequisite, M. E. 82. Professor EASTWOOD.

The various systems of heating and ventilating, methods of design and tests.

183. **THERMODYNAMICS.** Two credits. First semester. Senior M. E. Prerequisite, M. E. 82 or 123, physics 98 and mathematics 62. Professor EASTWOOD.

The fundamental principles underlying the transformation of heat into work, with reference to the steam engine, the gas engine and hot air engine, and the operation of refrigerating machinery; efficiency of the simple, compound, and multiple expansion engine.

184. **POWER PLANTS.** Two credits. Second semester. Senior M. E. Prerequisite, M. E. 123. Professor EASTWOOD.

The design of power plants involving their location, buildings, prime movers, power transmission, etc.

185. NAVAL ARCHITECTURE. Two credits. First semester. Elective. Professor EASTWOOD.

The calculations common to ship construction, accompanying regular drafting room work.

186. SHIP DRAWING AND DESIGN. Two credits. Second semester. Elective. Professor EASTWOOD.

An application of the principles of naval architecture to the design of a steamship for a definite purpose.

188. GAS ENGINES. Two credits. Second semester. Senior and graduate M. E. Prerequisite, M. E. 82. Associate Professor WILSON.

The development of gas engineering, including the different types of gas engines, and gas producers and methods of testing.

201. GAS ENGINE DESIGN. Two credits. First semester. Graduate M. E. Prerequisite, M. E. 188. Associate Professor WILSON.

Calculations and plans for the design of a given type of gas engine.

203. GRAPHIC STATICS OF MECHANISM. Three credits. First semester. Graduate M. E. Prerequisite, C. E. 131. Professor EASTWOOD.

MANUAL ARTS

1. CARPENTRY AND WOOD-TURNING. Two credits. Either semester. Freshman and sophomore M. E., C. E., E. E., and Ch. E. First semester. Mr. BEATTIE.

2. PATTERN MAKING AND CABINET WORK. Two credits. Either semester. Freshman and sophomore M. E., C. E., E. E., and Ch. E. First semester. Mr. BEATTIE.

4. MINE TIMBER FRAMING. Two credits. Second semester. Sophomore mining engineers. Mr. BEATTIE and Assistant Professor DANIELS.

53. FORGE AND FOUNDRY. Two credits. Either semester. Sophomore and junior M. E., E. E., and Ch. E. Mr. KANE.

54. MACHINE WORK. Two credits. Either semester. Sophomore and junior M. E., E. E. and Ch. E. First semester. Mr. KANE.

105. MACHINE WORK. Two credits. First semester. Junior and senior M. E. Mr. KANE.

Advanced.

106. MACHINE WORK. Two credits. Either semester. Junior and senior M. E. Mr. KANE.

Advanced.

107. MANUAL ARTS, WOODWORK. Two credits. Either semester. Mr. BEATTIE.

For teachers.

109. MANUAL ARTS, METALWORK. Two credits. Either semester. Mr. KANE.

For teachers.

SUBJECTS PRESENTED BY DEPARTMENTS OF OTHER COLLEGES OF THE UNIVERSITY

ASTRONOMY

(See Mathematics and Astronomy)

BACTERIOLOGY

(Science Hall)

103. GENERAL BACTERIOLOGY. Four credits. First semester. For chemical engineers. Prerequisite, junior standing; botany or zoology, 1 year; chemistry, 1 year. Professor WEINZIRL and Miss CHALLIS.

Methods of growing bacteria and studying their structure, functions and distribution.

104. SANITARY AND INDUSTRIAL BACTERIOLOGY. Four credits. Second semester. For chemical engineers. Prerequisite, 103. Professor WEINZIRL and Miss CHALLIS.

A brief survey of disease bacteria. Most of the time is given to sanitation and industry. Inspection trips.

*110. BACTERIOLOGY FOR ENGINEERS. Two credits. Second semester. Laboratory deposit, \$2.50. Professor WEINZIRL.

General course. Application to sewage disposal and water supplies.

* Not offered in 1916-17.

ENGLISH

(Office, Denny Hall)

3-4. **FRESHMAN COMPOSITION.** Two credits per semester. First semester of freshman and second semester of sophomore year. Associate Professor MILLIMAN in charge.

An adaptation of 1-2 for students in the College of Engineering. No students will be excused from the course, but a section will be provided for those whose training has been exceptionally good.

GEOLOGY

(Science Hall)

1-2. **GENERAL.** Four credits per semester. Three lectures and one laboratory period per week, with occasional half day field trips. Laboratory deposit, \$1.00. Assistant Professors SAUNDERS and CULVER.

The fundamental principles of structural, dynamic and historical geology.

3. **GEOLOGY FOR ENGINEERING AND MINING STUDENTS.** Four credits. Either semester. Elective for freshmen. Required for sophomores. Three class periods and one laboratory period. Laboratory deposit, \$1.00. Assistant Professor CULVER.

General geological principles with their special application to engineering and mining problems.

21. **COMMON MINERALS AND ROCKS.** Three credits. First semester. Two lectures and one laboratory period. Laboratory deposit, \$1.00. Assistant Professor CULVER.

An examination and study of the physical properties of the more common minerals and rocks with field trips to local outcrops.

22. **MINERALOGY.** Four credits. Second semester. Two lectures and two laboratory periods. For engineering and mining students. Laboratory deposit, \$2.00. Prerequisite, one year of college chemistry. Assistant Professor CULVER.

A descriptive and determinative study of the minerals, with blowpipe analysis.

LAW

(Office, Law Building)

180. **ENGINEERING CONTRACTS.** Two credits. Second semester. Senior and graduate C.E. Assistant Professor COCKERILL and special lecturers.

MATHEMATICS AND ASTRONOMY

(Office, Science Hall)

I. MATHEMATICS

1-2. **SOLID GEOMETRY.** Two credits per semester. Prerequisite, plane geometry.

Required during the freshman year of all students in the colleges of Engineering, Forestry and Mines who do not offer solid geometry for admission.

4. **SOLID GEOMETRY.** Three credits. Second semester. Same as 1-2.

51. **TRIGONOMETRY AND ALGEBRA.** Four credits. First semester. Prerequisite, same as 11-12.

Primarily for students in the colleges of Engineering, Forestry, and Mines. The elements of plane trigonometry and supplementary work in algebra equivalent to one hour per week.

52. **ANALYTICAL GEOMETRY AND ALGEBRA.** Four credits. Either semester. Prerequisite, 51.

Primarily for students in the colleges of Engineering, Forestry, and Mines. The elements of analytical geometry and supplemental work in algebra equivalent to one hour per week.

61. **CALCULUS FOR ENGINEERS.** Four credits. Either semester. Prerequisite, 52.

62. **CALCULUS FOR ENGINEERS.** Four credits. Either semester. Continuation of 61.

151. **APPLICATION OF THE CALCULUS FOR ENGINEERS.** Two credits. Either semester. Prerequisite, 62.

II. ASTRONOMY

(Office, The Observatory)

101. **ELEMENTARY PRACTICAL ASTRONOMY.** Four credits. First semester. Prerequisite, mathematics 11-12 or its equivalent and must be preceded or accompanied by mathematics 31 or its equivalent. Associate Professor BOOTHROYD.

After mastering the elements of the subject, they are applied to the problems of determination of time, latitude, longitude and azimuth with the sextant and surveyor's transit. The student becomes acquainted in this work with the use of the astronomical transit, clock and chronograph. Especially desirable for navigators and for civil, electrical and mining engineers.

102. **ELEMENTARY GEODESY.** Four credits. Second semester. Prerequisite, astronomy 101 and preceded or accompanied by mathematics 62 or its equivalent. Associate Professor BOOTHROYD.

Precise surveying methods and elements of geodesy, mapping and map projection. This course is planned especially for engineers who desire a knowledge of precise surveying methods such as are used in the survey of the larger cities, in geodetic surveying and in all survey work where a high degree of accuracy is necessary. As much practice in precise surveying methods will be given as the time permits.

103-104. **ADJUSTMENT OF OBSERVATIONS.** One credit per semester. Prerequisite, astronomy 102. Associate Professor BOOTHROYD.

105-106. **ANALYTICAL MECHANICS.** Two credits per semester. Prerequisite, mathematics 34. Associate Professor BOOTHROYD.

MILITARY SCIENCE AND TACTICS

(Office, The Armory)

WILLIAM TAYLOR PATTEN, CAPTAIN, U. S. A., RETIRED, COMMANDANT

A course of two years in military training is required. All able-bodied male students (except those from foreign countries, not intending to become naturalized) must take the course, which by regulations of the University is required during the first and second years. Three hours a week are devoted to military training, for which two credits are given each semester.

PHYSICS

(Basement, Denny Hall)

92. ELECTRICAL MEASUREMENTS. Two credits. Either semester. Junior E. E. Two laboratory periods. Prerequisite, 98. Laboratory deposit, \$6.00 per year. Assistant Professor BRAKEL.

95. PHYSICS MEASUREMENTS. Two credits. Either semester. All sophomore engineers. One four-hour laboratory period. Laboratory deposit, \$6.00 per year. Mr. GILBREATH.

96. PHYSICS MEASUREMENTS. One credit. Either semester. Sophomore engineers. One three-hour laboratory period. Laboratory deposit, \$6.00 per year. Mr. GILBREATH.

97. MECHANICS, WAVE MOTION AND LIGHT. Four credits. Either semester. Prerequisite, 8 credits in mathematics. All sophomore engineers. Assistant Professors BRAKEL and ANDERSON.

This course must be accompanied by 95.

98. ELECTRICITY AND HEAT. Four credits. Either semester. Sophomore engineers. Prerequisite, 97. Assistant Professors BRAKEL and ANDERSON.

This course must be accompanied by 96.

POLITICAL AND SOCIAL SCIENCE

(Office, Denny Hall)

3. ELEMENTS OF ECONOMICS. Three credits. Either semester. Dr. JANES, Mr. LAUBE, Mr. AKERMAN, and Mr. MACAULAY.

152. MUNICIPAL GOVERNMENT. Two credits. Second semester. Prerequisite, 1-2, 3, 81, or 51. Professor J. ALLEN SMITH.

COLLEGE OF FINE ARTS

THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), PRESIDENT.

IRVING MACKEY GLEN, A. M. (Oregon), Professor of Music, DEAN.

ARTHUR SEWALL HAGGETT, PH. D. (Johns Hopkins), Professor of Greek.

EVERETT OWEN EASTWOOD, B. S., C. E., A. M. (Virginia), Professor of Mechanical Engineering.

DAVID CONNOLLY HALL, M. D. (Chicago), University Health Officer and Director of Physical Education for Men.

WALTER GREENWOOD BEACH, A. M. (Harvard), Professor of Social Science.

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

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

DAVID ALLEN ANDERSON, PH. D. (Iowa), Assistant Professor of Education.

*ERNEST GEORGE ATKIN, A. M. (Harvard), Assistant Professor of French.

JOEL MARCUS JOHANSON, A. B. (Washington), Assistant Professor of English.

ERNEST OTTO ECKELMAN, PH. D. (Heidelberg), Assistant Professor of German.

WALTER EDMUND SQUIRE, M. G. (Northwestern), A. A. G. O. Assistant Professor of Music.

MORITZ ROSEN (Warsaw Conservatory), Assistant Professor of Music.

ALBERT FRANZ VENINO (New York College, Stuttgart Conservatory, Leschetizky), Assistant Professor of Music.

FRANCES DICKEY, A. M. (Columbia), Assistant Professor of Music.

CARL FRELINGHUYSEN GOULD, A. B. (Harvard), Assistant Professor of Architecture.

ATTILIO FILIPPO SBEDICO, PH. D. (Pennsylvania), Assistant Professor of French and Italian.

*Absent on leave, second semester, 1915-16.

SAMUEL HERBERT ANDERSON, PH. D. (Illinois), Assistant Professor of Physics.

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

*GRACE LOOMIS TERBY, B. M. (Knox), Instructor in Music.

HELEN BALCH CULVER (Columbia, Pratt Institute), Instructor in Design.

LOUISE HOWE TIFFANY, B. M. (Knox), Instructor in Music.

MRS. LOUISE VAN OGLE, Instructor in Music.

ROBERT CHENAULT GIVLER, PH. D. (Harvard), Instructor in Psychology.

HAROLD OGDEN SEXSMITH (Armour Institute), Instructor in Architecture.

ALBERT PORTER ADAMS, Instructor in Music.

MARIE GASHWEILER, A. B. (Colorado College), Instructor in Music.

ANNE VOELKER (Oberlin, Michigan), Assistant in Music.

†ADMISSION TO FRESHMAN STANDING

A student must offer for admission to freshman standing in the University, fifteen units by examination or by certificate from an accredited school from which he has graduated. The fifteen units must include the following combinations:

3 units of English

2 units of mathematics (or 3 units if desired)

3 units selected from one of the following groups (or 2 units, if 3 units of mathematics are presented):

(a) Latin and Greek (not less than 2 units of Latin, or 1 of Greek will be counted).

(b) Modern foreign language (at least 2 units in *one* language; not less than one unit will be counted in any language).

(c) History, civics, economics (at least one unit to form a year of consecutive work in history).

(d) Physics, chemistry, botany, zoology, general biology, physical geography, geology, physiology. (Not less than one unit will be counted in physics, chemistry, or general biology. No science will be counted as applying on this requirement unless it includes a satisfactory amount of laboratory work.)

*Absent on leave, 1915-16.

† More detailed information concerning admission is furnished on pages 43-46.

- 2 units in subjects represented in the above groups (a)-(d)
- 5 units selected from any subjects accepted by an approved high school for its diploma; not more than 4 units, however, may be in vocational subjects.

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University, it is recommended that a student expecting to enter the College of Fine Arts should elect his work from the groups (a) to (d), so as to offer the following subjects:

- A foreign language.....at least 2 units
- A science (physics, chemistry, botany or zoology) .1 unit
- A history (or U. S. history and civics).....1 unit

If he shall not have included these subjects in his high school elections, it will be necessary for him to include them among his elections in college.

Since all the courses in fine arts leading to a degree require four years of foreign language before graduation, it is advisable to elect as much of this work in preparatory years as possible. For students intending to enter the course in architecture this is especially desirable as provision is made in the architecture course for but two years of foreign language. Architecture students should also present on entrance, credits for courses in physics, chemistry, trigonometry and freehand drawing.

Students intending to enter any of the music courses leading to a degree must satisfy the director that they have completed in addition to the usual high school preparation the equivalent of four years' work in music of the following character:

First Year: Rudiments of music. Melody and rhythm. Principles of touch and technique. Major scales. Studies by Gurlitt, Gaynor, Martin, Lambert, etc.

Second Year: Continuation of work in melody and technique. All major scales. Begin the study of chords in three tones. Studies by Lynes, Behr, Lambert, Tschalkowski, etc.

Third Year: Begin minor scales, essential chords of scales in three positions. Studies by Bertini, Berens, Czerny, Kohler, Clementi, Moszkowski, etc.

Fourth Year: Scales, chords of scales in all positions. Studies by Bertini, Czerny, Loeschorn; easier Mozart and Haydn sonatas, Bach (Little Preludes and Fugues), Schumann.

NORMAL DIPLOMA

Graduates in music may receive in addition to their bachelor of music degree a normal diploma, entitling them to teach music in the public schools, by meeting the requirements of the department of education and such departmental requirements as the department of music may see fit to institute. This will necessitate a total of at least 132 credits.

CERTIFICATES OF PROFICIENCY FOR MUSIC SUPERVISORS

These may be issued by the head of this department to students who may not have completed the requirements for the degree, but who have satisfactorily completed certain stipulated courses at the discretion of the department. These courses include History of Music, Musical Theory, Elementary Harmony, Education, Public School Music, Vocal Music and Drawing.

CURRICULA OF THE COLLEGE OF FINE ARTS

CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH
VOCAL MUSIC MAJOR

FRESHMAN		SOPHOMORE	
	Credits		Credits
Vocal music	6	Vocal music	6
History of music.....	4	Harmony	4
English	8	Choral study	2
Modern language	8	Modern language	8
Fundamentals	4	Physics	8
Sight reading	4	Political science	6
Phys. Ed. or Mil. Sci.....	4	Phys. Ed. or Mil. Sci.....	4
	<u>34+4</u>		<u>34+4</u>
JUNIOR		SENIOR	
Vocal music	6	Vocal music	6
Harmony	4	Choral study	2
Choral study	2	Musical appreciation	4
Modern language	8	Program	2
Form and analysis.....	4	Composition	4
Counterpoint	4	Philosophy	4
Adv. music history.....	2	Elective	8
	<u>30</u>		<u>30</u>

**CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH
INSTRUMENTAL MUSIC MAJOR**

FRESHMAN		SOPHOMORE	
	Credits		Credits
Instrumental music	8	Instrumental music	8
History of music	4	Harmony	4
English composition	8	Modern language	8
Fundamentals	4	Physics	8
Modern language	8	Political science	6
Choral study or elective....	2	Phys. Ed. or Mil. Sci.....	4
Phys. Ed. or Mil. Sci.....	4		
	<hr/> 34+4		<hr/> 34+4
JUNIOR		SENIOR	
Instrumental music	8	Instrumental music	8
Harmony	4	Musical appreciation	4
Modern language	8	Philosophy	4
Form and analysis	4	Program	2
Counterpoint	4	Composition	4
Adv. music history	2	Elective	6
	<hr/> 30		<hr/> 30

**CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH
A MAJOR IN MUSICAL THEORY**

FRESHMAN		SOPHOMORE	
	Credits		Credits
English composition	8	Modern language	8
Modern language	8	Physics	8
Harmony	4	Advanced harmony	4
Form and analysis	4	Adv. music history	2
History of music	4	Analysis	2
Choral study or elective....	2	Composition	2
Applied music	4	Choral study or elective....	2
Phys. Ed. or Mil. Sci.....	4	Applied music	4
	<hr/> 34+4	Phys. Ed. or Mil. Sci.....	4
			<hr/> 34+4
JUNIOR		SENIOR	
Modern language	8	Philosophy	4
Political science	6	Vocal composition	4
Counterpoint	4	Instrumental composition ..	4
Vocal composition	4	Canon and fugue	2
Applied music	4	Applied music	4
Analysis	2	Choral study or elective....	2
Choral study or elective....	2	Elective	10
	<hr/> 30		<hr/> 30

**CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH
A MAJOR IN PUBLIC SCHOOL MUSIC**

FRESHMAN		SOPHOMORE	
	Credits		Credits
English composition	8	Modern language	8
Modern language	8	Physics	8
Notation and terminology... 2		Harmony	4
(First Semester)		Musical history	4
Ear training and dictation.. 2		School music	4
(Second Semester)		Applied music	4
Tone thinking and melody		Choral study	2
writing	4	Phys. Ed. or Mil. Sci.....	4
Sight singing	2		
Folk dancing	2		<u>34+4</u>
Applied music	4		
Choral study	2		
Phys. Ed. or Mil. Sci.....	4		
	<u>34+4</u>		
JUNIOR		SENIOR	
Modern language	8	Philosophy	4
Political science	6	Form and analysis.....	4
Education	6	Counterpoint	4
Harmony	4	Music education and	
Music education	4	supervision	4
Applied music	4	Musical appreciation	4
		Applied music	4
		Education	6
	<u>32</u>		<u>30</u>

NOTE.—A total of two years of German and two years of French pursued either in high school or in the University is required for the degree. If a student has finished this language work in the high school he shall substitute electives in the University. If he presents neither French nor German for admission he must supply the deficiency above the sixteen hours allowed for in the outlined courses, without credit.

If a student has had two years of Latin he may be excused from the second required year of French or German, at the discretion of the head of the department of music.

**CURRICULUM IN ARCHITECTURE LEADING TO THE DEGREE
BACHELOR OF ARCHITECTURE**

FRESHMAN YEAR

(First Semester)		(Second Semester)	
	Credits		Credits
History and elements of architecture	2	History and elements of architecture	2
Architectural drawing	3	Architectural drawing	3
Freehand drawing and modeling	1	Freehand drawing and modeling	1
English composition	2	English composition	2
Mechanics	4	Mechanics	4
History of civilization	1	History of civilization	1
French or German	4	French or German	4
Descriptive geometry	1	Shades and shadows	1
Phys. Ed. or Mil. Sci.	2	Phys. Ed. or Mil. Sci.	2
	<hr/> 18+2		<hr/> 18+2

SOPHOMORE YEAR

History of architecture	2	History of architecture	2
Architectural drawing	3	Architectural drawing	3
Freehand drawing	1	Freehand drawing and water color	1
Perspective	1	Perspective	1
Mathematics	4	Mathematics	4
French or German	4	French or German	4
Building construction and inspection	2	Building construction and inspection	2
Phys. Ed. or Mil. Sci.	2	Phys. Ed. or Mil. Sci.	2
	<hr/> 17+2		<hr/> 17+2

JUNIOR YEAR

History of architecture	2	History of architecture	2
Architectural design	3	Architectural design	3
Water color	1	Freehand from life	1
Mechanics of materials	2	Mechanics of materials	2
Heating and ventilating	2	Sanitation and plumbing	2
Physics	4	Physics	4
Wood analysis	2	Elective	3
Elective	1		
	<hr/> 17		<hr/> 17

SENIOR YEAR

(Design)

History of architecture	2	History of architecture	2
History of sculpture	1	History of painting	1
Architectural design	3	Thesis	3
Contracts and specifications	2	Lighting and acoustics	3
Freehand drawing	1	Freehand drawing	1
Elective	6	Elective	6
	<hr/> 15		<hr/> 16

SENIOR YEAR
(Engineering)

Advanced structural mechanics	4	Advanced structural mechanics	4
Masonry design	2	Thesis	3
Structural details	3	Surveying	2
Contracts and specifications	2	Elective	7
Elective	5		
	<hr/> 16		<hr/> 16

CURRICULUM IN ART FOR CERTIFICATES OF PROFICIENCY FOR
SUPERVISORS OF ART

FIRST YEAR	Credits	SECOND YEAR	Credits
English composition	8	Applied design	4
Design	4	Water color	4
Water color	4	Pose drawing and sketching	4
Drawing	4	Education	6
Construction	4	Methods	4
Modern language	8	Modern language	8
Art history and appreciation	2	Mechanical drawing	2
Phys. Ed. or Mil. Sci.	4	Art history and appreciation	2
	<hr/> 34+4	Phys. Ed. or Mil. Sci.	4
			<hr/> 34+4

I. MUSIC

(Office, Meany Hall)

PROFESSOR GLEN, ASSISTANT PROFESSORS SQUIRE, ROSEN, VENINO AND
DIOKEY; MISS TIFFANY, MRS. VAN OGLE, MISS GASHWEILER,
MISS VOELKER, MR. ADAMS.

1-2. FUNDAMENTALS OF MUSIC. Two credits per semester.
Mrs. VAN OGLE.

The study of major and minor scales and the various relations between them. Intervals, their inversion and classification. Triads of the major and minor scales, their classification and inversion. Cadences, their use and their more familiar forms. Sentence structure, the section, phrase and motif. Primary forms, large and small. The dance forms.

3-4. HISTORY OF MUSIC. Two credits per semester. Professor GLEN.

A survey course, covering the progress of musical development from the primitive period to the modern.

5-6. SIGHT READING. Two credits per semester. Assistant Professor DIOKEY.

A course for prospective grade teachers and for music students. This course will be conducted in two sections—one for be-

ginner and the other for students who have had some experience in sight singing.

7-8. CHORAL STUDY. One credit per semester. Professor GLEN.

The University chorus provides the opportunity, for those qualified, to study the more serious as well as the lighter forms of choral composition. Candidates must satisfy the director as to the extent of their musical ability.

9. NOTATION AND TERMINOLOGY. Two credits. First semester. Assistant Professor DICKEY.

Musical terms and their concise meanings. Acquisition of accurate and definite knowledge of notation. A brief survey of the history of notation, of musical instruments and of acoustics. For students who have had some musical training.

10. EAR TRAINING. Two credits. Second semester. Assistant Professor DICKEY.

Students must have a fair knowledge of musical notation and scales to undertake this course. Course 21 or equivalent work is prerequisite.

11-12. MELODY WRITING. Two credits per semester. Assistant Professor DICKEY.

The purpose of this course is to make students familiar with the simplest principles of melodic invention. Analysis of song material used in the public schools will supplement the practice in writing.

14. CHORAL STUDY. Two credits. Either semester. Professor GLEN.

This course provides the opportunity for the study of part songs for men's voices. Candidates admitted only upon examination.

15-16. APPLIED MUSIC. One to four credits per semester.

(a) Piano—Assistant Professors SQUIRE and VENINO, Mrs. VAN OGLE, Miss GASHWEILER, Miss VOELKER.

(b) Violin—Assistant Professor ROSEN.

(c) Voice—Professor GLEN, Miss TIFFANY.

B. A. students may earn one or two credits a semester; Mus. Bac. students carry a larger number of credits—two to four—as indicated in the set courses. Students enrolled in these courses

will be given opportunity, upon demonstration of the required ability, to participate in the public recitals of the department.

19-20. UNIVERSITY BAND. Two credits per semester. Mr. ADAMS.

Competent players of band instruments are admitted to the band upon consent of the bandmaster.

21-22. CHAMBER MUSIC. One credit per semester. Assistant Professor ROSEN.

Advanced students in the study of stringed instruments may have the opportunity of studying the musical literature for string trios, quartets and quintets.

23-24. ENSEMBLE SINGING. One credit per semester. Miss TIFFANY.

A choral course for women. Only advanced students will be admitted to this course.

51-52. HARMONY. Two credits per semester. Prerequisite, 1-2. Assistant Professor SQUIRE.

The study of intervals; triads, their formation and rules governing their connection. Original exercises in two, three and four voices, and keyboard exercises. The dominant, diminished, and collateral seventh chords, dissonant chords, and their resolutions. Chords with definite and chords with indefinite location. Figured basses, harmonization of melodies, transposition, and the writing of original chord progressions and chants. Tones foreign to the harmony. Organpoint.

55-56. SCHOOL MUSIC. Two credits per semester. Assistant Professor DICKEY.

A course for supervisors. The first semester will include the study of material for the primary grades especially. Some time devoted to the study of the child voice.

The work of the second semester will cover a study of material for the upper grammar grades, the high school and glee clubs. Appreciation courses for such grades and high school will also be considered.

101-102. ADVANCED HARMONY. Two credits per semester. Prerequisite, 3-4. Assistant Professor SQUIRE.

Figured and unfigured basses, harmonization of melodies and chorales, original progressions, unprepared, delayed, and unre-

solved dissonances, remote modulations, three and four voiced writing in dispersed harmony. Text: Foote and Spaulding's "Modern Harmony."

103-104. HISTORY OF MUSIC—ADVANCED. Two credits per semester. Mrs. VAN OGLE.

A detailed study of important periods and composers of modern music.

105-106. COUNTERPOINT. Two credits per semester. Assistant Professor SQUIRE.

Simple counterpoint in two, three and four parts. Canon in the octave and fifth for two voices. Exercises using alto and tenor clefs. Text by Sir Frederick Bridge or Ebenezer Prout. Two years of harmony, a prerequisite for entering this course.

107-108. FORM AND ANALYSIS. Two credits per semester. Assistant Professor SQUIRE.

Chord reading from standard chants, hymns and chorales. Primary forms as found in the classic and romantic schools. Bach inventions. Song or aria forms. Dance forms, variations and rondos. The suite and the sonata. The prelude and fugue.

109-110. MUSIC EDUCATION. Two credits per semester. Assistant Professor DICKEY.

A study of psychological and pedagogical principles and their application to the teaching of music. The work for the eight grades will be outlined and methods for such work will be developed. This course will include the planning and presentation of individual lessons or topics as well as the observation of music work in the schools.

151-152. COMPOSITION. Two credits per semester. Mr. ———.

Unaccompanied settings of poems for three, four, and five voices. Chants, hymns and chorals—simple and du figural. Songs and instrumental compositions in primary forms. Songs with more elaborate accompaniment. Dance and romantic forms with trio. The rondo. Courses 51-52, 101-102, 105-106, or their equivalents, are prerequisite for this course.

153-154. MUSICAL APPRECIATION. Two credits per semester. Mrs. VAN OGLE.

A course planned to make music contribute to liberal culture. Actual presentation of musical masterpieces of different periods, by mechanical devices.

155-156. MUSIC EDUCATION AND SUPERVISION. Two credits per semester. Assistant Professor DICKEY.

This course is for seniors or students of experience. A study of principles and methods. A consideration of the problems of supervision as well as of music teaching. High school, normal, and institute music.

COLLEGE COURSES IN APPLIED MUSIC

The courses outlined are not necessarily arbitrary. They simply indicate the amount and character of the work that the student is expected to cover for his musical degree. Credit will be given for equivalent courses pursued elsewhere prior to entering the University.

PIANO

Freshman: All major and minor scales, chords, in four-note forms, diminished seventh, arpeggios of all common chords, major and minor fundamental position. Studies, Czerny, Op. 299; selected studies of Cramer, Berens, Op. 61; sonatas, Reinecke, Krauss, Mozart, Haydn; two part inventions, Mendelssohn songs, Schumann, Op. 15, McDowell, etc.

Sophomore: Chords in inversions. Studies of Cramer, Czerny, two and three part inventions of Bach, Haydn, and Mozart, sonatas; Weber, Schubert, Mendelssohn, Greig, and Moszkowski.

Junior: Scales in thirds, sixths, and tenths. Studies, Op. 740 Czerny, Clementi, Gradus and Parnassum; Bach's French and English suites and fugues; Beethoven, Schumann; easier concertos of Mozart, Mendelssohn; Chopin, nocturnes and waltzes.

Senior: Studies in Chopin, Clementi, Bach; Well-tempered Clavichord, Brahms, Greig, Korsakow, MacDowell, etc.

VOCAL MUSIC

The course in vocal music is even more flexible than that outlined for piano study. The purpose is to develop the voice and musical understanding so that the best in vocal music may be faithfully interpreted. The fact of having studied vocal music for four years will not necessarily entitle a student to graduation.

Freshman: Practical work in voice placing, breathing, studies from among the following: Concione, Op. 9; Marchesi, Op. 1; Panofka, Op. 85; Vaccai, Book I; simple Italian and English songs.

Sophomore: Progressive tone work; Bordogni, Concone, Marchesi, Panofka, simple Italian arias, Italian and English songs.

Junior: Tone work; advanced technique. Arias from Italian, French and German operas. German song classics; modern French and English songs.

Senior: Tone work and technique. Repertoire in opera and oratorio. Recitals; Senior Program.

VIOLIN

Freshman: Violin schools, Dancla, DeBeriot; Exercises, Wohlfahrt, Op. 45; Etudes, Kayser.

Sophomore: Scales, Hrimaly; Studies, Blumenstengel Op. 33, Mazas, Books I and II; Concerto, Accoly; Scene de Ballet, DeBeriot.

Junior: Exercises, Schraedieck, Books I and II; Etudes, Kreutzer, Fiorillo; Rode. Concertos, DeBeriot, 7 and 9, Sophr, 2 and 8.

Senior: Scales, Rosen; Etudes, Gavini; Dont, Op. 35; Bach Sonata for violin alone; Concertos, Bruch, Mendelssohn, Wieniawski, D-Minor, Vieuxtemps, No. 4.

NOTE.—In the last semester the student is obliged to memorize one sonata by Bach for violin alone and one of the concertos given in the fourth year.

FEES. Since most of the work in the courses in applied music must necessarily be of the character of private or individual instruction, the student will be required to pay tuition fees for this work in addition to the general University tuition fee. These fees are payable to the University Bursar and are collected in advance for the entire semester. No rebate will be made for the loss of lessons falling on national or University holidays nor will such lessons be made up by the teacher. The rate charged takes these into consideration. The following quotations are based on one lesson per week. More than one lesson per week will be charged for at the same rate. All lessons are one-half hour in length.

Piano: Assistant Professor Squire, Assistant Professor Venino or Mrs. Van Ogle, \$24.00 per semester; Miss Gashweiler, \$20.00 per semester; Miss Voelker, \$16.00 per semester.

Vocal Music: Miss Tiffany, \$24.00 per semester.

Violin: Assistant Professor Rosen, \$24.00 per semester.

Band and Orchestra Instruments: Mr. Adams, \$16.00 per semester.

It has been necessary in some cases, and for special reasons, for the dean to give private instruction in singing and repertoire. In such instances the fee is \$40 per semester for one lesson weekly. Arrangements may be made for individual instruction in other musical courses if necessary or desirable.

Piano for practice may be rented at the Music department at the following rates:

One hour daily, \$4.00 per semester.

Two hours daily, \$7.50 per semester.

Additional hours, \$2.50 per semester.

All rental charges must be paid in advance. No rebate in these charges will be allowed. Lessons lost through enforced absence may not be made up unless the teacher in charge has been previously notified of the intended absence and is willing to accept the excuse for the absence.

II. ARCHITECTURE

(Office, Meany Hall)

ASSISTANT PROFESSOR GOULD AND MR. SEXSMITH

I. A student should have some previous training in free-hand drawing and he will be required to confer with the head of the department as to his special qualifications for taking the subject. It is desirable that a student shall have had in addition trigonometry, algebra, plane geometry, elementary physics or chemistry and two years of either French or German. Four years of modern language will be required before graduation. Provision for two years' work is made in the curriculum. A student offering his entire four years on entrance may elect 16 credits on approval of his advisor. Students offering no modern language on entrance will be obliged to do two years' work, or 16 credits in modern language in addition to the set course in Architecture.

METHOD OF INSTRUCTION

II. The plan of study recognizes that architecture is essentially a fine art, the practice of which must be based upon a thorough knowledge of construction and of the practical requirements of buildings. Technical training which has not recognized the importance of the knowledge of the principles of design has

failed notably to raise the skilled draughtsman to the position of an architect.

The University recognizes that its function in teaching the profession is to equip men to obtain not only a general knowledge of the subject of architecture but that they may become able to cope with the problems that occur in actual practice.

DESIGN

III. The program of studies is so arranged as to allow students to give the greater part of their afternoons to the work in the draughting room. This work will be largely problems in architectural design presented as far as possible with the object of developing the technical skill without hindering the individuality in expression. The problems after the freshman year will be judged by a visiting committee of architects appointed by the dean and the head of the department.

CONSTRUCTION

IV. The theory and practice of construction is taught as a necessary basis for and in connection with architectural design and is such as to prepare students in the best way for architectural practice. It is strongly recommended that the student supplement his University training by working in an architect's office and three months of office work at least will be required of a student before a degree may be obtained.

DESCRIPTION OF COURSES

1. HISTORY AND ELEMENTS OF ARCHITECTURE, DOMESTIC ARCHITECTURE. Three credits. First semester. Required of all students majoring in architecture and all juniors in home economics. Two lectures per week. Two laboratory hours except for architecture students. Assistant Professor GOULD and Mr. SEXSMITH.

Instruction is given by means of illustrated lectures and exercises in drawing the simpler elements of buildings—walls, roofs, doors and plans. A general survey of the history of dwellings will be given. Excursions will be made to buildings both completed and in process of construction and to builders' supply houses. Illustrated lectures will be supplemented by visits to buildings of various periods and types.

2. HISTORY AND ELEMENTS OF ARCHITECTURE. Two credits. Second semester. Assistant Professor GOULD.

A general course in the history of architecture, including all periods from ancient to modern. Lectures and selected readings.

3-4. ARCHITECTURAL DRAWINGS. Three credits per semester. Assistant Professor GOULD and Mr. SEXSMITH.

The purpose of this course is to teach the practical methods of presenting an architectural problem by means of plan, section, and elevation. Individual instruction is given with occasional conferences. Simple problems in the orders will be given with occasional design problems which are intended to develop individuality in expression and a general understanding of the different materials of construction, stone, wood and iron.

This course is recommended to students in engineering and will be open to all students in the engineering school.

5-6. FREEHAND DRAWING. One credit per semester. Mr. SEXSMITH.

Drawing from geometrical solids and from still life subjects. The mediums will be pencil and charcoal. Studies in clay of the simpler architectural ornament.

7. DESCRIPTIVE GEOMETRY. One credit. First semester. One lecture and two laboratory hours. Mr. SEXSMITH.

Designed for students in architecture, the problems used being those which most frequently occur in office practice.

8. SHADES AND SHADOWS. One credit. Second semester. Mr. SEXSMITH.

Construction by descriptive geometry of all shadows commonly found in the presentation of architectural renderings. Frequent examinations will be given.

9-10. HISTORY OF CIVILIZATION. One credit per semester.

A general survey of all the great epochs in the evolution of civilization. Lectures and reading.

47-48. MECHANICS. Four credits per semester. For freshman architects. No prerequisites. Professor MORE and Mr. SEXSMITH.

Statics, dynamics, and mechanics of materials.

51-52. HISTORY AND ELEMENTS OF ARCHITECTURE. Two credits per semester. Required of all students in architecture and open

to all students in the University. Regular sophomore course, but may be taken as a half course the first semester. Assistant Professor GOULD.

By means of illustrated lectures Egyptian, Greek and Roman architecture will be studied the first semester—notes, diagrams and drawings will be required of the student. The study of history of architecture is given in order to obtain an intelligent understanding of the principles of design by an analysis of the evolution of architectural form and its application. The student will be required to study the outline of general history concurrent with the lecture and also by assignments in books on architectural history.

The second semester Byzantine, Romanesque, and Gothic architecture will be studied and analyzed in the same manner.

53-54. ARCHITECTURAL DRAWING. Three credits per semester. Assistant Professor GOULD.

Problems in design and simple problems in planning will be given. Society of Beaux Arts Architects program will be used as the students' work progresses.

55-56. FREEHAND DRAWING. One credit per semester. Mr. SEXSMITH.

Drawing in charcoal or crayon of architectural ornament and studies from casts of the human figure. Drawing from costumed model in charcoal. Sketches from life with reference to structure. When the weather permits, the class will do out of door sketching with water color and pen and ink.

57-58. PERSPECTIVE DRAWING. One credit per semester. Mr. SEXSMITH.

The theory of perspective from simple problems up to and including the more complicated methods will be studied. The office methods will be compared frequently with the theory.

59-60. BUILDING CONSTRUCTION AND INSPECTION. Two credits per semester. Mr. SEXSMITH.

A general study of the methods used in building construction, including all types of buildings. Visits will be made to the manufacturing plants of building materials, such as structural and ornamental terra cotta, lumber mills, brick yards, plumbing, etc. Visits will also be made to all types of buildings under construction.

101-102. HISTORY OF ARCHITECTURE. Two credits per semester.

This course follows the same method of instruction as that for the sophomore year. The architecture of the Renaissance will be studied; problems in ornamental design and planning will be discussed.

103-104. ARCHITECTURAL DESIGN. Three credits per semester.

More advanced problems will be given in ornamental design and in planning. Ornamental design as applied to different materials, terra cotta, iron and stone will be studied. Problems of industrial layouts, city squares, playgrounds, etc., will be given.

105-106. FREEHAND DRAWING. One credit per semester. One two-hour period.

107-108. MECHANICS OF MATERIALS. Two credits per semester.

Experimental study of building materials and design of frame types in steel and concrete.

109. HEATING AND VENTILATING. Two credits. First semester.

A study of all types of heating appliances used in the modern building. Design of Plenum systems. Theory supplemented by problems of actual practice and by inspection trips.

110. SANITATION AND PLUMBING. Two credits. Second semester.

Methods of sewage disposal and water supply. All types of modern appliances will be discussed, as well as the general history of plumbing. Special problems occurring in office practice will be given.

111. WOOD ANALYSIS. Two credits. First semester. Mr. GRONDAL.

A study of the identification, physical properties, and characteristics of all woods used in building construction and finishing. The finishing and preserving of woods will be discussed.

151-152. HISTORY OF MODERN ARCHITECTURE. Two credits per semester.

153-154. ARCHITECTURAL DESIGN. Three credits per semester.

Advanced problems in design and plan. Studies in city plan with special reference to city plan in America.

Recognizing that many students will desire to emphasize the work in structural engineering, the work in the senior year has been divided for an option of design or engineering.

It must be recognized, however, that knowledge of design is the most essential subject in a course preparing students for the profession of architecture.

ELECTIVES

Electives may be chosen from among the following named subjects:

- Analytical geometry
- Calculus
- Architectural rendering
- Language
- Music
- Labor problems
- Acoustics
- Naval architecture
- Stone masonry
- Economics
- Psychology
- Public speaking
- History of sculpture and painting

III. DESIGN AND DRAWING

(Office, Meany Hall)

MRS. CULVER, MR. SEXSMITH.

1-2. PUBLIC SCHOOL DRAWING. Two credits per semester. Mrs. CULVER.

A course, which combined with regular work in methods, is primarily intended for those who wish to teach or supervise drawing in the public schools. The course includes: drill in line drawing; placing and proportion; comparative measurements; free hand practice; principles of perspective; drawing from objects and nature; use of pencil and charcoal; water color theory of color; painting from nature; elementary design and composition; principles of design; practice in simple, abstract designs; landscape and flower composition; free hand lettering.

3-4. PRINCIPLES OF DESIGN. Two credits per semester. Mrs. CULVER.

A study of line, dark, and color. To develop power of appreciation and creation of good design. Two laboratory periods a week. This course will be repeated the second semester.

5-6. FREEHAND DRAWING. Two credits per semester. Mr. SEXSMITH.

A course planned for a progressive growth in appreciation and power of expression, developing freedom and skill in drawing and painting.

8. ADVANCED DESIGN. Two credits. Second semester. Mrs. CULVER.

A continuation of the work begun in courses 1 and 2, which are prerequisites. Design applied to wood block color printing, painting. Massing in full values, posters, illustrations and decorations.

COLLEGE OF FORESTRY

THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), PRESIDENT.

HUGO WINKENWERDER, M. F. (Yale), Professor of Forestry; DEAN.

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

HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.

BURT PERSONS KIRKLAND, A. B. (Cornell), Associate Professor of Forestry.

GEORGE SAMUEL WILSON, B. S. (Nebraska), Associate Professor of Mechanical Engineering.

ELIAS TREAT CLARK, M. F. (Yale), Assistant Professor of Forestry.

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

ABRAHAM BERGLUND, PH. D. (Columbia), Assistant Professor of Economics.

JOHN WILLIAM HOTSON, PH. D. (Harvard), Assistant Professor of Botany.

*HAROLD EUGENE CULVER, PH. D. (Wisconsin), Assistant Professor of Geology.

BROB LEONARD GBÖNDAL, M. S. F. (Washington), Instructor in Forestry.

L. A. NELSON, Instructor in Scaling.

CONRAD W. ZIMMERMAN, A. B. (Washington), Lecturer in Timber Physics.

DAVID CONNOLLY HALL, M. D. (Chicago), University Health Officer and Director of Physical Education for Men.

CHARLES EDWARD NEWTON, E. M. (Michigan College of Mines), Assistant Professor of Civil Engineering.

WALTER EDWARD ROLOFF, PH. D. (Wisconsin), Instructor in German.

HORACE HARDY LESTER, PH. D. (Princeton), Instructor in Physics.

* Absent on leave, first semester, 1915-16.

SPECIAL LECTURERS

- R. E. BENEDICT, Forest Inspector, Canadian Forest Service, Lecturer on Forest Protection.
- R. H. MACMILLAN, Chief Forester, British Columbia, Lecturer on Forest Administration.
- THORNTON T. MUNGER, Chief of Silvics, District 6, United States Forest Service, Lecturer on Silvics and Planting.
- CHAS. H. FLORY, Assistant District Forester, District 6, United States Forest Service, Lecturer on Forest Fires.
- THOMAS TALBOT, District 6, United States Forest Service, Lecturer on Forest Law.
- LEWIS SCHWAGER, Schwager-Nettleton, Inc., Lecturer on Sawmilling.
- JOHN ADAMS, Insurance Appraiser, Lecturer on Lumber Insurance.
- J. P. VAN ORSDELL, Supt. of Logging, Portland Lumber Co., Lecturer on Scientific Logging.
- THORPE BABCOCK, Secretary West Coast Lumbermen's Association, Lecturer on Milling and Association Work.

PURPOSE AND LOCATION

The College 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 college 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 unrivalled opportunities for studying wood utilization.

***ADMISSION TO FRESHMAN STANDING**

A student must offer for admission to freshman standing in the University, fifteen units by examination or by certificate from an accredited school from which he has graduated. The fifteen units must include the following combinations:

- 3 units of English
- 2 units of mathematics (or 3 units if desired)
- 3 units selected from one of the following groups (or 2 units, if 3 units of mathematics are presented):
 - (a) Latin and Greek (not less than 2 units of Latin, or 1 of Greek will be counted).
 - (b) Modern foreign language (at least 2 units in *one* language; not less than one unit will be counted in any language).
 - (c) History, civics, economics (at least one unit to form a year of consecutive work in history).
 - (d) Physics, chemistry, botany, zoology, general biology, physical geography, geology, physiology. (Not less than one unit will be counted in physics, chemistry, or general biology. No science will be counted as applying on this requirement unless it includes a satisfactory amount of laboratory work.)
- 2 units in subjects represented in the above groups (a)-(d)
- 5 units selected from any subjects accepted by an approved high school for its diploma; not more than 4 units, however, may be in vocational subjects.

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University, it is recommended that a student expecting to enter the College of Forestry should elect his work from the groups (a) to (d), so as to offer the following subjects:

Advanced algebra	½ unit
Solid geometry	½ unit
Physics	1 unit
Botany	½ or 1 unit
A foreign language.....	2 units

If he shall not have included these subjects in his high school elections, it will be necessary for him to include them among his elections in college.

* More detailed information concerning admission is furnished on pages 43-46.

ADVANCED STANDING

Credit will be given for subjects pursued at other colleges of recognized rank upon presentation of certificates that such subjects have been satisfactorily completed, or upon examination. Graduates of this institution and others of similar rank are admitted to graduate standing. (See Entrance Information, page 47.)

SPECIAL STUDENTS

Persons twenty-one years of age or over, who are not regularly qualified for admission, but who have pursued special lines of studies related to forestry may be admitted as special students, on giving satisfactory evidence of their ability to pursue the work and conforming with the regulations regarding the admission of special students. (See Entrance Information, page 46.)

SPECIAL SHORT COURSES FOR FOREST RANGERS AND LUMBERMEN

(See page 285.)

Applicants must be at least twenty years old and show ability to carry the work with profit to themselves. Admission to classes is without examination.

FOREST LABORATORIES

DENDROLOGY. Individual lockers. Extensive collections of tree seeds, cones and bark specimens. An arboretum is under way and a great number of the less common tree species are to be found on the campus.

LUMBERING. Field work is given at logging camps and saw-mills about Seattle. A complete equipment of instruments and tools is available for work in logging engineering. One room contains a complete collection of lumber showing grades and patterns, charts of lumber grades, exhibits of sawmill and woods saws, logging equipment such as wire rope, axes, hooks, blocks, special appliances for donkey engines, sawmill belts and other tools or equipment used in logging and milling.

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

SILVICULTURE. Forests in and near Seattle offer wide opportunities for practical studies and demonstrations. An extensive forest tree nursery maintained by the College of Forestry affords an excellent opportunity for demonstrations and practice in modern nursery methods.

TIMBER PHYSICS. Laboratory work in timber physics is carried on in the U. S. Forest Service Timber Testing Laboratory, operated in cooperation with the University. This laboratory is magnificently equipped with seven large testing machines for static and impact loading, circular and band saws, planer and other shop equipment for wood-working.

WOOD TECHNOLOGY. Elementary work in wood technology is carried on in the same room as the work in dendrology. Individual lockers, gas, water, compound microscopes and all apparatus for preparing and sectioning wood for the microscopic study of woody tissues are provided. Hand specimens and planks of domestic and foreign commercial timbers are provided in large quantities. These include extensive collections of South American and Philippine hardwoods. Microscopic slides of nearly all American woods are kept on hand for check specimens.

RESEARCH LABORATORY. This laboratory is equipped with water baths, drying ovens, microtome, chemical and pulp balances, all apparatus necessary for the technical examination of wood preservatives, including standardized thermometers, darkroom, camera and apparatus required for photomicrography and all incidental apparatus required for the detailed study of woody tissue.

WOOD PRESERVATION. This laboratory consists of an open tank tie treating plant of commercial size, provided with three tanks and a duplex pump, with a storage capacity of 1,600 gallons of creosote, three pumps, and a twelve foot pressure retort. Four large creosoting plants and several smaller treating plants are located in or very near Seattle and are available for study.

WOOD UTILIZATION. Plants for the manufacture of paper, wood pipe, cooperage, excelsior, wood conduit, veneers, furniture, boxes and numerous other secondary wood products are located in or near Seattle and are available for study. As these industries on Puget Sound, not in Seattle, are reached largely by boat, transportation costs are very low. A wood distillation plant consisting of a retort of one-half cord capacity and equipped with re-

fining apparatus is operated cooperatively by the University and the U. S. Forest Service.

ASSEMBLY ROOM. Equipped with aluminum screen and Lietz lantern for episcopic, diascope and microscopic projection.

EXPENSES

Matriculation fee, \$10.00.

Tuition fee per semester, \$10.00.

Associated Students' fee, \$5.00.

LABORATORY DEPOSITS. Forestry 1, 102 and 303, \$1.00; Forestry 51, 52, 101, 103, 306, 309, 310, 313, 314, \$2.00; Botany, \$3.00; Chemistry, \$10.00; Geology 4, \$1.00; Physics, \$2.50; Zoology, \$2.00.

NOTE.—The laboratory deposits in each case are for materials used and cover repairs of apparatus. The student is entitled to a refund for such portion of the fee as is not used.

FIELD EXCURSIONS

Much of the instruction in technical forestry is given in the field, necessitating frequent field excursions in nearby forests, logging camps and sawmills. The expenses of these excursions are about \$10.00 for the freshman year, \$15.00 for the sophomore year, \$20.00 for the junior year, and \$50.00 for the senior year.

SUMMER WORK

Students of forestry are urged to spend their summer vacations in some line of practical work connected with the forest industry. Situated, as the school is, in the heart of a great lumbering section and near extensive national forests, ample opportunity is offered for summer employment. Students not only acquire valuable experience in this way, but earn a considerable portion of their University expenses.

FOREST CLUB

The Forest Club is an organization open to all students of the College of Forestry. It aims—To secure full acquaintance and good fellowship among students and instructors—To keep in touch with everyday problems in forestry and lumbering, and the men who are doing things worth while in these industries—To interest the public in the College of Forestry and in the forestry problems of the state.

Officers of the club for the year 1915-1916 are: President, Donald H. Clark; vice president, Harold Durfee; secretary-treasurer, Willis Corbitt.

The Club issues every May "The Forest Club Annual," a publication which contains articles and illustrations descriptive of the school, of scientific interest, and a complete roster of students, ex-students, and alumni. During the past year arrangements have also been made for the publication each month of a special College of Forestry page in the West Coast Lumberman.

COURSES AND DEGREES

Beginning with September, 1914, the College of Forestry abandoned its fixed four-year groups of study and has since then offered only one five-year course with a liberal allowance for electives. As technical forestry has reached a stage where some specialization is almost necessary, this arrangement gives the student ample opportunity for specialization along four distinct lines (1) Forest Service and State Work, (2) Logging Engineering, (3) Forest Products, and (4) The Lumber Business. *The course may, however, be pursued for only four years and on the completion of four years of the work the students will be awarded the degree of bachelor of science.* It should be emphasized that this arrangement will allow the student to receive practically as broad a training in four years as heretofore, but that if he desires to specialize he should pursue the work for five years.

REQUIREMENTS FOR GRADUATION

UNDERGRADUATE WORK

For the degree of Bachelor of Science the student shall have completed, in addition to the required subjects outlined in the curriculum, at least 24 credits in subjects selected from forestry, engineering, or the botanical, chemical, zoological, geological or economic sciences, the subjects to be approved by the students' class advisor, but in no case shall more than 12 in any department other than forestry be allowed toward graduation. The total number of credits required for graduation shall be 131 exclusive of shop and military science. Candidates for the degree must furthermore receive grades of "A," "B," or "C" in at least three-fourths of the credits required for the degree. (This re-

quirement does not apply to grades given before the year 1913-1914.)

GRADUATE WORK

For the degree of Master of Science in Forestry, the student, in addition to being a graduate of this University or other institution of equal rank, and having a satisfactory knowledge of botany, geology, physics, chemistry, mathematics, surveying and languages, shall have been credited at this University with 166 credits, of which at least 52 are in technical forestry subjects, including silviculture, dendrology, wood technology, mensuration, management, lumbering, wood preservation, forest economics, and thesis. Only grades of "A," "B," and "C" can be counted toward a graduate degree.

Attention is called to the special advanced courses for graduate students. They are dendrology, silviculture, wood technology, timber physics, wood preservation, advanced forest products, and research. Special facilities and apparatus are provided for advanced work of this nature. Emphasis is placed upon the fact that a graduate from a college of forestry of equal rank with the College of Forestry of this University may complete the requirements for the advanced degree in one year. Graduates from other institutions of equal rank, but giving no courses in technical forestry, may complete the required work in two years.

OUTLINE OF CURRICULUM

In the election of studies, students should follow the sequence of subjects as outlined in the curriculum. Deviations from the prescribed order will not be allowed by class advisors unless such deviation is imperative.

RECOMMENDATIONS FOR CHOICE OF STUDIES

For specialization in Forest Management, the following electives are recommended: C. E. 107, Political Science 47-48, Elementary Law, and Forestry 155, 157, 301, 303, 307, 308, 311, 315, 316.

For specialization in Logging Engineering: C. E. 107 and 108, Elementary Law, Zoology 14, Electrical Engineering 105, Mechanical Engineering 82, and Forestry 303, 305, 306, 311, 315.

For specialization in Forest Products: Chemistry 31 and 32 or 41 and 121, Botany 41-42, Electrical Engineering 105, Mechanical Engineering 82 and 153, and Forestry 301, 303, 304, 309, 310, 311, 315.

For specialization in the Business of Lumbering: Pol. Sci. 47-48, Journalism 5-6, and Forestry 157, 303, 304, 309, 310, 311, 315.

*FRESHMAN YEAR.

FIRST SEMESTER		SECOND SEMESTER	
	Credits		Credits
Mathematics 55	4	Mathematics 56	4
English 5	2	English 6	2
Botany 11 (general).....	4	Botany 12 (morphology)....	4
Forestry 1 (dendrology)....	4	Geology 6 (general).....	4
Forestry 3 (general).....	2	Forestry 4 (general).....	2
Forestry 5 (woodcraft).....	1	Mil. Sci. or Phys. Ed.....	2
Mil. Sci. or Phys. Ed.....	2		
	<hr/> 16+3		<hr/> 16+2

SOPHOMORE YEAR

Modern language	4	Modern language	4
C. E. 55 (surveying).....	6	C. E. 56 (surveying).....	6
Chemistry 1 (general).....	4	Chemistry 2 (general).....	4
Forestry 51 (mensuration)...	4	Forestry 52 (mensuration)...	4
Mil. Sci. or Phys. Ed.....	2	Mil. Sci. or Phys. Ed.....	2
Elective		Elective	
M. E. 1 (shop).....	2	M. E. 2 (shop).....	2
	<hr/> 18+2		<hr/> 18+2

JUNIOR YEAR

Physics 93 (general).....	4	Physics 94 (general).....	4
Forestry 101 (technology)...	4	Forestry 102 (silviculture)...	6
Forestry 105 (protection)...	4	Pol. Sci. 3 (economics)....	3
Electives	5	Electives	5
Chemistry 31 (organic)...	4	Chemistry 32 (organic)...	4
C. E. 107 (topography)...	4	C. E. 108 (logging rail-roads)	4
M. E. 2 (shop).....	2	M. E. 54 (shop).....	2
Pol. Sci. 5 (commercial geography)	3	Pol. Sci. 8 (accounting)...	3
Pol. Sci. 7 (accounting)...	3	Zoology 110 (entomology)	4
Zoology 109 (entomology)	4	Botany 142 (fungi).....	4
Botany 141 (fungi).....	4		
	<hr/> 17		<hr/> 18

* Freshmen entering the beginning of the second semester will take the following subjects: English, 2 credits; Forestry 1, 4 credits; Forestry 4, 2 credits; Geology 6, 4 credits, and Foreign Language, 4 credits.

SENIOR YEAR

Forestry 151 (management) .	5
Forestry 153 (lumbering) . . .	4
Electives	7
M. E. 153 (steam labora- tory)	2
M. E. 82 (steam engineer- ing)	2
Forestry 157 (history and policy)	2
Chemistry 41 (qualita- tive)	4
Botany 143 (plant phys- iology)	4
Forestry 155 (adv. silvi- culture)	2
Pol. Sci. 109 (money and banking)	3
Journalism 5 (advertis- ing)	3

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Forestry 152 (management) .	3
Forestry 156 (forest eco- nomics)	2
Forestry 154 (cruising and scaling)	2
Electives	10
E. E. 105	4
Zoology 14 (forest)	2
Journalism 6 (advertis- ing)	3
Law 180 (engineering contracts)	2

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GRADUATE YEAR

Thesis	4
Electives	13
Forestry 301 (adv. den- drology)	3
Forestry 303 (timber physics)	3
Forestry 305 (logging en- gineering)	4
Forestry 307 (seminar) . .	1
Forestry 309 (adv. for- est products)	2
*Forestry 311 (utiliza- tion)	4
Forestry 313 (research) . .	2
Forestry 315 (scientific management)	2
Pol. Sci. 111 (markets) . .	3

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Electives	16
Forestry 302 (adminis- tration)	2
*Forestry 304 (preserva- tion)	3
Forestry 306 (logging engineering)	6
Forestry 308 (seminar) . .	1
Forestry 310 (adv. forest products)	2
Forestry 314 (research) . .	2
*Forestry 316 (adv. for- est management)	3
Forestry 318 (field men- suration)	2

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Students wishing to specialize on the business side of lumbering are advised to elect nine hours of work in commerce.

* In the final form of the five-year course, 311 will be five credits, 316, six credits, and 304, four credits.

DEPARTMENT OF INSTRUCTION**FORESTRY**

PROFESSOR WINKENWERDER, ASSOCIATE PROFESSOR KIRKLAND, ASSISTANT PROFESSOR CLARK, MR. GRÖNDAL, MR. NELSON AND MR. ZIMMERMAN.

1. **ELEMENTARY DENDROLOGY.** Four credits. Either semester. Required of freshmen. Two recitations, four hours laboratory work, field trips additional. Prerequisite, high school botany. Laboratory deposit, \$1.00. Professor WINKENWERDER and Mr. GRÖNDAL.

The nomenclature and classification of trees. The use of keys. A study is made of one type species of each genus of the important timber trees of North America. Identification and distribution of the species of the Northwest. Texts: Sargent's Manual of the Trees of North America; Sudworth's Trees of the Pacific Slope; Winkenwerder's Keys to Trees of Oregon and Washington.

3-4. **INTRODUCTION TO FORESTRY.** Two credits per semester. required of all freshmen. Professor WINKENWERDER.

A course of lectures intended to familiarize the student with the general nature of the field of work he is about to enter.

5. **WOODCRAFT.** One credit. First semester. Required of all freshmen in forestry. Assistant Professor CLARK and Dr. HALL.

Food lists, camp cooking, woods clothing, camp equipment, camp sanitation, packing a horse, general woodcraft. Course concludes with a half dozen lectures on first aid to the injured.

A special section in Forestry 5 will be arranged for students not regularly enrolled in Forestry, providing at least six students apply for the course.

51. **FOREST MENSURATION.** Four credits. First semester. Two recitations and six hours field or laboratory work. Prerequisite, 1 or 110 and 8 credits in mathematics. Laboratory deposit, \$2.00. Required of all sophomores and graduate students. Assistant Professor CLARK and Mr. GRÖNDAL.

The construction and use of common types of log rules and hypsometers; methods of computing volumes of logs and trees;

the principles involved in the use of form factors; the construction and use of volume tables; the elements of scaling and cruising. Texts: Graves' Forest Mensuration, Winkenwerder and Clark's Exercises in Forest Mensuration.

52. **FOREST MENSURATION.** Four credits. Second semester. Two recitations, six hours field or laboratory work. Prerequisite, 5. Laboratory deposit, \$2.00. Required of all sophomores and graduate students. Professor WINKENWERDER and Mr. GRÖNDAL.

Methods of studying growth in diameter, height and volume. Sample plot methods. The construction of growth and yield tables. Texts: Same as 51.

101. **WOOD TECHNOLOGY.** Three credits. First semester. Primarily for seniors and graduate students. Prerequisite, 1 or 110, and 8 credits in college botany. Laboratory deposit, \$2.00. Professor WINKENWERDER and Mr. GRÖNDAL.

Wood structure, leading to the identification of the commercial timbers of the United States. The physical properties of wood. Each student is required to prepare permanent microscopic mounts of fifty species. Text: Record's Economic Woods.

102. **SILVICULTURE.** Six credits. Second semester. Required of all juniors and graduates. Four recitations, one-half day field work. Prerequisite, 1, 51, and 52. Laboratory deposit, \$1.00. Associate Professor KIRKLAND.

A study of the individual tree; forest ecology; the forest as a whole; treatment of the forest regions; forest types; silvical characters of trees; seed collecting; nursery practice; transplanting. Text: Graves' Principles of Handling Woodlands.

103. **WOOD IDENTIFICATION.** Two credits. First semester. Open to students in other departments of the University who upon consultation can show ability to carry the work. Professor WINKENWERDER and Mr. GRÖNDAL.

This course includes only the laboratory work of 101. Two three-hour laboratory periods a week. Laboratory deposit, \$2.00. Text: Record's Economic Woods.

105. **FOREST PROTECTION.** Four credits. First semester. Professor KINCAID, Associate Professor KIRKLAND and Assistant Professor HOTSON.

Protection of forests against fire, insects, fungi and other destructive agencies. Approximately one-third of the allotted

time will be devoted to each of the three following divisions of the subject:

Classification of parasitic and saprophytic fungi attacking trees and forest products; methods of detecting presence of fungi in trees with or without aid of fruiting bodies; how to avoid fungus attacks and minimize their ill effects; sanitation of the forest and lumber yards. Assistant Professor HOTSON.

Forest fires; organization of patrol for prevention of fire, considered from standpoint of national forests, state and private organizations; duties of various members of force; methods of patrol on tracts; water courses; railroads, etc.; requirements in trail and telephone facilities; lookout stations; tools and tool caches; organization of volunteer forces; integration of patrol with other work, procedure when fires are discovered; methods of fighting fire; location of fire lines; backfiring, etc. Associate Professor KIRKLAND.

Classification of forest insects; methods of detecting insect attack; preventing insect attack; combating insects by encouragement of natural enemies; by removal of trees attacked, etc. Professor KINCAID.

109. GENERAL FORESTRY. Two credits. First semester. Offered only to students not regularly enrolled in the College of Forestry, and may be taken at the University or as an extension course by correspondence. Professor WINKENWERDER.

The natural history of the tree and of the forest; the forests of Oregon and Washington; the forest as an economic factor (including forest influences); the nature and control of forest fires; harvesting the forest crop; the utilization of forest and wood waste; the status of forestry in the United States; forestry in the Pacific Northwest. Lectures, assigned readings and reports.

110. CHARACTERISTICS OF TREES. Two credits. Second semester. Offered only to students not regularly enrolled in the College of Forestry, and may be taken at the University or as an extension course by correspondence. Professor WINKENWERDER.

The identification, distribution, life-habits, and uses of the trees of the Pacific Northwest. Lectures supplemented by laboratory work and field trips.

111. TEACHER'S COURSE. One credit. Either semester. Offered only as a correspondence course. Must be accompanied or preceded by 109. Professor WINKENWERDER.

151-152. **FOREST MANAGEMENT.** Five credits first semester, three credits second semester. Required of all students in senior or graduate year. Prerequisite, 51, 52, and 102. Additional preliminary courses recommended, 156 and Political Science 7-8. Associate Professor KIRKLAND.

Forest finance, including theoretic discussion of values, outlay, income and valuation of assets, as applied to forest lands; forest valuation; general financial aspects of forest production and timber investment; application of compound interest to forest investment; profits from timber investment and forest production; appraisal of damages; stumpage values and appraisal in the field; comparison of forest with agricultural values.

Forest organization in public or private owned forests, either for immediate exploitation or continuous forest production, examination and report on forest properties; basis of determination whether tract shall be used for immediate exploitation or continuous forest production; organization in each case; in case of continuous production methods of silviculture; the rotation; regulation of annual cut; protection, improvements, special consideration of correct procedure in the Pacific Northwest on private, state, or national forests; forest administration. Texts: Chapman, Forest Valuation; Roth, Forest Regulation; Rechnagel, Working Plans.

153. **GENERAL LUMBERING.** Four credits. First semester. For seniors or graduate students only. Prerequisite, 51, 52. Assistant Professor CLARK and special lecturers.

Comparative methods of logging on the Pacific coast and in other lumbering regions of the United States. Study of machinery, organization, methods and costs of sawmill operations. Grading of lumber, transportation, lumber associations and general points connected with lumber industry. Text: Bryant's Logging.

154. **SCALING AND CRUISING.** Two credits. Second semester. Required of all students in senior year. Prerequisite, 52. Assistant Professor CLARK.

Advanced work in scaling and cruising, topographic mapping, woods surveying, and the study of a logging operation. The field work for this course will be given on a two weeks' field trip to a logging operation during the spring vacation. The office work and preparation of timber sale report will be performed in the classroom at the conclusion of the field work.

*155. **ADVANCED SILVICULTURE.** Two credits. First semester. For seniors and graduates. Prerequisite, 102. Associate Professor KIRKLAND.

Advanced work for students who desire to specialize in silviculture and management.

156. **FOREST ECONOMICS.** Two credits. Second semester. Required in junior or senior year. Prerequisite, Political Science, 1 or 3. Associate Professor KIRKLAND.

The forests of the United States compared with those of other countries of the world as to area and volume; classification of forests of the United States as to area, volume, ownership and future use of forest land; economic position of the lumber industry; relations with other industries and natural resources; influences of forests on climate; water supply for power, irrigation, navigation and other uses; drainage; relation to grazing, agriculture and game protection; logged-off land problem; how to determine best use of land. Open to students in other departments.

157. **FOREST HISTORY AND POLICY.** Two credits. First semester. Prerequisite, 102. Associate Professor KIRKLAND.

Forest policy of the United States; forestry in the states and our island possessions; the rise of forestry abroad. Text: Fernow, History of Forestry.

301. **ADVANCED DENDROLOGY.** Three credits. First semester. Primarily for graduate students. Professor WINKENWERDER.

An extension of course 1 covering the identification and distribution of all important commercial tree species of the United States. Text: Sargent's Manual Trees of North America.

302. **NATIONAL FOREST ADMINISTRATION.** Two credits. Second semester. Assistant Professor CLARK.

Objects of forest administration; regulations and instructions governing disposal of timber, range, and all other forest resources; use and disposal of land; rights-of-way; protection against fire, and trespass; improvement work; fiscal matters; principles and details of each subject, including investigations, reports, permits, use of all forms, supervision of work; suggestions and demonstrations.

* Given in alternate years. Will be offered in 1916-17 only in case there is sufficient demand.

303. **TIMBER PHYSICS.** Three credits. First semester. For senior and graduate students. Prerequisite, Mathematics 55-56. Laboratory deposit, \$1.00. Mr. ZIMMERMAN.

Various stresses which wood must resist; methods of making tests; theory of flexure; relation between moisture and strength; between specific gravity and strength; mechanical properties of wood.

304. **WOOD PRESERVATION.** Three credits. Second semester. Required of seniors and graduates. Prerequisite, 101 and one year of chemistry. Mr. GRÖNDAL.

Nature of the decay of timber. Preservative processes. Design and practical operation of wood preserving plants. Commercial testing of preservatives. Economics of wood preservation. Laboratory work with College of Forestry treating plant and report work on local creosoting plants.

305-306. **LOGGING ENGINEERING.** Five credits first semester, six credits second semester. Primarily for graduates. Prerequisite, 51,52, C. E. 108, M. E. 82 and 153. Assistant Professor CLARK.

The construction and use of types of logging machinery and equipment. The organization of logging companies, capital required. Construction of logging railroads, landings, camps, water systems, etc. Topographic and railroad surveying applied to logging operations. Organization and cost of operations. Lectures, demonstrations at plants manufacturing logging machinery, field work in nearby logging camps. During the second half of the second semester the work is transferred to the field where extensive work in logging engineering is carried on.

307-308. **SEMINAR.** One credit per semester. For seniors and graduates. Professor WINKENWERDER, Associate Professor KIRKLAND, Mr. GRÖNDAL.

Reviews, assigned readings, reports, and discussions on current periodical literature and the more recent Forest Service publications.

309-310. **ADVANCED FOREST PRODUCTS.** Two credits per semester. For seniors and graduates. Prerequisite, 101 and 304. Mr. GRÖNDAL.

Advanced studies in wood preservation and wood technology. Special problems with reference to the needs of the individual student.

311. **FOREST UTILIZATION.** Four credits. First semester. For seniors and graduates. Prerequisite, 101 and one year of chemistry. Mr. GRÖNDAL.

Lumber and its economic uses. Building materials and buildings. Proper uses of treated wood blocks. Wood pipe, silos, veneers, etc. Paper making, wood distillation, tanbark, naval stores and other secondary forest products.

313-314. **RESEARCH.** Two credits per semester. May be taken as a semester or a year course. For seniors and graduates.

315. **SCIENTIFIC MANAGEMENT.** Two credits. Second semester. Associate Professor KIRKLAND.

Fundamental principles of scientific management, with special reference to the lumber industry.

316. **ADVANCED FOREST MANAGEMENT.** Three credits. Second semester. For graduate students only. Prerequisite, 151-152. Associate Professor KIRKLAND.

Advanced studies. About one week of field work on a tract of 50,000 to 100,000 acres on which data concerning different soil classes, forest types, etc., and volume of timber is already available. This work will be followed by the actual formation of a working plan providing for regulation of the yield and organization of all forest work on the area, with estimates of outlay and income.

318. **FIELD FOREST MENSURATION.** Two credits. Second semester. For seniors or graduates. Prerequisite, 305. Associate Professor CLARK.

This course will be given in the field the second half of the semester in connection with the field work in logging engineering. It supplements and enlarges upon the work of timber estimating and mapping as given in courses 51 and 52.

319. **WOOD ANALYSES.** Two credits. First semester. For juniors in architecture. (Not given in 1916-17.) Mr. GRÖNDAL.

A study of the identification, physical properties and characteristics of all woods used in building construction and finishing. The finishing and preserving of wood will be discussed.

SUBJECTS PRESENTED BY DEPARTMENTS OF OTHER
COLLEGES OF THE UNIVERSITY.

BOTANY

(Science Hall)

1. **ELEMENTARY BOTANY.** Four credits. First semester. Professor FRYE and Assistant Professor RIGG.

The structure and functions of roots, stems, leaves and seeds. Only for those who have had no botany in the high school.

11. **FORESTERS' BOTANY.** Four credits. First semester. For forestry students. Prerequisite, botany 1. Assistant Professor HOTSON and Assistants.

A study of types of plants to illustrate the advances in complexity.

12. **FORESTERS' BOTANY.** Four credits. Second semester. A continuation of 11, which is prerequisite. Assistant Professor HOTSON and Assistant.

143. **PLANT PHYSIOLOGY.** Four credits. First semester. Prerequisite, chemistry 1 and 2; botany 1, 2 or 10. Assistant Professor RIGG.

The fundamental physical and chemical processes in plants.

CHEMISTRY

(Bagley Hall)

1. **GENERAL CHEMISTRY.** Four credits. Either semester. Two lectures and six laboratory hours per week. Professor BYERS, Assistant Professor ROSE, Instructors and Assistants.

This course is designed to meet the needs of students who come from accredited schools in which chemistry is not required.

2. **GENERAL CHEMISTRY.** Four credits. Either semester. A continuation of 1.

31. **ORGANIC CHEMISTRY.** Four credits. First semester. Prerequisite, 22, or its equivalent. Associate Professor DEHN.

Introductory course in organic chemistry, consisting of three lectures per week and four hours laboratory work, on the preparation and testing of representative compounds.

32. ORGANIC CHEMISTRY. Four credits. Second semester. Associate Professor DEHN.

A continuation of 31.

41. ELEMENTARY QUALITATIVE ANALYSIS. Four credits. Either semester. Two lectures and six laboratory hours per week. Mrs. ROSE.

This course is designed to follow chemistry 1 and 2, and is required of those students in the College of Engineering who have not presented high school chemistry for entrance.

43. ADVANCED QUALITATIVE ANALYSIS. Four credits. First semester. Professor BYERS.

Lectures on theory of solution as applied to analytical work. Laboratory work on the analysis of alloys and minerals.

135. CHEMISTRY OF FOREST PRODUCTS. Three credits. First semester. A course designed especially for students of forestry. Two lectures and one laboratory period. Professor BENSON.

A detailed study of the chemical processes involved in the utilization of wood.

CIVIL ENGINEERING

(Engineering Building)

30. FOREST SURVEYING. (Short session in Forestry, first year, Jan.-Mar.). Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Engineering drawing, topographical and map drawing. Instructions and field practice in the use of the chain, hand compass and Forest Service compass, hand level, clinometer and transit in direct application to the requirements of the U. S. Forest Service.

32. FOREST SURVEYING. (Short session in Forestry, second year, Jan.-Mar.). Laboratory deposit, \$3.00. Assistant Professor NEWTON, Mr. DUCKERING.

Traversing by various conventional methods, mining claim surveys, plane triangulation and topographical work; U. S. subdivision of public lands.

55-56. FOREST SURVEYING. Six credits per semester. Sophomore and junior foresters. Prerequisite, Mathematics 51 and

Forestry 3. Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Engineering lettering and map drawing. Chain, compass, transit and level surveying, with reference to work in forest. U. S. subdivision of public lands.

107. TOPOGRAPHY. Four credits. First semester. Junior foresters and miners. Prerequisite, C. E. 55-56. Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Topographic surveys as applied to forestry and mining. Reconnaissance and sketch maps, and exercises in reading and adjusting triangulation systems. Filling in topographic details with plane table and transit. Beginning of elementary railroad surveying.

JOURNALISM

(Education Building)

5-6. PRINCIPLES OF ADVERTISING. Three credits per semester. Laboratory deposit, \$2.00. Prerequisite, Journalism 1-2, 7-8. Mr. AGNEW.

Economic factors of advertising and the place of advertising in the systems of distribution. Establishing associations between the commodity and the buyer and making them dynamic. Preparation of copy and principles of display and adaptation to mediums.

ELECTRICAL ENGINEERING

(Engineering Building)

105. ELECTRICAL ENGINEERING. Four credits. Either semester. Prerequisite, Mathematics 62, Physics 96, 98. Assistant Professor KIRSTEN, Mr. CURTIS and Mr. BURBANK.

A short course giving the fundamental principles of direct currents with experimental tests on commercial dynamos and motors.

ENGLISH

(Denny Hall)

5-6. FRESHMAN COMPOSITION. Two credits per semester. An adaptation of 1-2 for students in the College of Forestry.

GEOLOGY

(Science Hall)

6. GEOLOGY FOR FORESTRY STUDENTS. Four credits. Second semester. Laboratory fee, \$1.00. Assistant Professor CULVER.

11. CLIMATOLOGY. Four credits. First semester. Three recitations and one laboratory period. Laboratory fee, \$1.00. Assistant Professor SAUNDERS and Mr. SALISBURY.

A general consideration of the climatic elements of the atmosphere, and a study of the climate of Washington and of the United States.

Short Course 1. FOREST GEOLOGY. Assistant Professor SAUNDERS.

A course of twenty lectures on general geology given in January, February and March, to the students in the short course in the College of Forestry.

LAW

(Law Building)

180. ENGINEERING CONTRACTS. Two credits. Second semester. Assistant Professor Cockerill and special lecturers.

MATHEMATICS

(Science Hall)

1-2. SOLID GEOMETRY. Two credits per semester. Prerequisite, plane geometry.

Required during the freshman year of all students in the colleges of Engineering, Forestry and Mines who do not offer solid geometry for admission.

4. SOLID GEOMETRY. Three credits. Second semester. Same as 1-2.

55-56. FORESTER'S COURSE. Four credits per semester. Prerequisite, one year plane geometry and one and one-half years elementary algebra. Assistant Professor GAVETT.

A year's course in numerical and graphic methods, solution of plane triangles, the elements of coordinate geometry, and derivatives and integrals with applications to problems involving maxima and minima, rectifications, quadratures and cubatures.

MECHANICAL ENGINEERING

(Engineering Building)

2. PATTERN MAKING AND CABINET WORK. Two credits. Either semester. Mr. BEATTIE.

53. FORGE AND FOUNDRY. Two credits. Either semester. Mr. KANE.

54. MACHINE WORK. Two credits. Either semester. Mr. KANE.

82. STEAM ENGINEERING. Two credits. Either semester. Professor EASTWOOD.

The various forms of steam apparatus used in modern power plants, considering the construction, use and reason for installing such apparatus.

153. STEAM LABORATORY. Two credits. First semester. Prerequisite, 82. Associate Professor WILSON.

Arranged especially for students in Forestry. Consists of two laboratory periods and is intended to familiarize the students with the fundamental equipment for steam generation and use. Practice will be given in the care and manipulation of the steam engine and boiler, and auxiliary apparatus.

MILITARY SCIENCE AND TACTICS

(The Armory)

WILLIAM TAYLOR PATTEN, CAPTAIN, U. S. A., RETIRED, COMMANDANT

A course of two years in military training is required. All able-bodied male students (except those from foreign countries, not intending to become naturalized) must take the course, which by regulations of the University is required during the first and second years. Three hours a week are devoted to military training, for which two credits are given each semester.

MODERN LANGUAGE

One year of modern language is required. Although German is recommended, any modern language will be accepted.

PHYSICS

(Denny Hall)

93-94. GENERAL PHYSICS. Four credits. Either semester. This course is an abridgment of 97 and 98 and is open only to students in forestry, pharmacy, and medicine. Three class periods and one laboratory period. Prerequisite, 4 hours in mathematics. Mr. VORIS.

NOTE.—The laboratory deposit is \$2.50 a semester.

POLITICAL AND SOCIAL SCIENCE

(Denny Hall)

1-2. ELEMENTS OF ECONOMICS. Three credits per semester. Assistant Professors McMAHON, BERGLUND and H. E. SMITH; Mr. AKERMAN.

A study of the principles of economics and of economic problems.

3. ELEMENTS OF ECONOMICS. Three credits. Either semester. Dr. JANES, Mr. LAUBE, Mr. AKERMAN, and Mr. MACAULAY.

5. COMMERCIAL GEOGRAPHY. Three credits. First semester. Dr. JANES.

An elementary study of the geographic basis of modern commerce, including such subjects as the location, classification and transformation of raw materials, the description of trade routes and the varieties and control of natural powers.

7-8. ACCOUNTING. Three credits per semester. Prerequisite, 1-2 or 3. Must be taken the full year to receive credit. Assistant Professor H. E. SMITH.

109. MONEY AND BANKING. Three credits. First semester. Prerequisites, 1-2 or 3. Assistant Professor CUSTIS.

Deals chiefly with the systems of money and banking prevailing in different countries, especially the United States, and with international exchange.

ZOOLOGY

(Science Hall)

14. FOREST ZOOLOGY. Two credits. Second semester. Professor KINCAID.

Habits and economic relations of typical forest animals. Especially for forestry students, but open to others.

109-110. GENERAL ENTOMOLOGY. Four credits per semester.
Prerequisite, 2. Professor KINCAID.

The structure, classification, and economic relations of insects.

SPECIAL SHORT COURSES IN FORESTRY, LOGGING AND LUMBERING

Session 1917—January 3 to March 30.

EXPLANATION. The short courses in Forestry at the University of Washington are offered for the benefit of persons engaged in some phase of the timber industry and who desire to increase their efficiency, but who cannot take the time required for a broader course. In outlining the courses a special effort has been made to have them simple, concise and thoroughly practical. The work is given by means of lectures, quizzes, laboratory and field practice. Although the time is only of twelve weeks' duration, our location and our equipment enable us to do thorough work in the subjects given. A high school training is not necessary for entrance, but students should be at least twenty years old.

Three distinct courses are offered:

- I. Forestry
- II. Logging
- III. Lumber and Its Uses

I. **THE COURSE IN FORESTRY.** This course is for men who are now employed as forest rangers and guards who wish to increase their efficiency, for persons who wish to prepare for this work and for timber land owners who desire some practical knowledge of the care and management of their timber holdings. The course includes the following subjects:

First Year Subjects

Characteristics of trees
Silviculture
Forest measurements
Surveying
Forest administration
First aid to the injured

Second Year Subjects

Advanced silviculture
Advanced forest measurements
Advanced surveying
Forest management
Logging
Forest economics

Electives either year—Forest law, botany, geology, diseases of trees.

NOTE.—Elective courses will be given only if a sufficient number elect them.

II. THE COURSE IN LOGGING. For persons engaged in woods work about the donkey engine, with the scaler, the cruiser, the logging engineer, or in any other capacity, who wish to prepare themselves for advancement. It is not for men engaged in mill work. All persons wishing to enter this course must have had at least three months' experience in a logging camp and should at time of registration bring a statement to this effect from a former employer or foreman.

The course includes the following subjects:

Characteristics of trees	Logging
Surveying	First aid to injured
Forest economics	Electives from forestry course
Forest measurements	

III. THE COURSE IN LUMBER AND ITS USES. Although wood is more widely used than any other material of construction, it requires more special information in its use than any other. This course is outlined with special reference to presenting this information for the use of persons engaged in office work at the sawmills, lumber salesmen, architects, engineers, builders and building inspectors.

The course includes the following subjects:

Characteristics of trees	Wood utilization
Properties of wood	Forest economics

Other subjects may be elected from the course in Forestry.

GENERAL INFORMATION

ADMISSION. This is without examination. The only requirement is that applicants must be at least twenty years old and must show evidence of being able to carry the work with profit to themselves. If in doubt write. See special requirement under course in Logging.

EXPENSES.

Tuition	\$10.00
Deposit for material supplied.....	2.00
Deposit to insure care in use of instruments (returnable).....	3.00
Board and lodging, per month.....	\$20.00- 30.00
Books, drawing instruments, etc.....	\$10.00- 15.00
Field trips, about.....	10.00

The total expenses for the twelve weeks, exclusive of transportation, need not exceed \$125.00.

EQUIPMENT REQUIRED. Since much of the field work will be done in the woods, each man should be equipped with suitable rough clothing and shoes. Men owning compasses or barometers are requested to bring them.

HOW TO ENROLL. On arrival at the University, students should report at the office of the dean, room 1, College of Forestry, where they will be given all necessary directions.

As the time for the course is limited, all men should report for enrollment on January 3, in order that all classes may begin promptly at 8 o'clock on the morning of the 4th.

ATTENDANCE AND DEPARTMENT. Students in these courses will be expected to attend classes regularly and in all respects will be required to observe the same rules that apply to the regular long course students in the University.

EXAMINATION AND CERTIFICATE. Examinations will be given in the various subjects at the close of the course and a certificate showing the work satisfactorily covered will be issued to each student.

DESCRIPTION OF SUBJECTS

SILVICULTURE. Three lectures or recitations a week, field work additional. Mr. KIRKLAND.

The requirements of trees for soil, light, water and climate; the special requirements of the trees of the Northwest. The reproduction of trees, how to secure new growth after logging by natural reproduction; system of cutting to this end. Reproduction by seeding and planting, seed collecting; nursery practice; transplanting; forest protection.

ADVANCED SILVICULTURE. For second year students. Three lectures a week, field work additional. Mr. KIRKLAND.

Forest ecology, forest regions and forest types are emphasized. Silvicultural systems of management.

FOREST MEASUREMENTS. Two lectures and one-half day field work a week. Mr. CLARK, Mr. NELSON, and Assistants.

(a) General mensuration. The theory of construction and the use of log rules; their comparative values; other units of measuring timber. The construction and use of height measures and diameter measures; how to make and use volume tables.

(b) **Scaling.** Lectures accompanied by extensive practical exercises in the woods. This work is given during the last four weeks of the course.

Methods of deducting for defects; the keeping of scale records; log grading.

(c) **Cruising and mapping.** Lectures accompanied by extensive field practice. The last two weeks of the course are largely given over to field practice.

The methods of cruising timber in use in the Northwest; how to tell defect and allow for it. Woods mapping; preparation of cruising reports.

ADVANCED FOREST MEASUREMENTS. Second year. Two lectures and one-half day field work. Mr. WINKENWERDER and Mr. CLARK.

(a) The construction of volume tables; valuation surveys by the volume curve and arbitrary group methods. Each part of the work demonstrated by field practice.

(b) Advanced work in cruising, topographic mapping and reports. Reports will include detailed forest descriptions, stumpage values, log grades, detailed cost and management of operations, additional practice in scaling.

FOREST SURVEYING. First year. Two lectures and two four-hour laboratory or field periods. Mr. NEWTON.

Engineering drawing, topographical and map drawing. Instruction and field practice in the use of the chain, hand compass and Forest Service compass, hand level, clinometer and transit in direct application to woods work.

ADVANCED FOREST SURVEYING. Second year. Two lectures and two four-hour periods in field practice. Mr. DUCKERING.

Traversing by various conventional methods. June 11th and mining claim surveys, plane triangulation and topographical work. U. S. subdivision of public lands.

CHARACTERISTICS OF TREES. Two lectures or recitations and one two-hour laboratory period a week. Mr. WINKENWERDER.

Simple characters by which the local trees may be recognized, both in the summer and winter condition; their classification, distribution and use.

FOREST ADMINISTRATION. Three lectures or recitations a week. Mr. CLARK, assisted by members of the United States and British Columbia Forest Services.

(a) Policies. Objects of forest administration. Use of the national forests; timber sales; privileges, and grazing policies; organization of the Forest Service; duties and qualifications of forest officers.

(b) Methods. Regulations and instructions governing disposal of timber, range and all other forest resources; use and disposal of land; rights-of-way; protection against fire and trespass; improvement work; fiscal matters; investigations; reports, permits, use of forms and supervision of work.

FIRST AID TO INJURED. Ten lectures. Dr. HALL.

What to do in case of accidents; how to use bandages; the treatment of shock, bruises, cuts, burns and poisoning. Demonstrations.

FOREST MANAGEMENT. For second year students. Three lectures or recitations a week. Mr. KIRKLAND.

Principles of compound interest as applied to forest property; valuation of forest land; methods of ascertaining the value of forest property. 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.

LOGGING. For students in lumbermen's course and second year forestry course. Four lectures and one field period per week. Mr. CLARK.

Construction of logging railroads, camps, landings, etc. The making of topographic maps and the surveying of logging railroads. Students will actually make a topographic map and survey several miles of logging spurs in this course.

WOOD UTILIZATION. Four lectures a week, and occasional field trips to local wood using plants. Mr. GRÖNDAL.

Preservation of wood, creosoted piling, paving blocks and lumber. Comparative strength of timber, the construction of buildings and economic uses of wood. Wood for the manufacture of boxes, wood pipe, silos, etc., and the value of such products. Wood distillation, utilization of waste, tanbark, turpentine and other products.

PROPERTIES OF WOOD. Two lectures and one afternoon of laboratory work a week. Mr. WINKENWERDER.

The structure of wood; physical properties, color, shrinking and swelling, checking, seasoning; simple characters for recognizing the various commercial species in the piece.

FOREST ECONOMICS. Two lectures a week. Mr. KIRKLAND.

Economic relation of forest to other resources, relation of forest industries to other industries. Special effort is made to analyze economic conditions in the lumber industry and the means for betterment of conditions.

GEOLOGY. Two lectures or recitations a week. Mr. SAUNDERS.

Common minerals, manner of occurrence and identification; mining, lode and placer work; how to select ore samples and use gold pan; work confined mainly to that which will assist in determining the validity of mineral and coal claims. Soil classification.

FOREST BOTANY. One two-hour laboratory period per week. Mr. HOTSON.

A study of roots, stems, leaves, flowers and their modification. Fruits and seeds. How plants are named and how to find their names. Special emphasis is placed on range plants.

FOREST LAW. A series of eight to twelve special lectures. Mr. TALBOT.

Interpretation of state and federal land, mining, live stock, water and forest laws; rulings and decisions; rules of practice before United States land offices; what constitutes trespass; what constitutes evidence and how to get it; authority of forest officers; when and how to make arrests.

DISEASES OF TREES. Six to ten lectures. Mr. HOTSON.

How fungi are distributed, how they get into the trees and what to do with them. General causes and nature of decay. The general principles underlying the treatment of diseased trees and timbers.

SCHOOL OF LAW

THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), President.

JOHN THOMAS CONDON, LL. M. (Northwestern), Professor of Law;
DEAN.

HARVEY LANTZ, A. M. (De Pauw), LL. B. (Kent), Professor of Law.

IVAN WILBUR GOODNER, LL. B. (Nebraska), Professor of Law.

CLARK PRESCOTT BISSETT, A. B. (Hobart), Professor of Law.

• ORVILLE PORTER COCKERILL, A. B., LL. B. (Ohio), Assistant Professor of Law.

FRED WAYNE CATLETT, A. M., LL. B. (Harvard), Assistant Professor of Law.

JOSEPH GRATTAN O'BRYAN, A. B. (Jesuit), Lecturer on Law.

THOMAS ROCHESTER SHEPARD, Lecturer on Mining Law.

*ADMISSION TO THE LAW SCHOOL

To be admitted to regular standing in the Law School students must, in addition to presenting credits or passing examinations entitling them to admission to any other school or college of this University, present credits or pass examinations equivalent to sixty college hours in the College of Liberal Arts of this University or other college or university of recognized standing, plus eight hours in physical education or military science. Students entering the College of Liberal Arts of this University with the intention of pursuing the study of law, should enroll in the curriculum preparatory to law, as outlined below, or take a course covering the regular freshman and sophomore prescriptions of that college and including any subjects recommended for admission to that college that have not been taken in high school.

* More detailed information concerning admission is furnished on pages 43-46.

CURRICULUM PREPARATORY TO LAW

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

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

FIRST YEAR

English (1, 2), Freshman composition.....	0-8 credits
History (English or American).....	8 credits
Chemistry, zoology or botany.....	8 credits
(Preferably in the order named.)	
College Mathematics or foreign language.....	8 credits
(If the student has taken two years of Latin, it is recommended that he take Roman Law.)	
Military Science (men); Physical Education (women)...	4 credits
College Problems.....	1 credit

SECOND YEAR

Political and Social Science.....	6 credits
(Either Political and Social Science 1-2, 81-82, or 51-52.)	
Philosophy	8 credits
(Selected from the following courses: 1, 2, 3, 101-102, Psychology 107.)	
Sixteen credits from among the following subjects:	
Physics; the continuation of a foreign language;	
History, American or European, political or constitutional; Political and Social Science; Philosophy; English Literature; a year of Science; Argumentation and Debate; Vocational Speaking.	
Military Science (men); Physical Education (women)...	4 credits

If a student registers in and completes the pre-law curriculum and later decides to remain in either the College of Liberal Arts or the College of Science, he must classify under some one of the groups as offered. In this case, the required mathematics may be taken in the junior year with full credit.

ADVANCED STANDING

If, in addition to satisfying the entrance requirements for regular standing in the Law School, the student has earned credits in another law school of satisfactory standing, by regular attendance for at least one academic year of not less than eight months, he will ordinarily receive credit for such work, subject to the following restrictions: The work must equal in amount and character that required by this law school. Not more than two years' credit will be allowed for such work. The right is reserved to refuse advance credit in law in whole or in part, save upon examination. Candidates for a degree, with advanced standing, must spend at least one full college year in this school.

SPECIAL STUDENTS

No person will be admitted as a special student in law, unless he is twenty-one years of age and his general education is such as to entitle him to take the state bar examination.

Special students who comply with these requirements and with the regulations for admission of special students (see Entrance Information, page 46) will be admitted to take such work in law as their previous preparation enables them to carry successfully, and upon satisfactory completion of sufficient law work to entitle them to take the state bar examination, will be given a certificate or affidavit entitling them to apply for examination. Students who intend to take this method must file notice of their intention to study law with the clerk of the Supreme Court as required by law.

SPECIAL STUDENTS BECOMING CANDIDATES FOR
DEGREE

Special students may become candidates for a degree upon complying with all the entrance requirements as above set forth in reference to regular students. If a special student intends to become a candidate for a degree by clearing up his entrance requirements during his law studies, he must notify the Dean of the Law School upon registration. Such students will be permitted to carry a limited amount of work in the College of Liberal Arts or the College of Science to enable them to clear up their entrance requirements in law.

COMBINED CURRICULUM IN ARTS AND LAW

This combined course allows the student with a good record to complete the A. B. and LL. B. in six years. It is open only to those students who have maintained a uniformly good record for scholarship during the first three years of Liberal Arts.

The student is enrolled in the College of Liberal Arts during the first three years. If at the end of three years he has a uniformly good record for scholarship and has earned ninety or more credits, including all the required work and major and minor, he may for the fourth year register in the Law School for the first year's work in law and must earn in the College of Liberal Arts additional credits sufficient to make his total of arts and science credits amount to ninety-six, and earn in the Law School at least twenty-four credits in the first year law work, to apply on his A. B. degree, thus making his one hundred twenty credits required for the A. B. degree. The A. B. degree will be granted upon the completion of both courses.

The last two years of this combined course are devoted to completing the rest of the 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 schools entering this University with advanced standing may take advantage of this combined course, provided they are registered in the College of Liberal Arts for at least one full year's work and earn at least thirty credits in this University before entering the law work.

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

THESIS

It is the desire of the faculty to encourage original investigation and research by the students. Each candidate for a degree is required to prepare and deposit with the Dean of the School of Law, before the beginning of the spring vacation of his senior year, a thesis of not less than thirty folios in length, upon some legal topic selected by the student and approved by the faculty. The student will be examined by the faculty upon this thesis. It

must be printed or typewritten, and is to be kept permanently in the library of the Law School.

CARKEEK PRIZE FOR THESIS UPON WASHINGTON LAW

Mr. Vivian M. Carkeek, of the Seattle bar, a graduate of this Law School, class of '01 (the first class to graduate from this Law School) offers an annual prize of twenty-five dollars for the best thesis submitted by members of the senior class, candidates for the degree of bachelor of laws, upon a subject of Washington law, or upon a subject of peculiar interest to Washington lawyers, the subject to be selected by the Dean of the Law School.

EVENING COURSES IN LAW

The University offers courses in law in the evening, open to those who are not able to attend in the day time. The entrance and graduation requirements for the evening school are the same as for the day school. The studies pursued in the evening school are exactly the same and the same text books are used, and the same instructors conduct the course. The evening classes meet three times each week, Monday, Wednesday and Friday.

INSTRUCTION IN OTHER DEPARTMENTS

Students in the Law School may pursue studies, for which they are prepared, in other departments of the University without charge, except that in the laboratory courses the usual laboratory deposits will be required.

LIBRARIES

The University Law Library consists of about fifteen thousand volumes. It contains the reports of all the courts of last resort, the reported lower courts of several states and the English courts. The latest revisions of all the state statutes and a large collection of the session laws of the various states, including a complete set of each of the Pacific Coast states, are important features.

Several hundred volumes are added each year and within the present year it is expected to have the Irish, Scotch, and Canadian reports completed, and to have the briefs of Washington Supreme Court cases completed and bound.

The Library is catalogued and indexed by the Library of Congress cards.

The University general library contains about sixty-four thousand volumes and is especially strong in reference works.

The public library of the city of Seattle is open to the free use of our students and is within easy distance of the campus by street car.

DEGREES

The degree of bachelor of laws (LL. B.) will be conferred on all students who comply with the entrance requirements for regular students stated hereinbefore, remain in residence in the school for three school years, successfully complete all the required law work provided in this Law School and in addition such electives as will with the required work aggregate eighty-two credits, and comply with all the rules and regulations of the faculty and board of regents of this University.

Students admitted to advanced standing based upon credits earned at another law school may count that work towards graduation, subject to the restrictions heretofore stated.

EXAMINATION

The members of each class are examined daily throughout the year in their studies, and may be subjected to written examinations at any time in the discretion of the faculty without notice. At the end of each semester the members of each class are subject to written examinations on the courses during the year and their promotion is dependent on successfully passing such examination.

To receive the degree of bachelor of laws it is necessary to pass satisfactory examinations in the entire course of three years. Students who pass these examinations with distinguished excellence will receive the degree of bachelor of laws *cum laude*.

FEES

A fee of ten dollars is paid by each student upon matriculation. This fee is collected once for all from each student who has not been in attendance at a previous regular session of the University.

A fee of twenty-two dollars and fifty cents (\$22.50) per semester for day students and ten dollars per semester for even-

ing students is charged in the Law School, payable at the beginning of each semester.

A diploma fee of five dollars is charged all students to whom diplomas are issued.

ADMISSION TO THE BAR

It is provided by an act of the legislature of the State of Washington that the graduates of this Law School shall be admitted to the bar of the courts of this state upon motion without examination.

OTHER INFORMATION

Information on subjects not covered by the foregoing statement will be furnished in answer to communications addressed to the Law School of the University of Washington, University Station, Seattle, Washington.

LAW

(Office, Law Building)

PROFESSORS CONDON, LANTZ, GOODNER AND BISSETT, ASSISTANT PROFESSORS COCKERILL AND CATLETT, MR. O'BRYAN AND MR. SHEPARD.

COURSES

FIRST YEAR

101. AGENCY. Two credits. First semester. Goddard's Cases on Agency, supplemented by Washington Cases. Professor GOODNER.

103. CRIMINAL LAW. Two credits. First semester. Mikell's Cases on Criminal Law, supplemented by the Washington Criminal Code and Cases. Mr. O'BRYAN.

104. PERSONS. Two credits. Second semester. Woodruff's Cases on Domestic Relations and the Law of Persons, supplemented by Washington Cases. Professor LANTZ.

105-106. CONTRACTS. Three credits per semester. Williston's Cases on Contracts. Professor LANTZ.

107. HOW TO FIND THE LAW. Two credits. First semester. This course consists of five lectures on legal bibliography followed by a study of the system of legal classification employed in the

leading Digests, etc., used by lawyers, and a series of selected practical problems in finding and keeping a record of the law. Professor CONDON.

108. PROCEDURE. Two credits. Second semester. Mikell's Cases on Criminal Procedure (abridged edition), supplemented by the Washington Criminal Code and Cases. Mr. O'BRYAN.

109-110. PLEADING. Two credits per semester. Sunderland's Cases on Common Law Pleading, first semester; Sunderland's Cases on Code Pleading and Hepburn's Development of Code Pleading as collateral reading, second semester. Assistant Professor COCKERILL.

111-112. PROPERTY. Two credits per semester. Gray's Cases on Property (second edition), Volumes I and II. Assistant Professor CATLETT.

113-114. TORTS. Two credits per semester. Case book to be selected. Textbook to be selected. Professor BISSETT.

116. STATUTORY INTERPRETATION. Two credits. Second semester. Washington Cases. Professor CONDON.

SECOND YEAR

REQUIRED WORK

121-122. EQUITY. Three credits per semester. Ames' Cases in Equity Jurisdiction, volumes I and II, supplemented by Washington Cases. Professor GOODNER.

123-124. PROPERTY. Two credits per semester. Gray's Cases on Property (2d ed.), volumes III and V. Professor BISSETT.

ELECTIVES

In addition to the required courses, second year students must elect from the following such courses as will, with their required work aggregate fourteen credits.

125-126. EVIDENCE. Three credits per semester. Wigmore's Cases on Evidence, supplemented by Washington Cases and Statutes. Professor CONDON.

127. BILLS AND NOTES. Two credits. First semester. Hufcut's Cases on Negotiable Instruments. Professor LANTZ.

128. CARRIERS. Two credits. Second semester. Green's Cases on Carriers. Professor LANTZ.

130. DAMAGES. Two credits. Second semester. Mechem and Gilbert's Cases on Damages, supplemented by Washington Cases. Professor BISSETT.

132. PARTNERSHIP. Two credits. Second semester. Gilmore's Cases on Partnership. Assistant Professor COCKERILL.

133-134. PRIVATE CORPORATIONS. Two credits per semester. Canfield and Wormser's Cases on Private Corporations, supplemented by Washington Cases. Assistant Professor CATLETT.

135. PROCEDURE. Two credits. First semester. This course relates to civil procedure in justice's courts in Washington. Professor GOODNER.

136. PROCEDURE. Two credits. Second semester. This course will relate to the procedure in civil actions in superior court and is a prerequisite to course 168. Professor GOODNER.

138. QUASI-CONTRACTS. Two credits. Second semester. Woodruff's Cases on Quasi-Contracts. Assistant Professor CATLETT.

139. SALES. Three credits. First semester. Woodward's Cases on Sales and Washington Statutes and Cases. Assistant Professor COCKERILL.

141. TAXATION. Two credits. First semester. Goodnow's Cases on Taxation and Washington Statutes and Cases. Professor BISSETT.

143. NEGLIGENCE. Two credits. First semester. Washington Cases. This course is designed to cover the Law of Negligence and the Workmen's Compensation Act for the State of Washington. Professor BISSETT.

144. WILLS. Two credits. Second semester. Costigan's Cases on Wills. Assistant Professor CATLETT.

145. WASHINGTON STATUTE LAW. Two credits. First semester. Washington Cases. Professor CONDON.

THIRD YEAR

Third year students must elect from the following or any second year subjects which they have not taken in their second year, such courses as will aggregate twelve credits.

151-152. CONSTITUTIONAL LAW. Two credits per semester. First semester, Federal; second semester, State of Washington. Hall's Cases on Constitutional Law and Washington Cases. Professor CONDON.

153. PROPERTY. Two credits. First semester. Gray's Cases on Property (2d ed.), volume VI. Assistant Professor CATLETT.

154. PROPERTY. Three credits. Second semester. Washington Statutes and Cases on Community Property. Assistant Professor CATLETT.

155. ADMIRALTY. Three credits. First semester. Ames' Cases on Admiralty. Professor LANTZ.

156. BANKRUPTCY. Two credits. Second semester. Holbrook and Aigler's Cases on Bankruptcy and Selected Cases. Professor BISSETT.

157. COMPARATIVE STATUTE LAW. Two credits. First semester. Professor CONDON.

158. CONFLICT OF LAWS. Two credits. Second semester. Lorenzen's Cases on Conflict of Laws. Professor LANTZ.

159. HISTORY OF LAW. Two credits. First semester. Textbook to be selected. Professor BISSETT.

160. JURISPRUDENCE. Two credits. Second semester. Textbook to be selected. Professor BISSETT.

161. INSURANCE. Three credits. First semester. Vance's Cases on Insurance. Professor LANTZ.

162. MINING. Two credits. Second semester. Textbook to be selected.

163. IRRIGATION. Two credits. First semester. Textbook to be selected.

164. MORTGAGES. Two credits. Second semester. Durfee's Cases on Mortgages and Washington Statutes and Cases. Assistant Professor COCKERILL.

165. MUNICIPAL CORPORATIONS. Three credits. First semester. Beale's Cases on Municipal Corporations and Washington Constitution, Statutes and Cases. Assistant Professor CATLETT.

166. OFFICE PRACTICE. Two credits. Second semester. Conveyancing and examination of abstracts, care of a law office generally, drawing wills and contracts, preparation of briefs and office accounts. Professor CONDON.

167. PROCEDURE. Two credits. First semester. This is a course in Washington probate practice. Each student will be required to conduct the administration or probate of an estate to decree of distribution. Professor GOODNER.

168. PROCEDURE. Two credits. Second semester. This will be largely moot court work, involving the drafting of pleadings, jury trials in the Superior Court and the taking of appeals to the Supreme Court. Course 136 is a prerequisite to this course. Professor GOODNER.

170. PUBLIC SERVICE COMPANIES. Two credits. Second semester. Wyman's Cases on Public Service Companies. Professor LANTZ.

171. SURETYSHIP. Two credits. First semester. Ames' Cases on Suretyship. Assistant Professor COCKERILL.

172. TRUSTS. Two credits. Second semester. Kenneson's Cases on Trusts. Professor GOODNER.

No first year student may take more than fifteen hours, no second year student may take more than fourteen hours, and no third year student may take more than twelve hours, in any one semester, without special permission of the Law Faculty, except that a student may take one course in which he has failed to pass.

COURSES OFFERED STUDENTS IN OTHER COLLEGES AND SCHOOLS

(No Law School credit is given for these courses)

53-54. BUSINESS LAW. Three credits per semester. Huffcut's Elements of Business Law and Bay's Cases on Commercial Law. Assistant Professor COCKERILL.

104. NEWSPAPER JURISPRUDENCE. Two credits. Second semester. Prerequisite, Journalism 1-2, 3-4, 7-8; or Journalism 1-2, 5-6, 7-8. DEAN CONDON.

180. ENGINEERING CONTRACTS. Two credits. Second semester. Senior and graduate C. E. Assistant Professor COCKERILL and special lecturers.

COLLEGE OF MINES

THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), PRESIDENT.

MILNOR ROBERTS, A. B. (Stanford), Professor of Mining Engineering and Metallurgy; DEAN.

ALMON HOMER FULLER, M. S., C. E. (Lafayette), Professor of Civil Engineering.

JOHN THOMAS CONDON, LL. M. (Northwestern), Professor of Law.

HORACE G. BYERS, PH. D. (Johns Hopkins), Professor of Chemistry.

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

FREDERICK ARTHUR OSBORN, PH. D. (Michigan), Professor of Physics.

ROBERT EDOUARD MORITZ, PH. D. (Strassburg), Professor of Mathematics and Astronomy.

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

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

DAVID CONNOLLY HALL, Sc. M., M. D. (Chicago), Director of Physical Education for Men.

WILLIAM FRANKLIN ALLISON, C. E. (Cornell), Professor of Municipal and Highway Engineering.

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

HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.

*FRANK MARION MORRISON, PH. D. (Chicago), Associate Professor of Mathematics.

LOREN DOUGLAS MILLIMAN, A. B. (Michigan), Associate Professor of English.

* Absent on leave, second semester 1915-16.

CHARLES W. HARRIS, C. E. (Cornell), Associate Professor of Civil Engineering.

JOSEPH DANIELS, S. B., M. S. (Lehigh), Assistant Professor of Mining Engineering and Metallurgy.

†VANDERVEER CUSTIS, PH. D. (Harvard), Assistant Professor of Economics.

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

EDGAR ALLEN LOEW, B. S. (Wisconsin), Assistant Professor of Electrical Engineering.

CLARENCE RAYMOND COREY, E. M., M. S. (Columbia), Assistant Professor of Mining Engineering and Metallurgy.

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

JOHN W. MILLER, B. S. (Nebraska), Assistant Professor of Civil Engineering.

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

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

CHARLES EDWARD NEWTON, E. M. (Michigan), Assistant Professor of Civil Engineering.

SAMUEL THOMAS BEATTIE, Instructor in Woodwork.

OTTO D. ROHLFS, E. M. (Columbia), Instructor in Mining, Short Session.

JESS C. JOHNSON, Assistant in Metallurgy

HENRY G. BOULTON, Assistant in Mining.

W. H. WHITTIER, Assistant in Stock Room.

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

ROBERT F. McELVENNY, E. M., Lecturer on Copper Smelting.

FREDERICK POWELL, A. B., Lecturer on Gold Dredging.

† Absent on leave, 1915-16.

***ADMISSION TO FRESHMAN STANDING**

A student must offer for admission to freshman standing in the University, fifteen units by examination or by certificate from an accredited school from which he has graduated. The fifteen units must include the following combinations:

- 3 units of English
- 2 units of mathematics (or 3 units if desired)
- 3 units selected from one of the following groups (or 2 units, if 3 units of mathematics are presented):
 - (a) Latin and Greek (not less than 2 units of Latin, or 1 of Greek will be counted).
 - (b) Modern foreign language (at least 2 units in *one* language; not less than one unit will be counted in any language).
 - (c) History, civics, economics (at least one unit to form a year of consecutive work in history).
 - (d) Physics, chemistry, botany, zoology, general biology, physical geography, geology, physiology. (Not less than one unit will be counted in physics, chemistry, or general biology. No science will be counted as applying on this requirement unless it includes a satisfactory amount of laboratory work).
- 2 units in subjects represented in the above groups (a)-(d)
- 5 units selected from any subjects accepted by an approved high school for its diploma; not more than 4 units, however, may be in vocational subjects.

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University, it is recommended that a student expecting to enter the College of Mines should elect his work from the groups (a) to (d), so as to offer the following subjects:

Advanced algebra	1/2 unit
Solid geometry	1/2 unit
Physics	1 unit
Chemistry (for four-year course only)	1 unit
A foreign language	2 units
A history (or U. S. history and civics)	1 unit

* More detailed information concerning admission is furnished on pages 43-46.

If he shall not have included these subjects in his high school elections, it will be necessary for him to include them among his elections in college.

DEGREES

The four-year curricula in the College of Mines lead to the following degrees: Curriculum I, bachelor of science in mining engineering; curriculum II, bachelor of science in geology and mining; curriculum III, bachelor of science in metallurgical engineering; curriculum IV, bachelor of science in coal mining engineering.

In addition to the above, curriculum V, which leads to the degree of bachelor of science (B. S.), is offered. The entrance requirements for curriculum V are less technical than for the other curricula and the training given by it is broader. Students who graduate in this curriculum are advised to spend an additional year in study and research according to the schedule given for the degree of master of science in mining engineering (M. S. in Min. E.). A new curriculum in coal mining engineering is offered.

The degree of engineer of mines (E. M.) is given to graduates in mining engineering who have practiced their profession for at least three years, and who present a satisfactory thesis. Graduates in metallurgy may receive the degree of metallurgical engineer (Met. E.) under similar conditions.

MINING AND METALLURGICAL INDUSTRIES AVAILABLE FOR STUDY

Excellent opportunities for becoming familiar with mining and metallurgical operations are open to students in the College of Mines. The amount of time available during the college year for this purpose is not great and even by using the summer vacations it is impossible for a student to cover the whole field of local industries included in his chosen profession.

Mining machinery of the best type is in operation within easy reach of the University. Much of the heavy mining machinery used in the neighboring states and Alaska is built in the city of Seattle, while patented machines, such as drills and concentrating tables of all makes, are kept in stock and as working exhibits by the firms that supply the North Pacific coast regions. The application of hydraulic mining methods to city grading is being carried on locally on a very large scale and with the most

approved pumping and piping appliances and methods. Equally important to the mining engineer are the operations of the steam shovels, which are used largely now in iron, copper and gold mining. The engineers in charge of these plants have given the mining students every opportunity to become familiar with the methods of planning and carrying on the work, and the same statement applies to the mine operators throughout the state.

A brief list of the other available works of interest includes coal mines, with the largest production west of the Rocky mountains; metal mines of gold, silver, copper, arsenic, antimony, iron, etc.; cement plants, glass works, several stone quarries and dressing works; clay mines, clay and pottery works; gravel and sand pits with large production and approved methods; a region of varied geology with many economic minerals; the Tacoma and Everett smelters and refineries; the U. S. assay office; the West Seattle steel plant of the Pacific Coast Steel Co., and several plants engaged in metallurgical work.

MINING SOCIETY

The Mining Society, affiliated with the American Institute of Mining Engineers, has a membership composed of upperclassmen, graduate students and three sophomores, chosen for the excellence of their records in actual mining. At the monthly meetings of the society addresses are made by prominent mining engineers, and papers descriptive of their summer work are presented by the student members. The officers for 1915-1916 are Fred S. Porter, president; Jess C. Johnson, vice-president; Henry G. Boulton, secretary and treasurer; Cecil F. Blogg, corresponding secretary.

UNITED STATES MINE RESCUE TRAINING STATION

The United States Mine Rescue Training Station, operated in connection with the College of Mines, occupies a separate building. The "smokeroom" is the largest of its kind in the country, measuring 25 by 50 feet.

Several sets of various types of oxygen rescue and resuscitation apparatus are kept on hand for practice as well as for use in mine rescue work. The purpose of the station is to train miners in the use of oxygen helmets, which are used in cases of mine fires and explosions in both coal and metal mines. From ten days to two weeks' time is required for the course of training. The ap-

applicant is taught the construction of the apparatus and is required to wear it for four hours each day, in two periods of two hours each. The practice is carried on in a room filled with gas which cannot be breathed without immediate danger, and the work to be performed is the same as that which would be required in actual mining operations or rescue work. The smoke-room represents a portion of a mine, and is equipped with mine car, track, overcast, timbers and brick. First aid instruction is also given. Applicants who have completed the course of training receive a certificate from the U. S. Bureau of Mines.

INSTRUCTION FOR COAL MINING MEN

Miners taking the rescue training also receive instructions in the College of Mines on the subjects of mine gases, explosions, and the origin and distribution of Pacific Coast and Alaska coals. Laboratory experiments are carried on to show the methods of analyzing coals and determining the uses to which they may be put. The methods of testing for permissible explosives at the Pittsburg Station and the safe methods of charging, tamping and firing are explained.

CURRICULA IN THE COLLEGE OF MINES

FRESHMAN YEAR FOR ALL CURRICULA

FIRST SEMESTER	Credits	SECOND SEMESTER	Credits
Mathematics 51	4	Mathematics 52	4
Chemistry 21	4	Chemistry 22	4
Civil Engineering 1.....	2	Civil Engineering 6.....	4
English 3	2	Civil Engineering 20.....	4
Geology 3	4	Mechanical Engineering 4...	2
Mechanical Engineering 1...	2	Mil. Sci. or Phys. Ed.....	2
Mil. Sci. or Phys. Ed.....	2		
	16+4		16+4

SOPHOMORE YEAR FOR ALL CURRICULA

Mining 51	2	Geology 22	4
Civil Engineering 11.....	2	Chemistry 101	4
Civil Engineering 27.....	3	Physics 98	1
Physics 95	2	Physics 98	4
Physics 97	4	Mathematics 82	4
Mathematics 61	4	Mil. Sci. or Phys. Ed.....	2
Mil. Sci. or Phys. Ed.....	2		
	17+2		17+2

OPTION I IN MINING ENGINEERING

JUNIOR YEAR

FIRST SEMESTER	Credits	SECOND SEMESTER	Credits
*Mining 101	2	Mining 106	2
*Mining 103	1	Metallurgy 102	4
*Metallurgy 101	4	Electrical Engineering 105..	4
Civil Engineering 131.....	4	Geology 124	4
*Mechanical Engineering 53..	2	*Political Science 3.....	3
Geology 123	4	Mining practice in summer	
*English 4	2	vacation.	
	<hr/> 16+3		<hr/> 17

SENIOR YEAR

Mining 151	4	*Mining 152	4
Metallurgy 151	3	*Mining 154	2
Mining 153	1	*Mining 156	2
Metallurgy 153	2	Mining 158	1
Metallurgy 155	2	Metallurgy 157	3
Civil Engineering 143.....	4	Metallurgy 162	1
Geology 125	1	Geology 128	4
	<hr/> 17		<hr/> 17

OPTION II IN GEOLOGY AND MINING

JUNIOR YEAR

FIRST SEMESTER	Credits	SECOND SEMESTER	Credits
*Mining 101	2	*Mining 102	2
*Mining 103	1	*Metallurgy 102	4
*Metallurgy 101	4	Metallurgy 106	2
Metallurgy 103	2	Civil Engineering 107.....	3
Mechanical Engineering 53..	2	Geology 124	4
Geology 123	4	*English 4	2
Geology 125	1	Geology or mining practice	
*Political Science 3.....	3	in summer vacation.	
	<hr/> 16+3		<hr/> 17

SENIOR YEAR

*Mining 151	4	*Mining 152	4
*Mining 153	1	*Mining 154	2
Metallurgy 151	3	*Mining 156	2
Metallurgy 153	2	Mining 158	1
Metallurgy 155	2	Metallurgy 162	1
Geology 125	1	Geology 128	4
Geology 131	4	Geology 222	1
	<hr/> 17	Elective	2
			<hr/> 17

* Required in all curricula.

OPTION III IN METALLURGICAL ENGINEERING

JUNIOR YEAR

FIRST SEMESTER	Credits	SECOND SEMESTER	Credits
*Mining 101	2	*Mining 102	2
*Mining 103	1	*Metallurgy 102	4
*Metallurgy 101	4	Metallurgy 104	2
Metallurgy 103	2	Metallurgy 162	1
Metallurgy 155	2	Electrical Engineering 105...	4
*Mechanical Engineering 53.	2	Mechanical Engineering 54...	2
Civil Engineering 131.....	4	*Political Science 3.....	3
*English 4	2	Metallurgical practice in summer vacation.	
	<hr/> 16+3		<hr/> 16+2

SENIOR YEAR

*Mining 151	4	*Mining 152	4
*Mining 153	1	*Mining 154	2
Metallurgy 151	3	Mining 156	2
Metallurgy 157	3	Metallurgy 158	2
Metallurgy 163	1	Metallurgy 160	3
Metallurgy 165	1	Geology 128	4
Civil Engineering 143.....	4		
	<hr/> 17		<hr/> 17

OPTION IV IN COAL MINING ENGINEERING

JUNIOR YEAR

FIRST SEMESTER	Credits	SECOND SEMESTER	Credits
*Mining 101	2	*Mining 102	2
*Mining 103	1	Mining 120	2
*Metallurgy 101	4	Mining 122	2
Civil Engineering 131.....	4	*Metallurgy 102	4
*Mechanical Engineering 53.	2	Electrical Engineering 105..	4
Geology 121	3	*Political Science 3.....	3
*English 4	2	Summer practice in coal mining.	
	<hr/> 15+3		<hr/> 17

SENIOR YEAR

*Mining 151	4	*Mining 154	2
*Mining 153	1	*Mining 156	2
Mining 171	2	Mining 172	3
Civil Engineering 143.....	4	Mining 174	2
Mechanical Engineering 82..	2	Mining 176	3
Mechanical Engineering 140.	2	Mining 182	2
Geology 125	1	Metallurgy 155	2
	<hr/> 16		<hr/> 16

* Required in all curricula.

CURRICULUM V IN MINING ENGINEERING

Leading to the Degree of Bachelor of Science

	Credits
Mining 51, 102, 151, 152, 156.....	14
Metallurgy 101, 102, 153.....	9
Civil Engineering 1, 6, 11, 20, 27, 131, 143.....	23
Electrical Engineering 105.....	4
Mechanical Engineering 1, 4, 53.....	6
Chemistry 1, 2, 41, 101.....	16
Physics 95, 96, 97, 98.....	11
Mathematics 51, 52, 61, 62.....	16
Geology 3, 22, 123, 124, 125.....	17
English 3, 4.....	4
Political Science 3.....	3
Modern foreign language.....	12
Elective.....	2
Military Science or Physical Education.....	8

GRADUATE COURSE IN MINING ENGINEERING

Following Option I and leading to the Degree of Master of Science
in Mining Engineering

FIRST SEMESTER	Credits	SECOND SEMESTER	Credits
Mining 101	2	Mining 154	2
Mining 103	1	Mining 156	2
Mining 153	1	Mining 158	1
Mining 801	3	Mining 182	2
Metallurgy 157	3	Metallurgy 104	2
Metallurgy 160	3	Geology 128	4
Elective (engineering)	4	Elective (engineering)	4
	16+1		17

Equivalent courses in Coal Mining Engineering may be substituted for those listed above.

The degree of Master of Science in Mining Engineering will also be conferred upon graduates of this College or of other mining colleges of the first class who complete a year (34 credit hours) of graduate work, including a satisfactory thesis, with the grade of A or B. The candidate must also pass a formal examination open to all members of the faculty. The selection of work for this degree must in each case be approved by the head of the department in which the student majors.

VI. SHORT SESSION FOR MINING MEN

The twentieth annual Short Session for mining men will open on January 2nd, 1917, continuing until April 1. During this period each year twelve of the instructors in mining engineering offer a course for the benefit of persons who are interested in prospecting, mining, milling, assaying or smelting. Admission

to the classes is without examination. Instruction is given by lectures, laboratory exercises, and visits to mines and plants in operation. The past experience and future aims of each student are taken into consideration, and the character of his work arranged accordingly.

No preparation is needed for this course. Many practical men with an interest in some branch of mining but without much education have obtained satisfactory results from the course; others with a college education and mining experience have gained much up-to-date training and information. Practically all the students attend the following subjects: Mining, field trips, mineralogy, geology, mining law; in addition to these subjects, fire assaying and general chemistry are studied by many of the quartz miners while, the placer men substitute placer mining and surveying. Assaying is accompanied by chemistry and mineralogy. Students who satisfactorily complete a course of study are given a certificate stating the amount and character of work done. For students who return a second year, a special course is arranged in continuation of their previous work.

The advantages of the University laboratories and libraries are open to all. Students may board and room at the dormitories or elsewhere, as preferred. A University fee of \$10.00 is paid by all students in the short sessions. There are no other charges, except for material used. Deposits are made to cover the actual cost of supplies drawn by each student, the balance of the deposit being returned at the end of the course. All deposits are made at the beginning of the course.

TIME SCHEDULE FOR SHORT SESSION

Day	8:00	9:00	10:00	11:00	1:5
Monday	Survey	Geology	Mineralogy	Assaying	Surveying
Tuesday	Placer	Chemistry	Milling	Mining	Mining and Milling
Wednesday	Survey	Geology	Mineralogy	Assaying	
Thursday	Placer	Chemistry	Milling	Assay	Assaying
Friday	Min. Law	Chemistry	Mining		Chemistry
Saturday	Surveying				

SUBJECTS IN THE SHORT SESSION

MINING S. C. 1. Lectures on prospecting, development, boring, air-compression, drilling, mining systems, timbering and transportation. Practice in air-compression, machine-drilling and sampling. Study of mine maps, ore deposits and mining dis-

tricts. Two lectures and one laboratory period a week. Professor ROBERTS.

MINING S.C. 2. Milling. Lectures and recitations on ore treatment and concentration. Laboratory practice in sampling, testing, and dressing, using breakers, rolls, screens, stamp battery, tables, vanners, jigs, and flotation machinery. Two lectures and one afternoon a week. Assistant Professor DANIELS.

MINING S.C. 3. Field Trips. An outline study of the operations at neighboring mines, mills, and smelters; geological field studies, followed by laboratory practice on the rocks and minerals found. Saturdays. Professor ROBERTS and Assistant Professor DANIELS.

METALLURGY S.C. 1. Fire Assaying. Lectures on sampling, preparing ores for assay, furnaces, fuels, reagents, and the fire assay of gold, silver and lead ores. The laboratory work includes the testing of reagents, and the assaying of various ores. One lecture and three afternoons a week in laboratory. Deposit, \$15.00. Assistant Professor COREY.

METALLURGY S.C. 2. A study of the principles of metallurgy for the benefit of those who are engaged in the metal trades or in the mining of ores requiring smelter treatment. Two lectures and one afternoon a week. Deposit, \$5.00. Assistant Professor COREY.

CHEMISTRY S.C. 3. GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS. Laboratory practice in the determination of the common elements. Three lectures a week, and one laboratory. Deposit, \$10.00. Professor BENSON.

GEOLOGY S.C. 2. MINERALOGY. Instruction and practice in blow-pipe analysis, with lectures upon the common minerals, and practice in the identification of minerals by field tests. Twice a week. Deposit, \$2.00. Mr. PACKARD.

GEOLOGY S.C. 3. ELEMENTS OF GEOLOGY. Lectures on the elements of geology, the common varieties of rock, metalliferous vein and ore deposits, etc. Twice a week. Mr. PACKARD.

MINING LAW. A series of lectures on the mining laws of the United States and Alaska. Illustrated by drawings and mine maps. Twice a week for one-half semester.

SURVEYING. (C. E. 38.) Instruction and field practice in the use of simple instruments for making underground and surface surveys; the elements of drawing, lettering, sketch-mapping and field notes; the rules governing mineral surveys. Two lectures and two laboratories a week. Deposit, \$3.00. Mr. NEWTON.

HYDRAULIC MINING. (C. E. 144.) The elements of hydraulics; the flow of water in pipes, flumes and ditches; the methods and costs of placer mining in its various forms. Two lectures a week. Professor ALLISON.

FORGE. Practice in sharpening and tempering drill steel and picks; systematic training in the making and care of fires, and the application of various heats, drawing, punching, riveting, bending, twisting, upsetting, welding iron and steel, and making and tempering machine tools. Deposit, \$2.00. One afternoon a week. Mr. KANE.

MINE TIMBER FRAMING. Shop work in the cutting, framing and erection of various types of timbers employed in mining operations. Deposit, \$2.00. One afternoon a week. Mr. BEATTIE and Assistant Professor DANIELS.

MINING. 103. COAL MINING AND RESCUE TRAINING. For a description of the short courses in coal mining, first aid to the injured and rescue training, see under "Mine Rescue Training Station," pages 306-307. Assistant Professor DANIELS and Government engineers.

DEPARTMENTS OF INSTRUCTION**MINING ENGINEERING AND METALLURGY****(Mines Building)**

PROFESSOR ROBERTS, ASSISTANT PROFESSORS DANIELS AND COREY, MR. BOHLFS; LECTURERS, MR. MC ELVENNY, MR. POWELL, MR. GLENN; ASSISTANTS, MR. WHITTIER, MR. BOULTON, MR. JOHNSON.

I. MINING ENGINEERING

Coal miners who are taking the ten days course in the U. S. Mine Rescue Training Station are given daily instruction and laboratory demonstrations in the subjects of mine gases, ventilation, the origin and composition of coals, and coal analysis.

51. ELEMENTS OF MINING. Two credits. First semester. Prerequisite, sophomore standing. Assistant Professor DANIELS.

A general study of mine development and operation, considering particularly layout of plant, haulage, hoisting, pumping, etc. The Renton mine is studied in detail.

101. MILLING. Two credits. First semester. Prerequisite, junior standing. Deposit, \$3.00. Professor ROBERTS, Assistant Professor DANIELS and Mr. JOHNSON.

One lecture and one laboratory period. Lectures and mill practice in the principles of ore dressing.

103. MINE RESCUE TRAINING. One credit. First semester. Twenty-five hours' instruction. Assistant Professor DANIELS and Government engineers.

Practice in the care and use of oxygen rescue apparatus, smoke-room training, and first-aid-to-the-injured work at the U. S. Bureau of Mines Rescue Station. Required of all students in the College of Mines.

106. JUNIOR EXCURSION. Two credits. Second semester. Required for senior standing. Professor ROBERTS, Assistant Professors DANIELS and COREY.

An excursion by the junior class to a mine or mining district. Sometimes made in connection with the senior excursion, Mining 156.

120. COAL RESOURCES OF NORTH AMERICA. Two credits. Second semester. Two lectures. Prerequisite, Mining 51. Assistant Professor DANIELS.

The occurrence of coal in North America with especial reference to geographic and geologic distribution and structure; study of the various types of coals; classification of coals; commercial requirements of coals.

122. COAL MINING METHODS. Two credits. Second semester. Two lectures. Prerequisite, Mining 51. Assistant Professor DANIELS.

Methods of prospecting coal seams; determination of structure and content; methods of development and working, timbering, etc. A detailed study is made of a nearby mine.

151. MINING ENGINEERING. Four credits. First semester. Prerequisite, senior standing. Deposit, \$3.00. Professor ROBERTS.

Three lectures and one laboratory period. Lectures on mining, power generation, air compression, hoisting and transportation. Practice with air compressors, machine drills and mine equipment in laboratories and local plants.

152. ORE DRESSING. Four credits. Second semester. Prerequisite, Mining 101. Senior or graduate. Deposit, \$5.00. Professor ROBERTS, Assistant Professor DANIELS and Mr. JOHNSON.

Two lectures and two laboratory periods. A detailed study of certain branches of ore dressing followed by a full test of ores by mill run checked by assays.

153. THESIS OUTLINE. One credit. First semester. One laboratory period. Professor ROBERTS, Assistant Professors DANIELS and COREY.

The outlining of senior thesis, the gathering of material, study of references, making of drawings, maps, etc. See Mining 154. Senior or graduate.

154. THESIS. Two credits. Second semester. Two laboratory periods. Professor ROBERTS, Assistant Professors DANIELS and COREY.

A continuation of Mining 153. Weekly consultation and seminars.

155. FIELD WORK. One credit. First semester. Time to be arranged. Professor ROBERTS and Assistant Professor DANIELS.

One laboratory period (or its equivalent in total time required) and monthly seminar. Class or individual visits to a mine, mill, smelter, or engineering work, to be followed by a report with field notes and sketches.

156. MINE INSPECTION. Two credits. Second semester. Time to be arranged. Professor ROBERTS, Assistant Professors DANIELS and COREY.

Ten days in the second semester. An excursion by the senior class to a mine or mining district.

158. MINING LAW. One credit. Second semester. Two lectures for one-half semester.

A series of lectures on the mining laws of the United States and Alaska. Illustrated by diagrams and mine maps.

171. MINE GASES AND VENTILATION. Two credits. First semester. Two lectures. Prerequisite, Mining 122. Assistant Professor DANIELS.

Composition and properties of mine gases, methods of testing. Lighting of mines. Principles of ventilation; ventilating machinery.

172. MINING PLANT. Three credits. First semester. Three drafting periods. Prerequisite, Mining 122 and 171. Assistant Professor DANIELS.

Design of plant and machinery employed in mining and preparing coal for market.

174. COAL MINING MACHINERY. Two credits. Second semester. Two lectures. Prerequisite, senior standing. Assistant Professor DANIELS.

Study of coal cutting machines, mine locomotives, fans, hoists, pumps, and tippie or breaker machinery with especial reference to application to coal mining.

176. COAL WASHING. Four credits. Second semester. Two lectures and two laboratory periods. Prerequisite, Mining 101. Deposit, \$5.00. Assistant Professor DANIELS.

A detailed study of methods of preparing coal for market, together with laboratory tests and runs on various coal to determine best methods of preparation.

182. MINE MANAGEMENT. Two credits. Second semester. Prerequisite, senior standing. Assistant Professor DANIELS.

A study of the organization and administration of engineering plants, involving the keeping and interpretation of cost accounts, the efficiency of labor and methods, the financial, legal and social aspects of engineering operation.

184. INDUSTRIAL ORGANIZATION. Two credits. Second semester. Two lectures. Assistant Professor DANIELS.

A study of the principles of industrial organization and scientific management, involving the consideration of handling labor and materials, methods of operation, cost keeping and performance records, interpretation of efficiency data.

301. MINING METHODS. Three credits. First semester. Senior or graduate. Professor ROBERTS.

Two lectures and one laboratory period. A detailed study of certain branches of mining.

II. METALLURGY.

101. FIRE ASSAYING. Four credits. First semester. Prerequisite, Chemistry 101. Deposit, \$15.00. Assistant Professor COREY, Mr. GLENN and Mr. WHITTIER.

One lecture and three laboratory periods. The testing of reagents, the crushing, sampling and assaying of ores, furnace and mill products for lead, silver, gold and tin; also, the assay of base and gold bullion.

102. GENERAL METALLURGY. Four credits. Second semester. Deposit, \$10.00. Three lectures and one laboratory period. Professor ROBERTS, Assistant Professor COREY, and Mr. McELVENNY.

The properties of metals and alloys, fuels, refractory materials, furnaces and the extraction of the common metals from their ores. Visits to smelter.

103. METALLURGICAL FUELS. Two credits. First semester. Deposit, \$5.00. Assistant Professor DANIELS.

One lecture and one laboratory period. The composition, manufacture and metallurgical uses of natural and prepared fuels; the methods and costs of coking, gas making, and coal briquetting. Furnace and calorimeter tests of various types of fuels.

104. **COPPER AND LEAD.** Two credits. Second semester. Assistant Professor COREY.

Two lectures. The metallurgy of copper and lead, especially the methods of roasting, smelting and refining.

106. **REFRACTORIES.** Two credits. Second semester. One lecture and one laboratory period. Deposit, \$3.00. Assistant Professor COREY.

Methods of testing clays, refractory materials, cement-making materials.

151. **GOLD AND SILVER.** Three credits. First semester. Deposit, \$5.00. Two lectures and one laboratory period. Assistant Professor COREY.

Amalgamation, cyaniding, and chlorination of gold and silver ores. Complete tests checked by assays.

153. **WET ASSAYING.** Two credits. First semester. Two laboratory periods. Prerequisite, Chemistry 101. Deposit, \$10.00. Assistant Professor COREY.

Technical methods for the determination of copper, lead, zinc, etc., in ores and furnace products, etc.

155. **IRON AND STEEL.** Two credits. First semester. Two lectures. Assistant Professor DANIELS.

The metallurgy and manufacture of commercial iron and steel, with especial reference to their properties and uses in engineering work.

157. **DESIGN OF PLANT.** Three credits. Either semester. Three drafting periods. Senior or graduate. Professor ROBERTS and Assistant Professor DANIELS.

The designing of a piece of equipment or a structure for mining, milling or metallurgical purposes.

158. **MINOR METALS.** Two credits. Second semester. Two lectures. Assistant Professor COREY.

The metallurgy of zinc, antimony, tin, aluminum, nickel, etc.; a study of the plant required, the methods and costs of treatment.

160. **METALLURGICAL ANALYSIS.** Three credits. Second semester. One lecture. Two laboratory periods. Prerequisite, Chemistry 101. Deposit, \$10.00. Assistant Professor COREY.

Technical methods of analysis of slags and industrial products.

162. METALLOGRAPHY. One credit. Second semester. One lecture. Assistant Professors DANIELS and COREY.

The constitution and microstructure of metals and alloys, especially iron and steel. The preparation and study of metal sections, photomicrography and the use of the microscope to aid in testing industrial alloys.

163. METALLOGRAPHY. One credit. First semester. One laboratory period. Deposit, \$3.00. Prerequisite, Metallurgy 162. Assistant Professors DANIELS and COREY.

Advanced study of industrial alloys.

164. PYROMETRY AND ALLOYS. Two credits. Second semester. One lecture and one laboratory period. Deposit, \$3.00. Assistant Professor COREY.

Methods of measuring high temperatures. Union of metals by fusion, compression and electro-deposition; the behavior of metals and alloys under heat. Laboratory practice in thermal measurements, synthesis and testing of alloys.

165. METALLURGICAL PROBLEMS. One credit. First semester. Prerequisite, Chemistry 101, and Metallurgy 102. Assistant Professor COREY.

Physical chemistry for the metallurgist, slag calculations, etc., illustrated by figures quoted from the present practice at a number of smelting plants.

THESIS. See Mining 153 and 154.

SUMMER FIELD WORK. See Mining 106 and 156.

SUBJECTS PRESENTED BY DEPARTMENTS OF OTHER COLLEGES OF THE UNIVERSITY

CHEMISTRY

(Bagley Hall)

1. GENERAL CHEMISTRY. Four credits. Either semester. Two lectures and six laboratory hours per week. Professor BYERS, Assistant Professor ROSE, Instructors and Assistants.

This course is designed to meet the needs of students who come from accredited schools in which chemistry is not required.

2. GENERAL CHEMISTRY. Four credits. Either semester. A continuation of 1.

3. GENERAL CHEMISTRY. Four credits. From January 1st to April 1st. Three lectures and four laboratory hours per week. Professor BENSON.

This course is open to students who enter the University short courses, and does not demand any previous knowledge of chemistry.

21. GENERAL CHEMISTRY. Four credits. Either semester. Two lectures and six laboratory hours per week. This course is open to students who have had a year of chemistry in an accredited high school. Professor BYERS, Dr. TRUMBULL, Dr. LANGDON, and Assistants.

22. GENERAL CHEMISTRY. Four credits. Either semester. A continuation of 21. Professor BYERS, Dr. TRUMBULL, Dr. LANGDON, and Assistants.

The laboratory work is an elementary course in qualitative analysis.

101. QUANTITATIVE ANALYSIS. Four credits. Either semester. Twelve laboratory hours and 1 recitation per week. Dr. BELL.

The technique of gravimetric and volumetric analysis.

102. QUANTITATIVE ANALYSIS. Four credits. Either semester. A continuation of 101. Dr. BELL.

Mineral analysis and special and analytical processes.

CIVIL ENGINEERING

(Engineering Building)

1. ENGINEERING DRAWING. Two credits. Either semester. All freshman engineers. Prerequisite, plane geometry. Two three-hour laboratory periods. Assistant Professor WARNER, Mr. MAY, Mr. STRANDBERG, Mr. DUCKERING, Mr. RUBEX.

The use of instruments, freehand lettering, tracing.

6. ENGINEERING DRAWING. Four credits. Either semester. All freshman engineers. Prerequisite, solid geometry, drawing 1. Two recitations and two three-hour laboratory periods. Assistant Professor WARNER, Associate Professor HARRIS, Mr. STRANDBERG, Mr. RUBEX.

The elements of descriptive geometry, including the principles of shades, shadows and perspective. Practical problems.

11. **ENGINEERING DRAWING.** Two credits. Either semester. All sophomore engineers. Prerequisite, 6. Two three-hour laboratory periods. Assistant Professor WARNER.

Continuation of drawing 6. Problems and tracings.

20. **ELEMENTARY PLANE SURVEYING.** Four credits. Either semester. All freshman engineers. Prerequisite, Math. 51 and C. E. 1. Laboratory deposit, \$3.00. Two recitations and two three-hour laboratory periods. Assistant Professor MILLER, Mr. DUCKERING, Mr. RUBEY.

Adjustment of instruments, trigonometric computations, mapping of simple surveys, and a brief introduction to the United States system of public land surveying.

27. **MINE SURVEYING.** Three credits. First semester. Sophomore mining engineers. Prerequisite, C. E. 20. Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Surface and underground practice. Observation for meridian. Topography. Mining claim surveys. Plane triangulation. Tunnel and vertical shaft work and connections. Mapping.

A trip of one or two days to a mine in the vicinity for the purpose of practice under operating conditions.

*103. **SURVEYING CAMP.** Six credits. Six weeks following the second semester sophomore work. Class will start for camp immediately following the commencement in June. Required of all C. E. students, beginning with the summer of 1916. Prerequisites, C. E. 14 and 22. Assistant Professor MILLER and ———.

Railway and topographic surveying. Elementary triangulation and the use of the plane table and stadia. Precise measurement of short base lines with the steel tape. Railway preliminary and location surveys. Cross sectioning and referencing the line and making the necessary right-of-way surveys.

107. **TOPOGRAPHY.** Four credits. First semester. Junior foresters and miners. Prerequisite, C. E. 55-56. Laboratory deposit, \$3.00. Assistant Professor NEWTON.

Topographic surveys as applied to forestry and mining. Reconnaissance and sketch maps, and exercises in reading and adjusting triangulation systems. Filling in topographic details with plane table and transit. Beginning of elementary railroad surveying.

* See bulletin of information—Summer School of Surveying.

131-132. **MECHANICS.** Four credits first semester. Three credits second semester. Junior engineers. Prerequisite, Mathematics 62, Physics 97; 131 is repeated second semester. Professor MORE, Mr. MAY, Mr. DUCKERING, Mr. STRANDBERG.

Statics, dynamics and mechanics of materials.

143. **HYDRAULICS.** Four credits. First semester. Senior miners and chemical engineers. Prerequisite, C. E. 131. Associate Professor HARRIS.

Elements of hydraulics with application to industrial uses.

144. **HYDRAULIC MINING.** (Short session in Mining, Jan.-Mar.). Professor ALLISON.

A course of two lectures per week on theory and practice of hydraulic mining.

ELECTRICAL ENGINEERING

(Engineering Building)

105. **ELECTRICAL ENGINEERING.** Four credits. Either semester. Junior C. E. and Ch. E. Prerequisite, Mathematics 62, Physics 96, 98. Assistant Professor KIRSTEN, Mr. CUSTIS and Mr. BURBANK.

A short course giving the fundamental principles of direct currents with experimental tests on commercial dynamos and motors.

ENGLISH

(Denny Hall)

3-4. **FRESHMAN COMPOSITION.** Two credits per semester. First semester of freshman and second semester of sophomore year. Associate Professor MILLIMAN in charge.

An adaptation of 1-2 for students in the College of Engineering. No students will be excused from the course, but a section will be provided for those whose training has been exceptionally good.

GEOLOGY.

(Science Hall)

3. **GEOLOGY FOR ENGINEERING AND MINING STUDENTS.** Four credits. Either semester. Three class periods and one laboratory period. Laboratory fee, \$1.00. Assistant Professor CULVER.

General geological principles with their special application to engineering and mining problems.

22. **MINERALOGY.** Four credits. Second semester. Two lectures and two laboratory periods. For engineering and mining students. Laboratory fee, \$2.00. Prerequisite, one year of college chemistry. Assistant Professor CULVER.

A descriptive and determinative study of the minerals, with blowpipe analysis.

121. **PETROLOGY.** Three credits. First semester. A special course for coal mining men in the College of Mines. Laboratory deposit, \$2.00. Prerequisite, Geology 3 and 22. Assistant Professor WEAVER or CULVER.

123. **OPTICAL CRYSTALLOGRAPHY.** Four credits. First semester. Two lectures and two laboratory periods. Prerequisite, Geology 1-2, or 3, or 12, college physics and college chemistry. Laboratory fee, \$2.00. Assistant Professor WEAVER.

Practice in the microscopic determination of crystals and artificial products by optical methods.

124. **PETROGRAPHY.** Four credits. Second semester. Two lectures and two laboratory periods. Prerequisite, Geology 22 and 123. Laboratory fee, \$2.00. Assistant Professor WEAVER.

A study of the distinguishing characteristics of the different groups and species of rocks, with practice in their determination by modern petrographical methods.

125-126. **FIELD WORK FOR MINING STUDENTS.** Credits to be arranged up to three. One credit for eight field days with written report. Prerequisite, 2 or 3 and 21 or 22 (124 also preferred). Assistant Professor WEAVER.

127-128. **ECONOMIC GEOLOGY.** Three credits per semester. For mining students four credits second semester. Three lectures and discussion of papers. Prerequisite, for 128, Geology 3, 22, 124. Professor LANDES.

A study of the origin and extent of economic deposits of non-metals (first semester), metals (second semester). Their production and use.

131. **PALEONTOLOGY.** Four credits. First semester. Three lectures and one laboratory period. Prerequisite, 2 or 3. Assistant Professor WEAVER.

A laboratory study of fossil invertebrates with their geologic and geographic distribution.

Short Course 2. MINERALOGY. Instruction and practice in blow-pipe analysis, with lectures upon the common minerals, and practice in the identification of minerals by field tests. Twice a week. Deposit, \$2.00. Assistant Professor CULVER.

Short Course 3. ELEMENTS OF GEOLOGY. Lectures on the elements of geology, the common varieties of rock, metalliferous veins and ore deposits, etc. Twice a week. Assistant Professor CULVER.

MATHEMATICS

(Science Hall)

1-2. SOLID GEOMETRY. Two credits per semester. Prerequisite, plane geometry.

Required during the freshman year of all students in the colleges of Engineering, Forestry and Mines who do not offer solid geometry for admission.

4. SOLID GEOMETRY. Three credits. Second semester. Same as 1-2.

51. TRIGONOMETRY AND ALGEBRA. Four credits. First semester. Prerequisite, same as 11-12.

Primarily for students in the colleges of Engineering, Forestry, and Mines. The elements of plane trigonometry and supplementary work in algebra equivalent to one hour per week.

52. ANALYTICAL GEOMETRY AND ALGEBRA. Four credits. Either semester. Prerequisite, 51.

Primarily for students in the colleges of Engineering, Forestry, and Mines. The elements of analytical geometry and supplemental work in algebra equivalent to one hour per week.

61. CALCULUS FOR ENGINEERS. Four credits. Either semester. Prerequisite, 52.

62. CALCULUS FOR ENGINEERS. Four credits. Either semester. Continuation of 61.

151. APPLICATION OF THE CALCULUS FOR ENGINEERS. Two credits. Either semester. Prerequisite, 62.

MECHANICAL ENGINEERING (Engineering Building)

1. CARPENTRY AND WOOD-TURNING. Two credits. Either semester. Mr. BEATTIE.

4. MINE TIMBER FRAMING. Two credits. Second semester. Freshman mining engineers. Mr. BEATTIE and Assistant Professor DANIELS.

53. FORGE AND FOUNDRY. Two credits. Either semester. Mr. KANE.

54. MACHINE WORK. Two credits. Either semester. Mr. KANE.

82. STEAM ENGINEERING. Two credits. Either semester. Professor EASTWOOD.

The various forms of steam apparatus used in modern power plants, considering the construction, use and reason for installing such apparatus.

140. EXPERIMENTAL ENGINEERING. Two credits. Either semester. Prerequisite, preceded or accompanied by M. E. 82. Associate Professor WILSON.

Calibrations of thermometers, gages, indicator springs, etc. Friction and mechanical efficiency tests of the simple steam engine. One complete engine and boiler test with report.

MILITARY SCIENCE AND TACTICS (The Armory)

WILLIAM TAYLOR PATTEN, CAPTAIN, U. S. A., RETIRED, COMMANDANT

A course of two years in military training is required. All able-bodied male students (except those from foreign countries, not intending to become naturalized) must take the course, which by regulations of the University is required during the first and second years. Three hours a week are devoted to military training, for which two credits are given each semester.

MODERN LANGUAGE

Twelve hours in a modern foreign language are required in Curriculum V in Mining Engineering. For description of courses in modern languages, see bulletin of the College of Liberal Arts.

PHYSICS

(Denny Hall)

95. **PHYSICS MEASUREMENTS.** Two credits. Either semester. All sophomore engineers. One four-hour laboratory period. Laboratory deposit, \$6.00 per year. Mr. GILBREATH.

96. **PHYSICS MEASUREMENTS.** One credit. Either semester. Sophomore engineers. One three-hour laboratory period. Laboratory deposit, \$6.00 per year. Mr. GILBREATH.

97. **MECHANICS, WAVE MOTION AND LIGHT.** Four credits. Either semester. Prerequisite, 8 credits in mathematics. All sophomore engineers. Assistant Professors BRAKEL and ANDERSON.

This course must be accompanied by 95.

98. **ELECTRICITY AND HEAT.** Four credits. Either semester. Sophomore engineers. Prerequisite, 97. Assistant Professors BRAKEL and ANDERSON.

This course must be accompanied by 96.

POLITICAL AND SOCIAL SCIENCE

(Denny Hall)

3. **ELEMENTS OF ECONOMICS.** Three credits. Either semester. Dr. JAMES, Mr. LAUBE, Mr. AKERMAN, and Mr. MACAULAY.

COLLEGE OF PHARMACY

THE FACULTY

HENRY SUZZALLO, PH. D., (Columbia), PRESIDENT.

CHARLES WILLIS JOHNSON, PH. C., PH. D. (Michigan), Professor of Pharmaceutical Chemistry; DEAN and STATE CHEMIST.

HORACE G. BYERS, PH. D. (Johns Hopkins), Professor of Chemistry.

THEODORE CHRISTIAN FRYE, PH. D. (Chicago), Professor of Botany.

JOHN WEINZIRL, PH. D. (Wisconsin), Professor of Bacteriology.

ARTHUR WILSON LINTON, B. S. (Michigan), M. S. (Washington), Associate Professor of Pharmacy.

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

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

GEORGE BURTON RIGG, PH. D. (Chicago), Assistant Professor of Botany.

EDITH HINDMAN, PH. C., M. S. (Washington), Instructor in Pharmacy and Assistant State Chemist and Bacteriologist.

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

EARL MILLIBON PLATT, PH. C., B. S. (Washington), Instructor in Pharmacy.

CORNELIUS OSSEWARD, PH. G. (Columbia), PH. C. (Northwestern), Lecturer on Commercial Pharmacy.

FOREST J. GOODRICH, PH. C., B. S. (Washington), Assistant State Chemist.

JAMES C. PALMER, PH. C. (Washington), Assistant in Pharmacy.

FREDERICK MORGAN PADELFORD, PH. D. (Yale), Professor of English.

FREDERICK ARTHUR OSBORN, PH. D. (Michigan), Professor of Physics.

PIERRE JOSEPH FREIN, PH. D. (Johns Hopkins), Professor of French.

ROBERT EDOUARD MORITZ, PH. N. D. (Strassburg), Professor of Mathematics and Astronomy.

FREDERICK WILLIAM MEISNEST, PH. D. (Wisconsin), Professor of German.

THE COLLEGE OF PHARMACY

The College of Pharmacy was organized in 1894 for the purpose of offering an opportunity to young men and women to become well trained practical pharmacists. The work of the two-year course as first organized has been extended to three, four and five-year courses. In the two and three-year courses a complete training is offered in technical and commercial pharmacy; in the four-year course an opportunity for training in more advanced scientific pharmacy together with a liberal training in other sciences and in languages. The five-year or graduate course offers an opportunity to do research in one of the most fertile fields of modern science.

The students in pharmacy share the advantages and enjoy the spirit of one of the foremost educational institutions of the Pacific Coast.

REQUIREMENTS TO PRACTICE PHARMACY IN
WASHINGTON

To become a registered pharmacist, one must be twenty-one years of age and must be a graduate of at least a two-year course in a college of pharmacy recognized by the Washington State Board of Pharmacy. The Washington State Board of Pharmacy recognizes such colleges as hold membership in the American Conference of Pharmaceutical Faculties and such foreign colleges as meet the requirements of the Conference.

Graduates of the two-year course of this College of Pharmacy are admitted as registered pharmacists without examination, providing they have had two years of practical experience, and of the three-year course providing they have had one and one-half years of practical experience.

Graduates of the four-year course of this college are admitted as registered pharmacists without examination, providing they have had one year of practical experience.

Graduates of any course of this college who have not had practical experience are admitted without examination as assistant registered pharmacists and serve as such until such time when they shall have received the required practical experience for full registration.

Assistant registered pharmacists may work under the direction of a registered pharmacist and may take charge of a store only during his temporary absence.

HIGHER STANDARDS IN PHARMACY

It may safely be said that never before have opportunities in pharmaceutical vocations been so great as at the present time. Rapid advances are being made in educational requirements to practice pharmacy. Many states now require graduation from a college of pharmacy as a prerequisite to become a registered pharmacist. In the Northwest, the states of Montana, Oregon and Washington now have the educational requirement. The National Association of Boards of Pharmacy at its 1915 meeting recommended that in 1920 all state boards holding membership in the organization should require graduation as a prerequisite for registering pharmacists. This advance in the requirements to the practice of pharmacy is certain to make the profession more attractive.

CURRICULA

1. A two-year course which prepares its graduates for responsible positions as practical pharmacists.

2. A three-year course which includes the work of the two-year course and in addition offers opportunity for training in commercial pharmacy, business law, advertising, accounting, advanced work in scientific pharmacy, bacteriology and chemistry.

3. A four-year course which offers a well rounded scientific and liberal training. Graduates of this course are prepared for positions; as, (a) Practical and manufacturing pharmacists; (b) Manufacturing and technical chemists; (c) Bacteriologists; (d) Teachers in colleges of pharmacy; (e) Food and drug inspection chemists and bacteriologists in the United States Civil Service; (f) Pharmaceutical journalism.

Graduates of the four-year course have clear entrance to the best medical colleges and are well equipped to carry on their medical studies.

4. A five-year course which offers opportunity to the four-year graduate to do graduate and research work in some line of

scientific pharmacy and graduate work in some branch of allied science. Graduates of this course are prepared for responsible positions in many different lines of work.

***ADMISSION TO THE COLLEGE OF PHARMACY**

1. **ADMISSION TO THE TWO-YEAR COURSE LEADING TO THE DEGREE OF GRADUATE IN PHARMACY**

2. **ADMISSION TO THE THREE-YEAR COURSE LEADING TO THE DEGREE OF PHARMACEUTICAL CHEMIST**

For admission to the two- and three-year courses, a student must offer fifteen units by examination or by certificate from an accredited school from which he has graduated. The fifteen units must include the following combinations:

- 3 units of English
- 2 units of mathematics (or three units if desired)
- 3 units in one of the following groups (or two units, if three units of mathematics are presented):
 - (a) Latin and Greek (not less than two units of Latin or one of Greek counted).
 - (b) Modern foreign language (at least two units in one language; not less than one unit counted in any language).
 - (c) History, civics, economics (at least one unit to form a year of consecutive work in history).
 - (d) Physics, chemistry, botany, zoology, general biology, physiology, physical geography or geology. (Not less than one unit counted in physics, chemistry, or general biology. No science counted as applying on this requirement unless it includes a satisfactory amount of laboratory work.)
- 2 units selected from the above groups.
- 5 units selected from any subjects accepted by an approved high school for its diploma, not more than four, however, to be in vocational subjects.

3. ADMISSION TO THE FOUR-YEAR COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY

For admission to the four-year course the student must present in the fifteen units as listed under paragraph two, two units of a foreign language and one unit of science selected from the following: Physics, 1 unit; chemistry, 1 unit; general biology, 1 unit; botany, $\frac{1}{2}$ or 1 unit; zoology, $\frac{1}{2}$ or 1 unit; physiology, $\frac{1}{2}$ unit. No science will be counted as applying on this requirement unless it includes a satisfactory amount of laboratory work.

A student who fulfills the entrance requirements as listed under paragraph two will be admitted to freshman standing, but if any of the prescribed subjects as listed in the preceding paragraph have not been taken in the high school he will take them in the University and receive college credit to apply towards the degree, so far as elective courses may be practicable.

4. THE FIVE-YEAR COURSE LEADING TO THE DEGREE OF MASTER OF SCIENCE IN PHARMACY

Candidates for the degree of Master of Science must have received the bachelor's degree from this college or from some other college of equal rank maintaining a four-year course which is the equivalent of the course at this institution.

5. STUDENTS NOT CANDIDATES FOR DEGREES

Students over nineteen* years of age may enter as specials, providing they present evidence of adequate preparation. In general, a student from an accredited high school will not be admitted as a special if he has been in attendance in high school the previous year. Persons desiring admission as specials should write to the dean, giving a detailed statement of their preparation. The necessary application blanks will then be forwarded.

DEGREES

1. The degree of Graduate in Pharmacy will be granted to any student who has fulfilled the entrance requirements to the two-year course and has completed the two-year course as outlined.

2. The degree of Pharmaceutical Chemist will be conferred upon any student who has complied with the entrance conditions and has completed the three-year course.

* Beginning with 1917-18, the minimum age limit for specials will be twenty-one years.

3. The degree of Bachelor of Science will be conferred upon any student who has fulfilled the entrance requirements and has completed the four-year course. This degree with honors may be conferred upon a student of the College of Pharmacy if recommended for this distinction by the pharmacy faculty.

4. The degree of Master of Science in pharmacy will be conferred upon any graduate of the four-year course who has completed at least one year of graduate work and has presented a satisfactory thesis.

MEDICINAL PLANT GARDEN

The College of Pharmacy maintains a medicinal plant garden on the campus where experiments are being carried on in the cultivation of plants of pharmaceutical importance. Uses are made of these plants by classes in pharmaceutical botany, materia medica and drug assaying. A study is also being made to learn what medicinal plants can be cultivated in this climate on a commercial scale.

SERVICE TO PHARMACISTS OF THE STATE

It is the desire of the college to render every possible service to the pharmacists of the state. We therefore invite the pharmacists to write us in regard to their prescription difficulties. Many pharmacists are now availing themselves of this privilege and it is our wish to extend this service to the entire profession.

A course in the study of the new (ninth edition) of the United States Pharmacopoeia for practicing pharmacists will be started in the fall of 1916. The class will meet once a week in the evening and will be open to all pharmacists who wish to register. If a sufficient demand appears, similar courses may be offered in some of the neighboring cities.

FOOD AND DRUG ANALYSIS

The enactment of the Food and Drugs Act by Congress, and of similar legislation by most of the states (Washington included), has placed very great importance upon pharmaceutical education. It is at once apparent that a knowledge of drugs is equally important with chemistry in the administration and enforcement of this legislation. The graduate in chemistry is not wholly qualified to act as a food and drug inspection chemist for the gov-

ernment, 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 are needed to carry out the analytical processes involved in the enforcement of this legislation, but the number of men adequately trained is very limited. Students with high school training are urged to consider these opportunities and to prepare themselves for such positions. The dean of the College of Pharmacy is chemist for the Washington State Department of Agriculture and is also in close touch with the government food and drug work. Courses are offered that will fit students for this line of work.

TUITION AND DEPOSITS

(a) All new students entering the University pay a matriculation fee of ten dollars.

(b) A tuition fee of ten dollars per semester is paid by all students.

(c) Laboratory deposits. The total deposit for first year students in pharmacy, chemistry and botany is twenty-seven dollars per semester.

Second year students have a deposit of twenty dollars in the first semester and fifteen dollars in the second semester.

The students pay only the actual cost of the drugs and chemicals used; the remainder of the deposit, less breakage, is returned at the end of the semester.

ASSOCIATED STUDENT FEE

The associated student fee of five dollars is paid by every student of the University. This entitles the student to a subscription to the University of Washington Daily and free admission to all athletic, debating and oratorical contests given under the auspices of the Associated Students of the University of Washington, the annual musical concert and discounts in the co-operative book store.

LIBRARY FACILITIES

A branch of the University library containing books and current publications on pharmacy and chemistry is maintained in the pharmacy building. Practically all the domestic and some foreign journals on pharmacy are received by the college. The student is expected to make use of the library and to report from time to time on current topics of interest.

OBSERVATION TRIPS

The observation visits made each year by the classes in pharmacy to the various large manufacturing and wholesale establishments of Seattle and to the large retail stores are an important feature of the work of the college. Among the places visited during the year 1915-1916 were Stewart and Holmes Drug Company, branch houses of Parke, Davis and Company, H. K. Mulford Company and some of the leading prescription and commercial pharmacies of the city. Also to the hydrastis and ginseng farm of Mr. C. E. Thorpe, situated near the University campus.

PHARMACY, MATERIA MEDICA AND CHEMISTRY
LABORATORIES

Rooms devoted to pharmacy, materia medica and chemistry are located in Bagley Hall, a three-story fireproof building. Special sections are provided for pharmacy students in general, organic and qualitative chemistry. Work in prescription practice receives special attention in a room constructed and arranged as a model prescription pharmacy. The materia medica room contains a museum of several hundred samples of official and unofficial crude drugs. It also contains an extensive collection of commercial and biological products manufactured and donated by the H. K. Mulford Company of Philadelphia, Pennsylvania, Parke, Davis and Company of Detroit, Michigan, and Eli Lilly and Company, of Indianapolis, Indiana. One room is given to drug assaying and food analysis. The examination of official food and drug samples for the state is under the direction of the Dean of the College of Pharmacy. A well equipped laboratory is devoted to this purpose. Pharmacy students taking botany, physiology and bacteriology have well equipped laboratories in Science Hall.

CORRESPONDENCE

Inquiries in regard to the College of Pharmacy may be addressed to the Dean of the College or to the Registrar of the University. Students desiring to enter the college will be furnished proper blanks for filing entrance credentials on request to the Registrar. Entrance credentials should be sent to the Registrar before August 15th. The student will then be notified if his credentials are satisfactory. Copies of the bulletin of the College of Pharmacy may be had upon application.

REQUIREMENTS FOR GRADUATION

1. WITH DEGREE OF GRADUATE IN PHARMACY

FIRST YEAR			
		Credits	
Chemistry 7	.....	4	
Chemistry 9	.....	4	
Pharmacy 1	.....	4	
Botany 13	.....	4	
		<hr/>	
		16	
			Credits
Chemistry 8	.....	4	
Chemistry 10	.....	4	
Pharmacy 2	.....	4	
Botany 14	.....	4	
		<hr/>	
			16

SECOND YEAR			
		Credits	
Pharmacy 3	.....	2	
Pharmacy 5	.....	2	
Pharmacy 7	.....	4	
Pharmacy 9	.....	4	
Bacteriology 5 or			
Zoology 7	.....	4	
		<hr/>	
		16	
			Credits
Pharmacy 4	.....	4	
Pharmacy 6	.....	3	
Pharmacy 8	.....	4	
Pharmacy 10	.....	4	
Pharmacy 12	.....	1	
		<hr/>	
			16

2. WITH DEGREE OF PHARMACEUTICAL CHEMIST

In addition to the work required in the two-year course, the student must complete twelve credits in pharmacy and electives sufficient to make a total of ninety-six credits. Students may elect such commercial courses as business law, advertising, accounting and any other courses in the colleges of Liberal Arts and Science which meet the approval of the Dean of the College of Pharmacy.

3. WITH DEGREE OF BACHELOR OF SCIENCE

For graduation with the degree of bachelor of science the student is required to do sufficient work in addition to that of the two-year course to make one hundred and twenty credits. Of the additional work the following credits are required:

Rhetoric, 4; mathematics, 4; modern language, 16; physics, 8; laboratory science, 16.

The work in laboratory science may be elected in bacteriology, botany, geology, pharmacy, pharmaceutical chemistry, physics, physiological chemistry, physiology, toxicology or zoology.

4. WITH DEGREE OF MASTER OF SCIENCE IN PHARMACY

Graduates of the four-year course may continue work for the master's degree as follows:

Not more than 16 credits allowed outside of the department of pharmacy. Election may be made from one or more of the following studies:

Bacteriology, 8 to 16 credits; botany, 4 to 16 credits; physics, 8 credits; chemistry, 4 to 16 credits; zoology, 4 to 8 credits.

Not less than 16 credits may be elected in the department of pharmacy from the following lines of work:

Manufacturing pharmacy, 4 to 8 credits; toxicology, 4 to 8 credits; chemistry of foods or drugs, 8 to 16 credits; plant analysis, 8 to 16 credits. At least 8 credits of the major work must be a research problem and the preparation of a thesis. Examination and thesis to conform to the regulations of the Graduate School.

MILITARY SCIENCE AND PHYSICAL EDUCATION

All men students in either the two or four-year course are required to take two years of military science. Women students in the two-year course are required to take one year of physical education and in the four-year course to take two years of physical education.

DEPARTMENT OF PHARMACY, PHARMACEUTICAL CHEMISTRY, AND MATERIA MEDICA

(Office, Bagley Hall)

PROFESSOR JOHNSON, ASSOCIATE PROFESSOR LINTON, MISS HINDMAN,
MR. PLATT, MR. GOODRICH AND ASSISTANTS.

FOR FRESHMEN AND SOPHOMORES

1. THEORY AND PRACTICE OF PHARMACY. Four credits. Either semester. Mr. PLATT.

The study of the principles of pharmaceutical operations, and the manufacture of such preparations as best illustrate these operations. Deposit, \$10.00 per semester.

2. PHARMACEUTICAL PREPARATIONS. Four credits. Either semester. Mr. PLATT.

The study and manufacture of galencial and other preparations. Deposit, \$10.00 per semester.

3. U. S. PHARMACOPOEIA. Two credits. First semester. Mr. PLATT.

A study of the inorganic and organic chemicals included in the pharmacopoeia. The manufacture, tests for purity, assay, medicinal properties and methods of identification.

4. U. S. PHARMACOPOEIA AND NATIONAL FORMULARY. Four credits. Second semester. Mr. PLATT.

A careful study of the United States pharmacopoeia and national formulary with the special object of explaining the chemistry involved in the manufacture of the various compounds and preparations.

5. PRESCRIPTIONS. Two credits. First semester. Deposit, \$5.00 per semester. Associate Professor LINTON.

6. PRESCRIPTIONS. Three credits. Second semester. Deposit, \$5.00 per semester. Associate Professor LINTON.

Pharmacy 5 and 6 take up the study of the problems in prescription practice, special attention being given to incompatibles, and to the more important newer remedies. The students are required to criticise and compound approximately two hundred of the more difficult physician's prescriptions.

7. PHARMACOGNOSY. Four credits. Either semester. Associate Professor LINTON.

A study of crude drugs, their source, methods of collecting and preserving, identification, active constituents and adulteration.

8. PHARMACOLOGY AND THERAPEUTICS. Four credits. Either semester. Associate Professor LINTON.

A study of the action of chemicals, drugs and their preparations on the human organism in health and disease, also the physiological action of the various poisons, their antidotes and emergency treatment in cases of poisoning.

9-10. DRUG ASSAYING. Four credits per semester. Miss HINDMAN.

In first semester experiments in gravimetric and volumetric methods of analysis are given with the idea of training the stu-

dents in the fundamental principles of quantitative chemistry, and at the same time making them familiar with the analysis of substances of pharmaceutical importance. The second semester's work includes methods of quantitatively estimating the active constituents of crude drugs and their preparations, the testing of alkaloids, organic analysis, urine analysis and water analysis. Deposit, \$10.00 per semester.

12. **COMMERCIAL PHARMACY.** One credit. Second semester. Mr. OSSEWARD.

A lecture course covering the commercial problems of the practical pharmacist. This course is for sophomores, but is open to election by upperclassmen.

FOR JUNIORS, SENIORS AND GRADUATES

101-102. **PHARMACEUTICAL CHEMISTRY.** Four credits per semester. Professor Johnson and Miss HINDMAN.

The lecture work includes a review of inorganic and organic chemistry with special reference to their application to pharmacy, a study of the chemistry of alkaloids, glucosides, volatile oils, indicators and other organic compounds of pharmaceutical importance. The laboratory work consists of ultimate analysis, alkaloidal analysis, separation of inorganic poisons and poisonous alkaloids from tissue and the analysis of medicinal mixtures and patent medicines. Deposit, \$10.00 per semester.

103-104. **MANUFACTURING PHARMACY.** Credit to be arranged. Mr. PLATT.

An advanced course in pharmaceutical manufacturing, including the manufacturing of some of the more difficult of pharmacopoeial and national formulary preparations, as well as a number of inorganic and organic compounds used in pharmacy and medicine. Deposit, \$5.00 or \$10.00 per semester, according to hours.

105-106. **ADVANCED PRESCRIPTIONS.** Three credits per semester. Prerequisite, Pharmacy 5 and 6. Associate Professor LINTON.

Extensive practice in difficult and incompatible prescriptions, also a study of special problems. One lecture and two laboratory periods. Deposit, \$10.00 per semester.

107-108. **CURRENT PROBLEMS.** One credit per semester. Associate Professor LINTON.

A lecture and recitation course on current scientific problems of pharmaceutical importance.

109-110. **TOXICOLOGY.** Credit to be arranged. Professor JOHNSON.

A course on the study of the action, detection and estimation of inorganic and organic poisons.

111-112. **FOOD ANALYSIS.** Four credits per semester. Laboratory three times per week. Professor JOHNSON and Miss HINDMAN.

Laboratory and class work in the study of methods of analysis of food products and the study of Federal and state laws regulating the sale of food and drug products. Methods of the Association of Official Agricultural Chemists are used. Graduate students, if prepared, may elect a research problem in food analysis. Deposit, \$10.00 per semester.

113-114. **CHEMISTRY OF FOODS.** Four credits. Either semester. Prerequisite, Chemistry 5, 6, and 33, or their equivalent. Miss HINDMAN.

A course in food analysis designed particularly for students in home economics. Deposit, \$10.00 per semester.

201-202. **INVESTIGATION.** Credit to be arranged.

Senior and graduate students may undertake some original investigation in pharmacy, pharmaceutical chemistry or chemistry of foods under the direction of one of the instructors. Deposit, \$5.00 or \$10.00, according to hours.

SUBJECTS PRESENTED BY DEPARTMENTS OF OTHER COLLEGES OF THE UNIVERSITY

BACTERIOLOGY

(Science Hall)

5. **BACTERIOLOGY FOR PHARMACISTS.** Four credits. First semester. Prerequisites, sophomore standing, one year of botany and one year of chemistry. Professor WEINZIRL.

A general survey including technique, biology, disease, immune sera, vaccines, disinfectants, etc.

103. GENERAL BACTERIOLOGY. Four credits. First semester. Prerequisites, junior standing; botany or zoology, 1 year; chemistry, 1 year. Professor WEINZIRL and Miss CHALLIS.

Methods of growing bacteria and studying their structure, functions and distribution.

108. MEDICAL BACTERIOLOGY. Four credits. Second semester. Prerequisite, bacteriology 5 or 103. Required of pre-medical students. Professor WEINZIRL and Miss CHALLIS.

The study of pathogenic bacteria.

111. BACTERIOLOGICAL ANALYSIS. Two credits. First semester. Laboratory work only. Prerequisite, bacteriology 103 or equivalent. Professor WEINZIRL.

Analysis of water, sewage, milk, meat, etc.

112. LABORATORY DIAGNOSIS. Two credits. Second semester. Prerequisite, bacteriology 104 or 108. Professor WEINZIRL.

The diagnosis of disease by laboratory methods, mainly bacteriological.

113. SANITARY PROBLEMS. Two credits. First semester. Lectures only. Prerequisite, bacteriology 103 or equivalent. Professor WEINZIRL.

The sanitary problems relating to water, sewage, and food.

114. DIAGNOSTIC METHODS. Two credits. Second semester. Lectures only. Prerequisite, bacteriology 104 or 108. To be taken with bacteriology 112. Professor WEINZIRL.

The consideration of diagnostic methods and their application.

209-210. RESEARCH. Two or four credits per semester. Open to qualified students after consultation. Professor WEINZIRL.

BOTANY

(Science Hall)

13-14. PHARMACY BOTANY. Four credits per semester. Assistant Professor RIGG.

Gross structure of vegetative and reproductive parts of seed plants. Brief study of spore plants. Microscopy of powdered drugs.

CHEMISTRY

(Bagley Hall)

1. GENERAL CHEMISTRY. Four credits. Either semester. Two lectures and six laboratory hours per week. Professor BYERS, Assistant Professor ROSE, Instructors and Assistants.

This course is designed to meet the needs of students who come from accredited schools in which chemistry is not required.

2. GENERAL CHEMISTRY. Four credits. Either semester. A continuation of 1.

7. GENERAL CHEMISTRY. Four credits. First semester. Dr. BELL.

A lecture and recitation course designed for students of the College of Pharmacy. It must be taken in conjunction with 9.

8. ORGANIC CHEMISTRY. Four credits. Second semester Dr. BELL.

A continuation of 7. For students in pharmacy. It must be taken in conjunction with 10.

9. GENERAL CHEMISTRY. Four credits. First semester. A laboratory course designed to accompany 7. Twelve hours per week. Dr. BELL.

A portion of this course, together with a portion of 10, form a continuous course in qualitative analysis.

10. ORGANIC CHEMISTRY. Four credits. Second semester. Dr. BELL.

A laboratory course in organic preparations. (See also 9.)

21. GENERAL CHEMISTRY. Four credits. Either semester. Two lectures and six laboratory hours per week. This course is open to students who have had a year of chemistry in an accredited high school. Professor BYERS, Dr. TRUMBULL, Dr. LANGDON, and Assistants.

22. GENERAL CHEMISTRY. Four credits. Either semester. A continuation of 21. Professor BYERS, Dr. TRUMBULL, Dr. LANGDON, and Assistants.

The laboratory work is an elementary course in qualitative analysis.

31. ORGANIC CHEMISTRY. Four credits. First semester. Prerequisite, 22 or its equivalent. Associate Professor DEHN.

Introductory course in organic chemistry, consisting of three lectures per week and four hours' laboratory work, on the preparation and testing of representative compounds.

32. ORGANIC CHEMISTRY. Four credits. Second semester. Associate Professor DEHN.

A continuation of 31.

41. ELEMENTARY QUALITATIVE ANALYSIS. Four credits. Either semester. Two lectures and six laboratory hours per week. Mrs. ROSE.

43. ADVANCED QUALITATIVE ANALYSIS. Four credits. First semester. Professor BYERS.

Lectures on theory of solution as applied to analytical work. Laboratory work on the analysis of alloys and minerals.

101. QUANTITATIVE ANALYSIS. Four credits. Either semester. Twelve laboratory hours and one recitation per week. Dr. BELL.

The technique of gravimetric and volumetric analysis.

102. QUANTITATIVE ANALYSIS. Four credits. Either semester. A continuation of 101. Dr. BELL.

Mineral analysis and special and analytical processes.

111. FOOD ANALYSIS. Four credits. First semester. Professor JOHNSON and Miss HINDMAN.

Lectures and laboratory work on the methods of analysis of food products and the federal and state laws regulating the sale of foods and drugs.

112. FOOD ANALYSIS. Four credits. Second semester. A continuation of 111. Professor JOHNSON and Miss HINDMAN.

113. CHEMISTRY OF FOODS. Four credits. Either semester. Two lectures and two laboratory periods per week. Prerequisites, chemistry 5, 6 and 33, or their equivalent. Miss HINDMAN.

A course designed particularly for students of home economics.

123. ORGANIC ANALYSIS AND GLASS BLOWING. One to four credits. Either semester. Associate Professor DEHN.

141-142. **PHYSIOLOGICAL CHEMISTRY.** Four credits per semester. Prerequisite, 32. Associate Professor DEHN.

A course designed for medical, chemical and general science students. The chemical composition of foods, tissues, secretions and excretions, their physiological and pathological changes. Special attention is given to the composition and analysis of blood, milk and urine.

144. **PHYSIOLOGICAL CHEMISTRY.** Four credits. Second semester. Primarily for home economics students. Essentially the same as course 141. Associate Professor DEHN.

146. **URINARY ANALYSIS.** Two credits. Second semester. Associate Professor DEHN.

Laboratory work only, on the analysis of normal and pathological urine. Designed especially for students preparing for medical study.

231. **ADVANCED ORGANIC CHEMISTRY.** Four credits. First semester. Assistant Professor ROSE.

A review of the theories of organic chemistry with special reference to the volatile oils, dye stuffs, alkaloids, sugars, etc. Special laboratory work to be arranged.

232. **ADVANCED ORGANIC CHEMISTRY.** Four credits. Second semester. A continuation of 231. Assistant Professor ROSE.

ZOOLOGY

(Science Hall)

7. **ELEMENTARY PHYSIOLOGY.** Four credits. Either semester. Assistant Professor SMITH and Mr. JOHNSON.

A general survey of the structure and functions of the human body, designed especially for students in home economics, but open to others.

GRADUATE SCHOOL

THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), PRESIDENT.

J. ALLEN SMITH, PH. D. (Michigan), Professor of Political and Social Science; DEAN.

ORSON BENNETT JOHNSON, LL. B. (Union College of Law), Professor Emeritus of Zoology.

*HENRY LANDES, A. M. (Harvard), Professor of Geology and Mineralogy and Dean of the College of Science.

EDMOND STEPHEN MEANY, M. L. (Wisconsin), Professor of History. CAROLINE HAVEN OBER, Professor of Spanish.

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

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

**HORACE G. BYERS, PH. D. (Johns Hopkins), Professor of Chemistry.

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

FREDERICK MORGAN PADELFORD, PH. D. (Yale), Professor of English.

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

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

FREDERICK ARTHUR OSBORN, PH. D. (Michigan), Professor of Physics and Director of Physics Laboratories.

WILLIAM SAVERY, PH. D. (Harvard), Professor of Philosophy.

DAVID THOMSON, A. B. (Toronto), Professor of Latin and Secretary of the Graduate Faculty.

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

PIERRE JOSEPH FREIN, PH. D. (Johns Hopkins), Professor of French.

THEODORE CHRISTIAN FRYE, PH. D. (Chicago), Professor of Botany and Acting Dean of the College of Science.

ROBERT EDOUARD MORITZ, PH. N. D. (Strassburg), Professor of Mathematics and Astronomy.

* Absent on leave, 1915-16.

** Absent on leave, second semester, 1915-16.

- CARL EDWARD MAGNUSSON, E. E., PH. D. (Wisconsin), Professor of Electrical Engineering.
- HARVEY LANTZ, A. M. (De Pauw), LL. B. (Kent Law School), Professor of Law.
- EVERETT OWEN EASTWOOD, B. S., C. E., A. M. (Virginia), Professor of Mechanical Engineering.
- FREDERICK WILLIAM MEISNEST, PH. D. (Wisconsin), Professor of German.
- DAVID CONNOLLY HALL, SC. M., M. D. (Chicago), University Health Officer and Director of Physical Education for Men.
- HERBERT HENRY GOWEN, F. R. G. S., M. R. S. A., D. D. (Whitman), Professor of Oriental History, Literature and Institutions.
- OLIVER HUNTINGTON RICHARDSON, PH. D. (Heidelberg), Professor of European History.
- IVAN WILBUR GOODNER, LL. B. (Nebraska), Professor of Law.
- WALTER GREENWOOD BEACH, A. M. (Harvard), Professor of Social Science.
- IRVING MACKEY GLEN, A. M. (Oregon), Professor of Music and Dean of the College of Fine Arts.
- CHARLES CHURCH MORE, M. S., C. E. (Lafayette), Professor of Civil Engineering.
- HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.
- JOHN WEINZIERL, PH. D. (Wisconsin), Professor of Bacteriology.
- HUGO WINKENWERDER, M. F. (Yale), Professor of Forestry and Dean of the College of Forestry.
- VERNON LOUIS PARRINGTON, A. B. (Harvard), A. M. (Emporia), Professor of English.
- FREDERICK ELMER BOLTON, PH. D. (Clark), Professor of Education and Dean of the College of Education.
- EDWIN JOHN VICKNER, PH. D. (Minnesota), Professor of the Scandinavian Languages.
- HERBERT GALEN LULL, PH. D. (California), Professor of Education.
- FRANK GEORGE KANE, A. B. (Michigan), Professor of Journalism.
- EFFIE ISABEL RAITT, B. S. (Columbia), Professor of Home Economics and Director of the Department of Home Economics.
- WILLIAM FRANKLIN ALLISON, B. S., C. E. (Cornell), Professor of Municipal and Highway Engineering.
- STEVENSON SMITH, PH. D. (Pennsylvania), Professor of Psychology.

- WILLIAM PIERCE GORSUCH, A. B. (Knox), Professor in charge of the Department of Public Speaking and Debate.
- CLARK PRESCOTT BISSETT, A. B. (Hobart), Professor of Law.
- ARTHUR RAGAN PRIEST, A. M. (De Pauw), Professor of Debating and Dean of Men.
- ALLEN ROGERS BENHAM, PH. D. (Yale), Associate Professor of English.
- BURT PERSONS KIRKLAND, A. B. (Cornell), Associate Professor of Forestry.
- THOMAS KAY SIDEY, PH. D. (Chicago), Associate Professor of Latin and Greek.
- WILLIAM MAURICE DEHN, PH. D. (Illinois), Associate Professor of Chemistry.
- EDWARD MCMAHON, A. M. (Wisconsin), Associate Professor of American History.
- JACOB NEIBEET BOWMAN, PH. D. (Heldelberg), Associate Professor of European History.
- GEORGE SAMUEL WILSON, B. S. (Nebraska), Associate Professor of Mechanical Engineering.
- GEORGE WALLACE UMPHREY, PH. D. (Harvard), Associate Professor of Spanish.
- OTTO PATZER, PH. D. (Wisconsin), Associate Professor of French.
- CHARLES WILLIAM HARRIS, C. E. (Cornell), Associate Professor of Civil Engineering.
- EDWIN JAMES SAUNDERS, A. M. (Harvard), Assistant Professor of Geology.
- HANS JACOB HOFF, PH. D. (Illinois), Assistant Professor of German.
- EDGAR ALLEN LOEW, B. S., E. E. (Wisconsin), Assistant Professor of Electrical Engineering.
- ELIAS TREAT CLARK, M. F. (Yale), Assistant Professor of Forestry.
- EDWARD GODFREY COX, PH. D. (Cornell), Assistant Professor of English.
- JOSEPH DANIELS, M. S. (Lehigh), Assistant Professor of Mining Engineering and Metallurgy.
- ELI VICTOR SMITH, PH. D. (Northwestern), Assistant Professor of Zoology.
- CHARLES MUNRO STRONG, A. M. (Missouri), Assistant Professor of Spanish.
- HENRY LOUIS BRAKEL, PH. D. (Cornell), Assistant Professor of Physics.

- HARVEY BRUCE DENSMORE, A. B. (Oregon), Assistant Professor of Greek.
- CHARLES EDWIN WEAVER, PH. D. (California), Assistant Professor of Geology.
- CLARENCE RAYMOND COREY, M. S. (Columbia), Assistant Professor of Mining and Metallurgy.
- ALLEN FULLER CARPENTER, PH. D. (Chicago), Assistant Professor of Mathematics.
- GEORGE BURTON RIGG, PH. D. (Chicago), Assistant Professor of Botany.
- DAVID ALLEN ANDERSON, PH. D. (Iowa), Assistant Professor of Education.
- *ERNEST GEORGE ATKIN, A. M. (Harvard), Assistant Professor of French.
- HORACE JAMES MACINTIRE, M. M. E. (Harvard), Assistant Professor of Mechanical Engineering.
- GINO ARTURO RATTI, PH. D. (Grenoble), Assistant Professor of French.
- THERESA SCHMID MCMAHON, PH. D. (Wisconsin), Assistant Professor of Political and Social Science.
- ERNEST OTTO ECKELMAN, PH. D. (Heidelberg), Assistant Professor of German.
- JOHN WILLIAM HOTSON, PH. D. (Harvard), Assistant Professor of Botany.
- LEWIS IRVING NEIKIRK, PH. D. (Pennsylvania), Assistant Professor of Mathematics.
- SAMUEL HERBERT ANDERSON, PH. D. (Illinois), Assistant Professor of Physics.
- DALLAS DEVELLO JOHNSON, A. M. (Columbia), Assistant Professor of Education.
- FRIEDRICH KURT KIRSTEN, B. S. (E. E.), (Washington), Assistant Professor of Electrical Engineering.
- HJALMAR LAURITS OSTERUD, A. M. (Washington), Instructor in Zoology.
- HARLAN LEO TRUMBULL, PH. D. (Chicago), Instructor in Chemistry.
- LESLIE FORREST CURTIS, B. S. (Tufts), Instructor in Electrical Engineering.
- ERIC TEMPLE BELL, PH. D. (Columbia), Instructor in Mathematics.
- BROR LEONARD GRÖNDAL, M. S. F. (Washington), Instructor in Forestry.

* Absent on leave, second semester, 1915-16.

FRANCES EDITH HINDMAN, M.S. (Washington), Instructor in Pharmacy and Assistant State Chemist and Bacteriologist.

ELIZABETH ROTHERMEL, A.M. (Columbia), Instructor in Home Economics.

EDWIN RAY GUTHRIE, PH. D. (Pennsylvania), Instructor in Philosophy.

ROBERT CHENAULT GIVLER, PH. D. (Harvard), Instructor in Psychology.

HORACE HARDY LESTER, PH. D. (Princeton), Instructor in Physics.

COMMITTEE ON GRADUATE COURSES: Professors OSBORN, HAGGETT, SAVERY, FREIN and MORITZ.

SECRETARY OF GRADUATE FACULTY AND EX-OFFICIO SECRETARY OF COMMITTEE ON GRADUATE COURSES: Professor THOMSON.

ORGANIZATION

The Graduate School was formally organized in May, 1911. The graduate faculty includes:

1. All heads of departments and full professors.
2. All associate professors, assistant professors, and instructors offering graduate work for major students; provided that no department shall have more than four representatives. If more than that number are eligible, the departmental representatives below the rank of full professor shall be elected by the members of the department.

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. Application for these fellowships must be in the hands of the Recorder of the University on or before March fifteenth.

UNIVERSITY TEACHING FELLOWSHIPS

There are also a number of teaching fellowships yielding \$450 each. The fellows are expected to give about half time to such work as the head of the department may assign. At the present time teaching fellows are employed in the following departments: Botany, Bacteriology, Chemistry, Electrical Engineering, English, French, German, History, Mathematics, Philosophy, Physics, Political Science, Sociology, Spanish, and Zoology. The distribution

varies somewhat from year to year. Applicants for teaching fellowships should apply directly to the head of the department in which they are most interested.

FEEES

Graduate students, including fellows, are required to pay a matriculation fee of \$10.00 and a tuition fee of \$10.00 a semester.

ADMISSION

Three classes of students are recognized in the graduate school:

1. Candidates for the master's degree.
2. Candidates for the doctor's degree.
3. Students not candidates for a degree.

A graduate of this University or of any other institution of equal rank will be given full graduate standing. In case the student is from a college whose requirements for graduation are not regarded by the dean as equivalent to those of the University of Washington, he must complete the deficiency in undergraduate work as specified by the committee on graduate courses, before being permitted to make application for an advanced degree.

Any graduate student who wishes to become a candidate for a degree, must file an application with the dean of the graduate school, on a blank provided for the purpose, within two weeks after registration. When this application has received the approval of the committee on graduate courses or of the graduate faculty, and the applicant has been notified thereof, the student will be enrolled as a candidate for a degree.

DEGREES

THE MASTER'S DEGREE

Graduate students may receive the degree of master of arts or master of science by complying with the following requirements:

1. At least one year's work must be done in residence in undivided pursuit of the studies elected; or not less than two years in residence, if the candidate is employed as a teacher or regularly engaged in any other occupation or profession. Attendance during four summer sessions may be accepted as the equivalent of one year in residence.

2. The candidate must elect a major subject and either one or two minors. He must earn not less than twenty-four credits in residence, with a grade of A, B or C, at least one-half being in the major subject, and present a thesis which shall embody independent, though not necessarily original research. The requirement of a minor or minors may be waived, but only upon the recommendation of the head of the major department and with the consent of the committee on graduate courses. The total must represent the equivalent of at least thirty hours.

3. No work done in the major subject may be counted toward the master's degree, until the candidate for such degree has complied with the departmental requirement as to previous work in that subject, which in no case shall be less than twelve hours.

4. The first eight credits in a department may not count toward the minor requirement and the teachers' courses may not count toward either the major or minor requirement. A minor requirement may be satisfied by six instead of eight hours when the courses from which it is selected are not four-hour courses.

5. Upon completion of the work as outlined in the application, the candidate shall be examined by a committee consisting of the major professor and all instructors with whom he has had work. The candidate in order to be recommended for a degree must receive a two-thirds affirmative vote of each department represented in the examination.

6. The candidate's thesis shall be in charge of the instructor in whose field the subject of it falls, and it must be approved by the instructor in charge and receive a two-thirds favorable vote of the instructors of professorial rank in the department concerned. One copy of the thesis in typewritten or printed form (or library hand, in case the thesis is of such character that it cannot be typewritten), prepared and bound according to the conditions prescribed by the librarian, shall be deposited with the Bursar at the time of payment of the diploma fee.

THE DOCTOR'S DEGREE

Graduate students will be received as candidates for the degree of doctor of philosophy in chemistry, in English, in botany and in other departments as their readiness to undertake this work may be approved by the committee on graduate courses.

Graduate students may receive the degree of doctor of philosophy by complying with the following requirements:

1. At least three years of graduate work, the last year of which must be spent in residence at the University of Washington. If a candidate is otherwise engaged in any regular employment, a correspondingly longer time will be required.

2. Evidence of a reading knowledge of both French and German and such other languages as individual departments may require. Evidence of sufficient attainment in these languages must be presented to the dean and, upon his approval, filed with the recorder at least one academic year before the degree is granted.

3. Completion of courses of study in a major and two minor subjects, the work in the minors to constitute one-third of the total course. The major subject, in addition to the regular courses, shall include the preparation of a thesis embodying the results of a research which shall be a positive contribution to knowledge. This thesis must be approved by a committee appointed by the head of the major department of which the instructor in charge of the thesis shall be a member, and also by the committee on graduate courses.

4. Oral examination in each of the minor subjects before a committee of three, including a representative of the major department. Certificates of the satisfaction of this requirement must be given before the candidate may be admitted to his major examination.

5. An exhaustive written examination in the major subject, not less than six hours in duration, no one session of which may exceed five hours.

6. An oral examination before a committee of three or more representatives of the major department, of not less than two hours. This examination must be approved by the entire committee. All examinations are open to members of the faculty.

7. Thesis, or such parts thereof as may be approved by the committee on graduate courses, must be printed in a form approved by the librarian and supplied with title and biographical sketch and one hundred copies presented to the University library.

The completion of the requirements as specified shall be certified by the head of the major department not later than the Wednesday preceding commencement day.

The doctor's degree will not be granted to graduates of the University of Washington who have not spent two years in grad-

uate work, or three years in undergraduate work, at some other institution.

For the present, instructors in the University of Washington shall not be received as candidates for the doctor's degree.

MASTER OF SCIENCE IN ENGINEERING

Courses leading to the degree of master of science in engineering are provided for students in civil engineering, electrical engineering, mechanical engineering, chemical engineering, and mining engineering.

For further information, see bulletins of the colleges of Engineering and Mines.

MASTER OF SCIENCE IN PHARMACY

The degree of master of science in pharmacy will be conferred upon graduates of the four year course in pharmacy who complete at least one year of graduate work as outlined and present a satisfactory thesis.

For further information, see the bulletin of the College of Pharmacy.

MASTER OF SCIENCE IN FORESTRY

For the degree of master of science in forestry, the student, in addition to being a graduate of this University or other institution of equal rank, and having a satisfactory knowledge of botany, geology, physics, chemistry, mathematics, surveying and languages, shall have been credited at this University with 166 hours of which at least 52 are in technical forestry subjects, including silviculture, dendrology, wood technology, mensuration, management, lumbering, wood preservation, forest economics, and thesis.

For further information, see the bulletin of the College of Forestry.

MASTER'S DEGREES IN EDUCATION

Advanced work for teachers leading to the master's degree in education is given by the University. See bulletin of College of Education for further information.

DEPARTMENTS OF INSTRUCTION**ASTRONOMY**

(See Mathematics and Astronomy)

BACTERIOLOGY

(Science Hall)

PROFESSOR WEINZIRL, MISS CHALLIS.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

103. GENERAL BACTERIOLOGY. Four credits. First semester. Prerequisite, junior standing; botany or zoology, 1 year; chemistry, 1 year. Professor WEINZIRL and Miss CHALLIS.

Methods of growing bacteria and studying their structure, functions and distribution.

104. SANITARY AND INDUSTRIAL BACTERIOLOGY. Four credits. Second semester. Prerequisite, bacteriology 103. Professor WEINZIRL and Miss CHALLIS.

A brief survey of disease bacteria. Most of the time is given to sanitation and industry. Inspection trips.

108. MEDICAL BACTERIOLOGY. Four credits. Second semester. Prerequisite, bacteriology 5 or 103. Required of pre-medical students. Professor WEINZIRL and Miss CHALLIS.

The study of pathogenic bacteria.

111. BACTERIOLOGICAL ANALYSIS. Two credits. First semester. Laboratory work only. Prerequisite, bacteriology 103 or equivalent. Professor WEINZIRL.

Analysis of water, sewage, milk, meat, etc.

112. LABORATORY DIAGNOSIS. Two credits. Second semester. Prerequisite, bacteriology 104 or 108. Professor WEINZIRL.

The diagnosis of disease by laboratory methods, mainly bacteriological.

113. SANITARY PROBLEMS. Two credits. First semester. Lectures only. Prerequisite, bacteriology 103 or equivalent. Professor WEINZIRL.

The sanitary problems relating to water, sewage, and food.

114. **DIAGNOSTIC METHODS.** Two credits. Second semester. Lectures only. Prerequisite, bacteriology 104 or 108. To be taken with bacteriology 112. Professor WEINZIRL.

The consideration of diagnostic methods and their application.

*116. **GENERAL PATHOLOGY.** Four credits. Second semester. Prerequisites, bacteriology 103, histology and junior standing. Professor WEINZIRL.

Gross and microscopical study of pathological lesions.

205. **SCHOOL HYGIENE.** See EDUCATION 165. Professor WEINZIRL.

207-208. **SEMINAR.** Two credits per semester. For graduate students only. With research constitutes a full year's work, and is planned as the regular third year's work in bacteriology. Time to be arranged. Professor WEINZIRL.

209-210. **RESEARCH.** Two or four credits per semester. Open to qualified students after consultation. Professor WEINZIRL.

BOTANY

(Science Hall)

PROFESSOR FRYE, ASSISTANT PROFESSORS RIGG AND HOTSON.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

105. **MORPHOLOGY AND EVOLUTION.** Four credits. First semester. Prerequisites, botany 2 or 10, or zoology 1 and 2. Professor FRYE and Assistant.

A morphological study of types to show advances in complexity; the principles upon which advance is based; the general line of evolution. Required of all majors.

106. **MORPHOLOGY AND EVOLUTION.** Four credits. Second semester. A continuation of 105. Required of all majors. Professor FRYE and Assistants.

*117. **SEEDS.** Four credits. First semester. Prerequisites, one year of botany; junior standing.

Seed structure and physiology. The recognition of plants by their seeds.

120. **PLANT HISTOLOGY.** Three credits. Second semester. Prerequisite, botany 106. Professor FRYE.

Preparation of slides for the compound microscope. Study of plant tissues.

125. **ELEMENTARY AGRICULTURE.** Four credits. First semester. Prerequisites, botany 1, and 2 or 10; junior standing. Assistant Professor HOTSON.

Designed as a preparation for those who expect to teach the subject in high schools.

126. **ELEMENTARY AGRICULTURE.** Four credits. Second semester. A continuation of botany 125. Assistant Professor HOTSON.

137. **JOURNAL CLUB.** No credit. One meeting per week at time to be arranged. Prerequisite, junior standing; two years of botany. Professor FRYE.

Review of articles in current journals. Suggested for all seniors, graduates and instructors in the department.

141. **GENERAL FUNGI.** Four credits. First semester. Time to be arranged. Prerequisites, botany 11 or 105 and junior standing. Assistant Professor HOTSON.

Morphology and classification of fungi; designed as a basis for plant pathology.

142. **GENERAL FUNGI.** Four credits. Second semester. Prerequisite, botany 141. A continuation of 141. Assistant Professor HOTSON.

143. **PLANT PHYSIOLOGY.** Four credits. First semester. Prerequisites, chemistry 1 and 2; botany 1, 2 or 10. Assistant Professor RIGG.

The fundamental physical and chemical processes in plants.

144. **PLANT PHYSIOLOGY.** Four credits. Second semester. Prerequisite, botany 143. Assistant Professor RIGG.

The laws underlying growth and movement in plants.

233. **RESEARCH.** Either semester or both. Credit and time to be arranged. Open to qualified students after consultation. Professor FRYE, Assistant Professors RIGG and HOTSON.

250. **ALGAE.** Four credits. Either semester. Prerequisite, botany 105 and 106, or 11 and 12. Professor FRYE.

251. BRYOPHYTES. Four credits. Either semester. Prerequisite, botany 105 and 106, or 11 and 12. Professor FRYE.

252. PTERIDOPHYTES. Four credits. Either semester. Prerequisites, botany 105 and 106, or 11 and 12. Professor FRYE.

253. ANGIOSPERMS. Four credits. Either semester. Prerequisite, botany 105 and 106, or 11 and 12. Professor FRYE.

254. ANGIOSPERMS. Four credits. Either semester. Prerequisite, botany 105 and 106, or 11 and 12. Professor FRYE.

Only one of courses 250 to 254, inclusive, will be given in one semester, the particular course to depend upon requests from the advanced students.

261. PLANT PATHOLOGY. Four credits. First semester. Prerequisite, botany 142. Assistant Professor HOTSON.

A study of the diseases of plants and of the fungi which produce them.

262. PLANT PATHOLOGY. Four credits. Second semester. Prerequisite, botany 1. Assistant Professor HOTSON.

CHEMISTRY

(Bagley Hall)

PROFESSORS BYERS AND BENSON, ASSOCIATE PROFESSOR DEHN, ASSISTANT PROFESSOR ROSE, DR. TRUMBULL, DR. BELL, DR. LANGDON, MRS.

ROSE AND DEAN JOHNSON AND MISS HINDMAN OF
THE COLLEGE OF PHARMACY.

31. ORGANIC CHEMISTRY. Four credits. First semester. Prerequisite, 22, or its equivalent. Associate Professor DEHN.

Introductory course in organic chemistry, consisting of three lectures per week and four hours laboratory work, on the preparation and testing of representative compounds.

32. ORGANIC CHEMISTRY. Four credits. Second semester. Associate Professor DEHN.

A continuation of 31.

43. ADVANCED QUALITATIVE ANALYSIS. Four credits. First semester. Professor BYERS.

Lectures on theory of solution as applied to analytical work. Laboratory work on the analysis of alloys and minerals.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

102. QUANTITATIVE ANALYSIS. Four credits. Either semester. Dr. BELL.

A continuation of 101. Mineral analysis and special analytical processes.

111. FOOD ANALYSIS. Four credits. First semester. Professor JOHNSON and Miss HINDMAN.

Lectures and laboratory work on the methods of analysis of food products and the federal and state laws regulating the sale of foods and drugs.

112. FOOD ANALYSIS. Four credits. Second semester. A continuation of 111. Professor JOHNSON and Miss HINDMAN.

123. ORGANIC ANALYSIS AND GLASS BLOWING. One to four credits. Either semester. Associate Professor DEHN.

133. SANITARY CHEMISTRY. Three credits. First semester. Two lectures and one laboratory period. Professor BENSON.

A study of the materials and processes used in the purification of water and sewage and in sanitation.

144. PHYSIOLOGICAL CHEMISTRY. Four credits. Second semester. Primarily for home economics students. Essentially the same as 141. Associate Professor DEHN.

146. URINARY ANALYSIS. Two credits. Second semester. Associate Professor DEHN.

Laboratory work only, on the analysis of normal and pathological urine. Designed especially for students preparing for medical study.

FOR GRADUATES

201. PHYSICAL CHEMISTRY. Five credits. First semester. Prerequisite, physics 1-2. Dr. TRUMBULL.

An elementary course dealing with the fundamental theories of chemistry based upon physical measurements. Three lectures and two laboratory periods per week.

202. ADVANCED PHYSICAL CHEMISTRY. Four credits. Second semester. Prerequisites, 201, and differential calculus. Two lectures and six laboratory hours per week. Dr. TRUMBULL.

A course in chemical statics and dynamics with physical chemical measurements.

204. **ELECTRO CHEMISTRY.** Four credits. Second semester. Prerequisite, 201. Professor BYERS and Dr. TRUMBULL.

The lecture course deals with the historical development of electro chemistry and the theories of voltaic and electrolytic cells. The laboratory work deals with the practical methods of electro analysis and electro synthesis and related processes.

211. **INORGANIC PREPARATIONS.** Four credits. First semester. Twelve laboratory hours per week. Professor BYERS.

The course deals with the methods of preparation of inorganic chemical compounds.

212. **ADVANCED ORGANIC PREPARATIONS.** Four credits. Second semester. Twelve laboratory hours per week. Associate Professor DEHN.

The course deals with the synthesis of organic compounds.

221-222. **CHEMICAL THEORY.** Two credits per semester. Professor BYERS.

All graduate students registering in the Department of Chemistry are expected to take this course, which deals with the historical development of the fundamental laws and theories.

231. **ADVANCED ORGANIC CHEMISTRY.** Four credits. First semester. Assistant Professor ROSE.

A review of the theories of organic chemistry with special reference to the volatile oils, dye stuffs, alkaloids, sugars, etc. Special laboratory work to be arranged.

232. **ADVANCED ORGANIC CHEMISTRY.** Four credits. Second semester. A continuation of 231. Assistant Professor ROSE.

241-242. **JOURNAL COURSE.** One credit per semester. Dr. LANGDON.

The course deals with the sources of information through the publications of various sorts and involves the preparation of abstracts of articles in English, French, German, and other periodicals.

250. **RESEARCH.** Credit to be arranged. The work in research offered by the department consists of three types; first, thesis work for the bachelor's degree in chemical engineering. Such work may receive a maximum of six credits. Second, research work for the master's degree. This work is not necessarily laboratory investigation, although the investigation of the

literature is ordinarily supplemented by more or less practical development of the subject. Maximum credit, six hours. Third, research for the doctor's degree. Maximum credit, thirty hours. Work for the doctor's degree may be carried on with any member of the staff of the department, on any topic, subject to the approval of the department.

CIVIL ENGINEERING (Engineering Building)

PROFESSORS FULLER, MORE AND ALLISON; ASSOCIATE PROFESSOR
HARRIS AND ASSISTANT PROFESSOR MILLER.

115. RAILWAY TRANSPORTATION. Two credits. First semester. Senior and graduate C. E. Prerequisite, 112. Assistant Professor MILLER.

The economics of railway transportation from an engineering standpoint. Traffic statistics and the choice of route and motive power.

116. TUNNELLING AND TRACK ELEVATION. Two credits. Second semester. Senior and graduate C. E. Prerequisite, 112. Assistant Professor MILLER.

The problems confronting the engineer in track elevation and the construction of subways.

118. YARDS AND TERMINALS. Two credits. Second semester. Senior and graduate C. E. Prerequisite, 112. Assistant Professor MILLER.

The design and operation of the large yards of modern railway organizations, and the control of trains by means of signaling and interlocking.

125. HIGHWAY CONSTRUCTION. Four credits. First semester. Senior and graduate C. E. Prerequisite, 112 and 122. Professor ALLISON.

The economics of highway location, construction, and maintenance of the more permanent character, i. e., \$5,000 per mile and up. All standard laboratory tests of highway metals.

126. CITY STREETS AND PAVEMENTS. Two credits. Second semester. Senior and graduate C. E. Prerequisite, 125. Professor ALLISON.

A study of city streets and pavements, including estimates and inspection; also, a study of the manufacture and testing of materials of paving.

135. **ADVANCED MECHANICS.** Four credits. First semester. Senior and graduate engineers. Prerequisite, C. E. 132 and 138. Professor MORE.

General theories of flexure, elasticity and least work, with applications.

145. **HYDRAULIC MOTORS.** Two credits. First semester. Senior and graduate E. E. and M. E. Prerequisite, 142. Associate Professor HARRIS.

Development and theory of water wheels and turbine pumps; design of a reaction turbine.

147. **HYDRAULIC POWER.** Three credits. First semester. Senior and graduate C. E. Prerequisite, 142. Associate Professor HARRIS.

Stream flow, storage and generation of power. Development and theory of turbines, design of a spillway, penstock and turbines; test of an existing power plant.

153. **WATER SUPPLY AND IRRIGATION.** Three credits. First semester. Senior and graduate C. E. Prerequisite, 142. Professor ALLISON.

A study of the principal engineering operations necessary to secure suitable water supplies for cities and towns and water for irrigation. The purification of water supplies.

154. **SANITARY ENGINEERING.** Three credits. Second semester. Senior and graduate C. E. Prerequisite, 153. Professor ALLISON.

A study of the design and construction of sewerage systems, both combined and separate. Sewage treatment.

157. **WATER SUPPLY AND IRRIGATION PROBLEMS.** Two credits. First semester. Senior and graduate C. E. Professor ALLISON.

Supplementary to 153, with special problems and investigations.

158. **SEWAGE TREATMENT.** Two credits. Second semester. Senior and graduate C. E. and Ch. E. Professor ALLISON.

Supplementary to 154, with special problems in matters relating to public health.

161-162. **BRIDGES.** Four credits first semester. Three credits second semester. Senior and graduate C.E. Prerequisite, 138. Professor FULLER.

Stresses, design and deflection of simple trusses. Detail drawings. Estimates.

164. **HIGHER STRUCTURES.** Four credits. Second semester. Senior and graduate C.E. Prerequisite, preceded or accompanied by 161-162. Professor FULLER.

Primary and secondary stresses. Design.

167. **STRUCTURAL MATERIALS.** Three credits. First semester. Senior and graduate C.E. and M.E. and graduate E.E. Prerequisite, 132. Laboratory deposit, \$3.00. Professor FULLER and Mr. MAY.

An experimental study of the physical properties of materials of construction.

EDUCATION

(Education Building)

PROFESSORS BOLTON AND LULL, ASSISTANT PROFESSORS ANDERSON AND JOHNSON, MR. KRUSE.

I. PRINCIPLES OF EDUCATION

207-208. **PHILOSOPHY OF EDUCATION.** Two credits per semester. Professor BOLTON.

Advanced course. A critical examination of the fundamental principles which underlie a scientific theory of education. The processes and problems of education are examined from the standpoint of biology, psychology, sociology, philosophy and the history of education. An attempt to formulate a philosophical basis for educational theory and practice. Time arranged to accommodate teachers of Seattle and vicinity.

II. EDUCATIONAL SOCIOLOGY

151. Two credits. Second semester. A continuation of 109. Assistant Professor JOHNSON.

The external social aspects of education as carried on through the institution called the school. Particular attention to relation between: (1) school and home; (2) school and vocation; (3) school and social progress. Prerequisite, 109.

159-160. HISTORY OF EDUCATION. Two credits per semester. Mr. KRUSE.

First semester, ancient and medieval. A study of the development of educational ideals and practices from a typical oriental civilization through Jewish, Greek, Roman, early Christian civilization and the Renaissance period. Second semester, the modern period. The educational forces that have been active since the Middle Ages; the conservative and creative elements in social and educational institutions during the modern period. American education, emphasizing the beginnings and development of the American high school. At every point an effort will be made to trace the origin and development of present-day educational theories and practices. The relation between the civilization of a given people and their education, and the reciprocal effect of education upon national ideals.

200. VOCATIONAL EDUCATION. Two credits. Either semester. Assistant Professor JOHNSON.

A consideration of the need for more adequate provision for vocational education as revealed in the demands coming from organized labor, employers, charities workers, educators, and statesmen. A comparative study of various administrative schemes, in operation and proposed, for meeting this need.

211-212. COMPARATIVE EDUCATION. Two credits per semester.

The critical study of modern educational organization and practice in foreign countries, especially in Germany, France, England, Norway, Sweden and Canada. Brief consideration of their development. Particular emphasis regarding their influence upon the development of the educational theories and practices in America.

III. EDUCATIONAL PSYCHOLOGY

155. CHILDHOOD AND ADOLESCENCE. Two credits. Either semester. Professor BOLTON.

A study of the characteristics of the child to reveal how education is conditioned upon the successive stages of development; hygiene of the school child; child welfare agencies; value of child study for parents and teachers; educational theories and methods of some of the great leaders in child study, including Froebel, Pestalozzi, Hall, Dewey, Montessori. (As the majority of students will be high school teachers, special emphasis is placed upon adolescence or the high school period.)

203-204. EDUCATIONAL PROBLEMS OF ADOLESCENCE. Two credits per semester. Professor BOLTON.

A critical consideration of the physical, intellectual, emotional, moral and social characteristics of adolescence, and the educative activities suited to the period of secondary school education. An evaluation of the content of some selected subjects of the high school curriculum to determine their adaptability to the adolescent period. Time especially arranged for teachers of Seattle and vicinity.

205-206. EXPERIMENTAL EDUCATION. Two credits per semester. Mr. KRUSE.

(a) A summary of the literature of recent experimental studies in education. (b) Methods of investigation and interpretation of results. (c) Scales and tests. (d) Problems suitable for class and individual experimentation. A consideration of those problems in the teaching of reading, writing, spelling, arithmetic, etc., which lend themselves to experimental investigation. Data will be obtained from various public schools.

215-216. ADVANCED EDUCATIONAL PSYCHOLOGY. Two credits per semester. Professor BOLTON.

Lectures, readings, discussions and demonstrations. Consideration of typical experimental methods in relation to the present state of exact knowledge involved in definite educational problems.

IV. EDUCATIONAL ADMINISTRATION

156. SUPERVISION AND MANAGEMENT. Three credits. Second semester. Professor LULL.

For those who are preparing for supervision, principalships or teaching positions. Practical problems of school organization and administration, such as the making and administration of courses of study; functions of school boards, superintendents, and principals; supervision of class work, teachers' meetings, student organizations.

165. SCHOOL HYGIENE. Two credits. First semester. Professor WEINZIEHL.

Problems of school hygiene, including heating, lighting, and ventilation; school diseases and medical inspection of schools, hygiene of various school activities.

209-210. ADMINISTRATION OF AMERICAN EDUCATION. Two credits per semester. Professor LULL.

Plan: To discover the educational needs and then to determine as far as possible to what extent the present systems of administration should be reorganized. First semester. National, state and county (or other similar local unit) administration. Problems in the reorganization of state and county units of administration. Emphasis upon the State of Washington. Second semester. Local administration, including cities and towns. The administrative machinery of the schools. Administration of instruction, secondary, elementary, and special forms.

V. GRADUATE SEMINARS AND INDIVIDUAL RESEARCH

249-250. SEMINAR IN MODERN EDUCATIONAL THEORIES. Two credits per semester. Professor BOLTON.

Critical consideration of technical educational literature bearing upon modern educational theories and problems. The evolution of these theories and problems will be traced. Reports on individual topics.

251-252. SEMINAR IN INDUSTRIAL ARTS EDUCATION. Two credits per semester. Assistant Professor JOHNSON.

The need for a study of industry in the elementary school, typical approaches to the study of industry; relation of industrial arts to other studies of the curriculum; criteria for curriculum making in the industrial arts; problems of supervision and administration. The endpoint of this course is the development of a tentative course of study in industrial arts for the elementary school.

253-254. SEMINAR IN EDUCATIONAL SURVEYS. Two credits per semester. Professor LULL.

Methods and literature of educational surveys.

255-256. SEMINAR IN ELEMENTARY SCHOOL CURRICULUM. Two credits per semester. Assistant Professor ANDERSON.

The function, character, and organization of the elementary school curriculum. A consideration of what subject-matter and experiences are of greatest worth for the individual. Adaptation of the curriculum to growth periods. The curriculum from the standpoint of the immediate interests, needs, and future efficiency of the child. Minimum essentials in and possibilities for the

enrichment of the course of study. The time is especially arranged for teachers of Seattle and vicinity.

299-300. **INDIVIDUAL RESEARCH OR THESIS WORK.** Credits to be arranged.

Intensive study and original investigation of special problems. Results are usually reported in one of the seminars and when especially meritorious may be published. The special problems are directed by different members of the department. Consult head of the department regarding registration.

ELECTRICAL ENGINEERING (Engineering Building)

**PROFESSOR MAGNUSSON, ASSISTANT PROFESSORS LOEW AND
KIRSTEN, MR. CURTIS.**

161. **ALTERNATING CURRENTS.** Four credits. First semester. Senior E. E. Prerequisite, E. E. 101, 102. Professor MAGNUSSON.

The theory of the generation of singlephase and polyphase currents. Energy storage in the magnetic and dielectric fields. Vector diagrams and the symbolic method of analysis. Power factors and the measurement of power. Hysteresis and eddy currents. Theory of the transformer, single phase and polyphase induction motors and alternators.

163. **ALTERNATING CURRENT LABORATORY.** Three credits. First semester. Prerequisite, E. E. 101, 102. To be taken in connection with E. E. 161. Mr. CURTIS.

Experimental work on alternating current machinery.

164. **ALTERNATING CURRENTS.** Four credits. Second semester. Prerequisite, E. E. 161, 163. Professor MAGNUSSON.

The theory of rotary converters, synchronous and commutator motors, and transmission lines. High tension phenomena. Commercial wave forms. Unbalanced and interlinked polyphase systems.

166. **ALTERNATING CURRENT LABORATORY.** Three credits. Second semester. Prerequisite, E. E. 161, 163. To be taken in connection with E. E. 164. Mr. CURTIS.

A continuation of E. E. 163 with tests on rotary converters, synchronous and commutator motors and transmission lines.

170. **ELECTRIC RAILWAYS.** Three credits. First semester. Prerequisite, E. E. 103, 104 or 105. Mr. CURTIS.

Electrical equipment and rolling stock; roadbed; construction and operation of direct current, single phase, and polyphase systems.

174. **CENTRAL STATIONS.** Two credits. Second semester. Prerequisites, E. E. 161 and 163. Mr. CURTIS.

Location, design and operation of electric central stations.

176. **POWER TRANSMISSION.** Two credits. Second semester. Prerequisites, E. E. 161 and 163. Assistant Professor KIRSTEN.

Theory, design and operation of electric power transmission systems.

180. **RADIO ENGINEERING.** Three credits. Second semester.

Natural oscillations of condenser circuits. Lineal, open and complex oscillators. Coupled circuits. Resonance. Transmitters. Undamped and quenched oscillations. Receivers. Propagation of waves over the earth's surface.

195-196. **THESIS.** One credit first semester. Three credits second semester. Professor MAGNUSSEN, Assistant Professors LOEW and KIRSTEN, Mr. CURTIS.

After consultation with the head of the department each student selects a suitable topic for investigation. Reports of progress are made weekly to the instructor in charge of the work selected. A complete report of the semester's or year's work is typewritten and bound and a copy deposited in the University library.

201-202. **TRANSIENT ELECTRICAL PHENOMENA.** Two credits per semester. Prerequisite, E. E. 161, 163. Professor MAGNUSSEN.

The exponential law of simple transients. Single and double energy transients. Current oscillations and traveling waves. Natural period of transmission lines. Short circuit transients. Surges. Corona. Lightning phenomena.

211-212. **RESEARCH.** Four credits per semester. Professor MAGNUSSEN.

ENGLISH
(Denny Hall)

PROFESSORS PADELFORD AND PARRINGTON; ASSOCIATE PROFESSORS
BENHAM AND MILLIMAN; ASSISTANT PROFESSORS GARRETT,
COX AND DARBY; MR. HARRISON.

Departmental Committee on Graduate Studies: Associate Professor BENHAM and Assistant Professors GARRETT, COX and DARBY.

REQUIREMENTS GOVERNING GRADUATE WORK: Supplementary to the general requirements established by the Graduate Faculty, the department has formulated the following rules governing graduate work in English:

1. All graduate students in English come under the immediate supervision of the Departmental Committee on Graduate Studies, who will pass upon their fitness to pursue the work proposed, will have general oversight of their studies and will determine the sufficiency both of the thesis and of the preparation of candidates who wish to be admitted to the examination for an advanced degree.

2. Major students who are candidates for a degree will be required: (1) To satisfy the committee that they possess a fair knowledge of Old English grammar, and some ability in reading simple Old English prose, (2) To pass a qualifying examination in the history of English literature. Such examination will be held on the second Monday in October. In the event of the candidate's failure to pass the examination, he will be permitted to take a second examination during the first week in May, failure to pass which will debar him from the final examination of that year. Candidates who fail in the October examination will be permitted to enroll in English A, but they may not count the work in computing credits. (3) To satisfy the committee that they possess a sufficient mastery of English prose style.

Graduate work is usually conducted by means of seminars. The time devoted to the meetings is indicated in each case, but the number of credits a student may elect in a given seminar varies from one to six at option. In every case, however, the number elected must be indicated at the time of enrollment.

In addition to the work outlined below, credits not to exceed twelve hours may be counted towards an advanced degree, earned

in courses primarily for juniors and seniors, and listed in groups II and IV of the English department in the College of Liberal Arts.

FOR GRADUATES

201-202. ENGLISH LITERARY HISTORY.

*A. THE MEDIEVAL PERIOD. From the beginnings to 1550. Assistant Professor Cox.

B. ENGLISH LITERATURE FROM 1550-1660. Professor PADEL-FORD.

For 1916-1917 the subject matter will be the Tudor and Jacobean drama. The first semester will be given up to the study of the general history of this drama and to the reading of a large number of plays; the second semester to the detailed study of problems connected with the drama.

C. ENGLISH LITERATURE FROM 1660-1830. Assistant Professor DARBY.

The work of this seminar is conducted by means of individual conferences. Each student selects his own reading in this field. Suggested readings for 1916-1917: Milton and the Puritans; The Queen Anne classicists, Dr. Samuel Johnson and his circle, the eighteenth century novel, the revolutionary period.

211-212. AMERICAN LITERATURE. Professor PARRINGTON.

The field of this work is determined by the wishes of the class. During the past two years the period from 1890-1914 has been studied.

221-222. MODERN ENGLISH LITERATURE. Associate Professor BENHAM.

The emphasis is placed on nineteenth century prose with a view to determining, if possible, the influence of the industrial revolution on modern English literature.

231-232. COMPARATIVE LITERATURE.

A. THEORIES OF POETRY AND CRITICISM. Assistant Professor Cox.

Readings for background in esthetic, philosophic, and poetic theories from Plato and Aristotle down to the present. Special investigations in tragedy and comedy, lyric and narrative poetry.

* Not offered in 1916-17.

B. RENAISSANCE TYPES IN ENGLAND, FRANCE AND ITALY. Professor PADELFORD.

A review of the history of the Renaissance and the Reformation; followed by a comparative study of the more notable Renaissance literature in England, France and Italy.

241-242. THE ENGLISH LANGUAGE.

A. OLD AND MIDDLE ENGLISH. Assistant Professor GARRETT.

For the year 1916-1917 the works of Chaucer will be studied.

B. LINGUISTICS. Assistant Professor GARRETT.

The history of English dialects from the eighth century down to the present time.

251. RHETORIC. Two credits. First semester. Associate Professor MILLIMAN.

A study of the elements of style in thought, unit, rhetorical foot, tone color, suppressed predication, and sentence shortening.

261-262. THE TECHNIQUE OF THE DRAMA. Three credits per semester. Mr. HARRISON.

A course in the practice of dramatic composition, together with the study of dramatic technique. Open to undergraduates with the permission of the instructor.

FORESTRY

PROFESSOR WINKENWERDER, ASSOCIATE PROFESSOR KIRKLAND, ASSISTANT PROFESSOR CLARK, MR. GRÖNDAL, MR. ZIMMERMAN.

301. ADVANCED DENDROLOGY. Three credits. First semester. Primarily for graduate students. Professor WINKENWERDER.

An extension of course 1 covering the identification and distribution of all important commercial tree species of the United States. Text: Sargent's Manual Trees of North America.

302. NATIONAL FOREST ADMINISTRATION. Two credits. Second semester. Assistant Professor CLARK.

Objects of forest administration; regulations and instructions governing disposal of timber, range, and all other forest resources; use and disposal of land; rights-of-way; protection against fire, and trespass; improvement work; fiscal matters; principles and details of each subject, including investigations, reports, permits, use of all forms, supervision of work; suggestions and demonstrations.

303. **TIMBER PHYSICS.** Three credits. First semester. For senior and graduate students. Prerequisite, Mathematics 55-56. Laboratory deposit, \$1.00. Mr. ZIMMERMAN.

Various stresses which wood must resist; methods of making tests; theory of flexure; relation between moisture and strength; between specific gravity and strength; mechanical properties of wood.

304. **WOOD PRESERVATION.** Three credits. Second semester. Required of seniors and graduates. Prerequisite, 101 and one year of chemistry. Mr. GRÖNDAL.

Nature of the decay of timber. Preservative processes. Design and practical operation of wood preserving plants. Commercial testing of preservatives. Economics of wood preservation. Laboratory work with College of Forestry treating plant and report work on local creosoting plants.

305-306. **LOGGING ENGINEERING.** Five credits first semester, six credits second semester. Primarily for graduates. Prerequisite, 51, 52, C. E. 108, M. E. 82 and 153. Assistant Professor CLARK.

The construction and use of types of logging machinery and equipment. The organization of logging companies, capital required. Construction of logging railroads, landings, camps, water systems, etc. Topographic and railroad surveying applied to logging operations. Organization and cost of operations. Lectures, demonstrations at plants manufacturing logging machinery, field work in nearby logging camps. During the second half of the second semester the work is transferred to the field where extensive work in logging engineering is carried on.

307-308. **SEMINAR.** One credit per semester. For seniors and graduates. Professor WINKENWERDER, Associate Professor KIRKLAND, Mr. GRÖNDAL.

Reviews, assigned readings, reports, and discussions on current periodical literature and the more recent Forest Service publications.

309-310. **ADVANCED FOREST PRODUCTS.** Two credits per semester. For seniors and graduates. Prerequisite, 101 and 304. Mr. GRÖNDAL.

Advanced studies in wood preservation and wood technology. Special problems with reference to the needs of the individual student.

311. FOREST UTILIZATION. Four credits. First semester. For seniors and graduates. Prerequisite, 101 and one year of chemistry. Mr. GRÖNDAL.

Lumber and its economic uses. Building materials and buildings. Proper uses of treated wood blocks. Wood pipe, silos, veneers, etc. Paper making, wood distillation, tanbark, naval stores and other secondary forest products.

313-314. RESEARCH. Two credits per semester. May be taken as a semester or a year course. For seniors and graduates.

315. SCIENTIFIC MANAGEMENT. Two credits. Second semester. Associate Professor KIRKLAND.

Fundamental principles of scientific management, with special reference to the lumber industry.

316. ADVANCED FOREST MANAGEMENT. Three credits. Second semester. For graduate students only. Prerequisite, 151-152. Associate Professor KIRKLAND.

Advanced studies. About one week of field work on a tract of 50,000 to 100,000 acres on which data concerning different soil classes, forest types, etc., and volume of timber is already available. This work will be followed by the actual formation of a working plan providing for regulation of the yield and organization of all forest work on the area, with estimates of outlay and income.

318. FIELD FOREST MENSURATION. Two credits. Second semester. For seniors or graduates. Prerequisite, 305. Associate Professor CLARK.

This course will be given in the field the second half of the semester in connection with the field work in logging engineering. It supplements and enlarges upon the work of timber estimating and mapping as given in courses 51 and 52.

FRENCH AND ITALIAN

(Denny Hall)

PROFESSOR FREIN, ASSOCIATE PROFESSOR PATZER, ASSISTANT PROFESSORS ATKIN, RATTI AND HELMLINGE.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

101-102. THE FRENCH NOVEL. Two credits per semester. Prerequisite, 6. Assistant Professor HELMLINGE.

History of the French novel from its beginning. Some of the most representative novels will be read in class, and others assigned for outside reading.

103-104. LYRIC POETRY. Two credits per semester. Prerequisite, 6. Assistant Professor HELMLINGE.

History of lyric poetry. Considerable attention paid to the structure of modern forms of lyric poetry. Canfield's French Lyrics.

105-106. THE FRENCH DRAMA. Two credits per semester. Prerequisite, 6. Associate Professor PATZER.

History of the drama from its origin. Some of the masterpieces are read in class, and some are assigned for individual reading and report.

107-108. THE SHORT STORY. Two credits per semester. Prerequisite, 6. Assistant Professor ATKIN.

History of the development of the French short story. Reading of some of the best short stories, both in class and for individual assignments.

111-112. HISTORY OF THE FRENCH LITERATURE OF THE NINETEENTH CENTURY. Two credits per semester. Prerequisite, 6. Assistant Professor RATTI.

Lectures in French. Some of the masterpieces assigned for individual reading and report.

*113-114. HISTORY OF THE FRENCH LITERATURE OF THE EIGHTEENTH CENTURY. Two credits per semester. Prerequisite, 6.

*115-116. HISTORY OF THE FRENCH LITERATURE OF THE SEVENTEENTH CENTURY. Two credits per semester. Prerequisite, 6.

Lectures in French; assigned reading.

117-118. TEACHERS' COURSE. Two credits per semester. Prerequisite, 6 and 8. Professor FREIN.

Special emphasis on the methods of teaching French pronunciation. Oral and written exercises. Review of grammar, with students conducting the recitations.

FOR GRADUATES

201-202. HISTORY OF THE FRENCH LITERATURE OF THE SIXTEENTH CENTURY. Two credits per semester. Prerequisite, 6. Associate Professor PATZER.

* Not offered in 1916-17.

Lectures in French. Some texts of the sixteenth century will be assigned for outside reading, and some will be read in class. The French Renaissance will be compared with that of other countries.

203-204. MIDDLE FRENCH. Two credits per semester. Professor FREIN.

Lectures on the history of the fourteenth and fifteenth centuries will be given in French. Some texts will be read in class, and others will be assigned to be read out of class and reports made to the class. Course conducted in French.

205-206. OLD FRENCH READINGS. Four credits per semester. Professor FREIN.

Elements of Old French grammar, and translation from Old French into modern French of some of the texts in Bartsch, Chrestomathie de l'Ancien Francals, and a few of the old texts will be read in complete editions.

207-208. HISTORY OF OLD FRENCH LITERATURE. Two credits per semester. Professor FREIN.

Open only to those who have a reading knowledge of Old French. Those who have had course 203-204 will ordinarily be prepared to follow the work. Course given in French.

GEOLOGY

(Science Hall)

PROFESSOR LANDES,** ASSISTANT PROFESSORS SAUNDERS, WEAVER
AND CULVER.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

103-104. ADVANCED HISTORICAL GEOLOGY. Two credits per semester. Two lectures with assigned reading and laboratory study. May be taken as a semester course or year course. Prerequisite, geology 1-2, or 12, or equivalent work. Assistant Professor WEAVER.

Study of continental evolution, including history of sedimentation, vulcanism, earth movements, and geographic changes in North America (first semester); Eurasia (second semester).

** Absent on leave, 1915-16.

105. **GLACIAL GEOLOGY.** Two credits. First semester. Two lectures and laboratory study of different regions. Prerequisite, geology 1 or 12, or equivalent work.

The characteristics of glaciers and the geological work they accomplish, and a study of continental glaciation.

107. **GEOLOGY OF WASHINGTON.** Two credits. First semester. Two lectures with assigned readings and laboratory study. Prerequisite, some knowledge of general geology or physiography. Professor LANDES.

A history of the geological development of the state and its different physiographic regions.

*111. **PHYSIOGRAPHY OF THE UNITED STATES.** Three credits. First semester. Three lectures with assigned laboratory study. Laboratory fee, \$1.00. Prerequisite, geology 1 or 12, or equivalent course. Assistant Professor SAUNDERS.

The development of the physiographic features of the United States and the influence these features have exerted on the history and commercial growth of the country.

113. **PHYSIOGRAPHY OF EUROPE.** Three credits. First semester. Three lectures with assigned laboratory study. Laboratory fee, \$1.00. Prerequisite, geology 1 or 12, or equivalent work. Assistant Professor SAUNDERS.

The development of the physiographic regions of Europe and the influence the larger features have exerted on the development and history of the country.

121. **PETROLOGY.** Three credits. First semester. A special course for coal mining men in the College of Mines. Laboratory deposit, \$2.00. Prerequisite, geology 3 and 22. Assistant Professor WEAVER or CULVER.

123. **OPTICAL CRYSTALLOGRAPHY.** Four credits. First semester. Two lectures and two laboratory periods. Prerequisite, geology 1-2, or 3, or 12, college physics and college chemistry. Laboratory fee, \$2.00. Assistant Professor WEAVER.

Practice in the microscopic determination of crystals and artificial products by optical methods.

124. **PETROGRAPHY.** Four credits. Second semester. Two lectures and two laboratory periods. Prerequisite, geology 22 and 123. Laboratory fee, \$2.00. Assistant Professor WEAVER.

* Not offered in 1916-17.

A study of the distinguishing characteristics of the different groups and species of rocks, with practice in their determination by modern petrographical methods.

125-126. FIELD WORK FOR MINING STUDENTS. Credits to be arranged up to three. One credit for eight field days with written report. Prerequisite, 2 or 3 and 21 or 22 (124 also preferred). Assistant Professor WEAVER.

127-128. ECONOMIC GEOLOGY. Three credits per semester. Three lectures and discussion of papers. Prerequisite, for 128, geology 3, 22, 124. Professor LANDES.

A study of the origin and extent of economic deposits of non-metals (first semester), metals (second semester). Their production and use.

131. PALEONTOLOGY. Four credits. First semester. Three lectures and one laboratory period. Prerequisite, 2 or 3. Assistant Professor WEAVER.

A laboratory study of fossil invertebrates with their geologic and geographic distribution.

133. PALEOGEOGRAPHY OF THE TERTIARY PERIOD. Two credits. First semester. Prerequisite, geology 2. Assistant Professor WEAVER.

A comparative study of the geological history of the continents and the development of life during the Tertiary in its world-wide application.

FOR GRADUATES

201-202. FIELD WORK or advanced work in general geology. Credits and hours to be arranged. Professor LANDES, Assistant Professors SAUNDERS and CULVER.

211-212. RESEARCH OR ADVANCED WORK IN PHYSIOGRAPHY. Credits and hours to be arranged. Assistant Professor SAUNDERS.

221-222. RESEARCH OR ADVANCED WORK IN PETROGRAPHY, OR ECONOMIC GEOLOGY. Credits and hours to be arranged. Assistant Professor WEAVER.

231-232. RESEARCH OR ADVANCED WORK IN PALEONTOLOGY. Credits and hours to be arranged. Assistant Professor WEAVER.

GERMAN

PROFESSOR MEISNEST; ASSISTANT PROFESSORS HOFF AND ECKELMAN;
DR. TRESSMANN.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

101. HISTORY OF GERMAN LITERATURE. Three credits. First semester. Assistant Professor ECKELMAN.

A general survey for students specializing in German.

102. LYRICS AND BALLADS. Three credits. Second semester. Assistant Professor ECKELMAN.

Characteristic lyrics and ballads of Goethe, Schiller, Uhland, Geibel, Moerike.

103. LESSING. Three credits. First semester. Professor MEISNEST.

Life and works. Early dramas, Emilia Galotti, Nathan der Weise, Hamburgische Dramaturgie or Laokoon.

104. GOETHE'S FAUST, PARTS I AND II. Three credits. Second semester. Professor MEISNEST.

Interpretation, genesis, plan and purpose of the drama. Faust legend and Faust theme in literature.

111-112. Two credits per semester. Professor MEISNEST.

First semester: Phonetics. General differences between German and English pronunciation, the organs of speech, a systematic study of the nature, production and classification of the German speech-sounds, drill in the stage pronunciation, practice in oral expression and reading, simple laboratory experiments and exercises.

Second semester: Methods of Teaching German. Review of grammar, courses of study for high schools, text-books and aids in teaching, observation and some practice teaching in the University and city high schools.

FOR GRADUATES

201-202. GOETHE'S LYRICS AND LETTERS. Two to four credits per semester. Professor MEISNEST.

An interpretative study and analysis of Goethe's lyrics and letters, a study of verse-forms, rhythm and meter.

*203-204. STORM AND STRESS PERIOD. Two to four credits per semester. Professor MEISNEST.

*205-206. ROMANTIC SCHOOL. Two to four credits per semester. Professor MEISNEST.

207-208. NINETEENTH CENTURY. Two to four credits per semester. Assistant Professor ECKELMAN.

Study of the drama and novel. Kleist, Grillparzer, Hebbel, Ludwig, Raabe, Keller, Storm, C. F. Meyer.

*209-210. INTER-RELATIONS OF GERMAN AND ENGLISH LITERATURE. Two to four credits per semester. Professor MEISNEST.

First semester: Shakespeare in Germany and his influence on German literature. Second semester: The influence on German literature of Milton, Young, Addison, Ossian, Pope, Thomson, Swift, Richardson, Fielding, Sterne and Goldsmith.

251-252. HISTORY OF THE GERMAN LANGUAGE. Two credits per semester. Dr. TRESSMANN.

A study of the origin and development of the German language, historical German grammar, formation and derivation of words.

*253-254. MIDDLE HIGH GERMAN. Three credits per semester. Assistant Professor HOFF.

*255-256. OLD HIGH GERMAN. Two credits per semester. Assistant Professor HOFF.

257-258. GOTHIC. Two credits per semester. Assistant Professor HOFF.

GREEK

(Denny Hall)

PROFESSOR HAGGETT AND ASSISTANT PROFESSOR DENSMORE.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

101-102. DRAMATIC POETRY. Two credits per semester. Prerequisite, 3-4. Assistant Professor DENSMORE.

Selected plays from Euripides, Sophocles, and Aristophanes.

*103. LYRIC POETRY. Two credits. First semester. Prerequisites, 3-4. Professor HAGGETT.

Selections from the elegaic, iambic, and melic poets.

*104. ORATORY. Two credits. Second semester. Prerequisite, 3-4. Professor HAGGETT.

Selections from Lysias and Demosthenes.

105. EPIC POETRY. Two credits. First semester. Prerequisite, 3-4. Professor HAGGETT.

Rapid readings of selections from Homer and Hesiod.

106. HISTORICAL PROSE. Two credits. Second semester. Prerequisite, 3-4. Professor HAGGETT.

Selections from Herodotus and Thucydides.

107-108. ADVANCED READING. Three credits per semester. Prerequisite, 101-102. Professor HAGGETT.

Rapid reading of the entire work (or a considerable portion) of some one author, or extensive work in some one department of Greek literature.

109. GREEK ARCHAEOLOGY AND ART. Two credits. First semester. Knowledge of the Greek language is not required. Professor HAGGETT.

After a brief survey of the results of archaeological discoveries up to the present time, the main work of the course will be devoted to a discussion of some of the best examples of Greek architecture, sculpture and vase painting. The discussions will be illustrated by photographs and lantern slides.

110. GREEK POETRY IN ENGLISH TRANSLATION. Two credits. Second semester. Knowledge of the Greek language is not required. Professor HAGGETT.

Lectures, assigned readings and discussions.

HISTORY

(Denny Hall)

PROFESSORS MEANY AND RICHARDSON, ASSOCIATE PROFESSORS
MC MAHON AND BOWMAN, DR. LUTZ.

Students must have had at least one year of history to elect any course in this group. Candidates for the master's degree must have taken major work in history in the University of Washington, or its equivalent elsewhere, before any graduate credits may be counted. The final examination for the master's

* Not offered in 1916-17.

degree will cover medieval and modern European history (the equivalent of History 1-2 in the College of Liberal Arts); the history of the thesis field (American or European, including English history); and the history of the field of the thesis subject.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

105-106. **ENGLISH CONSTITUTIONAL HISTORY.** Three credits per semester. Open to juniors and seniors who have taken or are taking 5-6, and to pre-law students with consent of the instructor. Professor RICHARDSON.

The development of the legal and governmental institutions of the English people to the present time.

109. **HISTORY OF THE MIDDLE AGES.** Three credits. First semester. Prerequisite, 1-2. Associate Professor BOWMAN.

An advanced course dealing with economic and social developments.

112. **MEDIEVAL CIVILIZATION.** Three credits. Second semester. Prerequisite, 1-2. Associate Professor BOWMAN.

A study of the medieval civilization and culture down to the thirteenth century.

115. **THE RENAISSANCE.** Three credits. First semester. Prerequisite, 1-2. Associate Professor BOWMAN.

A study of the origin and development of the Renaissance and its spread among the European peoples.

116. **THE REFORMATION.** Three credits. Second semester. Prerequisite, 1-2. Associate Professor BOWMAN.

A study of the origin and development of the Reformation, and of its spread among the European peoples.

121-122. **PRUSSIA AND NORTHERN EUROPE.** Two credits per semester. Prerequisite, 1-2. Professor RICHARDSON.

This course deals with Sweden as a great power, its rise, progress, and decline; the rise of Russia and Prussia; the partition of Poland; and the beginnings of the Eastern question. Special attention is paid to the economic, political and military development of the Prussian state from its foundation to the acquisition of world-power by Frederick the Great.

***123-124. HISTORY OF FRANCE FROM THE REFORMATION TO THE FRENCH REVOLUTION. Professor RICHARDSON.**

***127-128. HISTORY OF ENGLAND SINCE THE ACCESSION OF GEORGE III. Two credits per semester. Prerequisite, 1-2 or 5-6. Dr. LUTZ.**

129. THE FRENCH REVOLUTION AND NAPOLEONIC ERA. Three credits. First semester. Prerequisite, 1-2. Dr. LUTZ.

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.

130. EUROPE SINCE 1814. Three credits. Second semester. Prerequisite, 1-2. Dr. LUTZ.

Mainly political, introductory to European politics of the present time. The course deals with the fundamental principles and policies of the Era of Reaction under Metternich and the subsequent triumph of liberalism. The chief emphasis is laid upon the establishment of constitutional government and national unity in Germany, Italy and the other states of Western Europe, and upon the careers of great leaders, notably Bismarck and Cavour.

***131-132. EUROPE SINCE 1870, AND CONTEMPORARY EUROPE. Two credits per semester. Prerequisite, 1-2. Dr. LUTZ.**

135-136. THE DEVELOPMENT OF INTERNATIONAL ARBITRATION AND CONCILIATION. Two credits per semester. Dr. LUTZ.

***139-140. ECONOMIC AND SOCIAL HISTORY OF THE AMERICAN COLONIES. Associate Professor McMAHON.**

143. HISTORY OF THE UNITED STATES, 1787-1828. Three credits. First semester. Associate Professor McMAHON.

144. HISTORY OF THE UNITED STATES, 1828-1860. Three credits. Second semester. Associate Professor McMAHON.

147. CIVIL WAR AND RECONSTRUCTION. Three credits. First semester. Associate Professor McMAHON.

A general study of the Civil war and the period of reconstruction.

148. THE HISTORY OF NATIONAL DEVELOPMENT. Three credits. Second semester. Associate Professor McMAHON.

A continuation of 147, in which the development of the American nation will be traced from the close of the reconstruction period to the present time.

153. SPAIN IN AMERICA. Three credits. First semester. Professor MEANY.

A study of the rise and fall of Spanish power in the new world, and an outline of the history of the Spanish-American republics.

154. DEVELOPMENT OF THE PACIFIC. Three credits. Second semester. Professor MEANY.

History of the countries bordering upon the Pacific ocean, with special reference to the changes now in progress of development.

157-158. HISTORY OF AMERICAN DIPLOMACY. Two credits per semester. Professor MEANY.

A study of the treaties and foreign policy of the United States. Open to those who have taken a narrative course in American history.

163-164. NORTHWESTERN HISTORY. Two credits per semester. Professor MEANY.

From the earliest voyages to the settlement and organization of the territories.

185. THE HISTORY AND LITERATURE OF CHINA. Two credits. First semester. Professor GOWEN.

190. THE HISTORY AND LITERATURE OF JAPAN. Two credits. Second semester. Professor GOWEN.

195. METHODS OF TEACHING HISTORY. Two credits. First semester. Required of advanced students who expect to teach history. Associate Professor McMAHON.

Text-books, assigned readings, courses of study and methods of presentation will be considered.

FOR GRADUATES

*205-206. HISTORIOGRAPHY. One credit per semester. Open to graduate students and to seniors by permission. Associate Professor BOWMAN.

A study of the general history of the writing of history.

209-210. METHODS OF HISTORICAL RESEARCH AND CRITICISM. One credit per semester. Professor RICHARDSON.

213-214. SEMINAR IN EUROPEAN HISTORY. Two credits per semester. Associate Professor BOWMAN.

217-218. SEMINAR IN ENGLISH HISTORY. Two to four credits per semester. Open to graduates and a few seniors by permission. Professor RICHARDSON.

A graduate course which lays more stress upon the constitutional than upon the political side of the subject. The course will deal with topics in the Tudor and Stuart period, and with the antecedents of the Puritan Revolution.

*221-222. SEMINAR IN AMERICAN HISTORY. Two credits per semester. Associate Professor McMAHON.

This course is primarily for graduates or other advanced students who may be admitted by permission.

227-228. JOINT SEMINAR. Two credits per semester. Open to graduate students and to a limited number of seniors on recommendation of their major professors. Professors MEANY, SMITH and CONDON.

Designed for study and reports upon the problems in the historical, political, and legal developments of the State of Washington and the Pacific Northwest.

HOME ECONOMICS

(Home Economics Building)

PROFESSOR RAITT AND MISS BOTHERMEL.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

53. NUTRITION—DIETETICS. Four credits. First semester. Prerequisites, home economics 5, chemistry 5, chemistry 144. Laboratory deposit, \$3. Professor RAITT.

* Not offered in 1916-17.

Principles of human nutrition. Application to needs of individuals and groups under varying conditions. Dietary standards. Methods of computing dietaries. Two lectures and two laboratory periods per week.

56. NUTRITION. Two credits. Second semester. Prerequisite, home economics 53. Professor RAITT.

Study of the development of the science of nutrition. Review of present status. Original sources. Library research. Two lectures per week.

57. SPECIAL FOOD PROBLEMS. Three credits. First semester. Prerequisite, home economics 53 or 54. Laboratory deposit, \$1. Professor RAITT.

Marketing, cold storage, dietaries, adulterations, preservatives. A consideration of food habits. Three lectures.

FOR GRADUATES

200. SPECIAL FOOD PROBLEMS. Three credits. Second semester. Prerequisites, home economics 5, 51, 53, 57; chemistry 33 and 113. Professor RAITT.

Investigation of local food products.

202. SEMINAR. Four credits. Either semester. Prerequisite, thirty hours in home economics including 81-82. Professor RAITT.

A study of the present status of home economics education with special attention to the work in the elementary and high schools of the State of Washington.

203. RESEARCH. Either semester. Credits to be arranged. Miss ROTHERMEL.

Investigations of recent discoveries in the biological or physical sciences of immediate value to the housewife and consideration of methods for their utilization.

LATIN

(Denny Hall)

PROFESSOR THOMSON AND ASSOCIATE PROFESSOR SIDEX.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

101. PLINY, Letters. MARTIAL, Epigrams. Two credits. First semester. Prerequisite, 5, 6. Professor THOMSON.

102. JUVENAL, Satires. Two credits. Second semester. Prerequisite, 5, 6. Professor THOMSON.

FOR GRADUATES

201. LUCRETIVS, Books I and III. CICERO, De Finibus I and II. Two credits. First semester. Professor THOMSON.

202. VERGIL, Georgics and Aeneid VII-XII. Two credits. Second semester. Professor THOMSON.

203. MEDIEVAL LATIN. Einhard's Life of Charlemagne, Bede's History of England. Two credits. First semester. Associate Professor SIDEX.

204. TACITUS, History I, II. Two credits. Second semester. Associate Professor SIDEX.

205. LATIN OF THE EMPIRE. Gudeman's Selections. Two credits. First semester. Professor THOMSON.

206. TACITUS, Dialogus. QUINTILIAN, Book I. Two credits. Second semester. Professor THOMSON.

MATHEMATICS AND ASTRONOMY

(Science Hall)

I. MATHEMATICS

PROFESSOR MORITZ, ASSOCIATE PROFESSORS MORRISON AND BOOTHROYD,
ASSISTANT PROFESSORS GAVETT, CARPENTER AND NEIKIRK;
DRS. BELL, SMAIL AND WEAR.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

111-112. APPLICATIONS OF MATHEMATICS TO PHYSICS. Two credits per semester. Prerequisite, 34 or 62. Dr. BELL.

The object of this course will be to give the student mathematical knowledge sufficient to enable him to read the easier classical memoirs and treatises in which mathematics is applied to physics, and at least two such memoirs, to be selected jointly by the class and instructor, will be read. The first part of the course, proceeding from a review of Fourier's Theorem to a study of line, surface and volume integrals and the theorems of Green, Gauss, Stokes, Kelvin, and the equations of Laplace and Poisson, will consider some of their various physical interpretations. The

more important differential equations of the subject, and their solutions under given conditions will be derived and studied. The second part will be concerned with statistical methods as applied by Maxwell to physics.

113-114. ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS. Two credits per semester. Prerequisite, 34 or 62. Assistant Professor NEIKIRK.

Introductory course. Solutions of the equations of the first and second order. Determination of constants of integration from initial conditions. Application to physics, chemistry and astronomy.

115-116. VECTOR ANALYSIS. Four credits per semester.

117-118. PROJECTIVE GEOMETRY. Two credits per semester. Prerequisite, two years of college mathematics. Assistant Professor CARPENTER.

*119-120. NON-EUCLIDEAN GEOMETRY. Two credits per semester. Prerequisite, two years of college mathematics. Assistant Professor GAVETT.

*121-122. THEORY OF FUNCTIONS OF A REAL VARIABLE. Two credits per semester. Prerequisite, 34 or 62. Dr. SMAIL.

Rational and irrational numbers, the general function concept, continuity, integrability, and differentiability of functions, discontinuous functions, infinite series and products, series of functions, uniform convergence, multiple series, definite integrals, curvilinear integrals.

124. TEACHER'S COURSE. Four credits. Second semester. Prerequisite, 34. Required of those who make mathematics their major study and who are applicants for the teacher's certificate. Assistant Professor CARPENTER.

FOR GRADUATES

201-202. MODERN GEOMETRY. Three credits per semester. Must be accompanied or preceded by 117-118. Associate Professor MORRISON.

An introductory course in modern analytical geometry of two and three dimensions.

* Not offered in 1916-17.

*203-204. DIFFERENTIAL GEOMETRY. Three credits per semester. Prerequisite, 34 or 64. Associate Professor MORRISON.

*205. THEORY OF EQUATIONS. Three credits. First semester. Prerequisite, 34 or 64. Professor MORITZ.

*206. MODERN ALGEBRA. Three credits. Second semester. Prerequisite, 205. Professor MORITZ.

207-208. INFINITE SERIES. Three credits per semester. Prerequisite, 15-16, and 34. Professor MORITZ.

Convergence of infinite series and infinite products. The binomial, exponential, logarithmic, and trigonometric series for complex values of the variable. Summation and transformation of series. Power series, hyper-geometric series and Fourier series.

*209-210. ALGEBRAIC INVARIANTS AND COVARIANTS. Two credits per semester. Prerequisite, 23. Dr. WEAR.

211-212. FOUNDATIONS OF MATHEMATICS. Two credits per semester. Prerequisite, 34. Dr. WEAR.

213-214. THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. Two credits per semester. Prerequisite, 33 and 34. Dr. SMALL.

215-216. ANALYTICAL MECHANICS. (See astronomy 105-106.) Two credits per semester. Associate Professor BOOTHROYD.

251-252. MATHEMATICAL JOURNAL AND RESEARCH CLUB. Meets on the second Tuesday of each month in Science Hall, room 2, at 8 p. m. The club consists of advanced students and teachers in the department of mathematics. The purpose of the club is primarily to discuss the research work carried on by members of the club, and secondarily to review important recent mathematical literature.

II. ASTRONOMY (The Observatory)

PROFESSOR MORITZ AND ASSOCIATE PROFESSOR BOOTHROYD.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

101. ELEMENTARY PRACTICAL ASTRONOMY. Four credits. First semester. Prerequisite, mathematics 11-12 or its equivalent and must be preceded or accompanied by mathematics 31 or its equivalent. Associate Professor BOOTHROYD.

* Not offered in 1916-17.

After mastering the elements of the subject, they are applied to the problems of determination of time, latitude, longitude and azimuth with the sextant and surveyor's transit. The student becomes acquainted in this work with the use of astronomical transit, clock and chronograph. Especially desirable for navigators and for civil, electrical and mining engineers.

102. ELEMENTARY GEODESY. Four credits. Second semester. Prerequisite, astronomy 101 and preceded or accompanied by mathematics 62 or its equivalent. Associate Professor BOOTH-BOYD.

Precise surveying methods and elements of geodesy, mapping and map projection. This course is planned especially for engineers who desire a knowledge of precise surveying methods such as are used in the survey of the larger cities, in geodetic surveying and in all survey work where a high degree of accuracy is necessary. As much practice in precise surveying methods will be given as the time permits.

103-104. ADJUSTMENT OF OBSERVATIONS. One credit per semester. Prerequisite, astronomy 102. Associate Professor BOOTH-BOYD.

105-106. ANALYTICAL MECHANICS. Two credits per semester. Prerequisite, mathematics 34. Associate Professor BOOTHROYD.

***107-108. CELESTIAL MECHANICS.** Two credits per semester. Prerequisite, astronomy 1-2, 3-4, 105-106, and mathematics 113-114. Associate Professor BOOTHROYD.

FOR GRADUATES

201-202. ADVANCED ASTRONOMY. Two credits per semester. Associate Professor BOOTHROYD.

This work may be taken along any one of three lines as follows: (1) Astro-physics. Prerequisite, astronomy 1-2, 3-4, physics 101, mathematics 33-34. (2) Practical astronomy. Prerequisite, astronomy 103-104, mathematics 33-34. (3) Theoretical astronomy. Prerequisite, astronomy 107-108.

* Not offered in 1916-17.

MECHANICAL ENGINEERING

(Engineering Building)

PROFESSOR EASTWOOD, ASSOCIATE PROFESSOR WILSON, ASSISTANT
PROFESSOR MACINTIRE.

101. DESIGN OF SPECIAL MACHINERY. Two credits. First semester. Prerequisite, M. E. 91 and C. E. 131. Assistant Professor MACINTIRE.

Special problems in the design of hoisting and pumping machinery.

102. ADVANCED MACHINE DESIGN. Two credits. Second semester. Prerequisite, M. E. 101 and C. E. 132. Assistant Professor MACINTIRE.

Special problems in the design of machine tools, and automatic machinery.

124. ENGINE AND BOILER DESIGN. Three credits. Second semester. Prerequisite, M. E. 91, 123 and C. E. 132. Professor EASTWOOD.

One complete problem will be assigned for solution in the class room.

141. EXPERIMENTAL ENGINEERING. Three credits. First semester. Same as M. E. 140 except an additional laboratory period is provided. Associate Professor WILSON.

151. EXPERIMENTAL ENGINEERING. Two credits. First semester. Prerequisite, M. E. 141. Associate Professor WILSON.

A continuation of M. E. 140, involving more extended and complete investigations. Special attention is given to the theory involved and previous experiments. Gas and fuel analysis.

152. EXPERIMENTAL ENGINEERING. Two credits. Second semester. Prerequisite, M. E. 151. Professor EASTWOOD and Associate Professor WILSON.

An advanced course in commercial testing.

179. STEAM TURBINES. Two credits. First semester. Prerequisite, M. E. 82. Professor EASTWOOD.

The theory, construction and design of steam turbines.

180. **MECHANICAL REFRIGERATION.** Two credits. Second semester. Prerequisite, physics 96 and 98. Assistant Professor MACINTIRE.

The theory and application of mechanical refrigeration.

182. **HEATING AND VENTILATING.** Two credits. Second semester. Prerequisite, M. E. 82. Professor EASTWOOD.

The various systems of heating and ventilating, methods of design and tests.

188. **GAS ENGINES.** Two credits. Second semester. Prerequisite, M. E. 82. Associate Professor WILSON.

The development of gas engineering, including the different types of gas engines, and gas producers and methods of testing.

201. **GAS ENGINE DESIGN.** Two credits. First semester. Prerequisite, M. E. 188. Associate Professor WILSON.

Calculations and plans for the design of a given type of gas engine.

203. **GRAPHIC STATICS OF MECHANISM.** Three credits. First semester. Prerequisite, C. E. 131. Professor EASTWOOD.

MINING ENGINEERING AND METALLURGY

(Mines Building)

PROFESSOR ROBERTS, ASSISTANT PROFESSORS DANIELS AND COREY.

I. MINING ENGINEERING

184. **INDUSTRIAL ORGANIZATION.** Two credits. Second semester. Two lectures. Assistant Professor DANIELS.

A study of the principles of industrial organization and scientific management, involving the consideration of handling labor and materials, methods of operation, cost keeping and performance records, interpretation of efficiency data.

301. **MINING METHODS.** Three credits. First semester. Senior or graduate. Professor ROBERTS.

Two lectures and one laboratory period. A detailed study of certain branches of mining.

II. METALLURGY

106. REFRACTORIES. Two credits. Second semester. One lecture and one laboratory period. Deposit, \$3.00. Assistant Professor COREY.

Methods of testing clays, refractory materials, cement-making materials.

157. DESIGN OF PLANT. Three credits. Either semester. Three drafting periods. Senior or graduate. Professor ROBERTS and Assistant Professor DANIELS.

The designing of a piece of equipment or a structure for mining, milling or metallurgical purposes.

162. METALLOGRAPHY. One credit. Second semester. One lecture. Assistant Professors DANIELS and COREY.

The constitution and microstructure of metals and alloys, especially iron and steel. The preparation and study of metal sections, photomicrography and the use of the microscope to aid in testing industrial alloys.

163. METALLOGRAPHY. One credit. First semester. One laboratory period. Deposit, \$3.00. Prerequisite, Metallurgy 162. Assistant Professors DANIELS and COREY.

Advanced study of industrial alloys.

PHILOSOPHY AND PSYCHOLOGY

(Denny Hall)

PROFESSORS SAVERY AND SMITH, DR. DUCASSE, MR. WILCOX,
DR. GUTHRIE, DR. GIVLER.

I. PHILOSOPHY

101-102. HISTORY OF PHILOSOPHY. Four credits per semester. Dr. GUTHRIE.

Ancient, medieval and modern. The views of the classical philosophers on the nature of the universe and man, the values of life, the ideal form of society, the origin and limits of knowledge, the relation of the individual to the world, etc. Portions of the most important works of the greater philosophers will be read. Some of the more recent philosophical movements, such as pragmatism and neo-realism will be very briefly touched upon at the end of the course.

103-104. PRINCIPLES OF PHILOSOPHY. Three credits per semester. Prerequisite, 8 credits in philosophy. Professor SAVERY.

A course in systematic philosophy. (1) The meaning and tests of truth, with special reference to pragmatism. (2) The construction of a theory of the universe, including an account of the nature of the human self, its relation to the body, the nature of matter, the problem of the freedom of the will. Study of idealism. (3) The foundation of morality, pessimism and optimism, the evolution and destiny of man.

105-106. PHILOSOPHY OF SCIENCE. Two credits per semester. Prerequisite, 1 or 101-102. Professor SAVERY.

An account of scientific method; and of the fundamental laws and concepts of the sciences—mathematical, physical and biological. Interpretation of the scientific view of the world and its place in the human economy. Primarily for majors in science.

107-108. HISTORY OF RELIGION. Two credits per semester. Professor GOWEN.

First semester, primitive religious ideas, ghost worship, nature worship, divination, the religions of the Euphrates Valley, China, Japan, India, and Persia. Second semester, Judaism, Mohammedanism, and Christianity.

***109-110. PHILOSOPHY OF RELIGION.** Two credits per semester. Prerequisite, one course. Professor SAVERY.

111-112. PHILOSOPHY IN ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Two credits per semester. Prerequisite, one course previous or concurrent. Alternates with 113-114 as requirement for seniors in library training course. Professor SAVERY.

Conceptions of the universe, evolution, the destiny of man, the individual and social ideal in Wordsworth, Shelley, Emerson, Browning, Tennyson, Fitzgerald's Omar Khayyam, James Thompson, Arnold, Swinburne, Meredith and Whitman. An account of the social ideals of Carlyle, Ruskin, Morris, Shaw, Dickinson, Wells and Chesterton.

***113-114. PHILOSOPHY IN THE MODERN DRAMA.** Two credits per semester. Prerequisite, one course previous or concurrent. Alternates with 111-112 as requirement for seniors in Library Training course. Associate Professor BENHAM.

* Not offered in 1916-17.

115-116. **ESTHETICS.** Two credits per semester. Required for seniors in music. Dr. GIVLER and Dr. DUCASSE.

The origin and motives of art, and the esthetic principles of architecture, sculpture, painting, music, poetry, the drama, and the decorative arts. The nature of beauty, the sublime, the comic, the tragic. Standards of criticism. Social and democratic theories of art.

118. **ADVANCED LOGIC.** Two credits. Second semester. Prerequisite, 3 or analytical geometry and calculus. Dr. GUTHRIE.

The development of symbolic logic and the logic of mathematics, with a discussion of logical theory.

*121-122. **PLATO AND ARISTOTLE.** Two credits per semester. Prerequisite, 1, or 101-102. Dr. GUTHRIE.

123-124. **CONTEMPORARY PHILOSOPHY.** Two credits per semester. Prerequisite, 1 or 101-102. Dr. GUTHRIE.

Readings from authors representing the main tendencies in contemporary philosophy, including Haeckel, Mach, Bradley, Royce, Bergson, James, Dewey, Poincare, Russell, and the American neo-realists.

125-126. **SEMINAR IN LOGIC.** Two or three credits per semester. Prerequisite, 3. Dr. DUCASSE.

The course is a direct continuation of the elements of logic.

II. PSYCHOLOGY

101. **PHYSIOLOGICAL PSYCHOLOGY.** Four credits. First semester. Prerequisite, 1. One lecture, one recitation, two laboratory periods. Laboratory deposit, \$1.00. Mr. WILCOX.

The structure and function of the nervous system in relation to consciousness and behavior. Dissection and microscopic study of the human brain, spinal cord, and sense organs.

102. **EXPERIMENTAL PSYCHOLOGY.** Four credits. Second semester. Prerequisite, 1. One lecture, one quiz, and six laboratory hours. Laboratory deposit, \$1.00. Mr. WILCOX.

Students completing this course receive training in laboratory methods, are made familiar with all the more important kinds of psychological apparatus and perform many of the classical experi-

* Not offered in 1916-17.

ments in psychology. On the completion of this course and psychology 112, they are prepared for research.

103-104. PRINCIPLES OF PSYCHOLOGY. Three credits per semester. Prerequisite, 1. Mr. WILCOX and Dr. GIVLER.

An advanced course in general psychology. James' Principles of Psychology will be used as a text. Some account of the history of psychology will be given. Students are advised to precede this by physiological or experimental psychology.

105. ANIMAL BEHAVIOR. Three credits. First semester. Prerequisite, 1. Professor SMITH.

This course is an analytic study of the behavior of lower animals. The principles of experimentation in this field will be determined. The various conceptions of mechanism and vitalism will be considered in their relation to genetic psychology.

107. APPLIED PSYCHOLOGY. Two credits. First semester. Prerequisite, 1. For seniors in commerce. Dr. GIVLER.

The application of the principles of psychology to problems of personal efficiency in business. The student will select and develop a problem of permanent interest to himself.

108. EDUCATIONAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 1. Dr. GIVLER.

The psychological basis of education. Perception, the learning process, practice, memory, habit, judgment, attention, and motor functions, with reference to age, sex, race, and individual differences.

110. ABNORMAL PSYCHOLOGY. Three credits. Second semester. Prerequisite, 1. For pre-medical students, and others by permission of instructor. Mr. WILCOX.

Sleep, dreams, hypnotism, mediumship, possessions, hallucinations, motor automatisms, double personality and the subconscious.

112. CHILD PSYCHOLOGY. Three credits. Second semester. Prerequisite, 1. Professor SMITH.

A study of mental development from infancy to adult age. The course will include the following subjects: The starting point of mental life, the behavior of the newborn, the nature and occurrence of instincts throughout childhood, individual differences, the analysis of temperament, the psychology of learning,

heredity. The mind of the child will be examined in the light of systematic psychology with the purpose of giving the student some scientific understanding of childhood.

113. **PSYCHOLOGY OF EXCEPTIONAL CHILDREN.** Three credits. First semester. Prerequisite, 1. Professor SMITH.

The nature and cause of mental defects and peculiarities of children, with special reference to methods of diagnosis and to physical pathology.

114. **METHODS OF MENTAL AND PHYSICAL TESTS AND METHODS OF MEASUREMENT.** Two credits. Second semester. Prerequisite, 1. Laboratory fee, \$1.00. Professor SMITH and Miss WILKINSON.

Laboratory course with conferences. Students will be given extensive training in applying tests for general intelligence and for mental analysis. The principles of experimental procedure, methods of measurement, and statistical treatment of results form a major part of this course. The course is essential to work in clinical psychology and is advised as preparatory to all other laboratory research in this department.

201-202. **RESEARCH IN PSYCHOLOGY.** Either semester. Prerequisite, 102. Professor SMITH.

Opportunity for original investigation.

PHYSICS

(Denny Hall)

PROFESSOR OSBORN, ASSISTANT PROFESSORS BRAKEL AND ANDERSON;
DR. LESTER.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

*104. **VIBRATORY PHENOMENA AND SOUND.** Four credits. Second semester. Prerequisites, 3 and calculus. Professor OSBORN.

The course takes up the development and discussion of the mathematical expressions for wave motions, and various types of vibrations.

105. **HIGH TEMPERATURE THERMOMETRY.** Two credits. First semester. Prerequisite, 9. One class and one laboratory period. Dr. LESTER.

*107-108. **ILLUMINATION.** Two credits per semester. Prerequisite, 101. Professor OSBORN.

* Not offered in 1916-17.

110. **ELECTRO-CHEMISTRY AND THEORIES OF E. M. F.** Three credits. Second semester. Prerequisite, 4 or 92, and chemistry, 8 hours. Assistant Professor BRAKEL.

111-112. **TEACHER'S PHYSICS.** Two credits per semester. Open only to seniors. Prerequisite, not less than 12 credits of physics and 24 credits of other science. Professor OSBORN.

FOR GRADUATES

201-202. **DYNAMICS.** Two credits per semester. Prerequisite, 3 and calculus. Assistant Professor ANDERSON.

A rigorous mathematical treatment of the fundamentals.

203-204. **THEORETICAL ELECTRICITY AND MAGNETISM.** Two credits per semester. Prerequisite, 4; and calculus. Assistant Professor BRAKEL.

A rigorous mathematical treatment of the fundamentals.

206. **ADVANCED OPTICS.** Two credits. Second semester. Prerequisite, 101, and calculus. Professor OSBORN.

Polarization phenomena and modern theories of light.

207-208. **THERMODYNAMICS AND KINETIC THEORY OF GASES,** Two credits per semester. Two class periods. Prerequisite, 3, 9, and calculus. Assistant Professor ANDERSON.

209. **ELECTRON THEORY.** Two credits. First semester. Prerequisite, 4. Assistant Professor ANDERSON.

The important researches leading to the electron theory are presented, and the application of the theory in explaining the facts of electrostatics, electrical and thermal conduction, magnetism, and chemical valency is considered.

210. **ELECTRON THEORY.** Two credits. Second semester. Prerequisite, 209, and calculus. Assistant Professor ANDERSON.

A mathematical treatment of the electron theory of conduction, thermal and electrical, optical phenomena, atomic structure, etc.

211-212. **SEMINAR.** Credits to be arranged. For senior majors and graduate students.

213-214. **INVESTIGATION.** Credits to be arranged. Any student who can show that he is qualified may undertake original investigation under the direction of one of the instructors.

Of courses 200 to 214, not over eight hours per semester will be offered. Laboratory deposit is \$2.50 per semester for all laboratory courses.

POLITICAL AND SOCIAL SCIENCE

(Denny Hall)

PROFESSORS J. ALLEN SMITH AND BEACH; ASSISTANT PROFESSORS
CUSTIS, BERGLUND, H. E. SMITH AND MC MAHON; DR. JANES,
MR. LAUBE, MR. AKERMAN.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

106. INDUSTRIAL ORGANIZATION. Three credits. Second semester. Prerequisite, 1-2 or 3. Assistant Professor CUSTIS.

A study of modern industry with special reference to trusts and "industrial" monopolies. This course is practically a continuation of 101 (Transportation), but may be taken by students who have not taken that course.

107. PUBLIC FINANCE. Three credits. First semester. Prerequisite, 1-2 or 3. Mr. LAUBE.

Public expenditures, financial administration, taxation, public debts.

108. FINANCIAL HISTORY OF THE UNITED STATES. Three credits. Second semester. Prerequisite, 1-2 or 3. Mr. LAUBE.

The main lines of our financial development, including our monetary and banking history.

109. MONEY AND BANKING. Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor CUSTIS.

Deals chiefly with the systems of money and banking prevailing in different countries, especially the United States, and with international exchange.

110. INTERNATIONAL EXCHANGE. Three credits. Second semester. Prerequisite, 109. Assistant Professor H. E. Smith.

A study of the instruments and methods by which international exchanges are effected, and an analysis of the financial and political principles and consequences involved.

111. DOMESTIC AND FOREIGN MARKETS. Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor BERGLUND.

A study of the forces determining the movement of commodities from producing areas to consuming centers, organiza-

tions for marketing products at home and abroad and combinations formed for the control of the market.

112. **THE TRADE OF THE PACIFIC.** Three credits. Second semester. Prerequisites, 5, and 1-2 or 3. Dr. JANES.

A study of lines and conditions of the trade of the Pacific, with special reference to the commercial relation of the Pacific Northwest with the Orient and with South American countries.

113. **THE DEVELOPMENT OF INDUSTRIAL SOCIETY.** Three credits. First semester. Prerequisite, or concurrent, 1-2 or 3. Assistant Professor BERGLUND.

114. **MODERN TARIFF SYSTEMS.** Two credits. Second semester. Prerequisite, 1-2 or 3. Assistant Professor BERGLUND.

115. **WATER TRANSPORTATION.** Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor ———.

A study of the economics of water transportation, with special reference to the United States, including a consideration of line and bulk traffic, the relations between industrial concerns, rail carriers, and water carriers, the problems of port terminals, and the development in international trade of shipping rings.

116. **CORPORATION FINANCE.** Three credits. Second semester. Prerequisite, 6 hours in economics. Assistant Professor CURTIS.

117-118. **ADVANCED ACCOUNTING AND AUDITING.** Three credits per semester. Prerequisite, 7-8. Must be taken full year to receive credit. Assistant Professor H. E. SMITH.

Principles of higher accounting, including the use of columnar books, valuation of the various items of the balance sheet, classification of accounts, depreciation and appreciation, bad and doubtful debts; reserves, sinking fund, good will, cost accounting, accounting of institutions and municipalities, study of financial reports of corporations. Auditing, qualifications, duties and responsibilities of public auditor, procedure in proper conducting of an audit, preparation of accounts for an audit, examination of books, auditor's certificate and report. Problems in higher accounting and auditing. (Given every other year, alternating with 103-104.)

*119. **LABOR PROBLEMS.** Three credits. First semester. Prerequisite, 1-2 or 3. Assistant Professor McMAHON.

This course covers the topics of strikes, trade unions, employers' associations, arbitration, immigration, child labor.

120. LABOR LEGISLATION. Three credits. Second semester. Prerequisite, 119. Assistant Professor McMAHON.

American and foreign. A study of wages, hours, accidents, industrial hygiene.

121. THE LABOR MOVEMENT IN EUROPE. Three credits. First semester. Given in alternate years with 119. Assistant Professor McMAHON.

*123-124. PRINCIPLES OF ECONOMICS. Three credits per semester. Prerequisite, 6 hours in Economics. Mr. AKERMAN.

A study of the production, distribution, exchange, and consumption of wealth with special reference to present-day problems.

125-126. HISTORY OF ECONOMIC THOUGHT. Three credits per semester. Mr. AKERMAN.

An introduction to the study of the development of economic theory, the main emphasis being placed upon the mercantilists, the physiocrats, and the British classical school.

153-154. POLITICAL THEORIES. Two credits per semester. Prerequisite, six credits in Government. Professor J. ALLEN SMITH.

A study of the political ideas that have influenced constitutional development and legislation in England and the United States.

155. THE GOVERNMENT OF ENGLAND. Two credits. First semester. Prerequisite, six credits in Government. Professor J. ALLEN SMITH.

156. PUBLIC INTERNATIONAL LAW. Two credits. Second semester. Dr. JAMES.

The history and development of public international law.

157-158. JOINT SEMINAR. Two credits per semester. Professors J. ALLEN SMITH, CONDON and MEANY.

Designed for study and reports upon the problems in the historical, political and legal development of the state of Washington and the Pacific Northwest.

*159. COMPARATIVE GOVERNMENT. Two credits. First semester. Prerequisite, six credits in Government. Professor J. ALLEN SMITH.

A study of the chief features of the governmental systems of the countries of central and western Europe.

Courses 155 and 159 are given in alternate years.

***161-162. POLITICAL PROBLEMS.** Two credits per semester. Prerequisite, six credits in Government. Professor J. ALLEN SMITH.

The theory of the separation of powers, political parties and limited government, the United States Supreme Court and democracy, division of functions between central and local government, recent tendencies in governmental organization. Courses 153-154 and 161-162 are given in alternate years.

181-182. PRINCIPLES OF SOCIOLOGY. Three credits per semester. Professor BEACH.

A study of the principles underlying the organization and development of society.

183. SOCIAL AMELIORATION. Three credits. First semester. Prerequisite, 6 credits in sociology. Professor BEACH.

A study of the attempt of society under the present industrial system, to effect improvement in the life of the less fortunate classes.

***184. SOCIAL PSYCHOLOGY.** Three credits. Second semester. Prerequisite, 6 credits in sociology. Professor BEACH.

The growth and nature of custom and convention and the formation of public opinion. It is desirable that the student should have had a course in general psychology. Courses 184 and 186 are given in alternate years.

186. THE FAMILY. Three credits. Second semester. Prerequisite, 6 credits in sociology. Professor BEACH.

187-188. SOCIAL RESEARCH. Two or three credits per semester. Time to be arranged. Professor BEACH.

This course is intended to afford opportunity for investigation of special social problems. It is open only to graduates or advanced students, and in each case consent of the instructor is necessary.

FOR GRADUATES

201-202. SEMINAR IN POLITICAL AND SOCIAL SCIENCE. Two credits per semester.

Primarily for graduate students majoring in the department.

* Not offered in 1916-17.

SCANDINAVIAN

(Law Building)

PROFESSOR VICKNER

FOR ADVANCED UNDERGRADUATES AND GRADUATES

201-202. OLD ICELANDIC. Two credits per semester.

Grammar, prose selections, poems from the Edda, lectures on Scandinavian mythology and antiquities, Scandinavian philology.

*203-204. HISTORY OF THE SWEDISH LANGUAGE. Two credits per semester.

FOR GRADUATES

205-206. SCANDINAVIAN LITERATURE IN THE NINETEENTH CENTURY. Two credits per semester.

Other graduate work with the consent of the head of the department.

SPANISH

(Denny Hall)

PROFESSOR OBER, ASSOCIATE PROFESSOR UMPHREY, ASSISTANT
PROFESSOR STRONG AND MR. SANTANDER.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

131-132. SPANISH LITERATURE OF THE "SIGLO DE ORO." Two credits per semester. Prerequisite, 61. Professor OBER.

Selected texts, collateral reading, lectures. First semester, Cervantes. Second semester, Lope de Vega, Calderon, etc.

151. TEACHERS' COURSE. Two credits. First semester. Professor OBER.

161-162. THE NOVEL. Three credits per semester. Prerequisite, 61. Assistant Professor STRONG.

The origins of the Spanish novel and its development. Reading of selected texts; collateral reading and reports.

*163-164. THE DRAMA. Three credits per semester. Prerequisite, 61. Assistant Professor STRONG.

*171. LYRIC POETRY. Two credits. First semester. Prerequisite, 61. Associate Professor UMPHREY.

* Not offered in 1916-17.

*172. THE SPANISH POPULAR BALLAD. Two credits. Second semester. Prerequisite, 61. Associate Professor UMPHREY.

181, 182. SPANISH-AMERICAN LITERATURE. Two credits per semester. Prerequisite, 61. Associate Professor UMPHREY.

Representative writings of Spanish-American authors. Collateral reading and reports. Lectures.

185, 186. CONFERENCIAS EN ESPANOL ACERCA DE LAS REPUBLICAS LATINO-AMERICANAS. One credit per semester. Mr. SANTANDER.

One lecture a week will be given Saturday morning and will be open to auditors as well as to regular students.

187, 188. THE LITERATURE AND ART OF SPAIN. One credit per semester. Associate Professor UMPHREY.

One lecture a week, in English. Open to auditors as well as to regular students.

189, 190. LATIN-AMERICAN CIVILIZATION, with special attention to art and literature. One credit per semester. Associate Professor UMPHREY.

One lecture a week, in English. Open to auditors as well as to regular students.

FOR GRADUATES

210-211. OLD SPANISH. Two credits per semester. Associate Professor UMPHREY.

History of Spanish literature to the sixteenth century. Reading of the Poema del Cid and selections from other early Spanish writings. Reports on special topics.

ZOOLOGY

(Science Hall)

PROFESSOR EMERITUS JOHNSON, PROFESSOR KINCAID, ASSISTANT
PROFESSOR E. VICTOR SMITH, MR. OSTERUD.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

5-6. VERTEBRATE ANATOMY. Four credits per semester. Prerequisite, 1-2. Mr. OSTERUD.

Comparative structure of vertebrates.

101. **NORMAL HISTOLOGY.** Four credits. First semester. Prerequisite, 1-2. Mr. OSTERUD.

Mammalian histology, especially for pre-medical students, but open to others.

102. **EMBRYOLOGY.** Four credits. Second semester. Prerequisite, 1-2. Mr. OSTERUD.

Comparative developmental history of vertebrates. Especially for pre-medical students.

109-110. **GENERAL ENTOMOLOGY.** Four credits per semester. Prerequisite, 2. Professor KINCAID.

The structure, classification, and economic relations of insects.

FOR GRADUATES

201-202. **MUSEUM AND FIELD WORK.** Four credits per semester. Prerequisite, at least two years of zoology. Professor KINCAID.

Systematic investigation of the local fauna, including studies based upon material in the state museum.

203-204. **RESEARCH.** Credits to be arranged. Either semester. Students capable of carrying on independent research will be allowed to do so under the direction of the instructors in charge.

UNIVERSITY EXTENSION DIVISION

OFFICERS OF ADMINISTRATION

HENRY SUZZALLO, PH. D., PRESIDENT.

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

HERMAN A. BRAUER, PH. D., Chief, Bureau of Municipal Research.

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

OTHER OFFICERS

GEORGE ROMAN KEITH, LL. B., Business Manager, Better Business.

VIOLET WILHELMINA DUNGAN, A. B., Secretary to the Director.

AGNES MOBECK, A. B., Assistant, Department of Instruction.

LYDIA M. MCCUTCHEON, A. B., Assistant, Bureau of Debate and Discussion.

ETHEL E. WEISENSEE, Assistant, Bureau of Municipal and Legislative Reference.

PEARL A. MEGRATH, Assistant, Downtown Office.

The University Extension Division was organized in May, 1912, as an integral part of the University of Washington, to extend the usefulness of the University, both as a teaching institution for those who cannot avail themselves of the ordinary opportunities of resident study, and as a source of research and information for the state, its communities, and its people. Its activities are organized in

- I. The Department of Instruction.
- II. The Bureaus of
 - (a) Municipal Research.
 - (b) Debate and Discussion.
 - (c) Lectures.
- III. The Department of Publication.

The main offices of the Division are in the Administration Building of the University. A branch office and down-town classroom are in Rooms 1041-1044, Henry Building, Fourth Avenue.

I. DEPARTMENT OF INSTRUCTION**FACULTY**

EDWIN A. START, A. M., Director, and Chairman of the University Extension Faculty.

The Extension Faculty is composed of all instructors giving extension courses and of the following:

MARY F. RAUSCH, B. S., Assistant Professor of Home Economics in the Extension Division.

CHARLES A. GUERARD, B. L., Instructor in French in the Extension Division.

AILETTA M. GILLETTE, A. M., Instructor in English in the Extension Division.

EVERETT FRANCIS DAHM, A. B., Instructor in Business Administration, in charge of Extension Business Courses.

CARL BUSH, Lecturer in Business Administration in the Extension Division.

JAMES P. ROBERTSON, Lecturer in Business Administration in the Extension Division.

B. LETCHER LAMBUTH, Lecturer in Business Administration in the Extension Division.

EXTENSION TEACHING

Extension teaching is carried on by means of:

(1) Correspondence courses, through which individual students may be reached in any part of the state.

(2) Lecture courses with class work at different centers out in the state where classes may be organized, the extent of this depending upon the availability of instructors for field work.

Extension study is not to be regarded as a quick and easy means of obtaining a degree. Its last and least important use is to obtain formal university credit. Primarily the service of the Extension Division in its courses of instruction is for the benefit of those who are unable to come to the University but who need and desire some of the advantages which university teaching offers. There are offered in the Department of Instruction:

1. Regular university studies which may, under certain conditions, be offered for credit toward a degree.

2. Advanced courses to assist graduates and others in professional or business life to keep in touch with the progress of knowledge.

3. Preparatory studies for those who may not be able to attend the secondary schools.

4. Vocational courses to supply knowledge or training which will directly affect the student's efficiency in his occupation.

CORRESPONDENCE STUDY

The University Extension Division publishes circulars describing in detail the courses offered by the Department of Instruction and the method of entering upon and carrying them on. Any student contemplating taking extension work should send to the Division for information in regard to the subjects in which he is interested.

The instruction in these courses is prepared and given by members of the University Faculty, and each course represents a definite amount of work equivalent to work done in residence at the University, or in the standardized schools of our educational system.

To make the work thorough and permanent, the various courses are arranged, whenever practicable, in co-ordination with the regular residence work, the short courses, and the Summer Session.

Correspondence courses may be begun at any time during the year.

REQUIREMENTS FOR ADMISSION.—No preliminary examination is required for admission to correspondence courses, but the student will be required to give at the time of registration evidence that he is capable of pursuing the desired studies with advantage to himself. Those taking correspondence courses with a view to university credit must comply with the requirements that are imposed upon the resident students for a degree.

EXPENSES.—Fees are charged for all extension courses. The basis of this fee is \$16 for a course of thirty-two assignments, or a proportionate charge for shorter courses. Each eight assignments covers work equivalent to that required for one credit hour in a resident class. This charge pays for the instruction and postage one way. Text books, apparatus, and supplies of any kind that

are required for any course in addition to the text furnished by the Division must be purchased by the student. When these supplies cannot be obtained of local dealers they may be ordered through the University Extension Division, which will obtain them through the co-operative bookstore maintained at the University by the Associated Students of the University of Washington.

UNIVERSITY CREDIT.—Correspondence students who have had the required preparation for admission to the University and whose program has been approved, will, upon satisfactory completion of a course of correspondence study, be awarded a certificate of credit in the University, but the maximum university credit for work done by correspondence may not exceed one-half of the units required of resident students for graduation. Records of credit for correspondence study are filed until the student has satisfactorily completed one year in residence, when, if the requirements have been satisfied, the credits may be applied toward a degree.

The requirement of residence may often be satisfied, in whole or in part, by attendance at the Summer Session of the University. Four summer sessions are accepted for a year of residence.

CLASSES

A few courses, necessarily limited as to number and locality, are given in accessible centers as lecture courses, accompanied with the usual class exercises. Fifty such classes with an aggregate attendance of 800 students were held in Seattle and six other cities during the three years 1912-1915.

Short courses of lectures may be arranged to run parallel with correspondence courses. The lectures may be open to others besides those carrying on the correspondence course, and two objects thus served.

Fees for courses given to classes are adjusted according to the number of students in the class and the distance from Seattle.

COURSES OF INSTRUCTION

The list of extension courses at present offered is subject to change at any time, and additions are frequently made; therefore, if courses are desired in departments not mentioned in this list, inquiry should be made. Full descriptions of the courses will be

found in the circulars of information issued by the Division from time to time.

ASTRONOMY. Two credit courses in general astronomy.

BOTANY. Six credit courses in botany and horticulture.

BUSINESS ADMINISTRATION. Correspondence courses in Principles of Accounting, Selling and Business Methods, Commercial Correspondence, and Cost Accounting for Printers.

Classes in Accounting, Advertising, Commercial Correspondence, Commercial Law, Credits and Collections, Real Estate, Selling and Business Methods, Transportation.

CHEMISTRY. Two evening courses in general chemistry are given at the University by the Department of Chemistry.

ECONOMICS. One correspondence course (credit) in Economics, one in Municipal Government, and three in Municipal Government and Administration which may be given in classes.

EDUCATION. Three lecture courses and four correspondence courses, all credit, are offered in the Department of Education.

ENGINEERING. Three courses in civil engineering and six in mechanical engineering are offered in the College of Engineering. Some of these may be credit courses.

ENGLISH. Twenty-six correspondence courses are offered in this department. Four are of high school grade, and the remainder university credit courses. Six of these may also be given in classes.

FORESTRY. Five credit courses in forestry are offered.

FRENCH. Ten credit courses in French are offered.

GEOLOGY. Six correspondence credit courses in geology.

GERMAN. Nine credit courses in German.

GREEK. Ten correspondence credit courses, covering high school as well as college subjects.

HISTORY. A course in United States History and one in civil government of high school grade and two credit courses in American History are offered by this department.

HOME ECONOMICS. Four correspondence courses and class work in several forms are offered in this department. Some of these may be taken for university credit.

ITALIAN. Two credit courses in elementary Italian by correspondence.

JOURNALISM. Five correspondence courses are offered in the Department of Journalism.

LATIN. The Latin Department offers eight credit courses, covering elementary and advanced work of high school and college.

MATHEMATICS. One credit and five non-credit courses in mathematics are offered.

METALLURGY AND MINING. Special work is offered in the School of Mines for those who are not able to attend the regular courses of the school. Systematic courses along these lines cannot at present be formulated, as the work will have to be directed to meeting individual needs as far as possible. Inquiry should, therefore, be made by anyone interested, accompanied with a full statement of his personal problems and requirements.

PHILOSOPHY. Classes and correspondence courses in Modern Philosophy and Logic. A class in Child Psychology. Credit.

PHYSICS. One correspondence credit course in mechanics.

SPANISH. Eight credit courses in Spanish are offered.

II. COMMUNITY SERVICE

BUREAU OF MUNICIPAL RESEARCH

HERMAN A. BRAUER, CHIEF

This bureau in the University Extension Division is for the purpose of collecting, classifying, indexing, and making available for the work of the University, for state and municipal officers, and for others as far as practicable, accurate data on questions of municipal government, administration and comparative legislation.

The public official is at a disadvantage owing to lack of time for adequate investigation of the questions with which he has to deal. It is the duty of the people whom he serves to provide him with expert aid for the study of legislative and administrative problems. This cannot be done better than through the University with its already large corps of experts and its established and steadily growing libraries.

The headquarters are at the University, where the chief of the bureau may be consulted. The two libraries of the University—general and law—are here available and the bureau has likewise accumulated a special library of material of immediate value—laws, ordinances, charters, reports, etc.—all of which is classified and indexed for quick reference.

The bureau is in close touch with the municipalities of the state and aids their officers in dealing with the problems of municipal government. These problems are various and are often closely involved with state legislation. There are questions of health and sanitation, of traffic and transportation, of street paving, street cleaning, water supply, garbage and sewage disposal, milk and food inspection, public works, public utilities, and public service rates; questions of municipal employment, city planning, parks and playgrounds, civic centers, art commissions, schools, charities and corrections, accounting methods, commission government and the hundred and one other subjects of municipal interest which now exist or from time to time may arise.

It will be seen that the bureau aims to be a clearing house for municipal and legislative experiments and experience all over the world, so that our public men may be placed in a position to profit both by the wisdom and by the mistakes of states and cities in this and other countries.

The work of this bureau is a natural development of the public service-function of the state university. As such public service, it is rendered without fee or charge at any time, except traveling expenses when it is necessary for a representative of the bureau to visit any locality.

It is non-partisan, non-political, and absolutely confidential. Its function is not to convert or convince, nor even to recommend or to offer advice, but to give information in a purely non-partisan spirit, so that facts may speak for themselves. Its services are equally open to those on all sides of any question, its sole object being to provide them with the necessary data for intelligent action.

The executive office of the League of Washington Municipalities is at the bureau.

A circular of information setting forth more in detail the plans and work of the bureau may be had upon application to the Extension Division, Bureau of Municipal Research.

BUREAU OF DEBATE AND DISCUSSION

LEO JONES, CHIEF

The purpose of this bureau is to foster and assist the practice of debating and open discussion of public questions. There is no more wholesome way of developing habits of right thinking and open mindedness than through full and fair discussion, in which both sides of important questions may be adequately presented. It is, indeed, a most valuable means of general education. Such debating has been organized and carried on in the high schools of Washington under the auspices of the state department of education and has been stimulated by the annual prizes for competition of accredited high schools of the state given by Senator Wesley L. Jones.

This bureau promotes and extends this practice, not only in the high schools, but in civic, women's and farmers' clubs, and in any other organizations interested in such work, by advice, guidance and assistance in obtaining references and materials.

The work of this bureau is closely allied to that of municipal research, but it covers the field of information upon public questions in a somewhat different manner and for a different but related purpose.

PUBLICATIONS

The bureau has published practical manuals of the principles of debate, organization and procedure which have been widely distributed to schools throughout the state. There are also published from time to time bulletins outlining in the form of briefs the arguments for and against propositions of public interest. The range of subjects is wide and growing wider; the need of thorough and intelligent discussion of them in a country like ours, where the people are taking the control of affairs more and more into their own hands, is obvious. These bulletins contain adequate working reference lists of published material which is likely to be available or can be furnished by the Bureau. Seven bulletins have already been published by the Bureau. In addition to the printed bulletins, the bureau has furnished upon request typewritten outlines similar to the bulletins relating to several subjects which have been debated in certain localities.

PACKAGE LIBRARIES

Much of the most serviceable material upon these public questions is contained in magazines, newspapers, and government doc-

uments, which are not always and everywhere accessible. With the co-operation and assistance of the University Library, the bureau will collect and classify much of this material, preparing it in convenient package libraries, which may be borrowed without charge for a period not to exceed fourteen days, which time may in some cases be extended upon request. Particular paragraphs or chapters of books will in some cases be copied and the copies included in the package libraries.

HOW THIS SERVICE IS OBTAINED

The services of this bureau are rendered without charge to all citizens of the state. For any information in regard to this work not here given and for publications of the bureau, application should be made to the University Extension Division, Bureau of Debate and Discussion, University of Washington, Seattle.

BUREAU OF LECTURES

The University Extension Division will provide university lectures, when possible, single or in courses, some of them popular in character, others designed primarily for those having special interests. The lectures listed by this bureau are, however, distinct from the lecture classes mentioned under the Department of Instruction. As most of the lecturers are members of the University Faculty, the securing of dates for lectures will have to be limited by the prior demands of their university engagements. When arrangements are made sufficiently far in advance, it may be possible to group appointments to the advantage of the lecturer and the local organizations.

The ordinary fee for Extension Lectures is ten dollars (\$10.00) and expenses. This is intended to provide, in addition to his traveling expenses, only a moderate personal fee for the lecturer. The service of the Extension Division is rendered without charge. For illustrated lectures there will sometimes be additional expense, but this is slight, as the Bureau of Lectures provides its own apparatus, reducing the cost of illustration to a minimum.

The policy of this bureau is to provide the best lectures possible for the greatest possible number of auditors at the lowest possible cost. Arrangements can best be through some local organization which can secure the audience and the necessary local work.

The bureau will also provide commencement and teachers' institute speakers when desired.

Those interested in obtaining lectures should apply to the bureau for its list of lectures and any information in regard to arrangements will be cheerfully furnished and all possible assistance given.

BUREAU OF SOCIAL WELFARE

It is proposed, as opportunity and desire for such service may arise to promote the organization and helpful activity of social centers, to encourage the wise use of school and other public buildings, the institution of lecture courses and other educational work, and to assist in general in the advancement of communities, large and small, and the quickening of their intellectual life. The Director will be pleased to correspond or confer with persons interested in such work with a view to determining how and to what extent the University may serve in this direction the welfare of the state.

A preliminary bulletin on "The Social and Civic Center" (University Extension Series No. 2), a summary outline of the subject with a bibliography, has been published and may be had upon application.

EXHIBITS

It is proposed to prepare collections which may be obtained for specified periods for exhibition in libraries and schools, or to use for educational purposes. There has been prepared during the past year, by the College of Mines, a number of sets, of about one hundred specimens each, showing the economic minerals of the state. These collections are furnished to high schools for permanent use, the only charge being for transportation. It is also required that the school shall give assurance that its collection will be displayed in a suitable case and in an accessible place. Principals of schools wishing to obtain one of these sets should apply to the Director of the Extension Division.

III. PUBLICATION

This is an important department of Extension work. The Division published in 1914 the UNIVERSITY EXTENSION JOURNAL (quarterly), and numerous bulletins and circulars of information. The Journal has been temporarily suspended. Following is a list of publications:

ADMINISTRATIVE ANNOUNCEMENTS

PRELIMINARY ANNOUNCEMENT. (July, 1912.) An outline of work and purposes of the Division. Pp. 46. (Out of print.)

DEPARTMENT OF INSTRUCTION. (November, 1912.) Revised statement. Pp. 36. (Out of print.)

Division announcements are now issued in small circulars, covering special fields, and convenient for mailing and the pocket. They are issued at irregular intervals as required. The following are now available:

General Descriptive Circular.

Correspondence Study (general information, with list of courses).

Correspondence Study and Classes in English (Rev., Oct., 1915).

Classes, Lectures and Correspondence Study in Economics and Municipal Government.

Extension Work in Home Economics (Rev., Oct., 1914).

Extension Work in Forestry.

Extension Work in Journalism and Printing.

Extension Work in Engineering.

Extension Work in Business (classes).

Practical Business Training.

Accounting Procedure and Auditing.

Bureau of Lectures.

Bureau of Debate and Discussion (Rev., Sept., 1915).

DEBATING BULLETINS

A MANUAL FOR DEBATERS. By Leo Jones. A guide to the principles, organization, and practice of public debating. Pp. 81. Price 15 cents.

STATE ROADS AND PERMANENT HIGHWAYS. An outline for debate. Pp. 16. Price 10 cents.

THE RECALL OF JUDGES. An outline for debate. Pp. 16. Price 10 cents.

THE SINGLE TAX. An outline for debate. Pp. 16. Price 10 cents.

IMMIGRATION. An outline for debate. Pp. 20. Price 10 cents.

GOVERNMENT OWNERSHIP OF TELEPHONE AND TELEGRAPH. An outline for debate. Pp. 12. Price 5 cents.

TAXATION OF LAND VALUES. A bibliography. Pp. 20. Price 10 cents.

BULLETINS RELATING TO JOURNALISM

THE MAKING OF A NEWSPAPER. (1913.) Pp. 120. Price 25 cents.

THE BETTER NEWSPAPER. (1914.) Pp. 181. Price 30 cents.

NEWSPAPER PRODUCTION. (1915.) Pp. 72. Price 25 cents.

SUPPLEMENTARY LECTURES IN JOURNALISM, 1913-14. Pp. 83. Price 25 cents.

SUPPLEMENTARY LECTURES IN JOURNALISM, 1914-15. Pp. 122. Price 25 cents.

MISCELLANEOUS BULLETINS

THE SOCIAL AND CIVIC CENTER. Pp. 12.

TAXATION IN WASHINGTON. The proceedings of the state tax conference held in May, 1914. Pp. 302. Price 50 cents.

A SURVEY OF THE PORT TOWNSEND PUBLIC SCHOOLS. Pp. 112. Price 25 cents.

MANUAL OF SCHOOL OF MINES COLLECTION OF WASHINGTON MINERALS. In preparation. Probably 64 pages. Price 25 cents.

UNIVERSITY EXTENSION JOURNAL

THE UNIVERSITY EXTENSION JOURNAL was published quarterly during 1914. It is temporarily suspended. Leading papers in the four numbers published were as follows:

Seaport Studies by Charles Evan Fowler. No. 1, January, 1914.

Sanitation Papers by E. J. McCaustland. No. 2, April, 1914.

A Survey of the Blaine Public Schools by Herbert G. Lull and others. No. 3, July, 1914.

University Extension Papers by Edwin A. Start and others. No. 4, October, 1914.

Copies of these numbers are available. Price 10 cents each.

BETTER BUSINESS

A practical educational magazine of business, established in March, 1916, as an outgrowth of the service work of the extension courses in business. Issued monthly. Single copies, ten cents; annual subscription, one dollar.

Any of these publications, not out of print, may be obtained by anyone in the State of Washington, without charge except where a price is indicated, on request to the Director, Extension Division, University of Washington, Seattle. The smaller publications, priced at not over 10 cents, are distributed free to citizens of Washington.

SUMMER SESSION

DIRECTOR

FREDERICK E. BOLTON, PH. D.

University of Washington.

The thirteenth annual summer session will be held from June 19th to July 28th, 1916. The date of opening has been placed late enough for teachers coming from long distances or from schools which close late to reach the University in time for the opening.

ADMISSION

Formal entrance examinations are not required. Applicants, however, must give evidence of sufficient maturity and preparation to profit by the work offered.

CREDITS

A maximum of six semester hours of credit may be obtained during the session. Students registering after July 1st will not be permitted except under unusual circumstances to secure the maximum number of hours.

TEXT BOOKS

Text books may be purchased at reduced rates at the University bookstore, which is located on the campus near Denny Hall.

FOR WHOM INTENDED

The summer session is designed to meet the needs of the following classes of persons:

1. College graduates who wish to specialize or to work for advanced degrees.
2. Superintendents and principals who wish to acquaint themselves with recent progress in education or to study special problems.
3. High school teachers who wish to advance in their special lines of work.
4. Elementary and grammar school teachers who wish to work towards a collegiate degree.
5. Undergraduates who for some good reason find it necessary to shorten the period of their college course.

6. Candidates for certificates who need special courses in education and psychology or other subjects.

7. Persons who are preparing to become specialists in college and normal school positions.

8. Persons who desire practical field work in botany, geology, and zoology.

9. Persons who wish special instruction in music, drawing, manual training or physical training.

FACILITIES

The Summer Session is especially designed to be of assistance to teachers who cannot be in attendance during the regular sessions. The University places at the service of teachers practically all of the facilities of the colleges of Liberal Arts, Science, Education, Fine Arts, and the Graduate School. In addition, there is work offered in manual training, music, drawing, and physical education. The laboratories, libraries, and museum are open and the various departments offer both undergraduate and graduate work equal in quality to that offered during the rest of the year. In a very large number of cases heads of departments are in charge of the work. In addition to regular members of the faculty, several prominent lecturers from outside the University will give courses.

REGISTRATION

Saturday, June 17th, and Monday, June 19th, will be regular registration days. As many as possible should plan to register on Saturday. Class work will begin on Tuesday, June 20th, at 8 o'clock.

FEES

The regular tuition fee of ten dollars (\$10) is required of all students, and admits to all the privileges of the Summer Session, except certain laboratory courses and to special music courses requiring individual instruction. See the statements of these courses for the special fees. No reduction of fees will be made because of late registration or early withdrawal. Open lectures are free to all students regularly registered in the Summer Session.

MASTER'S DEGREE THROUGH SUMMER SESSIONS

At each succeeding Summer Session a larger number of graduate students are in attendance. In 1915 nearly one-third of the whole number of attendants were graduate students. Many were planning definitely to apply their work toward higher degrees. The University will accept four summer sessions of work as a fulfillment of the year of required residence, provided the student does work between the sessions under regulations prescribed by the graduate faculty and the departments concerned. With the new opportunities for extension work many will doubtless be enabled to secure master's degrees in the above manner.

CORRESPONDENCE COURSES

The University has established correspondence courses in many departments. These will be of special advantage to students who have been in attendance at summer sessions and who wish to go forward to degrees. The correspondence work can be very advantageously planned as a continuation of the regular Summer Session. For detailed information concerning correspondence courses write Director Edwin A. Start.

COLLEGE OF EDUCATION

The Summer Session and the College of Education stand in very close relations to each other. Doubtless a large number who plan to secure a degree, or a normal diploma, through the College of Education will accomplish much of the work in summer sessions. The work of the Summer Session being especially arranged for teachers will make it possible to accomplish this.

For bulletin of the Summer Session address Recorder E. N. Stone. For other information address Frederick E. Bolton, Director of the Summer Session.

PUGET SOUND MARINE STATION

FRIDAY HARBOR, WASHINGTON

June 26—August 5, 1916.

DIRECTOR

T. C. FRYE, University of Washington.

COUNCIL

W. J. BAUMGARTNER, University of Kansas.

TREVOR KINCAID, University of Washington.

This institution is the outgrowth of work in marine exploration carried on for many years by the University of Washington and other institutions. In 1904 a marine station was definitely established in rented quarters at Friday Harbor in the San Juan Archipelago, and sessions have been regularly held since that date. A number of universities and colleges are co-operating with the University of Washington in its organization.

The chief purposes of the Marine Station are these: (a) To enable biologists to pursue their researches on marine life in one of the richest fields for biology on the coast of the United States. (b) To enable teachers and students to study animals and plants in their natural habitats. (c) To serve the state and the Northwest through the study of its commercial forms of marine animals and plants. (d) To serve as a meeting place for biologists, to afford mutual inspiration and exchange of ideas, thus bettering the teaching of biology.

The location of the Station in the midst of the picturesque islands of the San Juan Archipelago, which lie in the northern section of Puget Sound, surrounded by waters unrivaled for their wealth of ocean life, makes the site an ideal one for the study of marine organisms; while the land flora and fauna of the islands are also of great interest, and present favorable opportunities for the study of many striking species of birds, plants and insects.

In the spring of 1910 a commodious building was constructed upon a site donated by Mr. Andrew Newhall of Friday Harbor. This structure contains upon its main floor a general laboratory

for class work, the office of the director, a store room for two large salt water aquaria. The second floor is occupied by a lecture room and by nine rooms for the convenience of persons engaged in research work. The third story is utilized as a store room and drying loft. The laboratory is abundantly supplied with running fresh and salt water and is lighted by electricity.

The equipment of the Station includes microscopes and general laboratory glassware, also a small library bearing upon the biology of the Pacific Northwest. A steamer is employed to transport parties to points of vantage among the islands, as well as to manipulate the dredge used in exploring the deep waters of the channels and bays in search of bottom forms. Plankton nets are also available, as well as material for quantitative work along this line.

A maximum of six credits may be earned at the Station during a session, and these will be accepted at par by any of the affiliated institutions.

The cost of living is minimized as far as possible for those taking courses at the Station. Tent houses are provided as sleeping quarters at about \$6 for the six weeks, whether occupied by one or more persons. The tents are 10x12 feet. Table board is furnished at \$4 or \$4.50 per week. This is gauged in such a manner that over a period of years the Station neither gains nor loses. The same is true of the tents and their equipment.

The expense attached to a stay of six weeks at the Station, including the tuition fee of ten dollars, board, lodging and incidentals, need not exceed fifty dollars.

For more detailed information apply to the director, Dr. T. C. Frye, University of Washington, Seattle, Wash.

DEGREES

Degrees Conferred June 16, 1915.

(For degrees conferred at the end of the Summer Session, see page 428.)

BACHELOR DEGREES

College of Liberal Arts

Bachelor of Arts

Anderson, Grace Boyce	Fisher, Charlotte Lucile
Anderson, Herman Carl	Fisken, Mary Carolyn
Anderson, Jacob Sigurt	Fowler, Louise Hobson
Angst, Laura	Fujitomi, Egi
Backowske, Mary	Fulton, Orra Stella
Ball, Florence	Gabbert, Gertrude Marguerite
Barstad, Anna Verna	Garland, Martha May
Batcheller, Elva Leonore	Gorham, Mrs. Fordyce C.
Beckham, Leona Mary	Grant, Henry Marinus
Begg, Ruth	Greene, Clyde Joseph
Berglund, Fanny	Grimstvedt, George
Bonney, Catherine Alicia	Hall, Eva Rachel
Brainerd, Donna Feodora	Hamilton, Juanita
Brinck, Raoul Alphonse	Harris, Laura Loretta
Broad, Henry Herman	Harrison, Frank
Bronson, Doris	Henderson, Harold Hayes
Brown, Ethel May	Hendricks, Mrs. Ford
Browne, Beryl Ione	Hilstrom, Theresa Ada
Bryant, Willis Rooks	Holmes, Ione Marcia
Burkheimer, Florence	Hunt, Margaret Jean
Campbell, Pansy Ellen	Hunter, Gordon Chester
Carse, Elta	Hutchinson, Orrel Eldora
Chandler, Gertrude V.	Ide, Mrs. Gladys Geneva
Child, Pauline Poehler	Karr, Surendra Nath
Conmey, Anna Louise	Kirkpatrick, Ella May
Cozier, Mary Helen	Knapp, Dora Ethel
Cremer, Henry	Knight, James Ernest
Daniels, Mrs. Gladys Fletcher	Knox, Wanda Christina
Dickson, Gordon Hunt	Kobayashi, Nuinosuke
Dougherty, Dola May	Kraus, Minnie Louise
Dunlap, Sadie Lorraine	Larrison, Winifred Fargo
Ellis, Jennie Ruth	Littell, Helen Harris
Emery, Ethel Anna	Lively, John W.
Esterly, Katherine Agnes	Luce, Anne Elizabeth
Evans, Frank Summers	Lustie, William August

McCann, Richard Joseph
 McClelland, George Zell
 McLellan, Roy Davison
 McMillen, Mabel A.
 Magillcuddy, Martha Anselm
 Mantz, Helen Orlena
 Matthews, Minnie Lucile
 Meany, Margaret
 Miller, Ruth Amelia
 Moore, Helen Southard
 Morrison, Bessie Mae
 Murchison, Mary Kathleen
 Nelson, Clare Elizabeth
 Nordberg, Erika Ingeborg
 Nunn, Frances Alexia
 Olson, J. Almeda
 Ormsby, George
 Ostlund, Charles William
 Parlin, Hazel Emma
 Pennell, Louise Farrar
 Pettibone, Louise Anita
 Pingry, Madeline Mary
 Poole, Jessie Lee
 Porter, Jean
 Powell, Charles Jeremiah
 Powers, James Montgomery
 Quilliam, Elsie Beatrice
 Ramage, Muriel
 Rambo, Florence Maude
 Rawson, Ralph French
 Reavis, Nan Preston

Rieder, Mrs. Miriam E.
 Rochester, Lettie Lee
 Sargent, Noel Gharrett
 Savage, Anthony
 Shaff, Louise
 Shawler, Florence
 Simonson, Emma Amalia
 SoRelle, Vivian
 Sullivan, Kathleen
 Sutton, Wayne Campbell
 Thomle, Kristine
 Tretheway, Bessie Louise
 Tronsrud, Anna Christine
 Turnbull, George Stanley
 Van Devanter, Louise Mary
 Warren, Elgine Jessie
 Welch, Julia Reezes
 White, Lena Henrietta
 Wiester, Grace Margaret
 Wilbur, Alvira Wood
 Williams, Charlotte Medora
 Wilsey, Walter Ralph
 Wilson, Florence Margaret
 Wilson, Isobel Mae
 Woelffen, Frederick Allan
 Wood, Wilma Barclay
 Woods, Arra Jane
 Woodward, Frances Marie
 Wyngaarden, Herman
 Wyngaarden, Martin
 Younger, Jesse Arthur

College of Science

Bachelor of Science

Arthun, Mabel Viola
 Babcock, Grace Ellen
 Bagley, Walter Ethen
 Barash, Leah
 Bjorklund, Irene Eleanor
 Bowers, Marion Ruth
 Cady, Osman Horace
 Carpenter, Hazel Bradley
 Coffman, Edith Margaret
 Cutter, Evelyn Tritle
 Donaldson, Mildred Irene
 Engstrom, Ella Catherine
 Everett, Ada Lillian
 Felder, Herman Abraham

Gille, Madell
 Glockler, George
 Greenwood, Lyle Archer
 Harrison, Alice Myrtle
 Hostetter, Ingomar
 Hoxsey, Maurice Younklin
 Huntington, Roma
 Hurd, Annie May
 Hutchinson, Pearl Irene
 Irvine, Marguerite Isabel
 Jacobson, Rose Ethel
 Johnson, Ruth Frances
 Johnstone, Margery Robinson
 Karrer, Joanne Laura

Lew, Don Geate
 Lincoln, Mattie Jane
 Milburn, Roszelle
 Morgan, Miles Evan
 Noderer, Ruth L.
 Paige, Caroline Tucker
 Palmer, Esther Rocelia
 Parks, George Sutton
 Platner, Evelyn Idessa
 Platner, Goldie
 Ratcliffe, Ruth Eloise

Schwartz, George Lewis
 Stauffer, John Cassius
 Stuart, George Percival
 Swope, Helen
 Thompson, Lucile May
 Thompson, Noel Finley
 Wagner, Katharine Berkey
 Walter, Ernest Rudolph
 Williams, Mary Louise
 Yocum, Elizabeth

College of Fine Arts

Bachelor of Music

Gottfeld, Alice Esther
 Jack, Myrna Neonetta
 Remsberg, Mabel Farquhar

Schmitz, Emma Henrietta
 Stahl, Eleanor Elizabeth

College of Engineering

Bachelor of Science in Chemical Engineering

Crites, Herbert Newton
 Faas, John Casper Washington Homestead

Howard, Henry Coburn, Jr.

Bachelor of Science in Civil Engineering

De Moss, Samuel
 Hawthorne, George Edward
 Hazelet, Craig Potter
 McMorris, Alfred William
 Mack, Friend D.

Masako, Frank Jugo
 Osborne, Edward Glenn
 Reynolds, Arnold Charles
 Truesdell, Archie Merle
 White, Chris

Bachelor of Science in Electrical Engineering

Baer, Harold E.
 Bessesen, Ben Burton
 Burbank, Sidney Raht
 Chaudhuri, Debendra Kumar
 Dodds, John Milton
 Drips, Arthur Noble
 Hansen, Verne
 Joubert, Lloyd Perry

Kuga, Kohel
 Marcy, Charles Goodell
 Mori, Nathaniel Rihei
 Palmer, George S.
 Pedersen, Edward Albion
 Sorensen, Bert H.
 Stoppelman, Frederick Henry
 Suehiro, Matsunosuke

Bachelor of Science in Mechanical Engineering

Finch, James Leslie
 Johnson, Ruben Emons
 McIntyre, Harry John

Matson, Herman Albert
 Rathvon, Halden Evann
 Sorensen, Edgar Peter

Bachelor of Science

Barlow, Calvin Russell
Bradford, Alford John
Hougen, Olav Andrew

Howard, Albert Leighton
Robinson, Wilber Hudson

*College of Mines***Bachelor of Science in Geology and Mining**

Gleason, Villeroy, Jr.

Sweeney, Edward Lavery

Bachelor of Science in Mining Engineering

Brown, Warren Oretto
Ellis, Hubert Ingersol

Johnson, Charles

Bachelor of Science

Wilcox, Elgin Roscoe

*College of Forestry***Bachelor of Science in Forestry**

Burris, Michael Murray

Gilbert, George Wright
(As of the Class of 1914)

Bachelor of Science

Evans, William Vincent
Rengstorff, Erwin Henry
Schmitz, Henry

Watson, Russell
Young, Lukens Peirce

*College of Pharmacy***Bachelor of Science**

Hannon, Robert Roger
Houser, March Hugo
Patton, Gerald S.

Richey, Charles Archer
Schreuder, Otis Blaine

Pharmaceutical Chemist

Brown, Burton Augustus
Fields, James David
Hannon, Robert Roger
Henry, Clara Marie
Hilton, Jeffery
Hilton, Omega
Hope, Claude Victor
Hoxsey, Maurice Younkin

Houser, March Hugo
Kath, Henry Louis
Lamb, Earl Frederick
McGogy, James Frank
Patton, Gerald S.
Peckenpough, Charles Irving
Peterson, Everett Norris
Sewell, Glenn Omer

School of Law

Bachelor of Laws

Adams, John Andrew	Knapp, Clarence Edward
Arney, Charles Elwood, Jr.	Lee, Carl Alphonso
Arney, Jenks Ward	McCullough, Campbell C.
Bautista, Felix	McFee, Joel Nason
Berkey, Harrison M.	Matzger, Nathan
Burford, Waldo Emerson	Nelson, Harry Bernard
Burson, James William	Parker, William Edward
Carrigan, Frederick Paul	Rains, Lester Elbie
Chadwick, Stephen Fowler	Rosaaen, James Douglas
Donnelly, Edward Peter	Scott, Irving Hull
Fairburn, Orville Geoffrey	Smith, Charles Lewis
Fielding, Fred Hebbard	Soule, John Arthur
Geary, John Joseph	Stevens, Dwight Norton
Griffin, Tracy Edward	Turner, Arlo Verner
Hammer, Paul Scheldrup	Ward, Arthur Hoyt
Hass, Karl Frederick	Watters, Lisle T.
Hathaway, Howard	Weinir, Elmon Lloyd
Hendricks, Ford H.	Wetherby, Loren Archibald
Hoffman, Edward William	

GRADUATE DEGREES

Graduate School

Civil Engineer

Frank Alva Kittredge

B. S. in C. E., University of Washington, 1912

Thesis: Building and Paving of the Pacific Highway, in Jackson County, Oregon

Electrical Engineer

Willis Tryon Batcheller

B. S. in E. E., University of Washington, 1911

Thesis: The Design of a 7500 K. W. Steam Electric Station

Earl Jacob Beery

B. S. in E. E., University of Washington, 1910

Thesis: Electrical Development of the State of Washington

Master of Arts

Herman Carl Anderson (Education)

A. B., University of Washington, 1915

Thesis: General Requirements in the Liberal Arts College

Laura Elizabeth Boucher (English)

B. L., University of California, 1914

Thesis: The Golden Mean in English Literature

Mrs. Addie Cornwall Eddy (German)

A. B., Simpson College, 1907

Thesis: The Dream as a Motive Force in German Literature

Mildred Firth (German)

A. B., University of Washington, 1914

Thesis: Some Mystical Aspects in Goethe's Faust

Elizabeth Macleay (English)

A. B., University of Washington, 1909

Thesis: Satire on Women in English Ballads, Fabliaux, etc.

Stuart Arthur Rice (Political and Social Science)

A. B., University of Washington, 1912

Thesis: Unemployment and Employment Offices in Washington

Virginia Roe (Political and Social Science)

A. B., University of Washington, 1914

Thesis: The Italian Population of Seattle

Herman Hale Smith (Education)

A. B., State University of Iowa, 1909

Thesis: The Development of the Child in the First Three Years, with Special Consideration of Motor Activity and Speech

Master of Science

Fred William Ashton (Chemistry)

A. B., University of Washington, 1912

Thesis: Evaluation of the Soils of Western Washington

Ruby Moser Clift (Chemistry)

B. S., University of Washington, 1914

Thesis: Electrolytic Endosmose

Ferry C. Houghton (Physics)

A. B., Olivet College, 1913

Thesis: The Effect of the Magnetic Field on the Resistance of Certain Substances

Willard Rouse Jillson (Geology)

B. S., Syracuse University, 1912

Thesis: A Preliminary Report on the Stratigraphy and Paleontology of the Quimper Peninsula of the State of Washington

Mary Greene Korstad (Zoology)

A. B., University of Washington, 1911

Thesis: Histology of the Spinal Sensory Ganglia of the Chick

David Ohlson (Physics)

A. B., University of Washington, 1913

Thesis: Incandescent Lamps as Barretters for Measuring Small Alternating Currents

UNIVERSITY OF WASHINGTON

Edward Franklin Rhodenbaugh (Chemistry)

B. S., Iowa State College, 1897

Thesis: Utilization of Western Washington Lignites

Göte Wilhelm Türesson (Botany)

B. S., University of Washington, 1914

Thesis: The Presence and Significance of Moulds in the Allimentary Canal of Man and Higher Animals

Master of Arts in Education

Allie Blough

A. B., University of Washington, 1913

Inez Cassa Cook

A. B., University of Washington, 1914

Sarah Pauline Waldrip

A. B., University of Washington, 1914

Master of Science in Civil Engineering

Alfred Aretus Burns

B. S., University of Washington, 1914

Thesis: Investigation of Properties of Building Brick

Master of Science in Forestry

Isaac Schneider

B. S. in Forestry, University of Washington, 1914

Thesis: A New Instrument for Measuring Horizontal and Vertical Distance

Doctor of Philosophy

Seth Chapin Langdon

B. S., Northwestern University, 1911

M. A., University of Washington, 1913

Thesis: A Study of the Factors Influencing the Anodic Passivity of Iron, with Notes on Polarization Potentials

NORMAL DIPLOMAS

University Life Diploma

Anderson, Ruth Fisk
Bechen, Carrie Isadore
Bigelow, Bertha Lucile
Blough, Allie
Boddy, Estie Terissa
Borrill, Marjorie
Broad, Henry Herman
Burns, Omar Allen
Cellegham, Adeline Hayes

Charles, Fannie Grace
Crowley, Myrtle Melva
Dall, Jeannette McKenzie
Daniels, Ethel Agnes
Daubney, Lucy Adelaide
Davis, Mrs. M. Elliott
Drum, Barbara Binks
Duckering, Bernice Rollett
Edwards, Elva Salome

Ettelson, Sadie
 Evans, Ruth Pauline
 Finley, Madge
 Fletcher, Hazel Velma
 Fuller, Emilie Stone
 Furry, Mabel Georgine
 Griffith, Ruth Helen
 Halbach, Norma Catherine
 Hansen, Ethel
 Herthun, Florence
 Hultgren, Claes Leonard
 Hunter, Lila Alice
 Hutchinson, Orrel Eldora
 Jackson, Blanche Gertrude
 Kellogg, Jessie M.
 Kilty, Irene Mae
 Kittilsby, Alma Otelie
 Learned, Aleen Hazel
 Lipscomb, Roy Spencer
 Luby, Mabel Agnes
 Mark, Mrs. Sadie Norris
 Miller, Mrs. Grace Phelps
 Parker, Kathleen E. Eudora

Powers, James Montgomery
 Pratt, Eloise Sawyer
 Pratt, Elsie
 Richards, Vera Miriam
 Sallberg, Millicent Charlotte
 Senska, Nellie May
 Sherrick, Johnson
 Sims, Ethel Douglas
 Slater, Doy
 Smiley, Clara
 Stanton, Edgar Adolphus
 Sturley, Ruth Emeline
 Teel, Arvilla Marie
 Teel, Gladys Augusta
 Thurmond, Viola
 Waggoner, Lovisa
 Welch, Edith Lindley
 Wells, Earnest Frederic
 Wheat, Laura Regina
 Whitham, Ruth Ellen
 Wight, Ada L. Sargent
 Wold, Sylvia Elvina

University Normal Diploma

Ake, Mary
 Anderson, Grace
 Anderson, Herman
 Arthun, Mabel
 Babcock, Grace
 Backowske, Mary
 Batcheller, Elva
 Beckham, Leona
 Begg, Ruth
 Berglund, Fanny
 Bonney, Catherine
 Bowers, Marion
 Brainerd, Donna
 Brown, Ethel May
 Browne, Beryl Ione
 Bunch, Agnes
 Carpenter, Hazel Bradley
 Carse, Elta
 Cremer, Henry
 Cutter, Evelyn Tritle
 Daniels, Gladys Fletcher
 Dougherty, Dola
 Dunlap, Sadie
 Eberle, Sidney
 Ellis, Jennie Ruth

Emery, Ethel
 Fisher, Charlotte Lucile
 Fiskén, Mary Carolyn
 Garland, Martha
 Grant, Henry
 Greene, Clyde Joseph
 Hall, Eva Rachel
 Hamilton, Juanita
 Harris, Laura Loretta
 Harrison, Frank
 Henderson, Harold Hayes
 Hendricks, Mrs. Ford
 Hilstrom, Theresa Ada
 Hilton, Edmund
 Holmes, Ione Marcia
 Hostetter, Ingomar
 Hunt, Margaret Jean
 Huntington, Roma
 Hurd, Annie May
 Hutchinson, Pearl Irene
 Irvine, Marguerite Isabel
 Jacobson, Rose Ethel
 Johnson, Ruth Frances
 Knapp, Dora Ethel
 Kraus, Minnie

Lively, John W.
 Littell, Helen Harris
 Lorbeer, Elizabeth
 MacKinnon, Marion Grace
 McLean, Dollie
 Mantz, Helen Orlena
 Matthews, Minnie Lucile
 Mearns, Edith
~~Miller, Mrs. Grace Phelps~~ *Life*
 Moore, Helen Southard
 Morgan, Miles Evan
 Morrison, Bessie Mae
 Moyer, Lillian
 Murchison, Kathleen
 Noderer, Ruth
 Nunn, Frances
 Olson, J. Almeda
 Paige, Caroline Tucker
 Palmer, Esther Rocella
 Parlin, Hazel Emma
 Pennell, Louise Farrar
 Pettibone, Louise Anita

Platner, Goldie
 Porter, Jean
 Quilliam, Elsie Beatrice
 Rambo, Florence Maude
 Seydell, Grace
 Shaff, Louise
 Simonson, Emma Amalia
 Simonson, Louise
 Stahl, Eleanor
 Tretheway, Bessie Louise
 Tronsrud, Anna Christine
 Wagner, Katherine Berkey
 Welch, Julia Reezes
 Wiester, Grace Margaret
 Wilbur, Alvira Wood
 Wilsey, Walter Ralph
 Wilson, Florence Margaret
 Wilson, Isobel Mae
 Wood, Wilma Barclay
 Woods, Arra Jane
 Woodward, Frances Marie

Degrees Conferred July 29, 1915

BACHELOR DEGREES

College of Liberal Arts

Bachelor of Arts

Anderson, Harrison Finch
 Byerly, Marian
 Chittenden, Eleanor Mary
 Edmonds, Rupert Oscar
 English, Elsie Serena

Hollingsworth, Robertson Riley
 Jones, Minabell
 Lindaas, Anna
 McMurray, Frederick Arnold
 Rogers, Leroy Anderson

College of Science

Bachelor of Science

Corskie, James Milne

Miller, Martha Jane

College of Engineering

Bachelor of Science in Chemical Engineering

Bissell, Addison Gardiner

Bachelor of Science

Ashim, Leland Edwin

College of Pharmacy

Bachelor of Science and Pharmaceutical Chemist

Maske, William, Jr.

School of Law

Bachelor of Laws

Blaisdell, Christopher Carroll

Raymond, Mrs. Mabel Dora

Meacham, Eugene Mills

Ross, Bert Clinton

GRADUATE DEGREES

Master of Arts

Estie Terissa Boddy (Oriental Language and Literature)

Ph. B., Morningside College, 1906

The Inherent Democracy of the Chinese People

Ruth Anna Gottlieb (Spanish)

A. B., University of Washington, 1914

Porto Rican Folklore

Charles Louis Helmlingé (French)

Ph. B., German Wallace College, 1911

Quelques Emprunts de Victor Hugo a la Comtesse d'Aulnoy

Gladys Genevra Ide (Psychology)

A. B., University of Washington, 1915

Color Vision and the Learning Process in Birds

Herman Joseph Schumacher (Political and Social Science)

A. B., University of Colorado

State Commission and Municipal Regulation of Urban Utilities
in Washington

Master of Science

Glenola Emily Behling (Chemistry)

A. B., University of Chicago, 1913

Isolation of Compounds with special reference to Green Cobalt
Compounds

George Glockler (Chemistry)

B. S., University of Washington, 1915

A Review of the Methods of Determinating Hydration of Ions

Arthur Wilson Linton (Chemistry)

B. S., University of Michigan, 1909

East Indian Voyages of the 16th and 17th Centuries in their
relation to Drugs, Spices, and Food Stuffs

Jessie Georgia Neikirk (Botany)

Ph. B., University of Colorado, 1897

The Effect of Fertilizer Salts on the Toxicity of Bog Water

Thomas Gordon Thompson (Chemistry)

A. B., Clark College, 1914

Tannin Content of Saw Mill Refuse

Margaret May Tomlinson (Physics)

B. S., University of Washington, 1914

A Study of the Behavior of a Vibrating Spring

NORMAL DIPLOMAS

University Life Diplomas

Bardon, Peter Jeremiah	King, Grace Elizabeth
Currey, Mauryce Louise	Knapp, Ellen Maude
Donaway, Alice May	Knox, Wanda Christina
Erickson, Elsie	Lind, Tennie Algott
Hollingsworth, Robertson Riley	McMillan, Mabel Adelia
Hubert, Lulu	Parish, William Francis
Joslin, Effie Rubarda	Reynolds, Florence Lucile
Kenny, Kathryn Petronilla	Wilson, Florence
Kilkoren, Mrs. Opal Beatrice	

University Normal Diplomas

Ball, Florence	Hunter, Gordon Chester
Beebe, Cornelius	Johnstone, Margery Robinson
Burkheimer, Florence	Luce, Anne Elizabeth
Campbell, Pansy Ellen	Magillcuddy, Martha Anselm
Edmonds, Rupert Oscar	Platner, Evelyn Idessa
Everett, Lillian	Siemens, Margaret
Foster, Anna	Studebaker, Herbert E.
Fowler, Louise Hobson	Tomlinson, Margaret May
Gabbert, Gertrude	

SCHOLARSHIPS AND PRIZES AWARDED

June 16, 1915

The John Walter Ackerson Prize for Women of \$100.00
Elizabetta Carina Pennell

The Women's League Scholarship of \$100.00
Anna Leland Baker

The Judge Alfred Battle Debating Prize of \$75.00
Pineus Allen Rickles Sol A. Herzog

The Philo Sherman Bennett Essay Prize of \$25.00
Noel Gharrett Sargent

The E. F. Blaine Oratorical Prize of \$100.00
Awarded to Oregon in 1915

The Vivian W. Carkeek Law Essay Prize of \$25.00
Tracy Edward Griffin

A Scholarship in Chemistry (Anonymous) of \$100.00
George Sutton Parks

The Jacob Furth Electrical Engineering Prize of \$100.00
Sydney Raht Burbank

The Washington Bankers' Association Prize of \$25.00
Jacob Sigurt Anderson Neal Dow

The Chi Omega Social Service Prize of \$15.00
Louise Mary VanDevanter

The Columbia University Fellowship of \$250.00 in Mining,
Engineering and Chemistry
John Casper Washington Homestead Faas
The N. Paoella Gold Medal
Persis Margaret Horton

The Sarah Loretta Denny Fellowships for 1915-16
Kate Leila Gregg (English)
George Glockler (Chemistry)
Mattie Jane Lincoln (Physics)

REGISTER OF STUDENTS

GRADUATE SCHOOL

<i>Name of Student</i>	<i>Home Address</i>
Adams, Florence Mayhew.....	Seattle
A. B., University of Washington, 1887.	
M. A., University of Washington, 1905.	
Adams, Gwenivere	Hoquiam
A. B., Vassar College, 1915.	
Alfonso, Marie	Seattle
A. B., University of Nebraska, 1918.	
Allen, David Justin.....	Seattle
Ph. B., Brown University, 1908.	
Anderson, Lillian Eugenie.....	Seattle
A. B., University of Nebraska, 1906.	
Anderson, Agnes Katherine.....	La Crosse, Wis.
Ph. B., University of Chicago, 1913.	
Asker, William	Seattle
Candidate in Philosophy (Chemistry), University, Lund, Sweden, 1905.	M. A., Education.
Athen, Sara Jane.....	Seattle
B. S., Fremont College, Nebraska, 1893.	M. A., Education.
Athen, Virginia Forrest.....	Seattle
B. S., Fremont College, Nebraska, 1904.	M. A., Education.
Baker, Wilma C.....	Seattle
A. B., Smith College, 1910.	
Balcom, Lillian L.....	Bath, N. Y.
B. S., Cornell University, 1894.	
Barash, Leah	Seattle
B. S., University of Washington, 1915.	
Bardon, Peter Jeremiah.....	Parkland
A. B., University of Washington, 1911.	M. A., Education.
Batcheller, Elva Leonore.....	Seattle
A. B., University of Washington, 1915.	M. A., English.
Bedell, Mary Elizabeth.....	Seattle
B. S., University of Washington, 1914.	
Bell, Rosalie M. Retz.....	Seattle
A. B., University of Illinois, 1909.	
Benthien, Elizabeth Margaret.....	Bellingham
Ph. B., University of Chicago, 1915.	M. A., Education.
Berglund, Edna Glass.....	Seattle
A. B., Washington State College, 1909.	
Bessesen, Ben B.....	Toppenish
B. S. in Electrical Engineering, University of Washington, 1915.	
Bigelow, Paul T.....	Edmonds
B. S. in Electrical Engineering, University of Washington, 1914.	
Bliss, Charles King.....	Seattle
A. B., University of Chicago, 1897.	
M. A., University of Illinois, 1909.	

Bohn, Herman Carl.....	Seattle
A. B., University of Washington, 1912.	M. A., Education.
Bonham, Almira K.....	Seattle
B. L., University of California, 1901.	
Booth, Edwin S.....	Seattle
B. S., Santa Clara University, California, 1915.	
	M. A., Political Science.
Botten, Margaret Christine.....	Seattle
A. B., University of Washington, 1913.	M. A., Education.
Bouillon, Victor J.....	Seattle
A. B., University of Washington, 1913.	
Brinck, Raoul Alphonse.....	Anacortes
A. B., University of Washington, 1915.	
Brown, Lulu Albia.....	Seattle
A. B., University of Washington, 1912.	
M. A., University of Washington, 1913.	
Bryan, Norris Pinkney.....	Seattle
A. B., Leland Stanford, Junior, University, 1908.	
Burbank, Sydney R.....	Seattle
B. S. in Electrical Engineering, University of Washington, 1915.	
	M. S., Electrical Engineering.
Burns, Omar Allen.....	Seattle
A. B., Greenville College, —.	
M. A., University of Washington, 1906.	
Burris, Michael Murray.....	Seattle
B. S. in Forestry, University of Washington, 1915.	
Bush, Helen Taylor.....	Seattle
A. B., University of Illinois, 1902.	
Carpenter, Clifford.....	Seattle
A. B., Mercer University, 1911.	M. A., Education.
Carse, Elta.....	Samish
A. B., University of Washington, 1915.	
Casey, Ralph D.....	Seattle
A. B., University of Washington, 1913.	
Challis, Bertha Mary.....	Tuscola, Mich.
A. B., University of Washington, 1910.	
M. A., University of Washington, 1911.	
Cook, Jennie.....	Seattle
A. B., University of Washington, 1904.	
Cox, Manning William.....	Machias
B. L., Whitman College, 1910.	
Crim, Lemuel Paul.....	Seattle
B. S. in Electrical Engineering, University of Washington, 1908.	
Culbertson, Lucile Elizabeth.....	Heppner, Ore.
A. B., University of Michigan, 1913.	M. A., English.
Dallas, James A.....	Seattle
A. B., University of Nebraska, 1907.	
Davis, M. Martelle Elliott.....	Tacoma
B. L., Ohio Wesleyan University, 1897.	
Davison, Cella Leah Madeline.....	Clyde
A. B., University of Southern California, 1914.	

- Diez, Rodrigo.....Santiago, Chile
 Bachiller en Humanidades, Universidad de Chile, 1911.
 Ingeniero Agrícola, Instituto Agronomo de Chile, 1915.
- Eastman, Jessie May.....Seattle
 A. B., Carleton College, 1909.
- Eddy, Addie Cornwall.....Seattle
 A. B., Simpson College, 1907.
 M. A., University of Washington, 1915.
- Ellert, William Herman.....Seattle
 B. S., Carleton College, 1903.
- Ellis, Jennie Ruth.....Seattle
 A. B., University of Washington, 1915. M. A., Education.
- Ely, Helen La Monte.....Wellesley, Mass.
 A. B., Wellesley College, 1915.
- Emerson, Albert T.....Seattle
 B. S. in Electrical Engineering, University of Washington, 1907.
- Etsell, Irma.....Seattle
 A. B., University of Wisconsin, 1913. M. A., Spanish.
- Evans, William Vincent.....Livingston, Mont.
 B. S. in Forestry, University of Washington, 1915.
 M. S., Forestry.
- Farnham, Frances E.....Ellensburg
 A. B., University of Washington, 1912. M. A., German.
- Fay, Alice Ober.....Seattle
 A. B., Vassar College, 1914. M. A., History.
- Flaherty, Benjamin Guy.....Sumner
 B. S. in Electrical Engineering, University of Washington, 1909.
- Fox, Viva.....Seattle
 A. B., Hamline University, 1914. M. A., Education.
- Freeman, David W.....Seattle
 A. B., Drake University, 1903.
 M. A., Drake University, 1904.
- French, Albert Newton.....Seattle
 A. B., University of Washington, 1911. M. A., Education.
- Gebaroff, Andrew.....Bremerton
 A. B., Lawrence University, 1906.
- Gille, Madell.....Seattle
 B. S., University of Washington, 1915. M. S., Zoology.
- Glockler, George.....Seattle
 B. S., University of Washington, 1915. Ph. D., Chemistry.
 M. S., University of Washington, 1915.
- Goodrich, Forest J.....Seattle
 Ph. C., University of Washington, 1913.
 B. S., University of Washington, 1914.
- Goold, Howard Ralph.....Tacoma
 B. S., Northwestern University, 1908.
- Gregg, Kate Lella.....Chehalis
 A. B., University of Washington, 1908. Ph. D., English.
- Grimstvedt, George.....Kristiania, Norway
 A. B., University of Washington, 1915. M. A., English.
- Halbach, Norma Catherine.....Seattle
 A. B., University of Wisconsin, 1904.

Hart, Josephine	Seattle
B. S., Michigan Agricultural College, 1912.	
Herrick, John Sidney	Seattle
B. S. in Chemical Engineering, University of Washington, 1914.	
M. S., Chemical Engineering.	
Hipkoe, George August	Seattle
A. B., University of Washington, 1913.	M. A., English.
Hoffenreich, Herman	Budapest, Hungary
Magister Artis Phar., University of Budapest, 1903.	
Hollingsworth, Robertson Riley	Seattle
A. B., University of Washington, 1915.	M. A., Education.
Hollingsworth, William Wiley	Seattle
A. B., Mercer University, 1910.	
M. A., Princeton University, 1914.	
Hopkins, Olive Fay	Seattle
A. B., Indiana University, 1905.	M. A., Education.
Howes, Alice	Spokane
A. B., University of Washington, 1910.	M. A., Education.
Hughes, Mary Mildred	Seattle
A. B., University of Colorado, 1908.	
M. A., University of Colorado, 1909.	
Hurd, Annie May	Seattle
B. S., University of Washington, 1915.	M. S., Botany.
Ide, Archie Lewis	Seattle
A. B., Hamline University, 1904.	
M. S., University of Washington, 1914.	
Ide, Gladys Geneva	Seattle
A. B., University of Washington, 1915.	
M. A., University of Washington, 1915.	
Jencks, Zalla	Ottawa, Ill.
B. S., University of Chicago, 1913.	M. S., Chemistry.
Johnson, David Hjalmar	Tacoma
B. S., Whitworth College, 1913.	M. S., Zoology.
Jones, Frank M.	Seattle
B. S., University of Washington, 1914.	
Jones, Zola Martha	Bremerton
A. B., University of Washington, 1914.	
Joubert, Lloyd P.	Enumclaw
B. S. in Electrical Engineering, University of Washington, 1915.	
Karlstram, Otto Reinhold	Seattle
A. B., Augustana College, 1909.	
Karrer, Joanne Laura	Seattle
B. S., University of Washington, 1915.	M. S., Botany.
Kenny, Kathryn Petronilla	Seattle
A. B., University of Washington, 1911.	M. A., Spanish.
Kleihauer, Cleveland	Seattle
A. B., Cotner University, Nebraska, 1907.	
M. A., University of Nebraska, 1912.	
Kobayashi, Nuiunosuke	Seattle
A. B., University of Washington, 1915.	M. A., History.
Koch, Samuel	Seattle
B. L., University of Cincinnati, 1899.	
M. A., University of Cincinnati, 1901.	

Koshiyama, William Masakazu.....	Seattle
A. B., Aoyama Gakuin College, Tokyo, Japan, 1908.	
Kuga, Kohei	Seattle
B. S. in Electrical Engineering, University of Washington, 1915.	
Laird, Allie Luella.....	Seattle
A. B., Northwestern University, 1906. M. A., Spanish.	
Larrison, Winnifred F.....	Seattle
A. B., University of Washington, 1915. M. A., English.	
Lawler, Lillian Donovan.....	Seattle
A. B., University of Washington, 1907.	
Lincoln, Mattie Jane.....	Seattle
B. S., University of Washington, 1915. M. S., Physics.	
Lindaas, Anna	Tacoma
A. B., University of Washington, 1915.	
Lindborg, Arthur E.....	Tacoma
A. B., University of Washington, 1913. M. A., Education.	
Lissé, Martin William.....	Harrisburg, Pa.
B. S., Pennsylvania State College, 1914. M. S., Chemistry.	
McDonald, James M.....	Seattle
B. S. in Mining Engineering, University of Washington, 1913.	
McLean, Berenice	Seattle
A. B., University of Washington, 1913.	
McLellan, Roy Davison.....	Davenport
A. B., University of Washington, 1915.	
Macintire, Elizabeth J.....	Seattle
A. B., Mount Holyoke College, 1902.	
Maske, Jr., William.....	Seattle
Ph. C., University of Washington, 1915.	
B. S., University of Washington, 1915.	
Moore, John Brooks.....	Seattle
A. B., Harvard University, 1914. M. A., English.	
Morgan, Miles Evan.....	Seattle
B. S., University of Washington, 1915.	
Morse, Florence M.....	Tacoma
A. B., University of Colorado, 1910.	
M. A., University of Colorado, 1912.	
Mullemeister, Hermance	Seattle
Ph. D., University of Utrecht, Holland, 1913.	
Murray, Kenneth G.....	Baltimore, Md.
A. B., Western Maryland College, 1895. M. A., History.	
Myers, Margaret	Seattle
B. S., University of Washington, 1914.	
Mykland, Albert A.....	Everett
A. B., St. Olaf College, Northfield, Minn., 1913.	
Neterer, Elizabeth	Seattle
A. B., Whitman College, 1915.	
Nordberg, Erika I.....	Seattle
A. B., University of Washington, 1915.	
Ohlson, David	Seattle
A. B., University of Washington, 1913.	
M. S., University of Washington, 1915.	

Parker, Alice Leila.....	Seattle
A. B., University of Washington, 1914.	
Parks, George Sutton.....	Seattle
B. S., University of Washington, 1915.	M. S., Chemistry.
Parton, Ida A.....	Seattle
A. B., University of Washington, 1910.	M. A., Education.
Pease, Vinnie Arah.....	Tacoma
B. S., University of Puget Sound, 1907.	M. S., Botany.
Pennell, Louise Farrar.....	Seattle
A. B., University of Washington, 1915.	M. S., Zoology.
Platt, Earl Milliron.....	Seattle
B. S., University of Washington, 1914.	M. S., Pharmacy.
Pollock, John D.....	Seattle
B. S. in Electrical Engineering, University of Nebraska, 1906.	
Porter, George N.....	Seattle
A. B., University of Nebraska, 1898.	
Price, William Kyle.....	Outlook
A. B., University of Washington, 1914.	
Rader, Ray	Seattle
B. S. in Electrical Engineering, University of Washington, 1914.	
Rawson, Ralph F.....	Seattle
A. B., University of Washington, 1915.	M. A., History.
Rengstorff, Erwin Henry.....	Enumclaw
A. B., University of Washington, 1915.	M. S., Forestry.
Rennie, Wesley Frederic.....	Vancouver, B. C.
A. B., Hillsdale College, 1913.	M. A., English.
Rennie, William Jacob.....	Vancouver, B. C.
A. B., Hillsdale College, 1915.	
Revenaugh, Carl Milhouse.....	Renton
A. B., Denison University, 1904.	
Richardson, Dio	Seattle
A. B., University of Colorado, 1913.	
Roberts, Alexander Crippen.....	Everett
A. B., University of Wisconsin, 1906.	
Sakai, Daisuke	Seattle
A. B., Waseda University, Japan, 1914.	
Scheer, Alfred E.....	Howard Lake, Minn.
Ph. B., Hamline University, 1911.	M. S., Physics.
Schmalle, Amos Lincoln.....	Seattle
A. B., University of Iowa, 1910.	
Schmidt, Marie C.....	Hillsboro, Ore.
A. B., Willamette University, 1911.	
M. A., University of Washington, 1913.	
Schmitz, Henry	Seattle
B. S. in Forestry, University of Washington, 1915.	
	M. S., Botany.
Schwartz, George Lewis.....	Seattle
B. S., University of Washington, 1915.	M. S., Chemistry.
Scott, Jr., Winfield.....	Seattle
A. B., Oberlin College, 1912.	M. S., Chemistry.
Smith, E. E.....	Seattle
B. S., Cornell College, Iowa, 1910.	

- Smith, William Merrill.....Seattle
A. B., De Pauw University, 1911.
- Sobel, Irene M.....Seattle
B. L., Ohio Wesleyan University, 1907.
- Spessard, Lester L.....White Salmon
A. B., Lebanon Valley College, Annville, Pa., 1911.
M. S., Zoology.
- Stafford, Howard Charles.....Seattle
A. B., Wittenberg College, 1906.
M. A., Wittenberg College, 1910.
- Staley, Ethel Maud.....Battle Creek, Mich.
A. B., University of Michigan, 1912.
- Staup, Minnie G.....Seattle
A. B., University of Washington, 1913. M. A., German.
- Stillinger, Charles Roy.....Moscow, Idaho
A. B., University of Idaho, 1913. Ph. D., Botany.
M. S., University of Idaho, 1915.
- Streator, Gertrude Inez.....Seattle
A. B., University of Washington, 1909.
M. A., University of Washington, 1912.
- Swartz, Leo.....Seattle
B. S. in Mechanical Engineering, University of Washington, 1914.
M. A., Education.
- Thing, Curtis W.....Seattle
B. S., Lenox College, Iowa, 1914. M. S., Chemistry.
- Thomas, Vera A. N.....Santa Ana, Cal.
B. L., University of California, 1908. M. A., English.
- Thompson, Claude Sims.....Seattle
B. S. in Mining Engineering, University of Washington, 1910.
M. S., Chemical Engineering.
- Thompson, Lucile May.....Seattle
B. S., University of Washington, 1915.
- Thompson, Noel F.....North Yakima
B. S., University of Washington, 1915. M. S., Botany.
- Thompson, Thomas Gordon.....Seattle
A. B., Clark College, 1914.
M. S., University of Washington, 1915.
- Thwing, Clarence.....Seattle
B. S., New York University, 1884.
M. S., New York University.
M. D., New York University.
- Trempe, Louis Adolph.....Winslow
A. B., University of Washington, 1914.
- Turnbull, George Stanley.....Seattle
A. B., University of Washington, 1915.
- Vickner, Bertha A.....Seattle
A. B., Gustavus Adolphus College, 1910.
- Walte, Netta Marguerite.....Seattle
B. S., University of Washington, 1914.
- Wakefield, Cleo Marie.....Seattle
A. B., University of Washington, 1908.
- Wallace, Isabel Weir.....Seattle
A. B., Whitman College, 1896.

Waltemeyer, Marie Claridge.....	Seattle
A. B., University of Colorado, 1908.	
Way, Evelyn Dorothy.....	Seattle
A. B., University of Washington, 1908.	
Welch, George Bernard.....	Muskego, Wis.
B. S., University of Washington, 1914. M. A., Education.	
West, Ruth	Seattle
A. B., University of Washington, 1908. M. S., Bacteriology.	
Westerberg, Iwar Sigurd.....	Seattle
A. B., Clark University, 1897.	
M. A., Harvard University, 1908.	
Whiteneck, Hosea A.....	Tacoma
A. B., Indiana University, 1909. M. A., Education.	
Wilcox, E. Roscoe.....	Seattle
B. S., University of Washington, 1915.	
Wiley, Sara Virginia.....	Seattle
A. B., Allegheny College, 1915.	
Winchester, Ralph Edward.....	Seattle
A. B., Ripon College, 1910.	
Wolfe, Allene Monroe.....	Seattle
A. B., Oberlin College, 1903.	
Woodworth, Frances Mary.....	Seattle
A. B., King's University, Windsor, Nova Scotia, 1897.	
Wright, Robert Creighton.....	Seattle
A. B., University of Washington, 1914. M. A., English.	
Yaeno, Hideo	Japan
A. B., Imperial University, Tokyo, 1912.	
Young, Frederic Harold.....	Eugene, Ore.
A. B., University of Oregon, 1914. M. A., Political Science.	

COLLEGE OF LIBERAL ARTS

ABBREVIATIONS

Classes

Sr.—Senior
Jr.—JuniorSo.—Sophomore
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Abe, Kingo; Jr.	Nagaoka, Japan
Abel, Lena Blanche; Fr.	Hoquiam
Abel, Robert Bryan; Fr.	Hoquiam
Abelset, Marcus; So.	Seattle
Abelset, Ruth; Fr.	Seattle
Adams, Adelaide; Fr.	Seattle
Adams, Frances True; Fr.	Seattle
Adams, Violette Beatrice; So.	Seattle
Adkins, Guinevere; Fr.	Seattle
Agassiz, Mary Florence; So.	Seattle
Agnew, Henry Clay; Fr.	Seattle
Aitchison, Irene; So.	Spokane
Alben, Ellen Gerda; Sr.	Vancouver
Alben, Nellie Edna; Sr.	Vancouver
Alexander, Janet; Fr.	Seattle
Allen, Cyria; Fr.	Aberdeen
Allen, Harold Beckwith; Jr.	Seattle
Allen, John M.; Fr.	Seattle
Allen, John Wesley; Fr.	Hood River, Ore.
Allen, Joseph Mills; Fr.	Tacoma
Allen, Troy Elmore; Fr.	St. John
Aller, Curtis C.; Jr.	Wapato
Alverson, Vida; Sr.	Seattle
Anasawa, Seichi; Jr.	Yonessawa, Japan
Andersen, Arthur James; Fr.	Tacoma
Andersen, Gudrun Cecelia; So.	Seattle
Anderson, Arlie M.; Jr.	Bellingham
Anderson, Clara; Fr.	Seattle
Anderson, Helen Dorothy; Fr.	Seattle
Anderson, Oscar B.; Fr.	Seattle
Anderson, Pearl Adella; Fr.	Seattle
Anderson, Perley J.; Fr.	Port Blakeley
Andrews, Etta; Sr.	Vancouver
Angle, Joseph Eber; So.	Shelton
Anstett, Leonard William; Fr.	Bellingham
Aono, Frank O.; So.	Seattle
Arant, Arthur W.; Fr.	Seattle
Armstrong, Irene Margaret; Sr.	Tacoma
Armstrong, Raphael Winton; Fr.	Tacoma
Armstrong, Spencer; Fr.	Everett
Arnold, Grace; Fr.	Tacoma
Arnold, Mercy Eggleston; Jr.	Conklin, Mich.

Arthur, Agnes; So.....	Canon City, Colo.
Ashton, Theresa; Fr.....	Seattle
Attebery, Hester Josephine; Jr.....	Opportunity
Augerson, Clare Arvilla; Fr.....	Seattle
Avery, Clara; Fr.....	Olympia
Babb, Ruth C.; Fr.....	Portland, Ore.
Bachelor, Arthur; So.....	Oakville
Bachrach, Herbert; So.....	Tacoma
Badger, Edwin Hill; Fr.....	Seattle
Baisden, Leo Bernard; Sr.....	Seattle
Baker, Alfred Landon; So.....	Seattle
Baker, Alice Harriett; So.....	Seattle
Baker, Anna Leland; Sr.....	Seattle
Baker, Dorothy Jesa; Fr.....	Portland, Ore.
Baker, Mildred Elizabeth; Jr.....	Tacoma
Baker, Ronald Franklin; Fr.....	Ellensburg
Baldwin, William Joseph; Fr.....	Seattle
Ball, Addie G.; Fr.....	Seattle
Bardin, James Everett; So.....	Seattle
Barker, Stanley Forsythe; Jr.....	Seattle
Barkwill, Bernard G.; Fr.....	Seattle
Barnes, Creston W.; Fr.....	Seattle
Barnes, Mildred; So.....	Seattle
Barr, Helen Mary; Jr.....	Seattle
Barron, Ernest Harold; Fr.....	Sumner
Barter, Etta Elizabeth; Sr.....	Seattle
Bash, Carolyn Horton; Fr.....	Seattle
Bass, Florence Gertrude; Jr.....	Red Oak, Iowa
Bateman, Stella; Fr.....	Helena, Mont.
Bates, Bernard Riheldaffer; So.....	Tacoma
Baughman, Lorita Marie; Fr.....	Seattle
Baxter, Catherine Colony; Sr.....	Seattle
Beal, Anna Miriam; Fr.....	Portland, Ore.
Bean, Frances Lorraine; Jr.....	Seattle
Beard, Helen Leighton; Fr.....	Fort Worden
Beardsley, George O.; So.....	North Yakima
Beck, George Frederick; So.....	Krupp
Becker, Gladys Aileen; Fr.....	Seattle
Beckwith, Hortense; Fr.....	Seattle
Beezley, Phona Cassius; So.....	Oakland, Iowa
Bell, Albert Harry; Fr.....	Portland, Ore.
Bell, Bonnie; Fr.....	Seattle
Bell, Doris Lillian; Fr.....	Everett
Bell, John Karl; Fr.....	North Yakima
Bender, Robert William; Fr.....	Tacoma
Benjamin, Hazel Leigh; So.....	Seattle
Bennett, Helen Marcia; So.....	Cashmere
Bennett, Ruth Elizabeth; Fr.....	Seattle
Benton, Ruth; Fr.....	Seattle
Bergh, May Alice; Fr.....	Seattle
Bertolet, Esther Marie; Jr.....	Seattle

Best, Elva; Jr.	Newberg, Ore.
Bevis, Dorothy True; Fr.	Lewiston, Idaho
Beymer, Richard K. Jr.; Fr.	Tacoma
Binnings, Mildred Olive; Jr.	Tacoma
Bjorkman, Frank W.; So.	Tacoma
Black, Wendell W.; So.	Everett
Blair, Anna Clio; Fr.	Seattle
Blumenfeld, Herman Naphtah; Fr.	Seattle
Blyth, Joseph; So.	Bothell
Boeshar, Ruth; Fr.	Everett
Bogert, Josephine De Sombre; Fr.	Seattle
Bolinger, Blanche Elizabeth; Jr.	Methow
Bolinger, John Clayton; So.	Methow
Bollman, Dean; So.	Auburn
Bolster, Edna Ellsworth; Fr.	Seattle
Bolster, Helen; Jr.	Seattle
Bolton, Ruth Genevieve; So.	Seattle
Bond, John; Fr.	Seattle
Bories, Henry Villard; So.	Seattle
Bouck, Ada E.; Jr.	Sedro Woolley
Bovee, Homer Thomas; Sr.	Seattle
Bowdoin, Blanche Virginia; Jr.	Bremerton
Bowie, Frances; Sr.	Roslyn
Bowman, Erma Vaughn; Fr.	Dayton
Bown, Robert Frederick; Sr.	Tacoma
Boyce, Leila Maude; Fr.	Kirkland
Boyd, Mary Elizabeth; So.	Portland, Ore.
Brace, Mary Winifred; Jr.	Seattle
Brackett, Anson Wendell; So.	Seattle
Bradbury, Laura Atosa; So.	Port Angeles
Bradway, Mabel; Jr.	Los Angeles, Cal.
Brakel, Anna Elnora; Jr.	Portland, Ore.
Brakel, Marguerite Bell; Jr.	Portland, Ore.
Brandenthaler, Arthur A.; So.	Seattle
Brandstrom, Axel Johan Felix; So.	Seattle
Brawley, Edith May; So.	Seattle
Brennan, Carlyle; Fr.	Tolt
Bressler, Donald L.; So.	Genesee, Idaho
Brevick, Conrad; So.	Seattle
Brokaw, Bernice Ethel; Fr.	Stanwood
Bronson, Deming; Sr.	Seattle
Brooke, Dorothy; Fr.	Seattle
Brooks, LeRoy W.; So.	Seattle
Broulette, James Barnes; Fr.	Seattle
Brown, Erma G.; Fr.	Seattle
Brown, Ford Keeler; So.	Seattle
Brown, Leland Pennock; Sr.	Auburn
Brown, Marian D.; Sr.	Seattle
Brown, Mildred Helen; Jr.	Landore, Idaho
Browne, Clarence H.; Fr.	Seattle
Browne, Edwin Chalmers; Fr.	Seattle

Browne, Leta Luella; Fr.....	Seattle
Brueggerhoff, Anna Marie; So.....	Seattle
Brueggerhoff, Marguerite; Fr.....	Seattle
Bryant, Mrs. Cassie Lawrence; Sr.....	Seattle
Bucher, Neva; Jr.....	Spokane
Buckley, James Raymond; Fr.....	Portland, Ore.
Burdick, Don; Fr.....	Centralla
Burnside, Catharine; So.....	Raymond
Burton, Alma Ann; Fr.....	Seattle
Bush, Agnes Selene; Jr.....	Seattle
Bushee, Helen Jane; Fr.....	Seattle
Bushell, Dorothy; Jr.....	Seattle
Bushnell, Helen; Fr.....	Seattle
Butler, Benjamin Fox; Fr.....	Seattle
Byers, John Reid; Fr.....	Seattle
Byles, Helen; So.....	Bellingham
Calder, Marion Dixon; So.....	Montesano
Calderhead, Adelaide Burns; So.....	Walla Walla
Caldwell, Royal Wallace; So.....	Seattle
Caley, Katharine; Jr.....	South Bend
Calhoun, Gladys Lillian; Jr.....	Seattle
Callow, Russell Stanley; Sr.....	Shelton
Cameron, Alfred Dorrance; Fr.....	Seattle
Campbell, Ernest W.; So.....	Seattle
Campbell, Esther Mary; Fr.....	Seattle
Campbell, Lloyd C.; Fr.....	North Yakima
Campbell, Robert H.; Fr.....	Seattle
Canfield, Clerice; Jr.....	Seattle
Carkeek, Amalia; Fr.....	Seattle
Carlin, Agnes Adele; Jr.....	Colville
Carlson, Axel; Fr.....	Seattle
Carlson, Iver Walter; Fr.....	Spokane
Carlson, Ruth Pauline; Fr.....	Seattle
Carlton, Frances W.; Jr.....	Seattle
Carmichael, George Albert; So.....	Bloomfield, Iowa
Carothers, Russell Ellis; Fr.....	Kelso
Carpenter, Vance Raymond; Fr.....	Canton, Mass.
Carrigan, Jack B.; So.....	Seattle
Cary, Miles Elwood; Jr.....	Edmonds
Case, Dorothy Serena; So.....	Seattle
Case, Edson M.; Fr.....	Puyallup
Case, Randall S.; So.....	Seattle
Cassidy, Frances Rosalind; So.....	Seattle
Cathcart, Anna Jeanette; Fr.....	Seattle
Catton, Lois Jane; Jr.....	Seattle
Chamberlin, Isabel; Fr.....	Seattle
Chandler, Elsie Rose; So.....	Seattle
Christensen, Agnes B. G.; Fr.....	Parkland
Christensen, Hans; Sr.....	Olympia
Christensen, Iolean Ruth; Sr.....	Tacoma
Christiax, Byron H.; Fr.....	Spokane

Clague, Ewan; Jr.	Dayton
Clare, Ethel Regina; Sr.	Selleck
Clark, Ermine; Fr.	Bellingham
Clarke, Florence Roberta; Sr.	Olympia
Cleaves, Edith Lorena; So.	Seattle
Clement, Vera L.; Jr.	Seattle
Clements, Colin C.; Sr.	Seattle
Cloud, Dan Gerald; Fr.	Montesano
Clyde, Paul D.; So.	Seattle
Cochran, Avadana Millett; Fr.	Seattle
Coder, Lloyd X.; So.	Seattle
Coe, Charles Rollit; Sr.	Seattle
Coe, Winifred Elizabeth; Sr.	Seattle
Coffee, John Main; So.	Tacoma
Coffman, John B.; Fr.	Chehalis
Coffman, Willow; Jr.	Seattle
Cohrs, M. Theodore; Sr.	Seattle
Cole, Eva Marsden; Jr.	Seattle
Cole, Miriam Elizabeth; Fr.	Seattle
Coleman, Clarence Joseph; Fr.	Everett
Coleman, Donald John; So.	Seattle
Coleman, Louise; So.	Seattle
Coleman, Montie Reed; Fr.	Seattle
Coleman, Rachel Esther; Sr.	Tacoma
Collins, Claude C.; Jr.	Monroe
Collins, James M.; So.	Seattle
Collins, Kenneth Roger; Fr.	Spokane
Collins, Lenore M.; Fr.	Puyallup
Collins, Marie Anna; Jr.	Seattle
Collins, Opal Helena; Sr.	Seattle
Condlon, Edward J.; Jr.	Seattle
Condon, Dorothy; Fr.	Port Gamble
Connell, Helen Loretta; Jr.	Seattle
Conner, Eva Margaret; Fr.	Seattle
Conner, Lewis C.; Sr.	Everett
Constantine, Dorothy Edna; Fr.	Seattle
Cook, Horace Lockwood; Jr.	Aberdeen
Cook, Marie Joy; Fr.	McKenna
Cooper, Frances Drake; Jr.	Seattle
Cooper, Isabel Donkin; Fr.	Tacoma
Cooper, Jesse Lee; Fr.	Pateros
Copeland, Mildred Frances; Fr.	Portland, Ore.
Corbiere, Anthony S.; So.	Seattle
Corbin, Louise Ellen; Fr.	Portland, Ore.
Corbitt, Helen D.; So.	Seattle
Corcoran, Wm. W.; Fr.	Tekoa
Cordz, Ollie; Fr.	Seattle
Cornett, Imogene Powell; Fr.	North Yakima
Cornett, Rita Powell; Fr.	North Yakima
Costello, Mary Cecilia; Sr.	Burke, Idaho
Cotter, Edward John; So.	Seattle

Courtney, C. Edwin; Fr.....	Seattle
Covey, Walter Howard; Jr.....	Seattle
Cox, Mrs. Edward Vaughn; Jr.....	Seattle
Crahan, Margaret; So.....	Seattle
Craig, Frances Anne; Sr.....	Knob Noster, Mo.
Craig, Samuel Ward; Fr.....	Portland, Ore.
Craven, Leonard Thomas; Fr.....	Spokane
Craver, Eugenia Marcia; Fr.....	Seattle
Crawford, Eleanor White; So.....	Seattle
Crawford, Grace R.; Fr.....	Seattle
Crawford, Susan Margaret; Fr.....	Walla Walla
Crippen, Inez; Sr.....	Spokane
Crogstad, Clara Irene; Fr.....	Mt. Vernon
Crouley, Anne; Fr.....	Seattle
Cuddy, George A.; Fr.....	Tacoma
Culliton, Elaine Clozier; Jr.....	Spokane
Culver, Evelyn Louise; Jr.....	Friday Harbor
Culver, Leda Gertrude; Fr.....	Friday Harbor
Curti, Ruth Clarke; Fr.....	Spokane
Cutting, Olive Christine; Fr.....	Seattle
Cutts, Louise; Fr.....	Deer Park
Dahlin, Ebba; Fr.....	Seattle
Dalley, Grace Olive; Fr.....	Seattle
Dalley, Mae Belle; Fr.....	Everett
Dally, Louise Beatrice.....	Seattle
Dalton, Arch Grant; Fr.....	Selah
Dalton, Robert Raymond; Fr.....	Olympia
Darr, Dorothy Rose; Fr.....	Tacoma
Darrin, Dorothy de Lepine; Sr.....	Seattle
Daulton, Elizabeth Katherine; So.....	Seattle
Davenport, Mabel A.; Jr.....	Hansen, Idaho
Davidson, John F.; Jr.....	Seattle
Davis, Achilles Philip; Fr.....	Colfax
Davis, E. Clark; So.....	Port Angeles
Davis, Gertrude; So.....	Chinook
Davis, L. Glenn; Fr.....	Mt. Vernon
Davis, Miss Leslie; Jr.....	Seattle
Davis, Marie D.; Fr.....	Seattle
Davis, Martha Jane; Jr.....	Seattle
Davis, Ruth Genevieve; Sr.....	Tacoma
Dean, Mildred; So.....	Walla Walla
DeBruyn, Paul Marcellus; So.....	Seattle
De Can, Ina; So.....	Seattle
Deerwester, Dorothy; So.....	Bellingham
DeKay, Frank G.; Fr.....	Blackfoot, Idaho
Delabarre, Margaret; Fr.....	Port Angeles
Delaney, Kathleen Nanon; So.....	Seattle
Delkin, Fred L.; Sr.....	Seattle
Dellar, Rae; Fr.....	Portland, Ore.
Deming, Wm. A.; So.....	Bellingham
Denny, Elizabeth Crocker; Fr.....	Seattle

Denny, Madge D.; Sr.....	Seattle
Derr, Elva J.; Fr.....	Salem, Ore.
Devin, Kern; Fr.....	Seattle
Dickerson, Will Eugene; Fr.....	Seattle
Dickson, Cecil Leslie; Jr.....	Tacoma
Dickson, David H.; Fr.....	Ellensburg
Dickson, Laura; Fr.....	Tacoma
Dill, Daniel George; Sr.....	Bellingham
Dimock, Dorothy; Fr.....	Seattle
Dinkelspiel, Bailey G.; Fr.....	Seattle
Dobbs, Jean Swift; Fr.....	Seattle
Dobbs, Thomas Erwin; So.....	Steilacoom
Dolloff, Ruphell A.; Fr.....	Everett
Donaldson, Harry Carl; Jr.....	Delevan, Wis.
Donaldson, Rox H.; So.....	Lind
Donley, Helen Irene; Fr.....	Seattle
Donnell, Georgia Marie; Fr.....	Snohomish
Donovan, Marguerite; Fr.....	Everett
Doolittle, Lynne Arden; Fr.....	Seattle
Doran, Eunice Wilma; Jr.....	Mt. Vernon
Dorgan, Yvonne Marie; So.....	Edmonds
Doty, Walter L.; Jr.....	Littell
Douglas, George Stuart; Jr.....	Seattle
Douglas, Muriel; Jr.....	Seattle
Dowell, Alice May; Jr.....	Seattle
Dowling, Mrs. Grace Thompson; Sr.....	Seattle
Downing, Ruth E.; Fr.....	Seattle
Drake, Alice Frisbie; Fr.....	Tacoma
Draper, Edgar Marian; Sr.....	Ontario, Ore.
Draper, Elizabeth; So.....	Greeley, Colo.
Drummond, Elizabeth MacE.; Jr.....	Tacoma
Dubuque, Emma; Jr.....	Seattle
Dulgar, Gladys M.; Fr.....	Raymond
Dunlap, Mary Donna; Fr.....	Seattle
Dunn, Frank Clyde; So.....	Bellingham
Du Pree, Grace Lindsey; Fr.....	Seattle
Durham, F. Wayne; Fr.....	Spokane
Durrant, William Edward; Jr.....	Everett
Dyer, Alvin E.; Fr.....	Spokane
Dysart, Lloyd Butler; Sr.....	Centralia
Dysart, Lorna; Fr.....	Centralia
Eagleson, Helen Elizabeth; Fr.....	Seattle
Easterbrook, Gladys F.; So.....	Seattle
Eastman, Florence I.; Sr.....	Seattle
Eaton, Geo. E.; Fr.....	Seattle
Ebert, Helen Louise; Fr.....	Seattle
Ebright, Carroll M.; Jr.....	Seattle
Ebright, Eloise; Fr.....	Seattle
Eckhart, Freda Louisa; Jr.....	Enumclaw
Edwards, Geo. K.; So.....	Seattle
Ehrlichman, Hannah Edith; Fr.....	Seattle

Ekern, Lincoln; Fr.....	Seattle
Elford, Florence Mae; So.....	Seattle
Elliott, Mary Frances; Fr.....	Seattle
Ellis, Floyd E.; So.....	Spokane
Ellsworth, Paul T.; Fr.....	Seattle
Elmore, Luther Long; So.....	North Yakima
Elway, Helena A.; Fr.....	Aberdeen
Elwood, Rose E.; So.....	Portland, Ore.
Embree, Felix Victor; Jr.....	Dayton
Enger, Harold Carl; Fr.....	Tacoma
Englehart, Oramel Philip; So.....	North Yakima
English, Alice; Fr.....	Seattle
Enyart, Grace M.; Fr.....	Seattle
Erchinger, Hazel Hildegard; Fr.....	Tacoma
Erdevig, Olga Josine; Fr.....	Seattle
Eriksen, Geneva A.; Jr.....	Seattle
Evans, Lecll Lacy; Jr.....	Seattle
Evanson, Clarence Frank; Fr.....	Seattle
Everest, Harold P.; So.....	Kirkland
Everett, Mrs. Elizabeth Rinehart; Jr.....	Seattle
Everett, Walter Herbert; Fr.....	Seattle
Everton, Clara M.; Jr.....	Edmonds
Eyman, Bradford; So.....	Seattle
Fairchild, Muir; So.....	Seattle
Falk, George L.; Fr.....	Seattle
Faulk, Theodore E.; Fr.....	Stromsburg, Neb.
Fay, Temple S.; Jr.....	Seattle
Feak, John Wesley; Fr.....	Castle Rock
Feldman, Joseph Bernard; Fr.....	Seattle
Fisher, Ben H.; Fr.....	Seattle
Fisher, Julia; Fr.....	Seattle
Fisher, Myrtle Elmira; Fr.....	Portland, Ore.
Fix, Will Harold; Fr.....	Lewiston, Idaho
Flagg, Donald Horatio; Fr.....	Olympia
Fleming, Roy Arthur; Fr.....	Silverdale
Flint, Lois E. A.; Jr.....	Port Townsend
Flockoi, George Howard; Fr.....	Ferndale
Foltz, Laura Azalia; Jr.....	Parkland
Fonda, Ada Elizabeth; Jr.....	Seattle
Foran, Florence Margarette; Fr.....	Everett
Ford, Jack L.; Jr.....	Spokane
Ford, Vivian M.; Fr.....	Seattle
Fosdick, Ruth Elizabeth; Jr.....	Goldendale
Foster, Ruth; Fr.....	Seattle
Fowler, Fred C.; So.....	Minneapolis, Minn.
Fowler, George W.; Fr.....	Everett
Francis, Violet; So.....	Seattle
Fraser, Alice Rosena; So.....	Burlington
Fraser, Mabel; Sr.....	Port Blakely
Freeman, Harry Boit; Fr.....	Seattle
French, Leslie E.; Fr.....	Elma

Freyd, Bernard; Sr.	Seattle
Freyd, Florence Sarah; So.	Seattle
Freyd, Max; Fr.	Seattle
Friedman, Robert; Fr.	Tacoma
Fryer, Beatrice Elizabeth; Fr.	Seattle
Fullerton, Gertrude L.; Fr.	Spokane
Fulton, Mary Louise; Fr.	Seattle
Funfsinn, Walter; Fr.	Seattle
Gallaher, Joseph Edward; Fr.	Seattle
Gardinier, Inez; Fr.	Baker, Ore.
Gardiner, Raymond Locke; So.	Seattle
Garratt, Eugenia E.; Fr.	Seattle
Gates, Louise Margaret; So.	Seattle
Gerriets, Anna; So.	Mount Vernon
Gerry, Alice; Fr.	Seattle
Giberson, Albert L.; Sr.	Seattle
Gibbs, Edna Earle; Fr.	Seattle
Gibson, Fred Everett; Fr.	Bellingham
Gibson, John Henry; Fr.	Spokane
Gieldseth, Genevieve; Fr.	Renton
Gilbert, Curtiss R.; Jr.	North Yakima
Gilbert, Warren John; Jr.	El Reno, Okla.
Giles, Walter Irving; Fr.	Seattle
Gill, Vivian Grant; Fr.	Seattle
Gilman, Bonnie Ruth; Fr.	Mondovi, Wis.
Gilmer, Josephine M.; So.	Seattle
Gindici, Pauline Amanda; So.	Dillon, Mont.
Glass, Cornelia; So.	Seattle
Glasscock, Carleton C.; Fr.	Bellingham
Gleason, Dorothy; Fr.	Seattle
Gleeson, Mary E.; So.	Butte, Mont.
Goggins, William Bernard; Fr.	Omak
Good, Myrtle; Fr.	Mount Vernon
Goodall, Kenneth C.; So.	Seattle
Goodell, Percy; Jr.	Chehalis
Goodman, Keith D.; Jr.	Tacoma
Goodrich, Evelyn Frances; So.	Port Townsend
Goodwin, Ervin Crawford; So.	Seattle
Gordon, Helen; Fr.	Seattle
Gourman, Mottle; Fr.	Seattle
Graham, Dorothy Virginia; Fr.	Seattle
Graham, Eva; Fr.	Seattle
Graham, John; Fr.	Los Angeles, Cal.
Graham, Llewellyn Irvine; So.	Aberdeen
Grant, Marguerite Fernald; So.	Seattle
Grant, Thomas S.; So.	Seattle
Gray, Clara Josephine; Fr.	Arlington
Green, Dorothy Gwendolyn; Jr.	Seattle
Greene, Gaylard W.; Sr.	Seattle
Greig, Wallace O.; So.	Seattle
Gresham, Marie Cole; Jr.	Seattle

Griffin, Robert W.; Fr.....	Astoria, Ore.
Griffith, Phyllis; Fr.....	Seattle
Grinnell, Charles H. Jr.; Fr.....	Tacoma
Gross, Irene; Fr.....	Walla Walla
Grout, Dorothy Knox; Jr.....	Seattle
Grout, Genevieve A.; Jr.....	Seattle
Guerin, Holt; Fr.....	Olympia
Guie, Hlester Dean; So.....	Seattle
Gustafson, Rhodes Harold; Fr.....	Seattle
Guthrie, Rosamond Dell; Fr.....	Seattle
Gyllenberg, Mary; Fr.....	Baker, Ore.
Haas, Mark Leo; Fr.....	Spokane
Haley, Stirling C.; So.....	Seattle
Hall, Alfred F.; So.....	Seattle
Hall, Charlotte; Jr.....	Vancouver
Hall, Emily; So.....	Seattle
Hall, Irene; Fr.....	Seattle
Hall, Maude Elizabeth; Fr.....	Edmonds
Hall, Leola Merle; Sr.....	Seattle
Hall, Sigrid Margaret; Jr.....	Seattle
Halling, George; So.....	Portland, Ore.
Halsey, Burt Corwin; Fr.....	Clarkston
Halvorson, Oscar; Fr.....	Mapton
Hamel, Floyd Raymond; So.....	Seattle
Hammond, Esther; Jr.....	Tacoma
Handforth, Thomas Schofield; Fr.....	Tacoma
Hansen, Howard H.; So.....	Vashon
Happy, John H.; So.....	Spokane
Hargrave, Richard Wade; So.....	Seattle
Harris, Charles Leonard; So.....	Seattle
Harris, Olive Mildred; Jr.....	Seattle
Harshman, Gertrude; Fr.....	Fall City
Hartmann, Elsie A.; So.....	Anacortes
Hartman, Robert N.; Fr.....	Seattle
Harvitz, Barnett; Fr.....	Vancouver, B. C.
Haskell, Irene Maria; So.....	Seattle
Haslett, Ruth; Fr.....	Tacoma
Hastie, Gladys; Fr.....	Seattle
Hatfield, Lois; Fr.....	Buhl, Idaho
Hawkins, Elma; Fr.....	Seattle
Hawkins, Mary Estelle; Fr.....	Seattle
Hawkins, Robert M. McM.; Fr.....	Seattle
Hawthorne, Rebecca Allison; Fr.....	Seattle
Hayden, Hoyt; Fr.....	Portland, Ore.
Hayes, Dorothy; So.....	Seattle
Hayner, Miriam Marjorie; Fr.....	Seattle
Hayner, Norman S.; So.....	Seattle
Haynes, Rhea Rachel; Sr.....	Seattle
Healy, Timothy; Fr.....	Bellingham
Hedden, Eleanor; Fr.....	Seattle

Hedges, Birdie; Sr.....	Seattle
Heermans, Donald; Fr.....	Olympia
Heermans, Jerome T.; Sr.....	Olympia
Heines, Thomas S.; Fr.....	Seattle
Helteshu, Dorothy Winifred; Fr.....	Seattle
Henderlite, Elmer Claude V.; So.....	Seattle
Henderson, Lloyd Putnam; Sr.....	Seattle
Hendricksen, Hilda Ovida; Fr.....	Portland, Ore.
Henry, Elizabeth; So.....	Seattle
Henson, Gus B.; Fr.....	Athol, Idaho
Herbst, Josephine Frey; Sr.....	Sioux City, Iowa
Hering, George Edward; Fr.....	Fairbanks, Alaska
Hermann, Hallgrimur; Jr.....	Seattle
Hermann, Ida M.; Jr.....	Seattle
Herrick, Charles Barrett; Jr.....	Seattle
Herzog, Sol A.; Jr.....	Portland, Ore.
Heuston, Alfred Newman; Fr.....	Tacoma
Higgins, Emerson P.; Fr.....	Seattle
Higgins, Frances Irene; Jr.....	Seattle
Hill, Elsie Mary; Fr.....	Orillia
Hill, Ethel M.; Fr.....	Seattle
Hill, Merton Alva; So.....	Seattle
Himmelhoch, Harold Herman; Fr.....	Seattle
Hindes, Vera Belle; Fr.....	Arlington
Hindman, Edna; Fr.....	Baker, Ore.
Hitch, Martha; Fr.....	Seattle
Hitt, Gladys; Jr.....	Weiser, Idaho
Hoard, Charles Vere; Fr.....	Seattle
Hodge, Paul Hartman; Jr.....	Seattle
Hodge, Walter Hartman; So.....	Seattle
Hoerr, Ruth Pauline; Fr.....	Lebanon, Ore.
Hoffman, Isabella F. M.; Fr.....	North Yakima
Hofmeister, Lillie Margaret; Sr.....	Seattle
Hogg, Edwin Ruvthen Jr.; So.....	Seattle
Holby, Alfred Clarence; So.....	Seattle
Hoisington, Earl Malcolm; Fr.....	Seattle
Holt, Doris L. M.; So.....	Adelaide
Holen, Olaf; Sr.....	Kathryn, N. Dak.
Holland, Kathleen; Sr.....	Davenport
Hollander, Tyre Harrison; Fr.....	Seattle
Holman, Norma Burnett; Fr.....	Oregon City, Ore.
Holmes, Anne M.; So.....	Seattle
Hooper, Cornelia; Fr.....	Seattle
Hooper, Mary Virginia; Sr.....	Seattle
Hopping, Wm. D.; Fr.....	Tacoma
Hoppock, Adele Louise; Fr.....	Seattle
Hoppock, Gertrude Cornelia; Jr.....	Seattle
Horton, Russell B.; Jr.....	Seattle
Hosner, Ruth Rachel; Fr.....	Seattle
Hossack, Myra Louise; Fr.....	Odell, Ill.
Houck, Eva Lucile; Fr.....	Seattle

Houlahan, Marie; So.....	Seattle
Hovey, Joseph Chester; Fr.....	Ellensburg
Hubbard, Glenn C.; So.....	Spokane
Hudson, Dorothy Sewall; Fr.....	Seattle
Huff, Virginia; So.....	Seattle
Huggett, Ralph A.; Fr.....	Seattle
Hughes, Anne; Jr.....	Osborn, Mo.
Hughes, Harold C.; So.....	Seattle
Hughes, Monica; Fr.....	Seattle
Hunter, Ruth; Fr.....	Seattle
Hurja, Emil Edward; So.....	Fairbanks, Alaska
Hurlbut, Robert McCaine; So.....	Seattle
Huston, Helen H.; Sr.....	Seattle
Imel, Dea La Plume; So.....	Astoria, Ore.
Inglis, Floyd Lester; Fr.....	Seattle
Ivey, Ethel Pearl; Sr.....	Seattle
Iwamura, Shimataro; So.....	Seattle
Jackson, Margaret Clark; So.....	Portland, Ore.
Jackson, Reynold D.; Jr.....	Montesano
Jacobs, Isabel; So.....	Seattle
James, Jeanette; So.....	Black Diamond
Jamieson, Lydia May; Jr.....	Tacoma
Jenne, Grace Manetta; Fr.....	Coupeville
Jensen, George Alf; Fr.....	Seattle
Johanson, Hanna Hilda; Fr.....	Winlock
Johnson, Alfred Pullman; Jr.....	Seattle
Johnson, Alice M.; Fr.....	Portland, Ore.
Johnson, Esther Victoria; Fr.....	Seattle
Johnson, Evelyn Fortune; So.....	Seattle
Johnson, Fannie; Sr.....	Great Falls, Mont.
Johnson, Gladys A.; Jr.....	Waterman
Johnson, Lyle Gilbert; Fr.....	Kennewick
Johnson, Minnie Lorna; Sr.....	Seattle
Johnson, Ofell H.; Fr.....	Seattle
Johnson, Ralph E.; So.....	Hoguliam
Johnson, Rose; Fr.....	Seattle
Johnson, William E.; Fr.....	Selah
Johnston, Jeannette; Jr.....	Seattle
Johnston, Rolland B.; Sr.....	Seattle
Johnston, Violet Kathleen; So.....	Ritzville
Joiner, Anna Elmina; Fr.....	Anacortes
Jolliffe, Ellen Mary; Jr.....	Seattle
Jones, Ella; Fr.....	Seattle
Jones, Gertrude Leadore; Fr.....	Seattle
Jones, Hays; So.....	Tacoma
Jones, Hazel Emma; Sr.....	Seattle
Jones, Irene V.; So.....	Renton
Jones, Katherine Adams; Fr.....	North Yakima
Jones, Margaret Ogle; Jr.....	Seattle
Jones, Mary E.; Sr.....	Rex, Ore.
Jones, Roy Franklin; So.....	Sumas

Jones, Sarah Dorothy; Fr.....	Fort Lawton
Jones, Stacy V.; Jr.....	Tacoma
Jones, Weaver J.; Fr.....	Centralia
Joyner, Isabelle May; Fr.....	Seattle
Judd, Florence; Fr.....	Seattle
Judd, Myron V.; Fr.....	Seattle
Juillerat, Lee August; Jr.....	Seattle
Karrer, Rosella Mae; Fr.....	Seattle
Kastner, George Charles; Jr.....	Seattle
Kastner, Louis Robert; Jr.....	Seattle
Keenan, Helen Rose; Jr.....	Seattle
Keenan, Mary Antoinette; So.....	Seattle
Kegley, Ronald Jefferson; Fr.....	Olympia
Keith, Emily Hazelwood; Fr.....	Seattle
Keller, Dallas C.; Fr.....	Seattle
Kelley, Thomas C.; So.....	Starbuck
Kellogg, Lottie Estelle; Sr.....	Tacoma
Kellogg, Mae Louise; Fr.....	Seattle
Kelley, Helen Phoebe; Jr.....	Bellingham
Kelly, Samuel P.; Sr.....	Bellingham
Kelsey, Louise; So.....	Seattle
Kelton, Charles Clarence; Fr.....	Dawson, Y. T.
Kelton, Viola; Fr.....	Dawson, Y. T.
Kemper, Leo E.; So.....	Toppenish
Kennedy, Mabel Josephine; Fr.....	Tacoma
Kerr, Katherine I.; Fr.....	Seattle
Kerr, Kathryn Laura; So.....	Seattle
Kerr, Ruth Hamilton; Fr.....	Seattle
Kershaw, William Earnest; Fr.....	North Yakima
Kibbe, Lynus A.; Sr.....	Olympia
Kimsey, Byram R.; So.....	Seattle
King, Marianne; Jr.....	Seattle
Kingsbury, Henry Walter; Fr.....	Newport, Me.
Kittrell, Beatrice; Jr.....	Seattle
Klopfer, Henrietta J.; Fr.....	Seattle
Knapp, Martha; So.....	Seattle
Knettle, Lemyrt Dix; Fr.....	Pomeroy
Knutson, Anna; Fr.....	Seattle
Koester, Christine Marie; Jr.....	Seattle
Kohlman, Marjorie Xavier; Fr.....	Vancouver, B. C.
Koller, Helen; Fr.....	Seattle
Kolnitz, Abe Victor; Fr.....	Seattle
Kolstad, Arthur; Sr.....	East Stanwood
Kramer, Fern; Fr.....	Seattle
Kraus, Ethel M.; Sr.....	Seattle
Kriegler, Joseph E.; Fr.....	Odessa
Kronschnable, Mercedes Ethel; So.....	Seattle
Kuepfule, Bessie May; Fr.....	Seattle
Lafromboise, Arthur; So.....	Enumclaw
Lamoreux, Ethan Allen; Fr.....	Burton
Lane, Josephine; So.....	Portland, Ore.

Laney, Frances Willard; So.....	Seattle
Lange, Mrs. Edith Spencer; So.....	Seattle
Lange, Johann H.; Fr.....	Seattle
Larson, Mildred; So.....	Seattle
Lathe, Helen Richards; Sr.....	Seattle
Lauthers, Gladys; Sr.....	Portland, Ore.
LaViolette, Ethel Josephine; Sr.....	Seattle
Lawson, Peninnah Belle; So.....	Seattle
Lawson, Gay Lillian; Fr.....	Seattle
Leaf, Alice; Jr.....	Seattle
Leavitt, Dorothy; Fr.....	Seattle
Lee, Edward Arthur; Fr.....	Spokane
Lee, Jean Elizabeth; So.....	Enumclaw
Lee, Marion W.; Fr.....	Tacoma
Leehey, Donald James; Fr.....	Seattle
Legg, Helen Taft; So.....	Quilcene
Leghorn, Frances Marie; Fr.....	Seattle
Lemley, Oddie Leroy; Fr.....	Rosalia
Leslie, Miriam; So.....	North Yakima
Lewis, Donald McKenzie; Fr.....	Beaux Arts
Lewis, J. Crawford; So.....	Beaux Arts
Lewis, Marion June; Fr.....	Edmonds
Lewis, Ruth Lynette; So.....	Seattle
Lieberg, Vivian Heln; So.....	Seattle
Liliopoulos, Hercules; Fr.....	Skarmutra, Greece
Lindberg, Gustaf Heimer; So.....	Tacoma
Lindberg, Wilmer Hilding; Fr.....	Tacoma
Lindburg, Russell; Fr.....	Medina
Linder, Muriel; So.....	Seattle
Lindsay, Irma; Sr.....	Seattle
Lindsley, Evangeline; Fr.....	Puyallup
Lindstrom, Mary Elizabeth; Sr.....	Tacoma
Linne, Harvey Edmond; Fr.....	Seattle
Liska, Martha; So.....	Seattle
Listmann, Grace; So.....	North Yakima
Lockman, Frederick Vincent; Fr.....	Seattle
Logan, Florence L.; Fr.....	Seattle
Logan, Frank Whitfield; Fr.....	Seattle
Logg, David Gladstone; Jr.....	Rolling Bay
Louden, Russell; Fr.....	Centralia
Love, Grover Allen; Fr.....	Elbe
Lovejoy, W. Ellsworth; So.....	Coupeville
Low, Nellie; Fr.....	Dayton
Lucas, Claire E.; Jr.....	LaCrosse, Wis.
Ludgate, Katie Eva; Jr.....	Seattle
Luke, Myrtle; Fr.....	Auburn
Lund, Katharine Louise; Jr.....	Seattle
Luther, Arthur O.; Fr.....	Seattle
Lutz, Harold Haswell; Fr.....	Seattle
Lutz, Hugh Ward; Fr.....	Seattle
McAllaster, Marion; Jr.....	Seattle

McCabe, Lucile M.; Jr.	Seattle
MacCallum, G. Howard; Jr.	Seattle
McClelland, Carl E.; So.	Seattle
McClelland, Clara Elizabeth; Jr.	Seattle
McCorkle, Mae Diana; Fr.	Lexington
McCormick, Helen F.; Fr.	Black Diamond
McCready, Irving Spencer; So.	Snohomish
McCredy, Harold F.; Fr.	Bickleton
McDermott, Paul Elmer; Jr.	Seattle
McDonald, Agnes; Jr.	Seattle
McDonald, Bruce Scott; Fr.	Spokane
McDonald, Claire; So.	Seattle
McDonald, Mayme; Fr.	Seattle
McDonald, Ray D.; Fr.	Chehalis
MacDougall, Chas. Bryant; Fr.	Seattle
MacDougall, John Brock Jr.; Fr.	Seattle
McDowell, Minnie Moore; So.	Seattle
McEntee, Mary Elizabeth; Sr.	Spokane
McEuen, Marshall Lee; So.	Seattle
McFaul, Helen; Jr.	Portland, Ore.
McFee, Jean; So.	Seattle
McGee, Helen; So.	Seattle
McGovern, Foster Lincoln; So.	Tacoma
McGregor, Mabel Marjorie; Fr.	Tacoma
McGuire, F. Edith; So.	Seattle
McGuire, Herbert W.; Fr.	Thornton
McGuire, Margaret; So.	Seattle
MacInnis, Sara; Jr.	Seattle
McIntyre, Enola F.; Sr.	Tacoma
McKay, Iva Virginia; Sr.	Seattle
McKee, Mary Elizabeth; Jr.	Everett
McKibben, Wilbur B.; So.	Kahlotus
McKim, James; Fr.	Puyallup
McKinney, Grace; So.	Tacoma
McLaughlin, Earl E.; So.	Seattle
McLean, Dwyer Coble; Fr.	Seattle
MacLean, Elizabeth; Fr.	Tacoma
McLean, Margaret Culver; Fr.	Bellingham
McLean, Margaret Vivian; Jr.	Seattle
McLean, Victoria; Sr.	Seattle
McLennan, Margaret; Fr.	Seattle
MacLeod, Frederick Bruce; Fr.	Spokane
McMurtrey, Nellie Byrd; So.	Seattle
McPhail, Mrs. Zora Laird; Sr.	Seattle
McPhee, Aletha Sophia; Sr.	Seattle
MacPherson, Lexie; So.	Seattle
MacRae, Lucile Agnes; Fr.	Seattle
Macdonald, Helen Mary; Fr.	Seattle
Magill, Wm. Fulton, Jr.; So.	Portland, Ore.
Magnuson, Manford Edwin; Fr.	Tacoma
Magowan, Hazel M.; Fr.	Hot Springs, S. Dak.

Malloy, Ralph Willard; Jr.....	Seattle
Malmo, Clarence Oliver; Sr.....	Seattle
Mann, Charlotte; Fr.....	Seattle
Mann, Marguerite; So.....	Port Townsend
Markey, Harry; Fr.....	Seattle
Markey, Joe; Fr.....	Seattle
Marks, Anna Lenora; Fr.....	Seattle
Marquette, Elizabeth; Jr.....	Seattle
Martin, Erma L.; Fr.....	Seattle
Martin, Robert Courtney; So.....	Wapato
Martin, Ruth Elizabeth; So.....	Seattle
Matheson, Katherine Willetta; So.....	Anacortes
Mathieu, Beatrice; So.....	Seattle
Mathis, Floy G.; So.....	Seattle
Mattson, Norma Claire; So.....	Seattle
Maxey, Henry Elmer; So.....	Ellensburg
Maxwell, Edmund Francis; So.....	Seattle
Mayer, Frieda; So.....	Seattle
Meckstroth, Esther Elizabeth; Fr.....	Seattle
Meenach, Virginia; Fr.....	Seattle
Meerscheidt, Erna; Sr.....	East Seattle
Meisnest, Darwin M.; Fr.....	Seattle
Melkild, Mildred Eunice; So.....	Seattle
Mercer, Beatrice; Sr.....	Seattle
Merrill, Mary Honor; Fr.....	Seattle
Merritt, Marion Ardra; Fr.....	Seattle
Meyer, George F.; So.....	Lind
Michael, Sadie; So.....	Chehalis
Middleton, Una Belle; So.....	Seattle
Millay, Lottie Elsie; Sr.....	Chewelah
Miller, Amelia Aurora; Fr.....	Lebanon, Ore.
Miller, Grace Thelma; Fr.....	Seattle
Miller, Mirgery Merle; So.....	Vancouver
Milton, Fletcher R.; Fr.....	Tacoma
Minahan, Cletus L.; Sr.....	Seattle
Miner, Grace Edith; Jr.....	Colville
Minnis, Marjorie Elizabeth; Jr.....	Seattle
Mitchell, Hiram Sherman; So.....	Astoria, Ore.
Mitchell, Maize B.; Fr.....	Sioux Falls, S. Dak.
Miura, Matajiro Y.; Jr.....	Seattle
Miyasaki, Taichiro; So.....	Seattle
Moberg, Clara Louise; Fr.....	Vashon
Moen, Anna; Fr.....	Bellingham
Moffet, Edith Pauline; So.....	Woodinville
Moll, Frances Louise; Fr.....	Arlington
Mongerson, Voleada Louise; Sr.....	St. Charles, Ill.
Monk, Edith Mary; So.....	Thomas
Monroe, Selmar Jay; Fr.....	Seattle
Moody, Anson Butler; So.....	Everett
Moody, Miriam Isabelle; Sr.....	Seattle
Moore, Elizabeth; Fr.....	Astoria, Ore.

Moore, Gerald Edwin; So.....	Seattle
Morehead, Elizabeth; Sr.....	Nahcotta
Morehouse, Dorothy; Fr.....	Seattle
Morehouse, Wilmot C.; Fr.....	Seattle
Morford, Kenneth James; Fr.....	Seattle
Morgan, Elizabeth; Jr.....	Aberdeen
Morgan, Guy; Fr.....	Aberdeen
Mori, Keukishi; So.....	Seattle
Morris, Eugene Ralph; So.....	Seattle
Morrison, Lily; Sr.....	Bellingham
Morrow, Jackson L.; Fr.....	Portland, Ore.
Morton, Lucie Wellington; So.....	Seattle
Mossford, Frances Maria; Jr.....	Seattle
Mossford, Margaret Annie; Fr.....	Seattle
Moulton, William R.; Jr.....	Aberdeen
Mowrey, Charles Wynne; So.....	Pomeroy
Mueller, Frank Carleton; Fr.....	Spokane
Mullon, Edward A.; Jr.....	Hoquiam
Murdey, Clarence Lewis; Fr.....	Seattle
Murray, Clara L.; Fr.....	Roy
Murray, Henry; Fr.....	Roy
Murray, J. Blaine; Fr.....	Seattle
Musser, Vera Irene; Fr.....	Seattle
Myer, Edna; So.....	Seattle
Myers, Dorothy; So.....	Seattle
Myers, Genneveve; Fr.....	Seattle
Myhrman, Andrew M.; Fr.....	Seattle
Neagle, Della; Fr.....	Seattle
Neeley, Charles Bertis; Fr.....	Spokane
Neighbors, Nancy Celia; Sr.....	Seattle
Neill, Frank W.; Sr.....	Seattle
Neill, Paul; Jr.....	Spokane
Nelson, Adilene R.; So.....	Friday Harbor
Nelson, Agnes Ellenore; Fr.....	Bellingham
Nelson, Earl C.; So.....	Seattle
Nelson, Helen; So.....	Seattle
Nelson, Herbert; So.....	Mt. Vernon
Nelson, Mildred Mae; Fr.....	Aberdeen
Nelson, Victor N.; Fr.....	Seattle
Nelthorpe, Helen; Fr.....	Seattle
Ness, Arthur B.; Fr.....	Tacoma
Newell, Dorothy Graham; Fr.....	Seattle
Nichols, William Robert; Sr.....	Tacoma
Nieder, Mandel; Jr.....	Seattle
Nigh, Alice; Jr.....	Los Angeles, Cal.
Noble, Elmer J.; So.....	Centralia
Nordhassel, Jennie Julia; Fr.....	Seattle
Nordhoff, Arthur Alphonsus; So.....	Seattle
Norton, John Eugene; Sr.....	Tacoma
Nye, Elizabeth; So.....	Seattle
Nylander, Gideon Karl; So.....	Seattle

Oathout, Marguerite; Fr.....	North Yakima
O'Callaghan, Claud Vincent; Fr.....	Bonner's Ferry, Idaho
O'Connell, Agnes E.; Sr.....	Tacoma
O'Connor, Matthew; Jr.....	Seattle
Odlin, Rene Woodbridge; Fr.....	Sedro Woolley
Oehler, Charles Elmer; Fr.....	Seattle
Oertel, Ernest E.; Fr.....	Seattle
Olds, Margaret; Fr.....	Wenatchee
O'Leary, Mary Carter; Jr.....	Seattle
Oleson, Carrie E.; Sr.....	Seattle
Oliphant, Bernice Marie; Fr.....	Ellensburg
Oliphant, J. Orin; Sr.....	Elberton
Oliver, Chester J.; Fr.....	Colfax
Olmstead, Frank Lewis; So.....	Caldwell, Idaho
Olmsted, Amy Catherine; Sr.....	Enterprise, Ore.
Olsen, Paul Crandall; So.....	Seattle
Olson, Ernest A.; Fr.....	Tacoma
Olson, Pauline; Fr.....	Seattle
Olswang, Cecelia; Jr.....	Seattle
O'Neill, Angus Lawrence; So.....	Shelton
O'Neill, James Philip; Sr.....	Seattle
Ooghe, Arthur; Sr.....	Seattle
Ort, Henry K.; Fr.....	Centralia
Osawa, Yuki Geda; So.....	Seattle
Overmeyer, Bertha F.; Fr.....	Seattle
Owen, Eleanor M.; Fr.....	Seattle
Packard, Mrs. LeFay Davy; Sr.....	Seattle
Palm, Roy Axel; Fr.....	Seattle
Palmer, Elizabeth; Fr.....	North Yakima
Parker, Frances Estella; So.....	Seattle
Parker, George Burnett; Jr.....	Tacoma
Parker, John A.; Fr.....	Tacoma
Parker, Samuel; Fr.....	Seattle
Parker, William Arthur; Fr.....	Seattle
Parks, Grace Amelia; Jr.....	Seattle
Parolini, Elizabeth C.; Jr.....	Norway, Mich.
Parsons, Rosamond; So.....	Seattle
Pedersen, Frederick L.; Sr.....	Skagway, Alaska
Pedersen, Ralph M.; So.....	Skagway, Alaska
Peeples, Don M.; Fr.....	Seattle
Pendergast, Wirt Wendell; So.....	Okanogan
Pendleton, Katherine; Fr.....	Everett
Pepper, Leah H. Etheldeene; So.....	Seattle
Perine, Esther Stewart; Sr.....	Seattle
Perry, Edward P.; Sr.....	Outlook
Perry, Frances Wayland; So.....	Selah
Peters, Tola; So.....	Seattle
Peterson, Elmer Justin; Fr.....	Aberdeen
Peterson, Florence M.; Jr.....	Seattle
Peterson, Inez Helena; So.....	Seattle
Peterson, Frank Lynn; So.....	Seattle

Peterson, Russel; So.....	Seattle
Phillips, Hubert J.; Jr.....	Seattle
Pieroth, Philip Joseph; Fr.....	Ellensburg
Pierrot, George Francis, Jr.; Fr.....	Seattle
Pierrot, Marjorie; So.....	Seattle
Pinkerton, Harold James; Fr.....	Cashmere
Pinneo, Beulah Fay; Jr.....	Seattle
Pinney, William George; Fr.....	Ontario, Ore.
Pitt, Mildred Esther; Fr.....	Seattle
Plants, Clyde Morie; So.....	Seattle
Platt, Luella Bash; Jr.....	Seattle
Playter, Mirie Denison; Fr.....	Seattle
Plimmer, Hilda More; Fr.....	Walla Walla
Polson, Harold L.; Fr.....	Seattle
Pope, Ezra T.; Fr.....	Seattle
Porter, Mrs. Frances Rice; So.....	Seattle
Post, Harry G.; Jr.....	Seattle
Potter, Elizabeth Anna; Jr.....	Grandview
Potter, Laird Irwin; Fr.....	Red Cloud, Neb.
Potter, Mabel Idella; Sr.....	Blaine
Potter, Walter E.; So.....	Seattle
Powell, Cornelia Foster; So.....	Seattle
Powers, Alvin James; Fr.....	Seattle
Pratt, Helen Margaret; So.....	Oak Harbor
Pratt, LeRoy, Jr.; Fr.....	Tacoma
Pressentin, Marie Olga; Fr.....	Seattle
Preston, Frank M.; Jr.....	Seattle
Prins, Alwine Clara Emma; Fr.....	Seattle
Prior, Pothena; Jr.....	Seattle
Pritchard, Grace Montana; Jr.....	Sorrento, Idaho
Pritchard, J. Gordon; So.....	Sorrento, Idaho
Proctor, Grance Ross; Jr.....	Seattle
Proctor, Muriel Esther; So.....	Seattle
Prothero, Kate; So.....	Seattle
Pryde, Joel J.; Sr.....	Hoquiam
Pucher, George; So.....	Seattle
Puffer, Floyd Arthur; Jr.....	Belding, Mich.
Quigg, John; Fr.....	Seattle
Quilliam, Louise Maud; Jr.....	Portland, Ore.
Rader, Donald Howard; Fr.....	Spokane
Rainey, Sarah Farquhar; Fr.....	Seattle
Ramage, Jerrine; So.....	Spokane
Ramseyer, Walter Chapin; Jr.....	Seattle
Randall, Veza Katherine; Fr.....	Seattle
Raney, Grace Paulene; Fr.....	Seattle
Rawls, Viola; Fr.....	Seattle
Rawn, Walter Huston; So.....	Prosser
Read, James W.; Jr.....	St. Louis, Mo.
Reed, Malcolm; So.....	Portland, Ore.
Reilly, Genevieve; Fr.....	Seattle
Reinhold, Dean Tripler; Fr.....	Montrose, Col.

Reinhold, Fred E.; So.....	Montrose, Col.
Reyburn, Ed. E.; Fr.....	Seattle
Reynolds, Mrs. Ada Thompson; Fr.....	Tacoma
Reynolds, James C.; Fr.....	Sheridan, Wyo.
Reynolds, Ollie Mildred; Fr.....	Seattle
Reynolds, Ruth Margaret; Sr.....	Chehalis
Richards, Dorothy; Fr.....	Tacoma
Richards, John S.; Sr.....	North Yakima
Richards, Walter Nelson; Fr.....	Seattle
Richardson, Ivy Rose; So.....	Stellacoom
Richter, Ella Paula; Fr.....	Tacoma
Rickles, Abraham; So.....	Seattle
Riddle, Rosamond; Fr.....	Seattle
Riddle, William Stanley; Fr.....	Seattle
Riehm, Helen; Fr.....	Dockton
Riley, Edward F.; Fr.....	Seattle
Rinker, Edwin R.; Fr.....	North Yakima
Risbell, Nadine; Fr.....	Seattle
Ritchie, Claude Albert; Fr.....	Seattle
Roan, Lily Nell; Fr.....	Seattle
Robbins, Morris Allen; So.....	Seattle
Robe, Dorothy Cecil; Fr.....	Seattle
Robe, Robert Samuel; Fr.....	Pueblo, Col.
Roberts, Elizabeth Jane; Fr.....	Seattle
Robertson, Richard Relfe; Fr.....	Seattle
Robinson, Estella E.; Sr.....	Tacoma
Robinson, Helen Lorna; Fr.....	Republic
Robinson, James Cyrus; Fr.....	Republic
Robinson, Laura Marie; Fr.....	Everett
Rockwell, Donald Shumway; So.....	Berkeley, Cal.
Rode, Alfred; So.....	Bellingham
Roegner, Kenneth A.; So.....	Ellensburg
Rogers, Joe B.; Fr.....	Colville
Rohwer, Fred H.; Fr.....	Spangle
Rooney, John Robert; Fr.....	Vancouver
Root, Milouise Rosa; Fr.....	Seattle
Roper, Llewellyn R., Jr.; Fr.....	Seattle
Rose, Charles D.; Fr.....	Seattle
Roseleaf, Dorothy Eleanor; Fr.....	Seattle
Rosenstein, Julie; Jr.....	Seattle
Rosenthal, Roy L.; So.....	Seattle
Rosling, Edward L.; So.....	Tacoma
Ross, Ethel; Fr.....	Seattle
Rowe, Gladess Marie; Fr.....	Olympia
Rowland, Harold W.; Fr.....	Seattle
Rowlee, Margaret Hubbard; Fr.....	Lockwood, Ohio
Ruelle, H. Wells; So.....	Seattle
Rupert, Emily Mae; Fr.....	Portland, Ore.
Rupert, Rhea; Sr.....	Aberdeen
Rushmer, Allen Benjamin; Fr.....	Tacoma
Russell, Florence Margretta; Fr.....	Seattle

Ruttle, Corinne Rosabel; Jr.	Seattle
Ryan, Raymond F.; So.	Seattle
Saboe, Leon G.; Fr.	Seattle
Sakamoto, Kei; So.	Seattle
Salisbury, Frank Sealy; Sr.	Farmington
Salladay, Flora Etta; Jr.	Seattle
Sample, Earle; Jr.	Roslyn
Sanborn, Henry Roblee; Fr.	Seattle
Sanborn, Elizabeth Katherine; Fr.	Seattle
Sanden, Arthur G. A.; Fr.	Seattle
Sangster, Reid George; So.	Clarkston
Sartoris, Roma Marie; Fr.	Enumclaw
Sater, Gertrude Pauline; So.	Seattle
Sato, Hiroshi; Jr.	Seattle
Saunders, John M.; Fr.	Seattle
Schiffer, Wilson Ermlich; Fr.	Portland, Ore.
Schopper, John H.; Sr.	Eudora, Kansas
Schulz, Antoinette Louise; So.	Seattle
Schumacher, Margaret C.; Jr.	Bellingham
Scott, Burton F.; So.	Oakley, Kan.
Scovill, Alice Corrine; Fr.	Kent
Scudder, Beth; Sr.	Seattle
Seagrave, Louis H.; Jr.	Spokane
Seal, Irene Mae; Sr.	Colville
Searle, William Everett; So.	Sunnyside
Seely, Anne Shepard; Fr.	Seattle
Seely, Harriet B.; So.	Seattle
Seibert, Marjorie Dee; Sr.	Seattle
Selig, Isabel; Sr.	Seattle
Sengfelder, Helen Adaire; Fr.	Spokane
Settle, Edith Bodine; Fr.	Kelso
Severns, Edward E.; So.	Chehalis
Shaffer, Harold B.; Fr.	Olympia
Shain, Julius; Fr.	Lakebay
Shannon, Thelma Lou; Fr.	Hamilton
Sharpe, Eva Mae; Fr.	Seattle
Sharpe, Ruth C.; So.	Seattle
Shaw, Mark; Fr.	Seattle
Sheehan, Mary Madeline; Sr.	Walla Walla
Sheperd, Paul Clark; So.	Seattle
Shields, Amy; Fr.	Seattle
Shipman, Maryan; Fr.	Spokane
Shivvers, Clarence H.; Sr.	Tacoma
Shoemaker, Herbert Curtis; Jr.	Spokane
Sholes, Jeannette Elizabeth; Fr.	Seattle
Short, Esther Lorinda; Fr.	Cle Elum
Shortall, Rose Violet; Fr.	Seattle
Shotwell, Catherine; So.	Seattle
Shuey, Paul; Fr.	Seattle
Silver, Max Arthur; Jr.	Seattle
Silverstone, Herschel; Fr.	Seattle

Silverstone, Libbie; Sr.....	Seattle
Simon, Arthur E.; Jr.....	Seattle
Simonds, Esther; So.....	Bothell
Sims, Agnes Helen; Jr.....	Walla Walla
Simson, Lillian Louise; Sr.....	Nome, Alaska
Sisler, Gertrude; So.....	Seattle
Skewis, Shirley Martin; Fr.....	Tacoma
Slater, Glen J.; Fr.....	Ferndale
Small, Adele; Fr.....	Seattle
Smallwood, Gladys Nelsine; Fr.....	Seattle
Smith, Adelina Naomi; Sr.....	Seattle
Smith, Alice Ward; Sr.....	Seattle
Smith, Duncan Llewellyn, Jr.; Sr.....	Port Gamble
Smith, Eleanor; So.....	Mt. Vernon
Smith, Elfreda Allen; Fr.....	Seattle
Smith, Frances K.; So.....	Seattle
Smith, George E.; So.....	Seattle
Smith, Harriet; Sr.....	Tacoma
Smith, Harriet H.; So.....	Seattle
Smith, Linabel; Fr.....	Seattle
Smith, Mark E.; Jr.....	Seattle
Smith, Pauline A.; Fr.....	Everett
Smith, Ralph R.; So.....	Seattle
Smith, Stephen Kemp; Fr.....	Port Angeles
Snider, Charles Claude; Fr.....	Brush Prairie
Snoddy, Esther; Fr.....	Seattle
Solid, Minda R.; So.....	Coupeville
Soule, Nadine; Jr.....	Seattle
Southard, Mabel; Fr.....	Seattle
Southard, Marion; Sr.....	Seattle
Sparks, Percy Spencer; Sr.....	Montesano
Spaulding, Florence Louise; Fr.....	Monroe
Spencer, Eunice Annie; Sr.....	Seattle
Spidel, George Albert; So.....	LaJunta, Col.
Sproul, Harold Dale; Fr.....	Ontario, Ore.
Squire, Clark; Sr.....	Seattle
Stalberg, Dorothy Ruth; Fr.....	Everett
Stalp, Rose Marie; Fr.....	Sprague
Stanton, Kathryn Bryce; So.....	Seattle
Starr, Beatrice Evangeline; So.....	Seattle
Starr, William Flavius; Fr.....	Seattle
Startup, Elmer G.; So.....	Startup
Startup, Kenneth Scott; So.....	Startup
Stave, George; Fr.....	Seattle
Steendahl, Anna Serine, Jr.....	Seattle
Stegner, Guy T.; Jr.....	Irvin
Stein, Waldemar L.; So.....	Seattle
Stewart, Charles William; Jr.....	Buckley
Stewart, Clare Douglas; Jr.....	Seattle
Stewart, Donald C.; Fr.....	Richmond Beach
Stewart, Dorothy Alice; Fr.....	Mount Vernon

Stewart, Howard Grant; So.....	Spokane
Stillwell, Ruth B.; So.....	Seattle
St. John, Edith Ivalon; Jr.....	Richmond Beach
Stone, Helen Morrill; So.....	Seattle
Strobach, Nettina Louise; Fr.....	North Yakima
Stubb, Albert Charles; Fr.....	Seattle
Stuchell, Edwin Wesley; Fr.....	Everett
Stusser, Leslie; Fr.....	Tacoma
Sullivan, John Vernon; So.....	Pine City
Sully, Catherine Fredericka; Jr.....	Seattle
Sully, Helen; Fr.....	Seattle
Summers, Doris Edith; Fr.....	Seattle
Summersett, Peter; Fr.....	Chehalis
Summy, Isabel Jean; Fr.....	Seattle
Sundquist, Leona Maria; So.....	Mount Vernon
Sutherland, Jean Eleanor; Fr.....	Fairbanks, Alaska
Sutherland, Starr S; Fr.....	Bellingham
Sutthoff, John Russell; Fr.....	Seattle
Svarz, Laura; Fr.....	Bellevue
Swanson, LeRoy Dwight; Jr.....	Seattle
Swarts, Zella Jane; So.....	Seattle
Swartz, Florence; Jr.....	Seattle
Swartz, Malinda; Fr.....	Reardan
Swartzbaugh, Garnet Marie; Fr.....	Seattle
Swift, Edward Alonzo, Jr; Fr.....	Seattle
Swigart, Howard F.; Fr.....	Seattle
Swigart, Bessie Lucile; Fr.....	Seattle
Takegawa, Johane T.; Jr.....	Seattle
Talbot, George Stephen; So.....	Seattle
Tanaka, Shinichi; So.....	Sukesaku, Kubo, Japan
Tanner, Raymond Michael; Fr.....	Davenport
Tarp, Violet Blenda; Fr.....	Seattle
Taylor, Cyril; Jr.....	Seattle
Taylor, Dorothea; So.....	Seattle
Taylor, George S.; Fr.....	Prosser
Taylor, Roy Franklin; Fr.....	Seattle
Tennant, Grace Bernyse; Fr.....	Seattle
Tennant, Harold E.; Fr.....	Seattle
Thelberg, Evelyn Elizabeth; Fr.....	Seattle
Thickins, Jane G.; Fr.....	Seattle
Thomas, Christina; So.....	Seattle
Thomas, Eldred Leroy; Fr.....	Bellingham
Thomas, Gezina; Sr.....	Seattle
Thomas, Irving W.; So.....	Seattle
Thomas, Kramer; So.....	Winslow
Thompkins, William R.; Fr.....	Seattle
Thompson, Agnes Salisbury; Sr.....	Seattle
Thompson, M. Beatrice; Jr.....	Harrington
Thompson, Gertrude Ronie; Fr.....	Seattle
Thompson, Guy W.; Sr.....	Seattle
Thompson, Lola; Fr.....	Tacoma

Thompson, Richard Aldwin; So.....	Seattle
Thompson, Ruth; Sr.....	Seattle
Thompson, Violet Florence; Fr.....	Seattle
Thorkelson, Borghild Victoria; So.....	Seattle
Tidball, Ben Watson; Fr.....	Bellingham
Tomlinson, Arella Evelyn; Fr.....	Seattle
Torrance, Kirby E.; Fr.....	American Falls, Idaho
Totten, Mabel Phelps; So.....	Seattle
Tracy, Mrs. Ada M.; Fr.....	Seattle
Traill, Frederick William; Jr.....	Seattle
Treat, Alice Ruth; So.....	Seattle
Tremper, Edward P. Jr.; Fr.....	Seattle
Trenholme, Mae Dickson; Jr.....	Seattle
Tucker, Glyde Lynne; Fr.....	Portland, Ore.
Tucker, Josephine Olive; Fr.....	Seattle
Tucker, Ruth Elizabeth; So.....	Seattle
Tuesley, Walter Harold; Fr.....	North Yakima
Tully, Irene A.; Fr.....	Tacoma
Turner, Everett W.; Fr.....	Modesto, Cal.
Turner, Ruth; Sr.....	Seattle
Turnure, Harold R.; Fr.....	Portland, Ore.
Tuttle, Sallie McClelland; Fr.....	Seattle
Tvete, Raymond Walter; Jr.....	Seattle
Uchikata, Henson M.; So.....	Seattle
Uhl, Grace E.; Jr.....	Bellingham
Unger, Nell Avery; So.....	Tacoma
Ungersma, Bernadine; Fr.....	Seattle
Upper, Euart Steele; Sr.....	Orillia
Upton, Virgil M.; Fr.....	Ellensburg
Vaas, Bertha Louise; Fr.....	Seattle
Vammen, Floyd Alexander; Fr.....	Aberdeen
VandeBogart, Paul M.; Jr.....	Hillyard
Vandercook, Mordecai Wm.; Fr.....	Seattle
VanHouten, Eugene L.; Fr.....	Seattle
Verran, William; Fr.....	Wapato
Vining, Marie Thelma; So.....	Seattle
Virtue, Eloise Beach; Fr.....	Seattle
Wada, Toshimasa; Jr.....	Japan
Wagner, Mildred Florence; Fr.....	Seattle
Walker, Henry Addis; Fr.....	Seattle
Walker; Chas. H.; Fr.....	Seattle
Wallace, Clara Louise; Fr.....	Seattle
Wallace, Edith; So.....	Seattle
Walsh, Mildred; So.....	Seattle
Walske, Max C.; So.....	Auburn
Walsworth, Esther; So.....	Butte, Mont.
Ward, George P.; So.....	Nyssa, Ore.
Ward, Pearl Edith; Jr.....	Seattle
Ware, S. Amelia; So.....	Seattle
Warner, S. Erma; Fr.....	Seattle
Warnock, Lola Myrtle; Fr.....	Joseph, Ore.

Warren, Edith Ione; So.....	Seattle
Washburn, Eleanor; So.....	Clear Lake
Wayland, Margaret; Jr.....	Seattle
Weaver, Clarence Alpheus; Fr.....	Seattle
Weaver, Grace Elizabeth; Fr.....	Seattle
Weber, Neal; Fr.....	Tacoma
Weissmiller, Cornelia Margaret; So.....	Seattle
Weixel, Besse; So.....	Seattle
Welch, Mrs. Mattie McGee; So.....	Seattle
Welts, Florence; Fr.....	Mount Vernon
Welty, Consuelo; Fr.....	Seattle
Wenzel, Arthur Erich; So.....	Seattle
Werby, Mamie Mathilda; Jr.....	Seattle
West, Helen; Fr.....	Twin Falls, Idaho
Wharton, Florence Lillian; Fr.....	North Yakima
Wheeler, Gladys F.; Sr.....	Seattle
Wheeler, Henry O.; Jr.....	Tacoma
Wheelon, Burton J.; Fr.....	Tacoma
White, Emma; Fr.....	Seattle
White, Frank I.; Fr.....	Seattle
White, Marjorie Whitworth; Jr.....	Seattle
White, Mildred Katharine; So.....	Seattle
Whitehead, Francis Virgil; Fr.....	Seattle
Whitelaw, Marjorie Campbell; Fr.....	Seattle
Whitlock, Marion Adeline Allen; Sr.....	Seattle
Wiegman, Marie; So.....	Spokane
Wilkie, Florence M.; Sr.....	Seattle
Williams, Anne Jane; Sr.....	Butte, Mont.
Williams, George Otis; Fr.....	Seattle
Williams, Merritt M.; Fr.....	Ilwaco
Williams, Ross P.; Fr.....	Seattle
Williams, William Carlton; So.....	Seattle
Wilson, Carl K.; Fr.....	Seattle
Wilson, Chester; Fr.....	Arlington
Wilson, Donald Crandall; Fr.....	Seattle
Wilson, Doris Glasgow; So.....	Winslow
Wilson, Evelyn; So.....	Tacoma
Wilson, John M. Jr.; So.....	Olympia
Wilson, John N.; Jr.....	Seattle
Wilson, William Ronald; Jr.....	Seattle
Winslow, Ella Patton; Sr.....	Seattle
Winslow, Irving D.; So.....	Seattle
Winter, Vonia; So.....	Everett
Wisner, Francis Preston; Fr.....	Parma, Idaho
Witherbee, Lewis C.; So.....	Seattle
Wittenberg, Ralph S.; Jr.....	Portland, Ore.
Wong, Hokkan; Fr.....	Portland, Ore.
Wood, Clara Louise; So.....	Helena, Mont.
Wood, James Harold; Fr.....	Seattle
Wood, Varian George; So.....	Granite Falls
Woodbridge, Dudley Warner; So.....	Seattle

REGISTER OF STUDENTS

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Woodworth, Madeline Emmons; Sr.....	Seattle
Woody, Samuel H.; Fr.....	Winlock
Woodyard, Robert Allan; Jr.....	Sunnyside
Worley, Ross; Fr.....	Bothell
Worthington, Mariette; Sr.....	Quilcene
Wright, Charlotte H.; Jr.....	Ellensburg
Wright, Helen M.; So.....	Spokane
Wright, Ruth H.; Fr.....	Seattle
Yerger, Bessie P.; Sr.....	Seattle
Yerkes, William D.; Fr.....	Seahurst
Young, Jennie R.; So.....	Seattle
Young, Wesley George; Jr.....	Winslow
Youngstrom, Joseph Fridolph; Jr.....	Rock Island, Ill.
Zacharias, Rose Lydia; Fr.....	Seattle
Zimmerman, Charles Lorraine; Fr.....	Seattle

UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Adams, Margaret Caroline.....	Bellingham
Allison, Roy Gordon.....	Seattle
Amoretti, Margaret.....	Lander, Wyo.
Baker, Adelia Gertrude.....	Seattle
Boice, Melvin Foster.....	Seattle
Boyle, George Lewis.....	Seattle
Calkins, Julius B.....	Seattle
Campbell, Mary.....	Seattle
Carlson, Hattie T.....	Seattle
Cheney, Joe Curtis.....	Montesano
Clausen, Ada.....	Twin Falls, Idaho
Cleeland, David Long.....	Butler, Pa.
Crippen, Maida.....	Spokane
Dirks, Donald C.....	Spokane
Dowell, Sareva.....	Seattle
Draham, Walter H.....	Olympia
English, Mark H.....	Arcadia, Wis.
Fletcher, Chas. Norman.....	Seattle
Folsom, Harold James.....	Bridgeport, N. J.
Gaynor, Alyce.....	Seattle
Gies, Ethel Harriet.....	Seattle
Godman, Donald Granville.....	Seattle
Goodman, Isey M.....	Seattle
Gosling, Florence.....	Seattle
Grimm, William H.....	Centralia
Hallahan, Grace Celestine.....	Spokane
Healy, Chester V.....	Tacoma
Johnson, Clarke.....	Tacoma
Johnston, Mary Edith.....	Seattle
Judy, Marjorie.....	Seattle
Keyes, Arthur.....	Tacoma

Kilgore, Owen	Spokane
Killman, Kathryn Scudder	Tacoma
Krogstad, Karl	Spokane
Leichhardt, Chester A.	Kelso
Maffett, Bert Harold	Weyerhaeuser, Wis.
Meenach, Gladys	Seattle
McKnight, Maud	Seattle
Moran, Alice Clara	Seattle
Moran, Malcolm Edward	Rosario
Moses, Gladys	Seattle
Nicholson, Clarke	Minneapolis, Minn.
Nihira, Kanzo	Makaha, Japan
O'Brien, Jay	Renton
Palmer, Kimball Blodgett	Seattle
Petersen, Jenny Lea	Trondhjem, Norway
Randall, May	Seattle
Relf, Gerald	Tacoma
Rogers, Gordon	Seattle
Ryan, Lewis	Seattle
Schlotthauer, Sam George	Portland, Ore.
Schreiner, Gertrude Mary	Seattle
Schweinbold, Harry	Seattle
Slater, Charles Hector	Seattle
Slaugenhaupt, Bernard	Kennewick
Slye, Blanche Beatrice	North Yakima
Steel, Portia	Enterprise, Ore.
Stevenson, Louis V.	Joseph, Ore.
Stinson, Albert G.	Seattle
Storm, Marie	Seattle
Strom, Ansley	Spokane
Stuart, Zara Althea	Hatton
Taggart, Marguerite Estelle	Seattle
Thompson, Thomas	Seattle
Tucker, William C.	Bellingham
Turnbull, Margaret May	Seattle
Turner, Charles Everett	Seattle
Turner, Laura Anna	Oshkosh, Wis.
Wagner, Adalia Catherine	Seattle
Waller, Vera	Edmonds
Warmoth, Murel	Seattle
Wiley, James Martin	Waterville
Wilson, Ross Samuel	Bellingham
Wood, Jay Wellington	Seattle
Yedica, Clarence Herman	Richland
Zimmerman, Helen Gladys	Portland, Ore.

SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Aiken, Effie E.	Three Tree Point
Barham, Kingsley	Seattle
Bennett, Edward Allen	Seattle
Bickel, Edward	Seattle
Brewster, Mrs. Pearl E.	Seattle
Brilliant, Albert	Seattle
Brintnall, B. W.	Seattle
Bundy, Thos. Walter	Seattle
Cavanagh, James Alfred	Seattle
Chittick, Mrs. Edna Whitman	Seattle
Clarke, Mrs. Ethel H.	Seattle
Cole, George M.	Husum
Cunningham, Harry B.	Seattle
Dedemann, Aug. Minna	Trittan, Germany
Dodge, Mrs. Elizabeth F.	Seattle
Ducasse, Neta	Seattle
Duskin, Bernard Stearns	Manette
Emy, Saburo	Seattle
Folk, Mrs. Katherine	Seattle
Garfinkel, Herman	Seattle
Guerrier, Charles Windfield	Centralia
Haines, May Stanley	Seattle
Hammond, Mrs. Clara P.	Seattle
Hanson, Tillie E.	Seattle
Harwood, Edward Phillips	Cordova, Alaska
Haugen, Anker	Seattle
Hoover, Ralph Leonard	Montesano
Jenkins, Margaret O.	Seattle
Johnsone, Delphine	Ellensburg
Jones, Nancy Emerson	Seattle
Kelly, Katherine M.	White Bluffs
Kyle, Elizabeth Faringer	Seattle
Langlow, Leonard S.	Tacoma
Lechner, Leslie A.	Seattle
Leslie, Eleanor M.	Seattle
Lofin, Howard Alsey	Seattle
McIlrath, Wm. R.	Keysport, Ill.
Minnick, Nelle H.	Sumas
Moore, Clarence F.	Walla Walla
Moroney, Lester	Manhattan, Ore.
Morrison, Clarence Victor	Seattle
Mousseau, Mrs. Elizabeth	Seattle
Mueller, Eugene A.	Spokane
Nash, Thomas Ogden	Omak
Ozaki, Myatara	Seattle
Perry, Adeline Virginia	Seattle
Peterson, Annette Lowe	Seattle
Peterson, Mrs. Ella W.	Seattle

Rave, William C.	Tacoma
Rensing, Herman	Seattle
Rutherford, Rex G.	Tacoma
Sharkey, Harold	North Yakima
Shostak, Lenovy	Kertch, Russia
Sinclair, Donald Walker.....	North Yakima
Smith, Arnold G.	Sumner
Smith, Mrs. Martha Elliott.....	Seattle
South, Roy Ford.....	Salem, Ore.
Steele, Mrs. Gladys J.	Black Diamond
Swinson, F. Leigh.....	Tacoma
Tanner, Frances	Seattle
Train, Edward N.	Seattle
Uhlman, Mrs. H. Gertrude.....	Seattle
Whalley, Frances	Seattle
White, Mrs. Eugenia Drew.....	Seattle
Wilson, Aimee L.	Seattle
Willson, Emma J.	Seattle
Wood, Joe S.	Seattle

COLLEGE OF SCIENCE

ABBREVIATIONS

Classes

Sr.—Senior
Jr.—JuniorSo.—Sophomore
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Ahrens, Helen Irene; Fr.....	Seattle
Aikins, Elta Mae; So.....	Riddle, Ore.
Ake, Claire Lail; Sr.....	Mountain Home, Idaho
Allan, Helen Frances; Fr.....	Seattle
Ames, Helene Houghton V.; Jr.....	Ellensburg
Anderson, Clarence; Jr.....	Seattle
Anderson, Rachel Dorothy; Fr.....	Seattle
Anderson, Frances Elizabeth; Fr.....	Seattle
Anderson, Helen Merriam; Sr.....	Seattle
Arney, Mary; So.....	Thomas
Atkin, Irene; Fr.....	Seattle
Austin, Frederick C.; Fr.....	Seattle
Ayers, Pearl Lottie; Fr.....	McCormick
Bachmann, Amelia Helen; Jr.....	Seattle
Bailey, Caroline E.; Jr.....	Seattle
Bailey, Edith; Jr.....	Walla Walla
Baldwin, David Edward; Fr.....	Cedarhurst
Bale, Robert Ezra; Jr.....	South Bend
Bale, Ruth Calista; Fr.....	South Bend
Banker, Iphigene C.; Jr.....	Seattle
Bardin, Galva Janet; Jr.....	Seattle
Barnum, Gertrude; Sr.....	Seattle
Barter, Ella; Jr.....	Seattle
Bassett, Charlotte Anne; Fr.....	Seattle
Behling, Vera F.; So.....	Seattle
Betts, Charles Allen; Jr.....	Seattle
Bickford, Ernest D.; So.....	Seattle
Bittner, Joseph Eric; Fr.....	Sprague
Bogardus, Almon; Fr.....	Seattle
Bolli, John; So.....	Seattle
Boyd, Winfield G.; Jr.....	Chehalis
Brackett, Bertha; Jr.....	Seattle
Bradley, Blythe Anita; So.....	Seattle
Bradley, Helen Lael; So.....	Seattle
Breck, Margaret; Sr.....	Seattle
Brewster, Helen Gertrude; Fr.....	Seattle
Brobst, Leona Jeannette; Fr.....	Seattle
Brooks, Mildred; Fr.....	Seattle
Brown, Warren; Fr.....	Wilkesbarre, Penn.
Bryan, Goldie Alice; Fr.....	Seattle
Burbank, Margaret Elizabeth; Fr.....	Seattle
Butcher, Bessie Elizabeth; So.....	Seattle

Butler, Judson Rea; Fr.....	Cuyapo, P. I.
Byers, Ada Kathryn; Fr.....	Seattle
Cadwell, Clytie Laurel; Jr.....	Wenatchee
Caffrey, Genevieve Elizabeth; Sr.....	Seattle
Calloway, Mary Gertrude; So.....	Seattle
Campbell, Donald M.; Fr.....	Seattle
Campbell, Lois; Sr.....	Seattle
Canfield, Damon R.; So.....	Seattle
Carleton, Lillian Genevieve; Jr.....	Seattle
Carlson, Agnes Naomi; So.....	Seattle
Carpenter, Beatrice; Sr.....	Seattle
Carroll, Emmett R. Jr; Sr.....	Seattle
Carson, Leslie D.; Jr.....	Seattle
Chamberlain, Percy Ira; Fr.....	Seattle
Chan, Guy Funn; Jr.....	Victoria, B. C.
Chapman, Grace Lillian; Jr.....	Seattle
Christensen, Elnora; Sr.....	Tacoma
Church, Mabel Minerva; So.....	Pocatello, Idaho
Claypool, John Cowles; Fr.....	Seattle
Cline, Frances Gott; Fr.....	Seattle
Coleman, Kenneth; Fr.....	Seattle
Colton, Grace Edith; Fr.....	Seattle
Condron, Lulu Alice; Sr.....	Hoquiam
Conner, Ruth Delight; Fr.....	Olympia
Cooper, Evelyn Frances; So.....	Seattle
Cornell, Gladys; Fr.....	Tacoma
Coughlin, Frances Gertrude; Sr.....	Spokane
Craib, Margaret Cumming; Fr.....	Seattle
Crawford, Edward Irwin; Sr.....	Seattle
Crawford, Russel D.; Jr.....	Seattle
Curtis, Paul W.; Fr.....	Seattle
Cushman, Thos. J.; Jr.....	Seattle
David, Pearl LaRue; Jr.....	Seattle
Davis, Charlotte G.; Jr.....	Bellingham
Davis, Harold E.; Fr.....	Tacoma
Davison, Dorothy; Jr.....	Seattle
DeMerchant, Leo A.; Sr.....	Oroville
Demro, Lucille; Fr.....	Seattle
Desmond, Margaret R.; So.....	Tacoma
Doheny, Charlotte; Fr.....	Seattle
Donovan, Harrison; Jr.....	Seattle
Dorgan, Mildred Eleanor; Jr.....	Edmonds
Douglas, Vernon Andrews; So.....	Great Falls, Mont.
Dow, Harlan A.; Fr.....	Chehalis
Downs, Agnes L.; Jr.....	Mount Vernon
Drew, Alice May; Fr.....	Seattle
Dunbar, Camilla K.; Sr.....	North Yakima
Dykeman, Robert L.; Fr.....	Orillia
Eagleson, James Mills; Jr.....	Seattle
Eaton, Mary Margaret; Sr.....	Drummond, Mont.
Eddy, Dudley Byron; Fr.....	Seattle

Elliott, Mary Elisabeth; So.....	Walla Walla
Emmons, Carl William; Fr.....	Salem
Entz, Ruth; Sr.....	Seattle
Falknor, Judson F.; Jr.....	Seattle
Farquhar, Elizabeth H.; Fr.....	Hillyard
Farrell, Charles Vincent; Fr.....	Sisco
Faubert, Alice M.; Fr.....	Shelton
Fenn, Grace; Fr.....	Seattle
Fisk, Frances Elaine; So.....	Parma
Fitts, Isabel; Sr.....	Seattle
Flanley, Evelyn Lisett; So.....	Seattle
Fletcher, Ina; So.....	Boise, Idaho
Floyd, Ruth Marion; Jr.....	Spokane
Foote, Gertrude May; So.....	Seattle
Foreman, Leotta Marie; Jr.....	Tacoma
Frame, Paul Warren; Sr.....	Seattle
Fredson, Dora Elizabeth; Sr.....	Shelton
Freed, Hugo; So.....	Seattle
Freeman, Robert E.; Jr.....	Spokane
French, Jane; Fr.....	Sedro Woolley
French, William Oscar; Fr.....	Modesto, Cal.
Frew, Rosamond; Jr.....	Seattle
Friars, Lola Eleanor; Fr.....	Tacoma
Frye, Else Marie; Jr.....	Seattle
Fujimaki, Samuel Y.; So.....	Seattle
Gallup, Lucy; Jr.....	Seattle
Gamble, Josephine M.; Fr.....	Bothell
Garrison, Glen G.; So.....	Seattle
Garvey, Edmund J.; Fr.....	Seattle
Gearhart, Esther; Fr.....	Astoria
Gerhardt, Cella Louise; Sr.....	Seattle
Gilbert, Lois Marion; So.....	North Yakima
Gilman, Helen Clare; Jr.....	Seattle
Gleason, Ruth; Sr.....	Seattle
Glenn, Margaret Ethel; So.....	Tacoma
Good, Jane; So.....	Mount Vernon
Goode, Helen Genevie; Fr.....	Hillyard
Gosnell, John Henry; So.....	Seattle
Gray, Isabel; Sr.....	Spokane
Greenleaf, Ruth S.; Fr.....	Seattle
Griffiths, Marion; So.....	Seattle
Guernsey, Harold Jackson; Fr.....	Prosser
Gunning, Nellie; Fr.....	Seattle
Hainsworth, Jeannette Florence; Fr.....	Seattle
Haller, Bernadine; So.....	Seattle
Hamburger, Ruth J.; Fr.....	Seattle
Hamilton, Alleen Ames; Jr.....	Seattle
Hamilton, Verna Elizabeth; Fr.....	Castle Rock
Hammond, Avis Ethel; So.....	Seattle
Hanson, Helen R.; Jr.....	Seattle
Hardy, William Agee; Fr.....	Seattle

Harmon, Don C.; So.....	Mt. Vernon
Kirkland, Harris Arthur; So.....	Colfax
Hartge, Mrs. Lena A.; Sr.....	Seattle
Haugum, Cyrus James; So.....	Seattle
Hayton, Gladys M.; Fr.....	Puyallup
Heath, Harry French; Sr.....	Dryad
Henderson, Phil A.; So.....	Portland, Ore.
Henry, Ruth Varene; Jr.....	Seattle
Herner, Helen; So.....	Portland, Ore.
Hess, Dorothy Ann; Sr.....	Seattle
Higgins, Hubert Gridley; Sr.....	Vancouver
Higgs, Paul McClellen; So.....	Pine City
Hillard, Robert Cushing; So.....	Spokane
Hirata, Mitsuo S.; So.....	Miyeken, Japan
Holden, Franklin Bishop; Fr.....	Brewster
Holman, Zelma Leone; So.....	Tacoma
Home, Jessie; Jr.....	Ellensburg
Hook, Florence Elizabeth; Fr.....	Aberdeen
Hopper, Floyd Christopher; Fr.....	St. Johns, Ore.
Houck, John Anson; Fr.....	Seattle
Howard, Alma B.; Jr.....	Seattle
Howes, Jessie; Fr.....	Hood River, Ore.
Howlett, Myrtle; Fr.....	Kellogg, Idaho
Hyndman, Alva Lucile; Fr.....	Seattle
Jacobson, Julia A.; Sr.....	Seattle
Jacobson, Wilhelmina Emelia; Jr.....	Devils Lake, N. Dak
Jaycox, Bonnie Jean; Fr.....	Walla Walla
Jeans, Mildred; So.....	Earlington
Jennings, Laura Belle; So.....	Seattle
Jerbert, Arthur Rudolph; Sr.....	Seattle
Jerbert, Einar Waldemar; So.....	Seattle
Johnson, Bertha; Fr.....	Kasson, Minn.
Johnson, Elmer A.; So.....	Vancouver
Johnson, Ernest Leroy; So.....	Tacoma
Johnson, Ethel Helen; So.....	Seattle
Johnson, Hilda; Jr.....	Nome, Alaska
Jones, Margaret C.; Jr.....	Mt. Vernon
Jones, Ray A.; Fr.....	Seattle
Jones, William F.; So.....	Seattle
Kaufman, Katharine Gladys; So.....	Bellingham
Kaupp, Raymond T.; Fr.....	Wenatchee
Keller, Eunice Katherine; So.....	Seattle
Kellner, Frank Everts; So.....	Hamilton
Keppel, Mrs. Susan M.; Fr.....	Seattle
Killen, Delcie; Fr.....	Seattle
King, Arthur Joseph; So.....	Vashon
Kirsten, O. E. Paul; So.....	Seattle
Klussman, Richard Mansfield; Fr.....	Spokane
Knausenberger, Clara Louise; Jr.....	Seattle
Knausenberger, Hilda; Jr.....	Seattle
Knudson, Esther; Fr.....	Rexford, Kan.

Kraus, Ada M.; Sr.....	Seattle
Kuehner, Arthur Christian; Fr.....	South Bend
Lamoreaux, Harvey DeWitt; So.....	Burton
Lansen, Mrs. A. Mae; Jr.....	Seattle
LaViolette, Melvin Francis; So.....	Seattle
Laughon, Marion Albert; Fr.....	Davenport
Lawson, Walter E.; Jr.....	Seattle
Leach, Mildred Orine; Fr.....	Tacoma
Lee, Vaughn; Sr.....	Seattle
Lonke, Lillian Jensine; Fr.....	Seattle
Lovejoy, E. Owen; Fr.....	Coupeville
Lungreen, Edith Charlotte; Sr.....	Seattle
Lusby, Ruth Margaret; So.....	Seattle
McBride, Lois; Sr.....	Seattle
McClellan, Helena Rilla; Sr.....	Steilacoom
McClung, Hugh; Fr.....	Pomeroy
McConihe, Paul M.; Jr.....	Tacoma
McCormick, Irma Alnita; So.....	Seattle
McDonald, Grace Lillian; Fr.....	Seattle
McDougall, Alfred Frank; So.....	Seattle
McGinnis, Mary Catherine; Fr.....	Waterville
McLaren, Gay Elizabeth; So.....	Seattle
McLeod, Norman Yene; Fr.....	Seattle
MacMurray, Douglas; Fr.....	Ridgefield
Majors, Irene; Jr.....	Seattle
Marlatt, Elmer; Fr.....	Everett
Marlatt, Lydia Abigail; Fr.....	Everett
Martin, Merritt K.; So.....	Bothell
Matzger, Edward; Fr.....	Seattle
Mayer, Siegfried; So.....	Seattle
Mead, Harold W.; Fr.....	Everett
Mendham, Jeanne Beatrice; Sr.....	Spokane
Mensor, Evelyn; Fr.....	Seattle
Mercer, Freeman J.; Fr.....	Prosser
Merling, Ruth Evelyn; Sr.....	Seattle
Meyer, Mabel June; Jr.....	Tacoma
Michelson, Aimee; Jr.....	Seattle
Michener, Marie Evans; So.....	Portland, Ore.
Miller, Mabel; Fr.....	Seattle
Miller, Wilhmetta Elizabeth; Fr.....	Ellensburg
Minnis, Wesley; Sr.....	Seattle
Misner, Doris; Jr.....	Seattle
Mitchell, Birdie Esther; Jr.....	Seattle
Mitchell, Richard S.; So.....	Olympia
Monaghan, Rey William; Fr.....	Tacoma
Montgomery, Agnes; Jr.....	Enumclaw
Moore, Alice; Fr.....	Anacortes
Moore, Carolyn Beatrice; Fr.....	Leavenworth
Moore, Rita; Fr.....	Anacortes
Morgan, Mona Margaret; Sr.....	Marysville
Morris, Erma May; Fr.....	Auburn

Morris, Leotta Genevieve; Fr.....	Tacoma
Morris, Ruth Snow; Fr.....	Buckley
Morrison, Victoria; Fr.....	Seattle
Morrow, Jessie; Fr.....	Seattle
Moseley, Virginia Reagan; So.....	East Seattle
Mullis, Frances F.; So.....	Friday Harbor
Murchison, John M.; Fr.....	Aberdeen
Murphy, James Douglas; Fr.....	Tacoma
Myers, Gennevieve; Fr.....	Seattle
Nelson, Esther; So.....	Seattle
Newson, Helen C.; Fr.....	Seattle
Northrup, Lulu May; Fr.....	Seattle
Oakley, Eldora Viola; Fr.....	Seattle
Oertel, Daniel Theodore; Fr.....	Blaine
Olson, Cecelia Olive; Jr.....	Port Townsend
Olson, Oscar E.; Sr.....	Lindsborg, Kas.
O'Neill, Hertha; Sr.....	Castle Rock
Packer, Francis; So.....	Seattle
Paige, Susie Boone; Sr.....	Portland, Ore.
Parker, Roscoe Stewart; Sr.....	Seattle
Parr, Marie Flowers; Sr.....	Seattle
Patten, Anna Marie; Jr.....	Seattle
Patton, Ysabel; Sr.....	Hoquiam
Paust, Edna L. Berta; Fr.....	Seattle
Peckenpugh, Vera Pauline; So.....	Manette
Pennell, Elisabetha Carina; Sr.....	Seattle
Peterson, Carolyn Lois; Jr.....	Seattle
Peterson, Geneva V.; Sr.....	Seattle
Phillips, Gertrude Anne; So.....	Seattle
Pike, Wendell A.; Fr.....	Seattle
Porter, Beatrice M.; Fr.....	Auburn
Porter, Charles E.; Fr.....	Thorp
Powell, Margaret Isabel; So.....	Seattle
Powell, Sargent Gastman; Sr.....	Seattle
Prior, Harold; Fr.....	Seattle
Pritchard, Millie M.; Fr.....	Seattle
Quast, Florence A.; So.....	Marysville
Quast, Ruth Iola; Jr.....	Seattle
Ransom, Rosamond Lucile; Fr.....	Seattle
Rasmussen, Violet M.; Fr.....	Seattle
Rawson, Erroll Whitman; So.....	Seattle
Raynor, George E.; So.....	Seattle
Reed, Hazel; Fr.....	Spokane
Reekie, Jean; So.....	Seattle
Regan, Chester A.; Fr.....	Seattle
Rehmke, Antoinette Maria; Sr.....	Ellensburg
Reid, Minor Kelley; So.....	Everett
Reynolds, Jack W.; Fr.....	Seattle
Rembe, Armin Carl; So.....	Lincoln, Ill.
Rhodes, Marthana; Fr.....	Seattle
Rickert, Harry Arthur; Fr.....	Seattle

Roberts, Ruth Margaret; So.....	Seattle
Robinson, Maude Isabel; Sr.....	Seattle
Robinson, Bessie Veryl; So.....	Seattle
Rodman, Harold; Jr.....	Wapato
Root, Mary Hortense; Fr.....	Seattle
Rose, Gertrude; Sr.....	Seattle
Rosenquist, Oscar William; Fr.....	Bow
Russell, Flora W. E.; So.....	Weiser, Idaho
Saboe, Grace M.; Sr.....	Seattle
Sanders, Alvis Monroe; So.....	Spokane
Sargent, Winford G.; So.....	Seattle
Sartoris, George Bartholomew; Fr.....	Enumclaw
Saunders, Lucille; Sr.....	Seattle
Schaefer, Ethel Pearl; Fr.....	Seattle
Schutt, Emory Leslie; So.....	Seattle
Scott, George Oliver; Fr.....	Seattle
Selland, Orrin I.; Fr.....	Manzanita
Sexsmith, Clare W.; Fr.....	Seattle
Shaffer, Florence; Jr.....	Seattle
Shelton, Lucy M.; Jr.....	Seattle
Sheyman, David-Nordhai Mendel; Jr.....	Seattle
Shimomura, Henry M.; Fr.....	Seattle
Shipley, Ethelyn; Sr.....	Seattle
Shumway, Antoinette E.; So.....	Granite Falls
Sifton, Edith; Sr.....	Seattle
Sigel, Morris; Fr.....	Snohomish
Sims, Mary Geneva; Jr.....	Walla Walla
Slack, Jean Gertrude; So.....	Waterville
Slemmons, Wilbert S.; Jr.....	Ellensburg
Slettengren, Hugo, Jr.; So.....	Seattle
Smith, Carrie Evelyn; Fr.....	Long Beach, Cal.
Smith, Virginia; So.....	Pocatello, Idaho
Soderberg, Linnea Elizabeth; Fr.....	Seattle
Sonntag, Charles; Fr.....	Seattle
Soule, Kenneth Jesse; Jr.....	Seattle
Sowers, Joe M.; Sr.....	Sunnyside
Spalding, Maurice; Fr.....	Vincennes, Ind.
Spelger, Edward Gilbert; Fr.....	Seattle
Spratley, Donald Andrew; So.....	Bellingham
Steel, Catherine Irene; Jr.....	Walla Walla
Stevens, Anna Leach; So.....	Seattle
Stevenson, De; Fr.....	Seattle
Stewart, May Anna; Sr.....	Tacoma
Stewart, Wade Andrew; Jr.....	Seattle
Stilson, Lenore Alice; So.....	Spokane
Sutter, Pearl Etta; Sr.....	Seattle
Swegle, Adele M.; So.....	Seattle
Swope, Alice Louise; Fr.....	Seattle
Taber, Luther A.; Fr.....	Spokane
Talbot, John A. Jr.; So.....	Seattle
Tashjian, Victoria Viola; Jr.....	Seattle

Taylor, Harold Boyne; Sr.....	Seattle
Taylor, Margie W. W.; So.....	Seattle
Taylor, Martha Sarah; Sr.....	Seattle
Theisen, Arthur; Fr.....	Seattle
Thomas, Lucile; Sr.....	Seattle
Thompson, Effie Hazel; So.....	North Yakima
Thompson, Leonard R.; Sr.....	Everett
Thornburg, Mildred Mercy; Fr.....	Seattle
Thornely, Emma Sarah; Fr.....	Tacoma
Todd, Mary C.; Sr.....	Seattle
Towns, Lola Dale; So.....	Seattle
Travis, Katherine; Fr.....	Rolling Bay
Tweed, Lois Ethel; Jr.....	Seattle
Tweed, Lucile; Fr.....	Seattle
Urner, John Arnold; Fr.....	Seattle
Van Winkle, Katherine E. H.; So.....	Oakville
Vinsonhaler, Elizabeth; Jr.....	Seattle
Von Wold, H. P. A.; Sr.....	Trondhjem, Norway
Wade, Dorothy; Sr.....	Seattle
Wainwright, Mary Tripler; Jr.....	Tacoma
Waite, Nettie Luella; Jr.....	Seattle
Waite, Vera B.; Jr.....	Seattle
Walker, Bessie Marie; Fr.....	Seattle
Wallace, Carl E.; Fr.....	Spokane
Walsh, Mary C.; Sr.....	Wenatchee
Ward, Bessie E.; Fr.....	Seattle
Ward, May Dunn; Jr.....	Seattle
Warren, Ruth Easterday; Sr.....	Fort Morgan, Col.
Watney, Stanley A.; Fr.....	Seattle
Waynick, Lou M.; Jr.....	Seattle
Weaver, Ralph Bowen; Sr.....	Tacoma
Weed, Susan Mary; Jr.....	Seattle
Wetzel, Hilda Bernice; Fr.....	Seattle
White, Maynard Osborne; So.....	Woodinville
White, Priscilla E.; So.....	La Conner
Whitney, Carey James; So.....	North Yakima
Whitney, Frank Fleming; So.....	North Yakima
Whyte, Kenneth Griffith; So.....	Boise, Idaho
Willard, Mrs. Ethel Combs; Sr.....	Seattle
Williams, Lowell Eugene; Jr.....	Seattle
Wilson, Margaret A.; Sr.....	Aberdeen
Wilson, Marjorie Frances; Jr.....	Tacoma
Wirt, Harry M.; Jr.....	North Yakima
Woelber, Harry J.; So.....	Seattle
Woodruff, Ruby H.; So.....	Seattle
Woods, Eva Jessie; Fr.....	Seattle
Wright, Mary Agnes; Jr.....	Seattle
Wright, Mary Della; So.....	Missoula, Mont.
Yahya, Mohammed Abbass; Jr.....	Aramon, Syria
Zindel, Blanche; Fr.....	Snow Shoe, Penn.

UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Bell, Jessie Lillian.....	Seattle
Day, Clara Virginia.....	Seattle
Dean, Kenneth K.	Seattle
Elliott, Dorothy Amelia.....	Walla Walla
Hilson, LaVida.....	Thief River Falls, Minn.
Jamison, Mrs. Alice F.....	Everett
Jared, Myron Shelby.....	Seattle
Johns, Marie	Tacoma
Kasakura, Naojiro	Ibaraki-Ken, Japan
Lindholm, Herbert Maurice.....	Spokane
Moore, Olive M.....	Seattle
Neely, Harold Richard.....	Spokane
Platt, Annie C.....	Seattle
Rostedt, Norman Emil.....	Tacoma
Sherman, Thomas W.....	Seattle
Sutton, Florence Irene.....	Seattle
Tills, Marguerite	Seattle
Trukositz, Elizabeth.....	Spokane
Ward, Elsie M.	Puyallup

SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Behling, Mrs. Anna M.....	Seattle
Bigelow, Clair Vivian.....	Seattle
Fowler, Kathryn A.	Everett
Glaser, Harry	Seattle
Glass, Ignatius L.	Seattle
Gorman, Sam J.	Seattle
Huelsdonk, Lena Augusta.....	Spruce
Kane, Mrs. Susan M.	Seattle
King, Malie A. D.	Port Townsend
Miller, Mrs. Hester J.	Seattle
Price, DeLance	Seattle
Rakestraw, Lulu	Hermiston, Ore.
Strom, John Fredrick.....	Seattle
Walsh, Archibald McD.	Lynden
Wilkinson, Madge Watson.....	Fletcher Bay

COLLEGE OF EDUCATION

ABBREVIATIONS

Classes

Sr.—Senior
Jr.—Junior

So.—Sophomore
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Albin, Mary; Fr.....	Seattle
Arnold, Margaret Rachel; Fr.....	Seattle
Backus, Joyce G.; Fr.....	Tacoma
Baker, Leola; Fr.....	Seattle
Bliss, Margaret Louise; Jr.....	Seattle
Bolton, Harold Frederick; Fr.....	Seattle
Clark, Frank Jones; Sr.....	Seattle
Cleland, Faith; Fr.....	Enumclaw
Cobb, T. Marie; Sr.....	Seattle
Connors, Edna Eliza; Jr.....	Seattle
Corbitt, Marsh M.; Jr.....	Seattle
Corwin, Hazel Irene; Jr.....	Seattle
Crandell, Mildred; Fr.....	Seattle
Crozier, J. Louis; Jr.....	Seattle
Dickinson, Lois Atherton; So.....	Dayton
Doud, Helen Margaret; Jr.....	Tacoma
Eastland, Edyth Marjorie; Fr.....	Seattle
Elliott, Carlotta Baker; Fr.....	Seattle
Everett, Elva R.; Fr.....	Colby
Fleming, Eloine; Jr.....	Seattle
Fleming, Eloise; Jr.....	Seattle
Fosnaugh, Mildred O.; So.....	Kirkland
Fry, Irene Winifred; Fr.....	Anacortes
Gamwell, Barbara Greene; Fr.....	Seattle
Gerischer, Lillian Wilhelmina; Jr.....	Muscataine, Ia.
Gilbranson, Anne; Fr.....	Tacoma
Gist, Arthur S.; Sr.....	Seattle
Goodman, Leo; Jr.....	Seattle
Grant, Catharine S.; Fr.....	Quilcene
Guitteau, Robert George; So.....	Snohomish
Guy, Albert Kingsley; Jr.....	Seattle
Hall, Merle Gladys; Fr.....	Renton
Hansen, Harry P.; Sr.....	Tacoma
Hassett, Daisy Marie; Fr.....	Seattle
Hills, Elizabeth; Fr.....	Seattle
Hirschheimer, Helen Zoriel; Jr.....	Seattle
Hoffman, Ed William; Jr.....	Seattle
Hollander, Mrs. Vivian L.; So.....	Seattle
Hyames, Frank M.; Jr.....	Seattle
Imes, Henry T.; Jr.....	Tacoma
Jacobson, Conrad; So.....	Hood River, Ore.
Keitner, Melva June; Fr.....	Seattle

REGISTER OF STUDENTS

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Knutson, Knute J.; So.....	Seattle
Lacock, Helena Gertrude; Sr.....	Seattle
Lie, Borghild C.; Fr.....	Seattle
Little, Edward Milton; Fr.....	Seattle
Lynch, Anna M.; So.....	Butte, Mont.
McGill, Merrie P.; Jr.....	Seattle
McRae, James Everett; Jr.....	Seattle
Meacham, Olive Elizabeth; Fr.....	Seattle
Metcalfe, John William; Fr.....	Seattle
Miller, Alice; Sr.....	Seattle
O'Brien, Mary; Fr.....	Renton
Otaka, Ray K.; Fr.....	Seattle
Peterson, Frank W.; Jr.....	Bellingham
Phillips, Allan Asahel; Jr.....	Prosser
Pike, Lenore N.; Fr.....	Seattle
Poage, William C.; Jr.....	Tacoma
Powers, Verne Leona; Fr.....	Seattle
Reed, Rachael Mae; So.....	Estacada, Ore.
Robertson, Henry H.; Fr.....	Arlington
Sakamoto, Mine; Fr.....	Seattle
Schragg, Lavine; So.....	Ritzville
Simmons, Elma; Sr.....	Seattle
Stewart, Helen; Fr.....	Kennewick
Tanner, Josephine Warren; Jr.....	Seattle
Tanzer, Alice; Fr.....	Seattle
Tewinkle, Ruth Merl; Jr.....	Spokane
Thomadsen, Leroy Nelson; Fr.....	Seattle
Tift, Lillian Bryce; So.....	Seattle
Tunander, Ruth Viola; Fr.....	Seattle
Vader, Zilmah; So.....	Seattle
Walsted, Mary Blanche; Sr.....	Seattle
Wentworth, Mrs. Lois J.; So.....	Seattle
White, Addie; Sr.....	Seattle
Willard, Dudley W.; Jr.....	Seattle
Witt, Lois Zoll; Fr.....	Seattle
York, Helen Denison; Fr.....	Tacoma

UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Coughlin, Helen Louise.....	Spokane
Elliott, Florence Ray.....	Seattle
Hatch, Ethel S.....	Tacoma
Leo, Ernest, Jr.....	Seattle
McLain, Ada Esco.....	Seattle
McPherson, Clara L.	Seattle
Montgomery, Catherine	Bellingham
Moore, Rolla W.	Seattle
Pease, Ira J.	Seattle
Smith, Herman F.....	Seattle
Stanley, Winfield J.	Tacoma
Widitz, Mary Agnes.....	Seattle

SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Belden, Fannie Evelyn.....	Seattle
Brown, Alfred L.	Seattle
Bryan, Clara M.	Montesano
Burr, Margaret	Seattle
Burton, Jennie L.	Seattle
Clark, Mary	Seattle
Clulow, Mrs. Edith Pomeroy.....	Seattle
Coughlin, Anna M.	Seattle
Dallas, James A.	Seattle
Dutcher, Lilla Mary.....	Seattle
Falkoff, Mrs. Anna.....	Lake Bay
Hart, Emma P.	Seattle
Knowlton, Viola.....	Salt Lake City, Utah.
Langdon, Anna Y.	Seattle
McIntosh, Elizabeth	Rolling Bay
Nelson, Kathryn	Seattle
Oakley, Enola	Seattle
Oakley, June	Seattle
Wafer, Barbara	Marysville
Watson, Kate V.	Seattle
White, Carroll.....	Clarinda, Ia.

COLLEGE OF ENGINEERING

ABBREVIATIONS

Classes

Sr.—Senior
Jr.—Junior

So.—Sophomore
Fr.—Freshman

Courses

C. E.—Civil Engineering M. E.—Mechanical Engineering
E. E.—Electrical Engineering Ch. E.—Chemical Engineering

<i>Name of Student, Rank and Department</i>	<i>Home Address</i>
Aalto, I. August; Jr., M. E.....	Douglas, Alaska
Adams, Irving Eugene; Fr., Ch. E.....	Waitsburg
Adams, John Middleton; Jr., C. E.....	Bellingham
Allen, Arnold S.; So., E. E.....	Seattle
Allen, Thos. James; Fr., C. E.....	Seattle
Almquist, Paul B.; Fr., E. E.....	Seattle
Anderson, Herman Carl; Fr., C. E.....	Tacoma
Anderson, Arthur Fred; Fr., E. E.....	Aberdeen
Anderson, Woodworth; Sr., M. E.....	Seattle
Angove, Clarence; So., E. E.....	Seattle
Bach, Roy Odell; Fr., E. E.....	Seattle
Backstrand, Carl E.; Fr., C. E.....	Portland
Baird, Earl L.; So., M. E.....	Seattle
Baker, Albert Lundy; Fr., E. E.....	North Yakima
Barbee, William Lee; So., E. E.....	Seattle
Bardin, Harry Melvin; Sr., E. E.....	Seattle
Batchelder, Harold S.; Jr., Ch. E.....	Spokane
Baum, Norval Douglas Durham; So., C. E.....	Seattle
Beaman, Edward Rollins; So., E. E.....	Tacoma
Beem, Aubrey Burrows; So., E. E.....	Seattle
Bell, Raymond W.; Fr., C. E.....	Tacoma
Beisel, Rex Buren; Sr., M. E.....	Seattle
Bell, Clarence; Fr., E. E.....	Kirkland
Bellingham, Norman; Fr., Ch. E.....	Tacoma
Benson, Albert Clarence; Fr., M. E.....	Seattle
Bentson, Lester; Fr., M. E.....	Ferndale
Benz, Renken George; So., E. E.....	Toppenish
Bergesen, Alf Ruh; Fr., C. E.....	Seattle
Beuschlein, Warren L.; So., Ch. E.....	Seattle
Bibb, John, Jr.; Fr., M. E.....	Tacoma
Biner, George M.; Fr., E. E.....	Phoenix, B. C.
Bird, Byron M.; Fr., C. E.....	Seattle
Blackler, Perry W.; Fr., C. E.....	Oroville
Blake, Buel Beecher; Fr., M. E.....	Seattle
Blochoff, Sam; Fr., Ch. E.....	Seattle
Boissonnault, Harry; So., E. E.....	Everett
Bonnell, Clement; Fr., C. E.....	Tacoma
Bracken, V. Earl; Jr., C. E.....	Redmond

Branchflower, Lyle Edward; Fr., E. E.	Mt. Vernon
Briggs, Erroll C.; So., E. E.	New Westminster, B. C.
Brisack, Floyd Raymond; Fr., E. E.	North Bend
Brokaw, Clyde Whitfield; Sr., C. E.	Stanwood
Brown, Ralph A.; Fr., E. E.	Centerville
Brown, Robert Quixote; Sr., E. E.	Goldendale
Brownie, Percy Watts; So., M. E.	Seattle
Bryson, Willard Alvin; Fr., M. E.	North Yakima
Buchanan, Jack Earnest; Fr., C. E.	Seattle
Buckowsky, Harry E.; So., M. E.	Portland, Ore.
Burke, Roland H.; Fr., Ch. E.	Seattle
Burque, Leroy; Fr., M. E.	Seattle
Bushell, Andrew McEwan; Fr., M. E.	Seattle
Bushnell, Sherman Ward; So., E. E.	Seattle
Calvert, Lawrence Cragin; Fr., E. E.	Seattle
Cameron, Jas. F.; Fr., M. E.	Victoria, B. C.
Cameron, Jas. Fraser; Sr., C. E.	Seattle
Campbell, Kenneth D.; Fr., C. E.	Bellingham
Campion, Cyrus Ranke; Fr., E. E.	Seattle
Canfield, Herbert Florian; Sr., E. E.	Seattle
Canfield, Ralph Edward; Jr., Ch. E.	Seattle
Carey, Robert Lincoln; Fr., E. E.	Seattle
Carlander, Clarence Henry; Jr., Ch. E.	Seattle
Carlson, Arthur Edward; So., E. E.	Anacortes
Carr, Burton Kenneth; Fr., C. E.	Seattle
Carr, Ernest Clifford; Sr., E. E.	Seattle
Carr, Howard Maynard; Fr., Ch. E.	Tacoma
Catlin, Claude; Jr., M. E.	Ellensburg
Catching, Ward Elmer; So., M. E.	North Bend
Chan, Guy Hugh; Fr., M. E.	Victoria, B. C.
Chan, He Quong; Fr., E. E.	Astoria, Ore.
Chapman, Franklin Eugene; Jr., Ch. E.	Seattle
Charles, Perry L.; Jr., Ch. E.	Seattle
Chin, Kee Ham; Sr., C. E.	Seattle
Chin, June Kee; So., E. E.	Seattle
Chittenden, Hiram Martin; Fr., E. E.	Seattle
Clarkson, Ernest Willard; Fr., C. E.	Spokane
Clulow, John Wm.; Fr., E. E.	Newcastle
Coffinberry, Clarence M.; So., M. E.	Seattle
Cohen, Samuel; Fr., Ch. E.	Seattle
Colesworthy, Joseph Bicknell; Fr., E. E.	Pendleton, Ore.
Collins, Charles Russell; Fr., M. E.	Seattle
Collis, Raemond Charles; Fr., M. E.	Spokane
Conroy, Edward W.; So., E. E.	Anaconda, Mont.
Cook, Ray C.; Jr., M. E.	Tacoma
Cowgill, Lester Blaine; So., E. E.	Choteau, Mont.
Crell, Edward, Jr.; Fr., Ch. E.	Seattle
Cropper, George James; So., Ch. E.	Lowell
Crumb, Isaac J.; Fr., C. E.	Morton
Curtis, Burton Freeland; Jr., M. E.	Seattle
Cutler, William R.; Fr., Ch. E.	Victoria, B. C.

Dashley, Leo H.; Fr., E. E.	Seattle
Davis, Lloyd Lincoln; Sr., Ch. E.	Bellingham
Davis, Paul Whitney; Jr., C. E.	Eugene, Ore.
Daymude, Earl Ludlow; Fr., M. E.	Seattle
Dean, Ernest Perry; Sr., M. E.	Puyallup
Dean, Russell H.; Jr., C. E.	Puyallup
DeCan, Lawrence Malon; So., M. E.	Seattle
Deggeller, Martin; Sr., C. E.	Chehalis
Deming, George M.; Jr., Ch. E.	Seattle
Dennis, Wolcott; Sr., M. E.	Seattle
Deutche, Richard E.; So., C. E.	Seattle
DeVoe, Donald R.; So., Ch. E.	Seattle
Dewhurst, James Frederic; So., Ch. E.	Seattle
Dickerman, H. Elmer, Jr.; So., C. E.	Seattle
Dillinger, Carl John; So., C. E.	Seattle
Dodge, Harold T.; So., M. E.	Seattle
Dolloff, Ralph Everett; So., E. E.	Everett
Donovan, Theodore Emerson; So., C. E.	Seattle
Doolittle, Edward Protheroe; Fr., C. E.	Seattle
Downing, Fred Thomas; So., M. E.	Portland, Ore.
Draves, Carl Zeno; Jr., Ch. E.	Seattle
Driftmier, Carl R.; Fr., E. E.	Anacortes
Driscoll, Thomas, Jr.; Sr., C. E.	Bremerton
Drummond, Wallace Gordon; So., C. E.	Seattle
Duffy, Lee, Jr., E. E.	Seattle
Dyer, Chas. Yorke; Fr., M. E.	Oak Harbor
Easterbrook, Arthur; Fr., M. E.	Port Townsend
Easterbrook, Wilfred George; Fr., Ch. E.	Port Townsend
Edson, Arthur A.; Jr., E. E.	Bellingham
Edquist, Paul Englebrecht; Fr., E. E.	Seattle
Edwards, Schuyler; Fr., Ch. E.	Port Townsend
Eggan, Hilmer R.; So., E. E.	Seattle
Egtvedt, Clairemont L.; Jr., C. E.	Seattle
Ellison, Robert Walderman; Sr., Ch. E.	Seattle
Etsell, F. George; Fr., M. E.	Seattle
Evans, Daniel Lester; So., C. E.	Seattle
Evans, Thos. P.; Jr., M. E.	Snohomish
Fallis, Gordon; Fr., Ch. E.	Seattle
Farmer, Albert M.; Sr., C. E.	Seattle
Faubert, Edward Henry; So., E. E.	Shelton
Fisher, Frank Emerson; Fr., E. E.	Edwall
Flagg, Paul McLeod; Fr., Ch. E.	Seattle
Fleishman, Chas. Raymond; Fr., E. E.	Portland, Ore.
Fowler, Harold Doyle; Fr., C. E.	Seattle
Fraser, Garrett Alexander; Jr., C. E.	Seattle
Fraser, William Maurice; So., E. E.	Tacoma
French, Phil Eugene; So., E. E.	Seattle
Friedenthal, Charles G.; Fr., E. E.	Seattle
Froggatt, Walter F. E.; Fr., E. E.	Seattle
Fukuzawa, Tanizo; So., Ch. E.	Seattle
Galley, Walter Raymond; Sr., Ch. E.	Seattle

Garrison, Clarence Wilbur; So., Ch. E.	Seattle
Gillette, Roswell S.; Sr., E. E.	Orondo
Gilluly, James Adolf; Fr., M. E.	Seattle
Gilmur, Chas., Jr.; Fr., E. E.	Seattle
Gleason, S. Irving; Jr., Ch. E.	Seattle
Glover, Sheldon Latta; So., C. E.	Seattle
Goodfellow, James Burwell; So., C. E.	Seattle
Goodfellow, Wm. Forrest; Jr., C. E.	Seattle
Goto, Frank I.; Fr., E. E.	Seattle
Graham, Henry Thomas; Fr., E. E.	Tacoma
Graves, Orville Raymond; Fr., E. E.	Ellensburg
Gray, Clarence Hubert; Fr., M. E.	Seattle
Gray, Harold B.; Jr., C. E.	Seattle
Gray, Miles Howard; Fr., M. E.	Seattle
Gray, George Rexford; So., Ch. E.	Kansas City, Mo.
Greig, John Whittier; Fr., E. E.	North Yakima
Grenland, Amos Sovereign; Jr., E. E.	Seattle
Gustafson, Herman Milton; Jr., E. E.	Everett
Gwinn, Cecil L.; So., E. E.	Harrington
Haakons, Hugo; Fr., E. E.	Duluth, Minn.
Haase, Herman Henry; So., C. E.	Clarkston
Hadley, Homer More; Fr., C. E.	Seattle
Hahn, George Ferdinand; Fr., C. E.	Seattle
Hainsworth, Wm. R.; Jr., Ch. E.	Seattle
Hallan, Claude; Sr., E. E.	Monroe
Hammond, Harold Lynn; Jr., M. E.	Seattle
Handforth, Stanley Loughed; So., Ch. E.	Tacoma
Hanson, Max Bernhardt; So., E. E.	Bellingham
Hardman, Walter Manfred; Fr., C. E.	Seattle
Harr, Adolph B.; Jr., C. E.	Portland, Ore.
Havel, Fred; So., E. E.	Tacoma
Hawley, Sydney J.; Fr., Ch. E.	Seattle
Hay, Ray Hamilton; Fr., M. E.	Sunnyside
Haynes, Richard Osborn; Fr., C. E.	Seattle
Heacock, Ward James; Fr., E. E.	Chelan
Hellenthal, Frank A.; Fr., M. E.	Seattle
Henningsen, Edgar Robert; Fr., E. E.	Pueblo, Col.
Herron, Willard George; Fr., E. E.	Seattle
Hervin, Albert W.; So., C. E.	Seattle
Hill, Curtiss L.; Jr., E. E.	Tacoma
Hill, H. Norman; Sr., C. E.	Seattle
Himmelsbach, Jesse Russell; Jr., E. E.	North Yakima
Hitchings, Allen; Fr., C. E.	Seattle
Hjertoos, William Martin; Fr., Ch. E.	Tolt
Hoard, George Lisle; Jr., E. E.	Seattle
Hoffmann, Valentine; Fr., M. E.	Walla Walla
Hoffstrom, Percy J.; Fr., E. E.	Seattle
Hopkins, Hubert V.; Sr., Ch. E.	Seattle
Hosner, Clare B.; Fr., E. E.	Seattle
Hudtloff, Arthur G.; Fr., M. E.	Butte, Mont.
Hunt, Ray Corbin; Sr., M. E.	North Yakima

Hunter, Basil Leslie; Fr., Ch. E.	Edmonds
Hunter, Stanley; Jr., E. E.	Seattle
Hurwich, David; So., E. E.	Luzin, Russia
Hutsell, William Warren; Fr., C. E.	Davenport
Iyesaka, Shohei; Fr., E. E.	Seattle
Jaqueth, Herbert H.; Fr., C. E.	Kalispel, Mont.
Johnson, George E.; Sr., C. E.	Seattle
Johnson, Halton J.; Fr., M. E.	Mt. Vernon
Johnson, Peter; Fr., E. E.	Douglas, Alaska
Johnson, Philip G.; So., M. E.	Seattle
Jones, Alan Walter; So., Ch. E.	Seattle
Jones, Oliver C.; Fr., C. E.	Seattle
Kallander, Carl; Sr., E. E.	Nooksack
Kantzler, Geo. R. A.; Fr., E. E.	Seattle
Kauffman, Walter Lee; So., M. E.	Tacoma
Keator, Frederic Wm., Jr.; Fr., M. E.	Tacoma
Kelliher, John Waldrip; Sr., M. E.	Ilwaco
Kief, Caswell Ward; Fr., M. E.	Mountainhome
Kilbourne, Melville Lucius; So., E. E.	Seattle
Klein, Linas C.; Jr., M. E.	Edwall
Kleist, Walter; Fr., E. E.	Tacoma
Knight, Gayton Leedy; Fr., Ch. E.	Spokane
Kongsted, Ludvig Petersen; So., M. E.	Seattle
Kronfield, David; Fr., Ch. E.	Seattle
Kronfield, Harry; Fr., E. E.	Seattle
LaChappelle, Oliver W.; Fr., M. E.	Tacoma
Ladner, James Guy; So., C. E.	Seattle
LaMotte, Robert Smith; Jr., E. E.	Manette
Lansen, Aksel Martin; So., E. E.	Seattle
Larson, Victor; Jr., Ch. E.	South Bend
Lassen, Irving Andrew; Fr., E. E.	Seattle
Laudan, Fred P.; So., C. E.	Troutdale, Ore.
Lee, Emery H. I.; So., E. E.	Seattle
Lee, Fairman B.; So., M. E.	Seattle
Lee, James Arthur; So., E. E.	Seattle
Lee, Tang L.; Fr., E. E.	Seattle
Legg, Emmett J.; So., C. E.	Seattle
Lewis, Franklin M.; Jr., E. E.	Portland, Ore.
Link, Eugene Martin; Fr., E. E.	Omak
Livingston, Larry T.; Jr., C. E.	Seattle
Lloyd, Wm. J.; Fr., E. E.	Seattle
Lopp, Dwight T.; Fr., C. E.	Seattle
Lord, Clifford; Jr., Ch. E.	Bellingham
McAdam, William Roy; So., E. E.	Seattle
McCarthy, Louis Augustine; Fr., E. E.	Seattle
McClure, Frank W.; Fr., E. E.	Seattle
McCombs, John; So., C. E.	Seattle
McCracken, Ray; Jr., M. E.	Clarkston
McCurdy, Horace Winslow; Fr., M. E.	Port Townsend
McDonald, David Elwood; Fr., E. E.	Thorp
McDougall, James Clinton; Sr., E. E.	Seattle

McFarland, James Helms; Fr., E. E.	Grantspass, Ore.
McJannet, Roscoe Nicol; Jr., C. E.	Seattle
McKean, Ernest Edward; Sr., E. E.	Ridgefield
McLennan, Millard C.; So., E. E.	Athens, Ore.
McRobbie, Henry William; Sr., E. E.	Seattle
Mackay, Ernest L.; Fr., E. E.	Great Falls, Mont.
Malakoff, Abe; So., M. E.	Vancouver, B. C.
Maney, Wallace Lincoln; So., E. E.	Seattle
Markham, John; Fr., C. E.	Centralia
Martin, Cedric A.; So., C. E.	Puyallup
Martin, John H.; Sr., Ch. E.	Seattle
Martin, Leonard A.; So., Ch. E.	Portland, Ore.
Maryatt, Roy Lincoln; Sr., C. E.	Seattle
Matheus, Charles Wm., Jr.; So., M. E.	Seattle
Matsumoto, Takao; Fr., Ch. E.	Yagami, Japan
Matzger, George Waite; So., M. E.	Seattle
Mayer, David; Fr., E. E.	Seattle
Mayer, Roland George; Jr., M. E.	Seattle
Mayes, Virgil; Fr., C. E.	Seattle
Mayfield, Benjamin H.; Fr., Ch. E.	Chehalis
Mero, Ralph Martin; Fr., M. E.	Seattle
Merriweather, Wm. Anthony; Fr., E. E.	Seattle
Michener, Edgar C., Jr.; Fr., C. E.	Portland, Ore.
Miller, Alfred L.; So., C. E.	Bellingham
Miller, E. Clarence; Sr., E. E.	Seattle
Miller, Fred Victor; Fr., C. E.	Seattle
Miller, Hugh Austin; Fr., E. E.	Granite Falls
Moore, Edward J.; Jr., M. E.	Seattle
Moore, Talcott; Jr., C. E.	Seattle
Moore, Victor J.; Jr., C. E.	Astoria, Ore.
Moravec, Frank; Fr., C. E.	Belle Plaine, Iowa
Moritz, Harold K.; Fr., M. E.	Seattle
Morris, Chas. Frederick; Jr., E. E.	Seattle
Morse, Wendell Arthur; Fr., C. E.	Seattle
Mottelson, Goodman; Fr., Ch. E.	Butte, Mont.
Motz, August Joseph; Jr., E. E.	Seattle
Mueller, Chester; So., M. E.	Seattle
Mullen, Maurice J.; Jr., C. E.	Seattle
Mulvey, Charles Reckner; So., M. E.	Seattle
Murane, Millard C.; Fr., E. E.	Seattle
Nakasawa, Geo. K.; Sr., E. E.	Seattle
Nederlee, Anton Louis; Fr., C. E.	Bryant
Nelles, Roy Hubert; Jr., E. E.	Sumner
Nelson, Carl Victor; Fr., C. E.	Winslow
Nelson, Victor; Sr., Ch. E.	Seattle
Nelson, Wesley Roy; So., C. E.	Shelton
Noble, Claude S.; Jr., Ch. E.	Seattle
Nord, Swan Emanuel; So., C. E.	Seattle
Nordlie, Glenn Justin; Fr., E. E.	Seattle
Northquist, O. Eaver; Fr., M. E.	Seattle
Ontake, Shotaro; Fr., C. E.	Seattle

Olsen, Orville; Fr., E. E.	Seattle
Olson, William J.; Fr., E. E.	Seattle
Omeara, John D.; Jr., C. E.	Seattle
O'Neill, Raymond E.; Sr., Ch. E.	Seattle
O'Rear, Clyde Shaw; So., M. E.	Seattle
O'Rear, Merle Wesley; Fr., M. E.	Seattle
Osborne, Ralph Albert; Fr., E. E.	Seattle
Osterberg, Arnold Erwin; Sr., Ch. E.	Seattle
Otis, Malcolm J.; So., Ch. E.	Seattle
Patten, Maurice William; Fr., M. E.	Seattle
Pehrson, Charles Edward; Fr., E. E.	Ferndale
Pendergast, Hugh W.; So., M. E.	Seattle
Peters, Howard Warren; Sr., C. E.	Bellingham
Peterson, Charles Wallace; Jr., E. E.	Seattle
Peterson, Philip Leonard; Fr., C. E.	Spokane
Peterson, Sylvester D.; Fr., M. E.	Seattle
Phipps, Frank W.; Jr., C. E.	Hamilton
Pickering, Lester Bert; So., C. E.	Chesaw
Pioda, Ferdinand; Jr., C. E.	Seattle
Potter, Harold Earl; So., C. E.	Seattle
Powell, Edward Reed; Sr., Ch. E.	Seattle
Priest, Harold Ragan; So., M. E.	Seattle
Puddicombe, Albert Le Baron; Fr., C. E.	Tacoma
Putman, Glen Harold; Jr., M. E.	Anacortes
Pyle, Carl W.; Sr., E. E.	Wenatchee
Redmond, Harold V.; Fr., C. E.	Seattle
Reed, Raymond Francis; So., C. E.	Bellingham
Reynolds, Charles Lane; Fr., M. E.	Seattle
Reynolds, Frank; Fr., Ch. E.	Port Townsend
Rice, George Russell; Fr., E. E.	Tacoma
Rice, James W.; Fr., C. E.	Seattle
Rice, Leon Alfred; So., M. E.	Seattle
Ring, Russell B.; Sr., C. E.	Seattle
Ringsted, Myron H.; So., Ch. E.	Seattle
Roberts, George Braden; Sr., C. E.	Seattle
Roberts, Joseph Haydn; Fr., E. E.	Renton
Robinson, James Wilson; So., C. E.	Seattle
Robinson, Lyle B.; Fr., E. E.	Seattle
Robinson, Ralph C.; Sr., C. E.	Richmond Highlands
Robinson, Wm. C.; Jr., E. E.	Seattle
Rogers, Nathaniel Stewart; Fr., Ch. E.	Auburn
Rooks, Lowell Ward; Jr., C. E.	Seattle
Ross, Albert H.; Fr., E. E.	Lewiston, Idaho
Roth, Walter; Jr., E. E.	Spokane
Rudow, Eugene Wellington; Fr., Ch. E.	Winslow
Rummel, Corwin P.; Fr., M. E.	Tacoma
Rupp, Wellington; Fr., E. E.	Snohomish
Ryan, Francis M.; So., E. E.	Seattle
Ryan, Roger William; Jr., Ch. E.	Auburn
Sallee, Hubert Bland; Fr., M. E.	Tumwater
Saunders, Robert Chancellor; Fr., C. E.	Seattle

Savannah, Edward Jack; Fr., Ch. E.	Victoria, B. C.
Schively, Dixon; Sr., M. E.	Seattle
Sellick, Jesse Henry Rowe; So., C. E.	Portland, Ore.
Sergeant, Donald E.; Fr., E. E.	Seattle
Servey, Mark J.; Jr., M. E.	Seattle
Shanks, Marcus M.; Fr., Ch. E.	Payette, Idaho
Shanly, Walter Earl; Sr., E. E.	Bellingham
Shelton, Edward M.; So., C. E.	Seattle
Shelton, J. Milton; So., C. E.	Seattle
Sheriff, Herbert Preston; Fr., C. E.	Seattle
Sherrick, Leon Danfreth; So., C. E.	Canton, Ohio
Shirley, Laurence F.; Fr., M. E.	Seattle
Shostrom, Oscar; Fr., Ch. E.	Tacoma
Sielk, George Jacob; Fr., E. E.	Spangle
Siebenbaum, John Henry; Jr., E. E.	Port Townsend
Simpson, Helen Margaret; So., E. E.	Seattle
Simpson, John Melvia; Fr., M. E.	Kirkland
Simpson, Stewart L.; Jr., M. E.	Seattle
Simson, Jerome; Fr., E. E.	Nome, Alaska
Sisler, Harry H.; So., M. E.	Seattle
Skog, Henry Andrew; Fr., E. E.	Seattle
Slater, William J.; Fr., M. E.	Tacoma
Slayden, Philip Lee; So., M. E.	Stellacoom
Sletmoe, Albert Martin; Fr., E. E.	Seattle
Smith, Albert Earl; Fr., E. E.	Seattle
Smith, Edgar Eugene; Fr., E. E.	Spokane
Smith, George Sherman; Sr., E. E.	Centralia
Smith, Laurence Kellam; Fr., M. E.	Seattle
Smith, Theodore C.; Jr., E. E.	Seattle
Somerville, David Annesley; Fr., Ch. E.	Lewiston, Idaho
Speyers, Albert Willoughby, Jr.; So., E. E.	North Yakima
Stark, Charles Richardson; Jr., Ch. E.	Seattle
Stetson, Virgil Calvin; So., C. E.	Seattle
Stewart, Clyde Emery; So., E. E.	Prosser
Stillson, Merle O.; Fr., Ch. E.	Seattle
Stinson, Harry L.; Fr., M. E.	Nampa, Idaho
Stranack, Ray; Fr., Ch. E.	Seattle
Strandberg, Arthur M.; Sr., C. E.	Seattle
Strandberg, Charles Henry; Sr., C. E.	Seattle
Strong, Frederick H.; Fr., M. E.	Portland, Ore.
Sundel, Louis W.; Fr., C. E.	Seattle
Suransky, Paul; Fr., M. E.	Seattle
Swart, Arthur Houghton; Sr., M. E.	Richmond Beach
Sylliaasen, Vincent L.; Jr., C. E.	Seattle
Tachell, Bert; Fr., E. E.	Renton
Taylor, George Leonard; Fr., E. E.	Auburn
Tegtmeyer, Arthur Woodruff; Jr., C. E.	Sunnyside
Thies, William A.; Fr., C. E.	Seattle
Thomas, Lyman W.; So., M. E.	Seattle
Thomson, Alexander; Sr., M. E.	Seattle
Tift, Claire C.; So., E. E.	Friday Harbor

Tipton, Richard R.; So., C. E.	Seattle
Tolmie, Jack R.; Fr., E. E.	Seattle
Toy, James; Sr., Ch. E.	Portland, Ore.
Tronsrud, Ingwald Anton; Fr., E. E.	Kirkland
Turnbull, Benjamin Frank; Jr., C. E.	Everett
Turner, Herbert Clair; Fr., C. E.	Seattle
Tuttle, Walter Wm; Sr., E. E.	Harper
Tyra, Edmund George; Jr., E. E.	Spokane
Valentine, Albert Lorraine; Fr., C. E.	Seattle
Vandenberg, George J.; Jr., E. E.	Ellensburg
Van Horn, Robert Bowman; Sr., C. E.	Oakland, Cal.
Ward, Cell Miner; Fr., M. E.	Seattle
Wassberg, Clarence E.; Fr., Ch. E.	Seattle
Weber, Fred; Fr., M. E.	North Yakima
Weber, Walter Herman; Fr., E. E.	North Yakima
Wexelstein, Leo; Fr., E. E.	Chabarowsk, Russia
Weythman, Chester C.; Fr., C. E.	Monitor
Whealdon, Alfred N.; So., C. E.	The Dalles, Ore.
White, Gail Clinton; Fr., E. E.	Seattle
White, Noble; Jr., C. E.	Goldendale
Whiting, Edward P.; Fr., E. E.	Seattle
Whitman, Mortimer Augustus; Fr., E. E.	Tacoma
Wickstrom, Harry Leo; Fr., C. E.	Seattle
Wilbur, Brayton; Jr., C. E.	Seattle
Willard, Edwin Ruthven; So., C. E.	Seattle
Williams, Charles Ayres; So., E. E.	Aberdeen
Williams, W. Walter; Sr., Ch. E.	Orosi, Cal.
Wilson, Edwin Durno; Fr., Ch. E.	Seattle
Winn, Burdett Alaska; Fr., E. E.	Juneau, Alaska
Woolfolk, Paul Albert; So., C. E.	Southworth
Wyman, Mark Ernest; Fr., E. E.	Seattle
Yamada, Fred Takuji; Sr., E. E.	Seattle
Yoshioka, Masa; Sr., E. E.	Seattle
Young, Carl Ludvig; Jr., E. E.	Seattle
Young, Frank Cranston; Jr., E. E.	Blaine
Young, Hugh; Fr., M. E.	Prosser
Young, Thomas Allan; So., C. E.	Seattle
Zaugg, Felix R.; Jr., E. E.	Tacoma
Zehring, Raymond William; Fr., E. E.	Seattle
Zimmerman, Henry Eugene; Sr., C. E.	Everett
Zwicky, Everett Edward; Fr., M. E.	Kaslo, B. C.

UNCLASSIFIED STUDENTS

<i>Name of Student and Department</i>	<i>Home Address</i>
Boyd, Harold Warren, M. E.	Bellevue
Cochrane, Eugene E. L.; C. E.	Tacoma
Dawson, Stephen Leonard; C. E.	Lytton, B. C.
Foster, Wm. Floyd; C. E.	Sunnyside
Funaki, Yoshinori; E. E.	Japan
Griffiths, Austin E., Jr.; E. E.	Seattle

Gunn, Arthur, Jr.; Ch. E.....	Wenatchee
Hoxsey, Geo. E.; C. E.....	Leavenworth
Johnson, Arthur R.; M. E.....	Seattle
Koucherenko, Xenophon E.; C. E.....	Moscow, Russia
Maejima, Tatsugoro; E. E.....	Japan
Moses, Curtiss J.; M. E.....	Portland, Ore.
Ray, Francis Adams; M. E.....	North Yakima
Waring, Glenn; M. E.....	Seattle
Whitcomb, Karl John; E. E.....	Seattle
Wick, Sanford Adolph; E. E.....	Arlington

SPECIAL STUDENTS

<i>Name of Student and Department</i>	<i>Home Address</i>
Allen, Wm. E.; E. E.....	Seattle
Auchampaugh, Leo; C. E.....	Seattle
Auckland, William; M. E.....	Seattle
Bell, Alonzo E.; M. E.....	Spokane
Blake, John G.; M. E.....	Seattle
Boutwell, Willard; E. E.....	Seattle
Brink, Adolph G.; M. E.....	Seattle
Brockway, Albert L.; M. E.....	Seattle
Brown, Lowell J.; E. E.....	Seattle
Campbell, Alphonse J.; E. E.....	Seattle
Cannan, Stephen Vincent; E. E.....	Seattle
Cannon, Patrick; M. E.....	Seattle
Carlson, Albin; M. E.....	Seattle
Cavan, Fred Paul; M. E.....	Seattle
Corey, Warren A.; E. E.....	Seattle
DeVere, Raymond B.; E. E.....	Seattle
Dickson, Amos B.; M. E.....	Seattle
Dunn, John Pierce; C. E.....	Lamook, Va.
Duryea, Silas Clayton; E. E.....	Seattle
Ervin, Milton J.; E. E.....	Seattle
Follett, W. V.; M. E.....	Seattle
Foss, Henry; M. E.....	Seattle
Gray, Harold E.; E. E.....	Seattle
Griffith, John H.; M. E.....	Seattle
Hall, Chas. W.; M. E.....	Seattle
Hewitt, Will T.; E. E.....	Seattle
Hodges, Donald Frederick; E. E.....	Seattle
Huelsdonk, Adolph; E. E.....	Seattle
Hulburd, Frank Moore; E. E.....	Seattle
Hundsorfer, George; E. E.....	Seattle
Hutchins, Ernest; E. E.....	Seattle
Jackson, Chester Arthur; E. E.....	Pleasant Plain, O.
Johnson, Albert; C. E.....	Norway
Johnson, August Elmer; E. E.....	Seattle
Johnson, Gale H.; E. E.....	Seattle
Johnson, Walter Z.; E. E.....	Great Falls, Mont.
Jordan, Archie H.; E. E.....	Seattle

Kalin, Albert; E. E.	Seattle
Kimball, Austin L.; E. E.	Seattle
King, Geo. H., Jr.; E. E.	Seattle
Lafferty, Hugh S.; C. E.	Seattle
Lees, Edward Arthur; M. E.	Seattle
Leith, Robert E.; E. E.	Seattle
Lewis, Samuel Foster; E. E.	Seattle
Lluellyn, Albert Lee; M. E.	Seattle
McNulty, Daniel H.; E. E.	Seattle
McPherson, John H.; M. E.	Sedro Woolley
Mackay, Hugh Kenneth; E. E.	Seattle
Mackay, William J.; E. E.	Seattle
Marion, Philip Prescott; E. E.	Seattle
Meece, James E.; E. E.	Seattle
Naugle, Philip Daniel; E. E.	Seattle
Neighbor, Roy; E. E.	Seattle
Newell, John Whittier; E. E.	Seattle
Nicholson, Percival Harford; E. E.	Seattle
Olson, Wm. Johann; E. E.	Seattle
O'Neil, David Henry; E. E.	Seattle
Peters, James Raymond; E. E.	Seattle
Potthoff, Joseph A.; E. E.	Seattle
Procunier, Thomas Lee; E. E.	Seattle
Quinn, John T.; E. E.	Seattle
Reed, William H.; Ch. E.	Tacoma
Remmruder, Alvin Gordon; M. E.	Seattle
Rhodes, Wm. P.; M. E.	Seattle
Rose, Guy S.; M. E.	Seattle
Schacht, Carl Emil; E. E.	Seattle
Shantz, Frederick Charles; C. E.	Vancouver, B. C.
Shelton, Henry C.; M. E.	Seattle
Shutz, William; M. E.	Seattle
Slate, Joe F.; M. E.	Seattle
Smith, Elmer Z.; E. E.	Seattle
South, Fremont Lane; C. E.	Fort Ward
Stallings, George; E. E.	Seattle
Storm, Harold J.; E. E.	Seattle
Swartout, George Valette; M. E.	Seattle
Thompson, Earl A.; E. E.	Seattle
Ullricht, Frederick Wilhelm Paul; E. E.	Seattle
Whiting, Herbert Cherrie; E. E.	Seattle
Willson, Hiram A.; E. E.	Seattle
Winsor, Kenneth C.; C. E.	Seattle

COLLEGE OF FINE ARTS

ABBREVIATIONS

Classes

Sr.—Senior
Jr.—Junior

So.—Sophomore
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Anderson, Arthur W.; Fr.....	Colton, Ore.
Anderson, Mildred A.; So.....	Mount Vernon
Anderson, Myrtle Alvira; Fr.....	Seattle
Anthes, Cora Leola; Fr.....	Everett
Appleby, Nevada; So.....	Seattle
Arnold, Ruth Louise; Fr.....	North Yakima
Bailey, George Congdon; Fr.....	Seattle
Bardshar, Ruth; Jr.....	Seattle
Bell, Neva Evadne; Fr.....	Aberdeen
Benton, Louise Dow; Fr.....	Seattle
Bergh, Florence Helen; Jr.....	Seattle
Bogstad, Hulda J.; Fr.....	Everett
Bonell, Aura Minerva; So.....	Fall City
Bonell, Hannah Elizabeth; Jr.....	Fall City
Bordeaux, Lucille; Fr.....	Seattle
Bouillon, Victorine Marie; So.....	Seattle
Brachvogel, Rosaline; So.....	Aberdeen
Brown, Margaret Esther; Fr.....	Chelan
Brown, Rhenie Lillian; So.....	Seattle
Campbell, Mary Marguerite; Fr.....	Vulcan, Alta, Canada
Carberg, Marguerite; Fr.....	Seattle
Carlson, Marie; So.....	Seattle
Cason, Vera; So.....	Portland, Ore.
Charlton, Harriet; So.....	Chehalis
Clarke, Alta May; Fr.....	Seattle
Cole, Erma Gale; Fr.....	Puyallup
Denny, Inez Louisa; Fr.....	Seattle
Douglass, Dorothy; Fr.....	Boise, Ida.
Engstrom, Ruth Elizabeth; Fr.....	Renton
Ewing, Dorothy Lillian; Fr.....	Seattle
Ferryman, Helen Louise; So.....	Wenatchee
Fotheringham, Stuart G.; So.....	Seattle
French, Ellene; Sr.....	Seattle
French, Eugenie Page; Fr.....	Seattle
Frost, Lorna; Fr.....	Seattle
Frye, Ruth Louise; Fr.....	Seattle
Fullington, Mary Wilkins; Fr.....	Seattle
George, Clarence W.; Fr.....	Tacoma
Gerry, Lillian Gertrude; So.....	Seattle
Gieser, Harold F.; Fr.....	Seattle
Gilbert, John Herman; So.....	Seattle
Glenn, Mary Lois; So.....	Tacoma
Goodheart, Mary Katharine; Fr.....	Bellingham

Graham, Louise Margaret; Fr.....	Seattle
Greenberg, Estelle; Fr.....	Seattle
Hampton, Ruth H.; Fr.....	Seattle
Harris, Marian Parker; Fr.....	Seattle
Hart, Lillian; Fr.....	Seattle
Hartle, Elizabeth R.; Fr.....	Seattle
Haynes, Dorothy Morrell; Fr.....	Seattle
Heath, Frederick T.; Fr.....	Tacoma
Hertges, Frances; Fr.....	Tacoma
Higgie, Mable Iona; Fr.....	Girard, Kan.
Hollinger, Vivian Marie; Fr.....	Bonnars Ferry, Ida.
Honey, Katherine Mead; Fr.....	Gresham, Ore.
Horton, Persis Margaret; Sr.....	Seattle
Hughes, Ethel Gertrude; So.....	Cashmere
Hutchinson, Muriel Lang; So.....	Tacoma
Jackson, Laurence; Fr.....	Seattle
Johnson, Florence; Fr.....	Spokane
Johnston, Marjorie Dean; Fr.....	Seattle
Karshner, Zura Maeble; Fr.....	Aberdeen
Keller, Lula Marguerite; Fr.....	Spokane
Kinney, Clair A. R.; Jr.....	Seattle
Koren, Helen; So.....	Spokane
Liska, Olga; Sr.....	Seattle
Lohman, Loretta; Sr.....	Chinook
Lovely, Nell Frances; Sr.....	Arlington
MacDougall, Minnie Fogg; Fr.....	Seattle
Manson, Gladys; So.....	Seattle
Marsh, Constance Ardena; So.....	Arlington
Miller, Helen M.; Fr.....	Seattle
Nelson, Lillian; Fr.....	Seattle
Nielsen, Agnes Theresa Bertha; Fr.....	Seattle
O'Hara, Marie Katherine; Fr.....	Aberdeen
Parker, Harriett Pennington; So.....	North Yakima
Parsons, Leura Annette; Fr.....	Seattle
Phelps, Byrl Dean; Fr.....	Seattle
Philbrook, Madge H.; Jr.....	Seattle
Raymond, Louise A.; Fr.....	Seattle
Reist, Robert J.; Fr.....	Dayton, Ohio
Ritter, Edith; Jr.....	Spokane
Rothernhoefer, Elizabeth M.; So.....	Seattle
Russell, Beulah Henrietta; Jr.....	Seattle
Scheurer, Genevieve; So.....	Los Angeles, Cal.
Schumaker, Elizabeth; Sr.....	Sultan
Semmen, Eunice Martha; Fr.....	Aberdeen
Sheppard, Violet A.; Fr.....	North Yakima
Smith, Corinth Doris; So.....	Portland, Ore.
Snyder, Helen Marquis; Fr.....	North Yakima
Suver, Ida E.; Fr.....	Ellensburg
Swearingen, Mary; Fr.....	Tacoma
Tachell, Maud; Fr.....	Renton
Thompson, Genevieve A.; Sr.....	North Yakima

Thompson, Zella; Fr.....	Pendleton, Ore.
Titus, Frances Louise; So.....	Portland, Ore.
Turner, Ellen M.; So.....	Seattle
Tuttle, Blanche; Fr.....	Summerville, Ore.
Vinsonhaler, Sara Rea; So.....	Seattle
Wardall, Janet E.; Fr.....	Seattle
Watt, Evelyn Minnie; Fr.....	Seattle
Waxman, Elizabeth Ethel; Fr.....	Seattle
Wendler, Margaret; Fr.....	Spokane
Wickland, Alma Rebecca; Fr.....	Seattle
Wilson, Helen Mardell; Fr.....	Aberdeen
Winsor, Helen Marie; Jr.....	Seattle
Wright, Gladys Lillian; Fr.....	Seattle

UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Barron, Fred A.....	Seattle
Belton, Jessie Ames.....	Puyallup
Billings, Rhea Ramona.....	Tacoma
Calkins, Maude Joe.....	Stevensville, Mont.
Farlow, Maryl Rebecca.....	Centralia
Forbes, Ralph Lincoln.....	Puyallup
Gilpin, Esther Victoria.....	Tacoma
Larrison, Margaret Fargo.....	Seattle
Lilygren, Bertha Emelia.....	Seattle
MacKenzie, Frances.....	Lostine, Ore.
Morris, Harold Vernon.....	Tacoma
Nisbet, Mac.....	Seattle
Peterson, Elmer J.....	Seattle
Pitka, Ruth.....	Seattle
Rehmke, Annette Detmerring.....	Ellensburg
Riddle, Katharine.....	Seattle
Rogers, Rose.....	Seattle
Sowle, Marion S.....	Seattle
Stubblefield, Vera.....	Enterprise, Ore.
Thurston, Ruth Frances.....	Spokane

SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Bogan, Mabel Viola.....	Seattle
Brandt, Nancy A.....	Frankfort
Britton, Gladys Irene.....	Seattle
Bryan, Josephine Richmond.....	Seattle
Burgh, Esther J.....	Seattle
Curry, Mrs. Geo. L.....	Seattle
Dana, Adeline Emilie.....	Seattle
Dickey, Hester Maud.....	Landlock, Alaska
Dodge, Alice.....	Seattle
Gerrard, William H.....	Chester, England
Gross, Sylvia.....	Seattle

Johnson, Coral Matilda.....	Seattle
Kellogg, George A.	Anacortes
Krisher, Mrs. Emma C.....	Seattle
McDonald, Pearl Evangeline.....	Seattle
Myers, Hazel Fay.....	Miles City, Mont.
Packer, Graynella	Seattle
Pantages, George B.....	Seattle
Ray, Selah	Seattle
Scott, Mabel Inez.....	Seattle
Sharp, Alla Douglas Fenwick.....	Seattle
Townsend, Martha	North Yakima

COLLEGE OF FORESTRY

ABBREVIATIONS

Classes

Sr.—Senior
Jr.—JuniorSo.—Sophomore
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Anderson, Albert C.; Jr.	Colton, Ore.
Balmer, Jesmond Dene; Fr.	Cle Elum
Barrett, Phillip E.; Jr.	Tacoma
Bevan, Arthur; Jr.	Vavenley, B. C.
Blunt, Jos. Robert; Jr.	Tacoma
Boughter, Robert W.; Fr.	Seattle
Bozorth, Clifford C.; Fr.	Woodland
Briem, Alfred; Fr.	Orillia
Brindley, Ralph; Jr.	Boscobel, Wis.
Bristol, Maurice Ainsworth; Fr.	Spokane
Broxon, Donald Rich; Jr.	Boise, Idaho
Burnham, Roland P.; Jr.	Boulder, Col.
Clark, Donald H.; Jr.	Threepines, Ore.
Cochran, Lamont Martin; So.	Seattle
Corbett, Willis G.; So.	Seattle
Coyle, William James; So.	Seattle
Culver, Ross E.; Fr.	Spokane
Dreitzer, Ralph Francis; Fr.	Seattle
Durfee, Harold Atkinson; Jr.	Los Angeles, Cal.
Durland, William Davies; Fr.	Pasadena, Cal.
Eldridge, Ferris; So.	Alamogordo, N. M.
Faulkner, Ralph B.; Sr.	Aberdeen
Fish, Walter Harold; Jr.	Seattle
Foran, Harold George; Sr.	Seattle
Ganett, Clarence Byrwood, So.	Seattle
Gillespie, James T.; Jr.	Albany, Mo.
Hutton, James Ferdinand; Jr.	Portland, Ore.
Jacobson, Wm. H.; Fr.	Seattle
Keller, William K.; Fr.	Redmond
King, Robert F.; Fr.	Greenup, Ill.
Knapp, Frank Ray; So.	Seattle
Lind, Harry Milton; Fr.	Seattle
MacKechnie, Archibald Ross; Sq.	Port Angeles
Madigan, Frederick Howard; Jr.	Seattle
Mower, Milton L.; Fr.	Blaine
Muncaster, Roy; Jr.	Denver, Col.
O'Brien, George William; Fr.	Vancouver, B. C.
Oass, Alf; So.	Seattle
Powers, Victor; Fr.	Seattle
Roberts, Arthur K.; Fr.	Tacoma
Roberts, Wesley Kilmore; Fr.	Chicago, Ill.
Robison, Sidney C.; Fr.	Port Orchard
Schmaelzle, Karl Joseph; Sr.	Seattle

Smith, Howard S.; Jr.....	Madison, Neb.
Stanton, Louis Galard; Fr.....	Everett
Sternberg, Henry B.; Sr.....	Woodbine, Ia.
Studley, James Donald; Sr.....	Seattle
Sundholm, Frederick O.; Fr.....	Everson
Thomas, James Milton; Fr.....	Seattle
Torkelson, Timon John; Jr.....	Astoria, Ore.
Van Wickle, James Morgan; So.....	Seattle
Westerberg, Joshua Fredrik; Jr.....	Mill Valley, Cal.
Wirt, William H.; Fr.....	North Yakima
Wright, Clifford Allen; Jr.....	Portland, Ore.
Young, James Arthur; Jr.....	Seattle

UNCLASSIFIED STUDENTS

<i>Name of Student.</i>	<i>Home Address.</i>
McDougal, Edmund Howard.....	Edmonton, Alberta, Can.

SPECIAL AND SHORT COURSE STUDENTS

<i>Name of Student.</i>	<i>Home Address.</i>
Auzias-de-Turenne, Amaury	Seattle
Brady, Charles C.....	Long Beach, Cal.
Browning, Harold A.....	Los Angeles, Cal.
Charleson, Alex	Vancouver, B. C.
Colton, W. E.....	Snohomish
Gilman, D. E.....	Seattle
Harris, C. W.....	Seattle
Hartsuck, David G.....	Tumwater
Huff, Roland.....	Halfway, Ore.
Jaeger, William	Alpha
Landess, Geo. J.....	Oakridge, Ore.
Larson, Arthur	Ketchikan, Alaska
MacFarland, C. B.....	Landax, Ore.
Moody, Alan Kenneth.....	Aberdeen
Mortimer, Chas. W.....	Seattle
Seymore, Henry P.....	Seattle
Shannon, Billie I.....	Portland, Ore.
Thompson, Louis A.....	Duluth, Minn.
Waterhouse, Frank G.....	Gearhart, Ore.

SCHOOL OF LAW

ABBREVIATIONS

Classes

3rd. Third Year

2nd. Second Year

1st. First Year

*Name of Student and Rank**Home Address*

Abel, Donald George; 1st.....	Hoquiam
Adams, Howard Allen; 1st.....	Seattle
Anderson, Clarence Ray; 3rd.....	Spokane
Anderson, Otto Duncan; 1st.....	Seattle
Baker, Ray; 2nd.....	Hoquiam
Benz, Fritz R.; 1st.....	Toppenish
Brown, Herman E.; 2nd.....	Seattle
Burdick, Harold P.; 2nd.....	Tacoma
Byrd, Carroll F.; 2nd.....	Spokane
Chambers, Clarence Conrad; 3rd.....	Centralia
Cochran, Lloyd T.; 2nd.....	Seattle
Cushing, Melzar H.; 3rd.....	Seattle
Dean, Ralph C.; 2nd.....	Seattle
Dickinson, Henry; 3rd.....	Seattle
Dickson, Gordon H.; 3rd.....	Seattle
Donworth, Charles Tenney; 3rd.....	Seattle
Driver, Samuel Marion; 3rd.....	Wamic, Ore.
Duffy, Maurice Matthew; 1st.....	Seattle
Dumett, Ray; 1st.....	Seattle
Easton, Martin H.; 3rd.....	Seattle
Ellis, Leon; 2nd.....	Spokane
Erspamer, Frank A.; 2nd.....	Tacoma
Fox, Roy C.; 1st.....	Davenport
Franklin, Edward S.; 3rd.....	Seattle
Gorrill, Athol B.; 1st.....	Spokane
Gray, Spencer; 1st.....	Viola, Idaho
Grimes, Harper D.; 1st.....	North Yakima
Haight, Gilbert Pierce; 1st.....	Seattle
Hall, George T.; 2nd.....	Seattle
Harrison, Frank; 1st.....	Benton City
Hendricks, Carl Herbert; 2nd.....	Fossil, Ore.
Hill, Matthew William; 2nd.....	Lester
Hoard, Mary Gladys; 2nd.....	Seattle
Johnston, Eric Allen; 1st.....	Spokane
King, Erman A.; 3rd.....	Witchell, Mont.
Kolnitz, Charlotte; 1st.....	Seattle
Kumm, Ward C.; 2nd.....	Seattle
Langenbach, John J.; 1st.....	Malone
Laughlin, James A.; 3rd.....	Mt. Vernon
Leader, Edwin O.; 3rd.....	Portland, Ore.
Leader, Elmer W.; 3rd.....	Portland, Ore.
Leavitt, Harry B.; 1st.....	Seattle

Lind, Fred A.; 1st.....	Seattle
Lindberg, Arthur Redding; 2nd.....	Seattle
McDonald, Grace; 3rd.....	Seattle
Mac Lean, Edwin L.; 3rd.....	Minneapolis, Minn.
McMicken, Maurice R.; 2nd.....	Seattle
McMurtrey, Joseph Patton; 3rd.....	Troy, Mont.
Macdonald, William J. A.; 2nd.....	Chatfield, Minn.
Major, Archie M.; 3rd.....	Seattle
Major, Ralph Day; 3rd.....	Seattle
Malloy, Frank B.; 3rd.....	Waterville
Mathieu, George Eugene; 3rd.....	Seattle
Matzger, Manford; 2nd.....	Seattle
Moore, Harold Neis; 2nd.....	Seattle
Moriarty, Charles P.; 1st.....	Seattle
Morisette, Harry; 2nd.....	Seattle
Morrison, Lorne; 3rd.....	Anacortes
Mount, Wallace, Jr.; 2nd.....	Olympia
Murphy, Earnest Cullen; 1st.....	Wallace, Idaho
Naimy, Michael Joseph; 3rd.....	Walla Walla
Newton, Arthur M.; 1st.....	Everett
Newton, Charles Arthur; 2nd.....	Oakville
Norton, Joseph E.; 3rd.....	Mt. Vernon
Peck, Clarence Ronald; 1st.....	Seattle
Prins, Johan Willem; 3rd.....	Seattle
Richardson, George Frederick, Jr.; 1st.....	Kennewick
Rickles, P. Allen; 2nd.....	Seattle
Riordan, Jerry D.; 1st.....	Seattle
Roberts, George W.; 3rd.....	Walla Walla
Sandall, Robert Franklin; 3rd.....	York, Neb.
Schwellenbach, Lewis Baxter; 2nd.....	Seattle
Scott, Earle W.; 2nd.....	Seattle
Shannon, Arthur James; 2nd.....	Seattle
Shiel, Walter Parsons; 2nd.....	Spokane
Staatz, Stanley W.; 1st.....	Tacoma
Sutherland, Luther; 2nd.....	Davis City, Iowa
Swale, Jack Bracy; 1st.....	Everett
Tolman, Leland I.; 2nd.....	Spokane
Toomey, Floyd F.; 1st.....	Seattle
Totten, Wm. P.; 3rd.....	Seattle
Tracy, Joseph Platt; 2nd.....	Seattle
Wallin, James R.; 3rd.....	Seattle
Ward, Frank Donlon; 1st.....	Seattle
Webb, Ulys; 2nd.....	Tyston, Okla.
Weiss, Phil J.; 1st.....	Seattle
Winter, Henry Earle; 3rd.....	Everett
Zolasko, Josef; 1st.....	Aberdeen

UNCLASSIFIED STUDENTS

<i>Name of Student.</i>	<i>Home Address.</i>
Anderson, Joseph	Seattle
Anderson, Stanley B.	Seattle
Aronow, Boris	Seattle
Beardsley, Arthur Sydney.....	North Yakima
Carr, Arthur E.	Seattle
Carson, Albert A.	Seattle
Chambers, Charles Maltby.....	Centralia
Connell, Jay Martin.....	Tacoma
Dakin, Harold Morgan.....	Ferndale
Davis, Lester A.	Seattle
Edris, Ned Curtis.....	Seattle
Foster, Charles Rannells.....	Ellensburg
Greenwood, Ray R.	Seattle
Hartman, Albert Gus.....	Victoria, B. C.
Landsburg, Frank Emerson.....	Treadwell, Alaska
Lange, Paul F.	Seattle
Larson, Wallace R.	Tacoma
MacDougall, J. Bruce.....	Seattle
Martin, John Morrill.....	Seattle
Martin, Philip Lyle.....	Castle Rock
Miller, Cedric	Vancouver, Wash.
Mosier, Harry	Tekoa
Moyer, Winfield	Seattle
Neergaard, John H.....	Oakesdale
Norris, Stuart Matthew.....	Burlington
Peterson, Julius E.....	Seattle
Robbins, Benj. I.....	Seattle
Robinson, Ralph	Spokane
Rogers, Chas. L.....	Colville
Rose, Clyde B.	Seattle
Sanders, Claude	Eveline
Schollmeyer, Herman	Nehalem, Ore.
Sessen, Wm. C.....	Seattle
Van Slatte, Eloise.....	Spokane
Vierhus, Alexander McKenzie.....	Six Prong
Wapato, Louie Chief.....	Mamon
Watanabe, Harley Shuichi.....	Seattle
Wood, Roy E.	Aberdeen
Wright, Paul R.	Seattle

SPECIAL STUDENTS AND NIGHT STUDENTS

<i>Name of Student.</i>	<i>Home Address.</i>
Anderson, C. Andy.....	Montevideo, Minn.
Andrews, Cornelius B.....	Seattle
Bardell, Duane B.	Seattle
Benton, Dwight Carleton.....	Seattle
Berger, H. Oskar.....	Seattle

Bjornstad, Jacob Andersen.....	Seattle
Boetsch, Karl L.	Seattle
Bolles, Lemuel Lewis.....	Seattle
Bourns, Frank Swift	Seattle
Brooks, John B.	Seattle
Brott, Robert R.	Seattle
Burr, Frances	Seattle
Buschmann, Leif Christie	Seattle
Bush, John K.	Seattle
Buttrick, Harry	Seattle
Buttrick, Samuel G.	Seattle
Canfield, Charles Morris.....	Am. Falls, Idaho
Conklin, Grover Ames.....	Seattle
Dinsmore, Ozro Glen.....	Seattle
Edris, William	Seattle
Elerdin, Charles Ernest.....	Puyallup
Elkan, Louis	Seattle
Fields, Mrs. George T.	Seattle
Grill, William Leslie.....	Seattle
Hart, Earl R.	Seattle
Hunting, Percy B.	Seattle
Ingstad, Louie M.	Seattle
Jackson, Jesse Aaron.....	Seattle
Jarmuth, John A.	Seattle
Johnson, John	Seattle
Kresky, Archer S.	Seattle
McKinlay, Annie	Seattle
Miffin, Gordon	Seattle
Morgan, Blanche Holden.....	Long Beach, Cal.
Morris, Wm. Harry.....	Seattle
Mumford, Maurice C.	Seattle
Oakes, Alphretta Elizabeth.....	Seattle
Olson, Samuel I.	Seattle
Pierce, Frank Richardson.....	Seattle
Quist, Edward A.	Seattle
Reilly, Joseph Francis.....	Seattle
Rupert, Mrs. Bessie M.	Portland, Maine
Smart, Thos. Franklin.....	Seattle
Smith, Nicholas Leo.....	Seattle
Sussman, David W.	Seattle
Thorn, Walker Moore.....	Ashland, Ore.
Tucker, Wm. Sherman.....	Seattle
Walker, Henry Stook.....	Seattle
Wein, Clara G.	Seattle
Yagle, Joseph L.	Seattle

COLLEGE OF MINES

ABBREVIATIONS

Classes

Sr.—Senior
Jr.—Junior

So.—Sophomore
Fr.—Freshman

*Name of Student and Rank.**Home Address.*

Blogg, Cecil Fasson; Jr.	Seattle
Boulton, Henry G.; Jr.	Chico
Bridgman, Ethan Allan, Jr.; Jr.	Richmond Beach
Brown, Walter E.; So.	Clarkston
Burmeister, Harry L.; Fr.	Tacoma
Campbell, Roy Everett; Fr.	Bremerton
Carlson, Clement John; Fr.	Matsqui, B. C.
Crandall, Seamore A.; So.	Tacoma
Dobson, Percy G.; Jr.	Seattle
Drylle, Thomas F.; So.	Issaquah
Foster, Philip E.; Fr.	Sorrento, Maine
Gates, Frank Oliver; Fr.	Seattle
Glaeser, Oscar Arthur; Fr.	Seattle
Gott, Harold Jasper; Fr.	Seattle
Gregory, Frank; Fr.	Seattle
Hardie, James Rogers; Fr.	Spokane
Hawley, Lyle Tracy; Fr.	Seattle
Hazelet, Calvin C.; So.	Cordova, Alaska
Hoff, Conrad F.; So.	Seattle
Houlahan, Clifford A.; Fr.	Seattle
Jensen, Hilbert Canfield; Fr.	Santa Cruz, Cal.
Johnson, Jess C.; So.	Seattle
Johnson, Walter W.; Fr.	Spokane
Latimer, Earl H.; Fr.	Seattle
Luther, Richard Robinson; So.	Spokane
McLeod, Donald Grant; Jr.	Tacoma
Merrill, Levi J.; So.	Seattle
Nightingale, William T.; Fr.	Portland, Ore.
Patty, Ernest Newton; Fr.	Seattle
Petteys, Fred Elmer; So.	Seattle
Pigott, William; So.	Seattle
Pilgrim, Earl R.; Sr.	Seattle
Porter, Fred S.; Sr.	Seattle
Olson, Edwin; Fr.	Tacoma
Oppermann, Conrad J.; So.	Tacoma
Robeson, Ralph Manning; So.	Seattle
Saboe, Karl E.; Fr.	Seattle
Sanders, David Scott; So.	Spokane
Schofield, George Joseph; Sr.	Redmond
Scovell, Harold B.; So.	Seattle
Slack, Albert E.; So.	Seattle
Smith, Edward Tracy; Fr.	Seattle
Sprague, Hollister; Sr.	Seattle

Stenstrom, Samuel Andrew; Fr.....	Spokane
Streng, Wallace Armstrong; Fr.....	Portland, Ore.
Talbot, Henry Head; Jr.....	Seattle
Thompson, John Howard; So.....	Seattle
Tuck, Clarence Morley; So.....	Seattle
Tucker, Ernest Lee; Fr.....	Titlow Beach, Tacoma
Whittier, William Harrison; Sr.....	Seattle
Wilcox, H. Glenn; Fr.....	Seattle
Will, Edward Clark; Sr.....	Seattle
Wilson, Alfred S. R.; Sr.....	Seattle

SPECIAL STUDENTS AND SHORT COURSE STUDENTS

<i>Name of Student.</i>	<i>Home Address.</i>
Anderson, C. S.; S. C.....	Knik, Alaska
Bergdol, Eyvind; S. C.....	Adal, Norway
Burns, William T.; S. C.....	Seattle
Bjorneberg, John L.; S. C.....	Marysville
Colombe, Robert Delmer; S. C.....	Little Falls, Minn.
Cooke, Herbert Stanley; S. C.....	Seattle
Coughlin, Chas. C.; S. C.....	Lytton, B. C.
Craig, Newell H.; S. C.....	Seattle
Crocker, Alfred Finch; S. C.....	Seattle
Davis, Edgar B.; S. C.....	San De Fuca
Dowden, Albert M.; Sp.....	Kirkland
Erne, Harland Pierre; S. C.....	Seattle
Fenton, Francis M.; S. C.....	Seattle
Fowler, Charles H.; S. C.....	Seattle
Harris, Robert G.; S. C.....	Seattle
Hunt, Samuel Franklin; S. C.....	Sunnyside
Ingraham, Albert James; S. C.....	Vancouver, B. C.
Johnson, Albert Allen; S. C.....	Seattle
Johnson, Oscar A.; S. C.....	Seattle
Kain, Frank; S. C.....	Seattle
Knauff, Lester H.; S. C.....	Seattle
McElroy, Chas. P.; S. C.....	Seattle
MacGowan, John N.; S. C.....	Seattle
McMicken, Wm. E.; S. C.....	Seattle
Mead, Donald G.; S. C.....	Everett
Meyers, Frederick August; S. C.....	Seattle
Olsen, John B.; S. C.....	Seattle
Parker, Percy B.; S. C.....	Seattle
Peterson, William Christie; S. C.....	Seattle
Pillkahn, Henry; S. C.....	Seattle
Radloff, Clifford H.; S. C.....	Seattle
Richmond, John; Sp.....	Seattle
Schiller, Oswald T.; S. C.....	Seattle
Tyndall, Edward; S. C.....	Renton
Virtue, Lawrence W.; S. C.....	Seattle
White, Eathel Peter; S. C.....	Seattle
Wilkinson, George William; S. C.....	Seattle
Wilson, Garnett Hamilton; S. C.....	Seattle

COLLEGE OF PHARMACY

ABBREVIATIONS

Classes

Sr.—Senior
Jr.—JuniorSo.—Sophomore
Fr.—Freshman

<i>Name of Student and Rank.</i>	<i>Home Address.</i>
Ayres, Harry Warner; Fr.....	Tacoma
Beaver, Charles W.; So.....	Sumner
Beck, Floyd Joseph; So.....	Kelso
Biggs, Lodie Maurine; So.....	Seattle
Boyce, Arthur Y.; So.....	Toledo
Breuer, Walter Thomas; So.....	Tacoma
Chiba, Yasukichi; Fr.....	Tokyo, Japan
Coffman, Charles R.; Fr.....	Sumner
Collins, Joel Ellett; Fr.....	Seattle
Carroll, Ruth Helena; Jr.....	Seattle
Ferry, Cecile Worthen; So.....	Kirkland
Fields, James David; Jr.....	Woodland
Gauss, Raymond Paul; So.....	Shenandoah, Iowa
Gell, LaRoy H.; Jr.....	Walla Walla
Goettge, John E.; So.....	Spokane
Harris, Carl E.; So.....	Seattle
Henry, Margaret Dale; Fr.....	Seattle
Hilton, Omega; Jr.....	Marysville
Hilton, Jeffery; Jr.....	Marysville
Hope, Claude Victor; Jr.....	Tacoma
Hutchinson, Earle C.; So.....	Port Townsend
Johnson, Eugene G.; So.....	Seattle
Kath, Henry Lewis; Jr.....	Seattle
Kenney, Marjory D.; Fr.....	Ellensburg
Larsen, John Joseph; So.....	Kalama
Lee, Vernet Charles; Fr.....	Enumclaw
Leverich, Jesse Francis; So.....	Olympia
Loan, Thomas Henry; So.....	Post Falls, Ida.
MacGregor, John Ray; Fr.....	Butte, Mont.
McHugh, Charlotte Cecelia; Fr.....	Seattle
McKeen, Albert; Fr.....	Ridgefield
Manson, Marcus W.; So.....	Puyallup
Nash, Albert Mortimer; Fr.....	Friday Harbor
Norman, Harry Emanuel; Jr.....	Charleston
Ostrander, Carl Eugene; So.....	Dillon, Mont.
Ostrander, Henry Sage; So.....	Dillon, Mont.
Ottesen, Mary Sophia; Sr.....	Juneau, Alaska
Palmer, James Clarence; Sr.....	Everett
Peterson, Everett N.; Jr.....	Snohomish
Pingrey, George S.; So.....	Seattle
Pusey, Gertrude Elizabeth; Fr.....	Seattle
Rawson, Merrill; So.....	Oakland, Cal.

REGISTER OF STUDENTS**505**

Sells, Anthony Joseph; Fr.....	Seattle
Sewell, Hugh Finis; Sr.....	Seattle
Smith, Gertrude Eleanor; Fr.....	Hamilton
Smith, Truman W.; Jr.....	Seattle
Van Cott, Albert B.; Fr.....	Seattle
Whitmore, Comfort; Fr.....	Buckley

UNCLASSIFIED STUDENTS

<i>Name of Student.</i>	<i>Home Address.</i>
Sears, George L.....	Centralia

SPECIAL STUDENTS

<i>Name of Student.</i>	<i>Home Address.</i>
Devenport, Oliver R.....	Bothell
Gunther, Earl Joseph.....	Seattle
Hannerlund, Edwin Ferdinand.....	Gig Harbor
Hawn, E. Wesley.....	Charleston
Hendricks, William E.....	Ellensburg
Heyes, George, Jr.....	Seattle
Hultgren, Lorentz E.....	Tacoma
Marcus, Andrew.....	Downsville, Wis.
Moffat, Raymond John.....	Seattle
Schlack, Walter H.....	Seattle
Stutevass, James Fred.....	Seattle

SUMMER SESSION STUDENTS 1915

Aarvig, Ellillian M.....	Everett
Abrams, Joseph M.....	Seattle
Adams, Rosamond.....	North Yakima
Aellen, Eliza Berthe.....	Opportunity
Ake, Claire Lail.....	Mountain Home, Ida.
Albright, Ella.....	Seattle
Allard, Emma M.....	Tacoma
Allen, David J.....	Seattle
Allen, Maybell.....	Pendleton, Ore.
Allen, Mildred A.....	Seattle
Allison, Mildred L.....	Seattle
Alvis, W. M.....	Latah
Ames, Laura.....	Poulsbo
Anderson, Gudrun Cecelia.....	Seattle
Anderson, Ada Charlotta.....	Seattle
Anderson, Agnes Katherine.....	LaCrosse, Wis.
Anderson, Harrison F.....	The Dalles, Ore.
Anderson, Lydia Cecilia.....	Waterman
Andrak, Josephine M.....	Tacoma
Armstrong, Grace.....	Index
Arnold, Margaret Rachel.....	Westmoreland, Kan.
Arnold, Mercy Eggleston.....	Conklin, Mich.
Arthur, Marjorie.....	Vancouver
Ashim, Leland E.....	Seattle
Ashton, Theresa.....	Riverton
Athen, Sara Jane.....	Seattle
Aubert, Claudius P.....	Colville
Aubuchon, Elsie Herminia.....	New Lisbon, Wis.
Austin, Frederick C.....	Seattle
Bailey, George C.....	North Yakima
Bailey, Myron E.....	Seattle
Baisden, Leo Bernard.....	Seattle
Baker, Dorsey.....	Walla Walla
Baker, Elizabeth Ross.....	Seattle
Baker, Harriet M.....	Spokane Bridge
Balkema, Richard R.....	Seattle
Barber, David A.....	Rochester
Bardin, Harry Melvin.....	Seattle
Bardon, Peter Jeremiah.....	Parkland
Barlow, Russell Calvin.....	Tacoma
Barnet, Esther C.....	Olanta, Pa.
Barron, Fred A.....	Seattle
Barron, Mrs. Minna P.....	Seattle
Batdorf, Beryl.....	Bellingham
Bateman, Rachel.....	Helena, Mont.
Bateman, Stella.....	Helena, Mont.
Batson, Mabel A.....	Seattle
Baughman, Pearl C.....	Seattle

Bay, W. D.	Renton
Beckham, Leona Mary	Seattle
Beebe, Cornelius	Seattle
Behling, Vera F.	Seattle
Belden, Mrs. Bernice	Spokane
Belden, Florence A.	North Yakima
Bell, Elsie A.	Santa Ana, Cal.
Belswick, Emily Louise	Seattle
Bennett, E. Allen	Seattle
Berggren, Alma E.	Seattle
Berry, Karl Russell	Vancouver, B. C.
Berthiaume, Sheridan M.	Seattle
Bickel, Paul Clark	Greenville, Ohio
Bickford, E. Albi	Seattle
Birks, Margaret Elizabeth	Tacoma
Bishop, Harriet M.	Seattle
Bissell, Addison G.	Seattle
Black, M. Adelaide	Seattle
Blackstone, Jessie Edna	Anoconda, Mont.
Blackwell, Leita Belle	Seattle
Blaisdell, Christopher C.	East Franklin, Maine
Blanchard, Mary Ellen	Seattle
Bliss, Addie Jeannette	Seattle
Bliss, Margaret Louise	Seattle
Blodgett, Kate	Seattle
Blosser, Stella Bell	Sultan
Blough, Allie	Seattle
Bohannon, Guy W.	Wenatchee
Bolinger, Blanche Elizabeth	Methow
Bond, Rowena	Seattle
Bonney, Catherine	Seattle
Boulger, Martha L.	Spokane
Bowie, Frances	Roslyn
Bowman, Edna E.	Everett
Bown, Robert Frederick	Kent
Bragdon, Mrs. May Fisher	Seattle
Brainerd, Donna F.	Seattle
Brakel, Anna E.	Portland, Ore.
Brant, William Oscar	Meriden, Iowa
Brayton, Fannie E.	Seattle
Breazeale, I. Edna M.	Bay View
Breslin, Sarah	Butte, Mont.
Brinck, S. M.	Anacortes
Britton, Gladys Irene	Seattle
Brown, Burton Augustus	Seattle
Brown, Herman E.	Seattle
Brown, Marian D.	Seattle
Brown, Other Dwight	Mead
Brown, Rhenie L.	Seattle
Brueser, Clara Emma	Seattle
Brumbaugh, Florence	Memphis, Mo.

Bryant, Agnes Sarah	Rochester, Minn.
Buchanan, F. L.	Cheney
Buchanan, Jessie H.	Cheney
Buchanan, L. L.	Cheney
Buchanan, Nina O.	Seattle
Buckley, Helen Margaret	Portland, Ore.
Buckner, Mary Elizabeth	Jefferson City, Tenn.
Budde, Charles A.	Blaine
Buell, Nora	Burlington, Wis.
Burkheimer, Florence	Seattle
Burleigh, Bess M.	Seattle
Burleigh, E. Jean	Seattle
Burns, Fern Elizabeth	Thorp
Burns, Lillian Winslow	Seattle
Burns, Omar Allen	Seattle
Burr, Margaret	Seattle
Burt, Anna Howell	Fort Bragg, Cal.
Bush, Elva A.	Fall City
Bush, Nellie Hazel	Seattle
Butcher, Bessie E.	Seattle
Butler, Anna De Vere	Butte, Mont.
Butler, Jessie Eloise	Seattle
Byerly, Marian	Seattle
Cady, Osman H.	Seattle
Cales, Tony Foster	Seattle
Callow, Russell Stanley	Elma
Cameron, Sarah	Seattle
Campbell, Fannie	Coal City, Ill.
Campbell, Mary	Seattle
Campbell, Pansy	Seattle
Canfield, Ralph Edward	Seattle
Carleton, Lillian	Seattle
Carlson, Mrs. Josephine	Silvana
Carpenter, Hazel Bradley	Grandview
Carroll, Joseph D.	Seattle
Casey, Ralph D.	Seattle
Cass, Bessie Marsh	Seattle
Catching, Thomas E.	Seattle
Catlin, Florence E.	Anaconda, Mont.
Caulkins, Mary E.	Seattle
Cavan, Lois T.	Seattle
Chaffee, Josephine Evelyn	Tacoma
Chamberlain, Ruth	Portland, Ore.
Chamberlin, Alla Maude	Olympia
Chambers, Hope	Olympia
Chapman, Ronald E.	Edmonds
Chase, May Barbo	Seattle
Chew, Jean Kennedy	Seattle
Chittenden, Albert F.	Seattle
Chittenden, Eleanor	Seattle
Chittick, Edna Whitman	Seattle

Clair, Elsie M.	Portland, Ore.
Clark, B. M.	Seattle
Clark, Olive M.	Bellingham
Clark, William H.	Butte, Mont.
Clarke, Florence Roberta.	Olympia
Clarke, Lillian Katherine.	Moscow, Ida.
Cleaver, C. Ray.	Creswell, Ore.
Clements, Colin C.	Seattle
Cloud, Bettie.	Baker, Ore.
Clulow, Mrs. Edith M.	Seattle
Clumpner, Guy Alfred.	Conconully
Coates, Alice	Coupeville
Coates, Frank C.	Coupeville
Coffman, Mabel M.	Bellingham
Cohen, Mae.	Butte, Mont.
Cohrs, Theodore M.	Seattle
Cole, C. Stewart.	North Yakima
Coleson, Elsie	Seattle
Collier, Helen Natalie.	Olympia
Collins, Catherine Zora.	Seattle
Collins, Marie Anna.	Seattle
Collins, Opal H.	Seattle
Colvin, Julia W.	Bellingham
Colwell, Edward Russell.	Exeter, Ont., Can.
Condlon, Edward J.	Seattle
Condon, Margaret	Wenatchee
Conmey, Anna Louise.	Seattle
Conmey, Kathryn	Seattle
Conmey, Marie Winston.	Seattle
Connell, Helen Loretta.	Seattle
Connors, Edna Eliza.	Seattle
Cook, Helen Adelia.	Seattle
Cook, J. Geraldine.	Seattle
Cook, Raymond E.	Chehalis
Cook, Wm. Bell.	Seattle
Cooper, Frances D.	Seattle
Cooper, Mary B.	Seattle
Copeland, G. D.	Grandview
Corbitt, Marsh M.	Seattle
Core, Susie Pearl.	Outlook
Corey, Ruth	Tacoma
Corskie, James M.	Seattle
Cottingham, Jesse B.	Seattle
Cottrell, Florence	Seattle
Coughlin, Irene.	Helmville, Mont.
Coughlin, Mary W.	Seattle
Cox, Mrs. Grace E.	Seattle
Cox, Manning W.	Machias
Craig, Dora B.	Seattle
Crain, Leota	Tacoma
Crayton, Catherine	Everett

Cronin, Anna.....	Butte, Mont.
Crosno, Olive V.....	Seattle
Crowley, Mae Veronica.....	Seattle
Crozler, J. L.....	Seattle
Cruden, Gertrude	Seattle
Cunningham, Jessie	Seattle
Curtis, Leslie Forrest.....	Seattle
Cutter, Evelyn T.....	Seattle
Dahl, Bernice I.....	Seattle
Dahlquist, F. Clarence.....	Lynden
Dallas, James A.....	Seattle
Danahey, Michael I.....	Butte, Mont.
Dancer, David Anderson.....	Lamoni, Iowa
Dancer, Howard N.....	Lamoni, Iowa
Daniels, Ethel A.....	Seattle
Danielson, Mary.....	Miles City, Mont.
Darling, May.....	Walla Walla
Darrin, Dorothy deLepine.....	Bellingham
Dashley, Leo H.....	Seattle
Daubenspeck, Margaret R.....	White Bird, Ida.
Daubenspeck, Marion.....	White Bird, Ida.
Daude, Antoinette.....	Pasadena, Cal.
Davies, Catherine	Carbonado
Davis, Corinne.....	Lindsay, Cal.
Davis, Miss Leslie.....	Seattle
Davis, Lester A.....	Seattle
Davis, Mrs. Martelle Elliott.....	Seattle
Davis, Mrs. Rose.....	Seattle
Davis, Ruth	Seattle
Davison, Dorothy	Seattle
Dean, Bessie M.....	Olympia
Dean, Mildred.....	Walla Walla
Deane, Mrs. Luna Athen.....	Seattle
Deasy, Catherine M.....	Spokane
DeChesne, Victor C.....	Seattle
DeFoe, James Albert.....	Chewelah
De Lacy, John Byron.....	Seattle
Dempsey, Mary Allen.....	Spokane
Denny, Madge D.....	Seattle
de Rapalje, Bertha Eletta.....	Seattle
Deringer, Laura T.....	Seattle
Dershem, Elsie.....	Baldwin, Kan.
de Tourville, Agnes Isabela.....	Seattle
Devin, Mildred	Seattle
DeVoe, Helen G.....	Seattle
Diamond, Maude.....	Whitesboro, Texas
Dick, Nellie May.....	Seattle
Dimmitt, Alva W.....	Renton
Dimmitt, Lorris M.....	Seattle
Dirimple, Belle	LaConner
Dobbins, Eva Ennis.....	Seattle

Dobbs, Mary Louise.....	Seattle
Dohse, Millie E.....	Salem, Ore.
Dole, Sarah Proctor.....	Mattoon, Ill.
Dolloff, Ralph Everett.....	Everett
Donovan, Mrs. Katherine M.....	Spokane
Donovan, Ruth Marie.....	Seattle
Dorman, Hugh B.....	Wilson Creek
Dougherty, Dola May.....	Seattle
Douglas, Elma I.....	Colorado Springs, Col.
Dove, Eva M.....	Bickleton
Drake, Clinton.....	Centerville
Drake, Rollen H.....	Morrison
Drake, Mrs. Rubie Hall.....	Morrison
Drew, Loyal M.....	Seattle
Drotning, Theo. M.....	Parkland
Drummond, Annie M.....	Tacoma
Drummond, Elizabeth M.....	Tacoma
Dubuque, Emily.....	Seattle
Duckering, Bernice Rollett.....	Bellevue
Duckering, William Elmhirst.....	Seattle
Dulitz, Frances.....	Webster, S. Dak.
Dulitz, Helen.....	Webster, S. Dak.
Dunbar, Camilla Kennon.....	North Yakima
Dunkle, Murna M.....	Pittsburgh, Penn.
Duskin, Bernard S.....	Silverdale
Dutcher, Helen.....	Appleton, Wis.
Dutcher, Lila Mary.....	Appleton, Wis.
Earhart, Blanche V.....	Seattle
Earles, Pearl Frances.....	Seattle
Eby, Mrs. Emma Horner.....	Seattle
Edmonds, Rupert Oscar.....	Mount Vernon
Edwards, Elva Salome.....	Port Townsend
Egan, Mrs. Anna H.....	Kansas City, Mo.
Eichholzer, Rupert E.....	Seattle
Eldred, Mabel Elizabeth.....	Seattle
Ellert, William Herman.....	Seattle
Elliott, Carlotta Baker.....	Seattle
Elliott, Dora Balsden.....	Seattle
Elliott, Mary Frances.....	Seattle
Ellis, J. Boyd.....	Olympia
Ellis, Jennie Ruth.....	Seattle
Ellis, Lycurgus.....	Latah
Ellis, Mattie Pearl.....	Snohomish
Ellis, Mrs. Sadie.....	Latah
Elyea, Winifred.....	Ephrata
England, Olga.....	Seattle
English, Elsie.....	Seattle
Engstrom, Ella Catharine.....	Seattle
Erickson, Elsie.....	Seattle
Ericson, Lars John.....	Bellingham
Evans, Curtis A.....	Kirkland

Evand, Earl H.	Olympia
Evans, Frank O.	Bremerton
Evans, Mrs. Gwendolyn Elder	Everett
Everett, Lillian	Seattle
Eves, Laura Katherine	Seattle
Ewer, Maud	Coeur d'Alene, Ida.
Fahrenwald, Alice	Seattle
Farnsworth, Grace Lewis	Wilbur
Fasel, Elsa	Butte, Mont.
Fauble, Ruth	Coeur d'Alene, Ida.
Fay, Helen Frances	Seattle
Finley, Madge	Seattle
Firth, Mildred	Seattle
Flalz, Walter Collins	College Place
Fleming, Edna Martha	Medford, Ore.
Fleming, Mary	Butte, Mont.
Flodin, Hazel May	Seattle
Flowers, Ruby J.	Chehalis
Foltz, Laura Azalia	Parkland
Forrest, Veda	Bellingham
Forster, Geo. F.	Seattle
Fossen, Clara	Parkland
Foster, Anna Elizabeth	Burton
Foster, Homer	Wilbur
Fowler, Fred C.	White Salmon
France, Georgia M.	Hoquiam
Francis, Violet Eloise	Seattle
Fraser, Alice Sinclair	Seattle
Fraser, Harriet Evron	Tacoma
Freiberg, George W.	Elitzen, Minn.
French, A. N.	Seattle
French, Bertha I.	Seattle
French, Ellene	Seattle
French, Mrs. Ethel A.	Portland, Ore.
Frerichs, William Reinhard	McMinnville, Ore.
Freyd, Bernard	Seattle
Friant, Josephine N.	Seattle
Friermood, John Earl	Seattle
Froelich, Geo. H.	Barrington, Ill.
Fuller, Emilie Stone	Seattle
Gahagan, Lillian M.	Puyallup
Galley, Walter Raymond	Seattle
Gaines, Mable J.	Hillyard
Gale, Fulton Gilberth	Seattle
Gallear, Elizabeth	Yelm
Garrison, Laura Grace	Seattle
Garver, Lela May	Clarkston
Gaupp, Pauline	Tacoma
Gay, Ruth Edney	Seattle
Gee, Gertrude L.	Monticello, Minn.
Gee, Marian	Seattle

REGISTER OF STUDENTS

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Gerhardt, Celia Louise.....	Seattle
Giberson, Albert L.....	Seattle
Giberson, Rose Shotwell.....	Seattle
Giblin, Chester Earl.....	Snohomish
Gibson, Clayton E.....	Seattle
Gibson, Ernest W.....	Seattle
Gifford, Lola L.....	Bellingham
Gillespie, Grace V.....	Seattle
Gillespie, Virgil A.....	Seattle
Gillmore, Cecilia Catherine.....	Shawnee, Okla.
Gilmer, Josephine Maude.....	Seattle
Gilmer, Lucy W.....	Seattle
Gilroy, Mary Catherine.....	Butte, Mont.
Gist, Arthur S.....	Seattle
Glockler, George.....	Seattle
Golsch, Edward Herman.....	Seattle
Goodell, R. H.....	Bellingham
Goodmanson, Hattie.....	Point Roberts
Goss, Charlotte A.....	Port Orchard
Gottlieb, Ruth Anna.....	Cincinnati, O.
Gourman, David Z.....	Seattle
Graham, Elmina Elizabeth.....	Walla Walla
Graham, Joseph W.....	Clarkston
Granning, Martin Lewis.....	Portland, Ore.
Grant, Henry N.....	Orillia
Gray, Mrs. Anna H.....	Walla Walla
Gray, Harold Eugene.....	Seattle
Gray, Henry Lorenz.....	Walla Walla
Green, Frank E.....	Kennewick
Greene, Gaylard Wilson.....	Seattle
Gregg, Kate Lelia.....	Chahal's
Gregory, Anna Lawrence.....	Spokane
Grenland, Amos Sovereign.....	Pecatonica, Ill.
Griffin, Hazel B.....	Auburn
Griffin, J. Luther.....	Everett
Grimstvedt, George.....	Kristiania, Norway
Grindrod, Ione.....	Seattle
Grocock, Robert.....	Seattle
Grunert, Elsie.....	Butte, Mont.
Gulstine, Etta M.....	Zillah
Gwinn, Bessie A.....	Garfield
Hagerty, Genevieve.....	Seattle
Hagerty, Nellie.....	Seattle
Haggland, Vera Charlotte.....	Port Blakeley
Halbach, Norma C.....	Milwaukee, Wis.
Hallegan, Stasia.....	Seattle
Hanawalt, Harold O.....	Manette
Hancock, Mary Bel.....	Portland, Ore.
Hancock, Virgil Kinney.....	Coupeville
Hansen, Mrs. J. T.....	Stanwood
Hansome, Marius.....	Kongsmark, Germany

Hardenburgh, Alice.....	Missoula, Mont.
Hargrove, Oscar Lee.....	Payette, Ida.
Harmeling, Mrs. Philip.....	Seattle
Harrington, Josephine M.....	Ellensburg
Harrington, Marie.....	Butte, Mont.
Harrington, Mary G.....	Butte, Mont.
Hart, Josephine.....	Otsego, Mich.
Hartge, Mrs. Lena Armstrong.....	Seattle
Harty, Melvin E.....	Pe Ell
Haserick, Alice Ernestine.....	Seattle
Haslam, Edwin A.....	Seattle
Hawkins, Isabel Lorton.....	Helena, Mont.
Hawn, E. W.....	Charleston
Hay, Ella B.....	Wellsville, Kan.
Hayward, Alexa Mitchell.....	Seattle
Headrick, Grace M.....	Seattle
Healy, Carolyn.....	Wyoming, O.
Heater, Edna M.....	Pullman
Heaton, Ruth.....	Seattle
Hedrick, Langdon Bruce.....	Seattle
Hegman, Bertha.....	Seattle
Helm, F. D.....	Sedro Woolley
Helm, Lula L.....	Sedro Woolley
Henry, Clarice Burdelle.....	Seattle
Henry Zella J.....	Seattle
Herbert, Helen.....	Walla Walla
Herford, Mabel.....	Seattle
Herford, Marjorie.....	Seattle
Hevly, Martin Bernhard.....	Silvana
Heyes, Lucy J.....	Seattle
Hibbard, Mattie Florence.....	Helena, Mont.
Higgie, Mable Iona.....	Seattle
Higgins, Irene Frances.....	Seattle
Hill, Edward Cecil.....	Seattle
Hillard, Robert Cushing.....	Seattle
Hillgrove, Luella Margaret.....	Elma
Hillis, Arnetta.....	Bathgate, N. Dak.
Hills, Herbert Vincent.....	LaConner
Hilton, Helen Irene.....	Fort Worden
Hitz, Kate.....	North Yakima
Hjort, Elsie Rina.....	Stanwood
Hogan, Philip.....	Burlington
Hollingworth, Ernest A.....	Doty
Hollingworth, Mrs. Louise M.....	Doty
Hollingsworth, Robt. Riley.....	Roy
Hollinshead, Marion Ninette.....	Seattle
Holloway, Lucie F.....	New York City
Home, Jessie.....	Ellensburg
Hong, Nils J.....	Parkland
Hopton, Luella A.....	Snohomish
Hosner, Ruth Racheal.....	Seattle

Hoss, Charles August.....	Centralia
Houlahan, Eileen	Seattle
Howes, Alice	Spokane
Huelsdonk, Dora	Spruce
Huelsdonk, Lena	Spruce
Huggett, Ralph A.....	Seattle
Huggett, Ruth	Olympia
Hughes, Cecil Leonard.....	Hoquiam
Hultgren, Claes Leonard.....	Seattle
Hultgrenn, Elmer F.....	Mabton
Humbert, Martha H.....	Seattle
Hunter, Gordon Chester.....	Edmonds
Hutchins, Sheldon F.....	Seattle
Hutchison, Dora A.....	Tacoma
Ide, Archie Lewis.....	Seattle
Ida, Gladys Geneva.....	Seattle
Imes, Henry T.....	Tacoma
Ingalls, Estelle M.....	Portland, Ore.
Ingersoll, Louise J.....	Seattle
Ireland, Ethelena.....	Lincoln, Neb.
Irish, Nina E.....	Wapato
Iverson, Anna	Olympia
Ivey, Ethel Pearl.....	Seattle
Jackson, Blanche Gertrude.....	Seattle
Jackson, Geo. B.....	Seattle
Jamieson, Anna C.....	Seattle
Jeffery, Florence A.....	Sioux Rapids, Ia.
Jennings, Laura B.....	Seattle
Jensen, Arne S.....	Lawrence
Johnson, Alice M.....	Seattle
Johnson, Anna Helen.....	Seattle
Johnson, Daisy M.....	Tacoma
Johnson, David H.....	Tacoma
Johnson, Ella E.....	Spokane
Johnson, Ethel M.....	Hartford
Johnson, Fannie	Seattle
Johnson, Grace Alice.....	Seattle
Johnson, Hanna.....	Willmar, Minn.
Johnson, H. D.....	Seattle
Johnson, Joella T.....	Seattle
Johnson, John Earl.....	Bickleton
Johnson, Marguerite Henrietta.....	Seattle
Johnson, Nina B.....	Seattle
Johnson, Ralph C.....	Seattle
Johnston, Marjorie Dean.....	Seattle
Johnstone, Margery Robinson.....	Seattle
Joiner, Winnie D.....	Seattle
Jones, Effie D.....	North Yakima
Jones, Leo	Seattle
Jones, Lucius A.....	Seattle
Jones, Minabell.....	Pendleton, Ore.

Jones, Nancy Emerson.....	Seattle
Joslin, Effie Rubarda.....	Port Orchard
Kahler, Herbert	Tacoma
Kabus, Helen	Chehalis
Karrer, Rosella Mae.....	Seattle
Kastner, Louis R.....	Seattle
Kellogg, Lottie Estelle.....	Wilkeson
Kellogg, Ruth	Wenatchee
Kellogg, Winifred	Seattle
Kelly, Katherine M.....	White Bluffs
Kendrick, James C.....	Ottumwa, Ia.
Kennard, Guy W.....	Burton
Kennedy, Mary Helen.....	Seattle
Kennicott, Frances C.....	Chehalis
Kenny, Kathryn	Seattle
Kenward, Hazel De Etta.....	Seattle
Kenyon, Katherine M.....	Spokane
Kerr, Lelah Belle.....	Seattle
Kimmel, Bertha May.....	Olympia
King, Dessa M.....	Seattle
King, Elisha Alonzo.....	Seattle
King, Grace Marie.....	Seattle
Kirkham, J. M.....	Cunningham
Kirkham, Virgil R. D.....	Seattle
Kittredge, Marguerite E.....	Seattle
Kittrell, Beatrice	Seattle
Klaeboe, Olga	Seattle
Klebe, Andrew J.....	Tacoma
Knapp, Lebbens J.....	Seattle
Knapp, Lena	Aurora, Ore.
Knapp, Martha	Seattle
Knowlton, Margaret.....	Nampa, Ida.
Knowlton, Viola.....	Salt Lake City, Utah
Knox, William A.....	Tono
Koester, Christine Marie.....	Seattle
Koester, Minnie Lona.....	Battle Creek, Neb.
Kolstad, Arthur	Stanwood
Krafft, Gertrude	Spokane
Kralowec, Harriet Elizabeth.....	Auburn
Kraus, Ada M.....	Seattle
Kreutz, Florence H.....	Oakdale
Krey, Olga Edith.....	Seattle
Krisner, Emma Curnon.....	Seattle
Kucera, Louis	Alpha
Lacock, Helena Gertrude.....	Columbus, Kan.
Lafferty, Priscilla M.....	Port Townsend
Laird, Allie Luella.....	Seattle
Lake, John	Canton, China
Lamson, Lucy S.....	Tacoma
Lane, James S.....	Snohomish
Langtry, Mrs. Florence N.....	Seattle

Lansen, Mae	Seattle
Larsen, Aksel Martin.....	Seattle
Larsin, Josephine C.....	Seattle
Lash, Frederick M.....	Battle Ground
Lash, Rae E.....	Battle Ground
Laurens, Helen Clara.....	Port Angeles
Leach, Mildred Orine.....	Tacoma
Leck, Bertha	Prosser
Lehman, Maud D.....	Coeur d'Alene, Ida.
Lemmel, Laurance H.....	Seattle
Lentz, Katherine Jane.....	Marietta, O.
Leo, Ernest	Seattle
Leonhard, Hortense L.....	Seattle
Lester, Claud Frederick.....	Seattle
Lewis, Margaretta May.....	Seattle
Lewis, Wilfred	Seattle
Liddell, Grace Isadora.....	Tacoma
Lincoln, Cleolia Lucile.....	Carrollton
Lind, Ralph Richard.....	Seattle
Lind, Tennie Algotd.....	Seattle
Lindaas, Anna	Tacoma
Lindfors, Verena O.....	Missoula, Mont.
Linse, Emma Frederica.....	Mondovi, Wis.
Liska, Olga	Seattle
Litch, Russell	Centralla
Lively, John W.....	Seattle
Livermore, Francesse May.....	Seattle
Logan, Ettie.....	Portland, Ore.
Long, Agnes	Seattle
Love, Grover Allan.....	Elbe
Lowrey, Madge.....	Portland, Ore.
Lowry, Ralph Wm.....	Corvallis, Ore.
Lucas, Mary Eva.....	Seattle
Lund, Charlotte B.....	Grandview
Lynch, Agnes	Seattle
Lynch, Anna M.....	Butte, Mont.
Lynch, Julia P.....	Butte, Mont.
Lynch, Loretta C.....	Butte, Mont.
Lynch, Veronica.....	Butte, Mont.
Lyons, Catherine Powel.....	Seattle
McArdle, Joseph Rice.....	Seattle
McCabe, Lucile Margueritte.....	Seattle
McCarney, Margaret	Seattle
McCauley, Harriet M.....	Seattle
McComb, Effa	Spokane
McCormick, Earl O.....	Wilbur
McCoy, Elizabeth.....	Oneida, Kan.
McCredy, Harold F.....	Bickleton
McCullough, J. N.....	Bothell
MacDonald, Agnes.....	Anaconda, Mont.
McDonnell, E. L.....	Hoquiam

McDonnell, Mrs. Mae Rose.....	Hoquiam
McDowell, Ella M.....	Newport
McDowell, Sadie B.....	Bellevue
McElroy, Jean B.....	Seattle
McElvain, Jason N.....	Seattle
McGill, Merrie P.....	Seattle
McGinley, Howard.....	Kodiak, Alaska
McGinley, Laura Kelter.....	Kodiak, Alaska
MacGregor, Amy.....	Monisteque, Mich.
McHugh, May.....	Anaconda, Mont.
MacIlraith, Annie L.....	Grand Forks, N. Dak.
McIlravy, Frank D.....	Seattle
MacInnes, Lenora A.....	Seattle
MacInnes, Sara.....	Spokane
McIntosh, Elizabeth.....	Rolling Bay
McIntyre, Enola F.....	Tacoma
MacKechnie, Hazel Grace.....	Port Angeles
MacKechnie, Margaret Lucetta.....	Port Angeles
McKinney, Mrs. Flora Wood.....	Seattle
McKnight, Maud.....	Seattle
MacLean, Mrs. Alma.....	Seattle
McLeran, Grace Kathrine.....	Bellingham
McMahan, Leonard C.....	Nezperce, Ida.
MacMaster, Sara C.....	Seattle
McMillan, Violet C.....	Seattle
McMillen, Mabel.....	Seattle
McMurray, Frederick Arnold.....	Seattle
McNamara, Eugene James.....	Aberdeen
McPhee, Aletha Sophia.....	Seattle
MacQueen, Elizabeth D.....	Vancouver, B. C.
McQueen, Kate Hewitson.....	Shaughnessy Heights, B. C.
McRae, Christine L.....	Walla Walla
Mackenzie, Annie Sadie.....	Seattle
Mackintosh, John J.....	Seattle
Macready, Eleanor.....	Tacoma
Magee, Grace Garber.....	Tacoma
Maguire, Grace.....	Seattle
Mahoney, Mrs. Jerry P.....	Anaconda, Mont.
Malloy, Frank B.....	Waterville
Malloy, Ralph Willard.....	Seattle
Malmo, Clarence.....	Seattle
Malmo, Ruth Anne.....	Seattle
Mark, Lee Ellis.....	Seattle
Mark, Mrs. Sadie Norris.....	Seattle
Markell, Gertrude Louise.....	Centralia
Marks, Edna A.....	Lewiston, Ida.
Marlatt, Adin E.....	Everett
Marratte, Samuel Antoine.....	Portland, Ore.
Marshall, Charlotte Duer.....	Weston, Mo.
Marston, Althea W.....	Seattle
Martin, Mrs. Beatrice.....	Everett

Martin, Earl B.....	Bremerton
Martin, George A.....	North Yakima
Mason, Daisy D.....	New Plymouth, Ida.
Mason, Kate Juliette.....	Seattle
Matheson, Anna May.....	Seattle
Mathews, Gertrude Anna.....	Seattle
Meacham, Eugene M.....	Seattle
Meador, Mrs. Ollie M.....	Grangeville, Ida.
Meisnest, Darwin Mason.....	Seattle
Melbye, Carrie Sophie.....	Seattle
Mendenhall, Harriett.....	Seattle
Metras, Louis Henry.....	Loomis
Meyer, Henry W.....	Harrington
Meyer, Mrs. Minerva.....	Seattle
Meyer, Sophia C.....	Lind
Michael, Etta M.....	Seattle
Miller, Dora M.....	Cheyenne, Wyo.
Miller, Elvena.....	Bellingham
Miller, Ethel Adella.....	North Yakima
Miller, George Burdette.....	Aberdeen
Miller, Martha Jane.....	Seattle
Miller, Sarah.....	Dayton
Miller, Wilhelmina.....	Cheyenne, Wyo.
Miller, William M.....	Portland, Ore.
Miner, Grace Edith.....	Colville
Minnig, Etta.....	Seattle
Minnis, Marjorie Elizabeth.....	Seattle
Mitchell, Gordon C.....	Kennydale
Mitchell, Grace.....	Plummer, Ida.
Mitchell, L. Lillian.....	Corwith, Ia.
Moe, Alma.....	Florence
Moore, Edwin H.....	Seattle
Moore, Rolla Wilbur.....	Seattle
Moreland, Thomas W.....	Seattle
Morgan, Barton S.....	Hartline
Morris, Nina Marie.....	Buckley
Morrison, Edna Roberta.....	Seattle
Morton, Ira Abbott.....	Tacoma
Morton, Lucie Wellington.....	Seattle
Mossford, Frances Maria.....	Seattle
Mott, Zurah Jean.....	Seattle
Mount, Wallace, Jr.....	Olympia
Mousseau, Elizabeth W.....	Seattle
Mullane, Winifred.....	Seattle
Mullen, Frances Katherine.....	Seattle
Mullon, Marjory.....	Hoquiam
Murphy, Winnifred Esther.....	Seattle
Murray, Rosetta M.....	Oroville
Naimy, M. J.....	Walla Walla
Nebe, Edith M.....	Atlantic, Iowa
Needham, Lucile.....	North Yakima

Neff, George Brock.....	Libby, Mont.
Neighbors, Nancy Cella.....	Seattle
Neill, Frank W.....	Seattle
Nelson, Eunice V.....	Norman
Nelson, Kathryn.....	Seattle
Nelson, Victor.....	Seattle
Ness, Sever W.....	North Yakima
Nesvold, Nellie O.....	Portland, Ore.
Neustel, Benjamin C.....	Rathdrum, Ida.
Newell, Mamie Evalyn.....	Ferndale
Newell, Mary.....	Butte, Mont.
Newhouse, Mrs. Ethel Smawley.....	Kirkland
Newton, Cornelia E.....	Seattle
Noble, Claude Stratton.....	Seattle
Noble, Elizabeth Belle.....	Centralia
Noble, Meda.....	Leavenworth
Nordberg, Erlka.....	Seattle
Norman, Harry Emmanuel.....	Charleston
Norris, Ernest.....	Seattle
Norton, Parker L.....	Seattle
O'Brien, Jane Alexandria.....	Butte, Mont.
O'Connell, Agnes E.....	Tacoma
O'Connor, Thomas Edward.....	Seattle
O'Day, Mary I.....	Butte, Mont.
O'Donnell, George Hugh Roe, Jr.....	Moscow, Ida.
Ohlson, David.....	Seattle
O'Leary, Mary Carter.....	Seattle
Olsen, Leah I.....	Norden, S. Dak.
Olson, Effie A.....	Amery, Wis.
Olson, Oscar E.....	Lindsborg, Kan.
Olson, Pauline.....	Seattle
O'Malley, Katherine.....	Chewelah
O'Malley, Mary Mona.....	Sedro Wooley
O'Neill, Georgla.....	Seattle
Ooghe, Arthur E.....	Seattle
Ormsby, George.....	Sheffield, Ia.
Orr, Ella.....	Butt, Mont.
Osborn, Bertha Charlotte.....	Havre, Mont.
Osborn, Meida B.....	Tacoma
Osgood, Robert S.....	Seattle
Packer, Graynella.....	Jacksonville, Fla.
Palmer, Irwin Ross.....	Sunnyside
Parish, William Francis.....	Seattle
Park, Lical.....	Seattle
Parker, Agnes F.....	Seattle
Parker, Frances E.....	Seattle
Parks, George Sutton.....	Seattle
Parks, Grace A.....	Seattle
Parlin, Hazel Emma.....	Concrete
Parsell, Chas. C.....	Ashley, Ind.
Parsons, E. T.....	Seattle

Patten, David	Seattle
Paulson, Mark G.	Snohomish
Payne, Calista R.	Seattle
Peairs, Edna I.	Tacoma
Peairs, Gladys A.	Tacoma
Pearson, Hilder J.	Pearson
Pease, Ira J.	Auburn
Pepper, Ruth A.	Seattle
Percival, Winnifred	Everett
Petersen, Lea Jenny	Seattle
Peterson, Abby	Seattle
Peterson, Frank W.	Bellingham
Pfaff, Roland Leslie	Salem, Ore.
Phelps, Vera May	Dryad
Phillips, Ruth	Seattle
Pierce, Lillian May	Hillyard
Pinneo, Annie Evelyn	Weiser, Ida.
Pioda, Ferdinand C.	Seattle
Platner, Evelyn I.	Seattle
Platt, Annie C.	Seattle
Plummer, Esther Elizabeth	Puyallup
Poage, William Courtney	Tacoma
Poole, Jessie Lee	Seattle
Porter, Mrs. Frances Rice	Seattle
Porter, Ruby Willvie	Prescott
Potter, Charles	Snohomish
Pottner, Otilie M.	Minneapolis, Minn.
Powell, Emeline	Seattle
Powell, Lucy Reed	Seattle
Powell, Sargent Gastman	Seattle
Price, William K.	Outlook
Prins, Johan Willem	Seattle
Pritchard, Gordon J.	Tekoa
Proctor, Muriel Esther	Seattle
Puffer, Floyd Arthur	Bellingham
Purdy, Florence Wylie	Tacoma
Quigley, Agnes	Seattle
Quill, Katherine	Butte, Mont.
Randall, Veza Katherine	Seattle
Randle, Agnes Adams	Nehalem, Ore.
Rapp, Kathryn L.	Ardmore, Pa.
Rasmussen, Violet	Seattle
Rawson, Ralph F.	Seattle
Ray, Selah	Seattle
Raymond, Mabel D.	Seattle
Read, Helen L.	Seattle
Reavis, Nan Preston	Seattle
Redmond, Kate	Butte, Mont.
Reed, Kathryn	Seattle
Reichert, Dora	Butte, Mont.
Reither, S. J.	Bingen

Remsberg, Helen	Seattle
Rensing, Herman.....	Castle Rock
Reseburg, Walter J.....	Seattle
Reuter, Alexia M.....	Seattle
Revenaugh, Carl M.....	Renton
Rhoads, Luke Caldwell.....	Iona
Richardson, Annie M.....	Edmonds
Richardson, Dio	Tacoma
Richardson, Mrs. Dio.....	Tacoma
Richardson, Margaret	Spokane
Richardson, Mary Hazen.....	Seattle
Richeson, Mary C.....	Seattle
Ringhoffer, Mary.....	Walla Walla
Ringhoffer, Ruth.....	Walla Walla
Roberts, Alexander C.....	Everett
Roberts, Clara A.....	Seattle
Roberts, Nellie Louise.....	Seattle
Robinson, Elizabeth Langley.....	Seattle
Robinson, Myrtle Mary.....	LaConner
Robinson, Ruth J.....	Seattle
Rockefeller, Pearl.....	Omaha, Nebr.
Rogers, Clara E.....	College Place
Rogers, H. E.....	Centralia
Rogers, Leroy Anderson.....	Ferndale
Rogers, Mary.....	Butte, Mont.
Roller, Martha A.....	North English, Ia.
Rosenstein, Julie	Seattle
Rowse, Helena Brackett.....	Seattle
Rueter, Emma	Seattle
Ruring, G. A.....	Vale, Ore.
Russel, Leilah.....	Butte, Mont.
Russell, May.....	Anaconda, Mont.
Rutherford, Olive.....	Fall City
Ryan, Gertrude.....	Butte, Mont.
Ryan, Rose.....	Butte, Mont.
Sabin, Rowland Glenn.....	Coupeville
Sackett, Leland Russell.....	Sheridan, Ore.
Salladay, Flora Etta.....	Seattle
Sanborn, Henry R.....	Olympia
Sanborn, Maude Irene.....	North Yakima
Sandy, William Ross.....	Tekoa
Sateren, Lawrence B.....	Everett
Satterthwaite, Dorothea H.....	Olympia
Saunders, Lucille	Seattle
Saunderson, Laura	Seattle
Schaefer, R. Madeline.....	Seattle
Schmitz, Henry	Seattle
Schneider, Katherine	Seattle
Schneider, Marion.....	Portland, Ore.
Schoettler, Miriam Chapman.....	Seattle
Schramm, Elwina E.....	Salem, Ore.

Schumaker, Elizabeth	Sultan
Schumaker, H. J.	Montesano
Schwinke, Edmund	Seattle
Scott, Charles E.	Vancouver
Scott, Gertrude E.	Bellingham
Scott, Winfield, Jr.	Seattle
Search, Katherine	Spokane
Sears, A. G.	Seattle
Selig, Isabel	Seattle
Seltzer, A. J.	Clinton
Senska, Nellie May	Seattle
Servis, Mrs. Isabel Trow	LaCrosse, Wis.
Sexsmith, Clare W.	Seattle
Shafer, Mrs. Frances	Seattle
Shannon, Clarence William	Seattle
Shannon, Grace	North Yakima
Shave, Ethel	Seattle
Sheeks, Mrs. Malkah H.	Seattle
Sheldon, Sarah M.	Seattle
Shimmin, William L.	Snohomish
Shine, Rose Jennings	Newport, Ky.
Shoulter, Janea	Marysville
Siemens, Margaret	Seattle
Silver, Max A.	Columbus, O.
Silverthorn Mary Marjorie	LaGrande, Ore.
Sim, Mattie Pauline	Butte, Mont.
Simmons, Charles L.	Seattle
Simmons, Elma	Seattle
Sims, Nellie Ruth	Kingston, Wis.
Skartvedt, Bertha Wilhelmina	East Stanwood
Skoog, Joseph Lawrence	Seattle
Slocomb, Irene	LaCrosse
Slusser, Grace	Portland, Ore.
Smailes, Esther Ellen	Spokane
Small, Vinnie	Seattle
Smiley, Clara	Seattle
Smith, Adellna Naomi	Seattle
Smith, Alice Ward	Seattle
Smith, Elsie M.	Ypsilanti, Mich.
Smith, Elsie Pearl	Seattle
Smith, Erma	Seattle
Smith, F. Dale	Cheney
Smith, Frances K.	Seattle
Smith, John Vaughn	Fallbridge
Smith, Lynn H.	Cheney
Smith, Nelle	Vinita, Okla.
Smith, Nellie Barbara	Ypsilanti, Mich.
Smith, Silva	Zillah
Snoddy, Benjamin Luther	Arlington
Somers, Sarah Louise	Seattle
Spaford, Ella	Butte, Mont.

Sparks, Loren Darius.....	Ellensburg
Sperber, Katherine Elizabeth.....	Spokane
Speyers, Albert Willoughby, Jr.....	North Yakima
Squire, Walter	Seattle
Stacey, Edith Mildred.....	Spokane
Stanley, Winfield J.....	Tacoma
Staples, Edna V.....	Seattle
Starch, Amy Hopson.....	Madison, Wis.
Start, Mabel C.....	Seattle
Staup, Mrs. Minnie G.....	Seattle
Stead, Edith Agnes.....	Seattle
Sterling, Edna Louise.....	Auburn
Stevens, Mabelle Erma.....	Blaine
Stewart, Frances	Chehalis
Stewart, George William.....	Aberdeen
Stewart, Sallie Wilson.....	Helena, Mont.
Stinson, Harry L.....	Nampa, Ida.
St. John, Naomi.....	Richmond Beach
Storey, Bertha May.....	Spokane
Storlie, Carl J.....	Goshen
Strange, Nona Alloway.....	Burnett
Straub, Clara May.....	Plymouth
Streator, Gertrude Inez.....	Seattle
Streeter, Mildred	Seattle
Studebaker, Herbert E.....	Seattle
Sullivan, Julia.....	Butte, Mont.
Sullivan, Mary F.....	Butte, Mont.
Swanson, Elvera.....	Butte, Mont.
Swartz, Florence	Seattle
Swartz, Leo.....	Granite Falls
Sweet, Elsie Sears.....	Bellingham
Sweetser, Pansy	Prescott
Sylvester, Frances C.....	Olympia
Tachell, Maud	Renton
Tanner, Beth E.....	Seattle
Tanner, Margaret.....	Port Townsend
Tanner, Merle	Seattle
Tashjian, Victoria Viola.....	Seattle
Taylor, Fern Earl.....	Seattle
Taylor, Harold Boyne.....	Seattle
Taylor, Marion Olive.....	Tacoma
Taylor, Roy	Seattle
Thing, Curtis Willard.....	Seattle
Thollehaug, O. K.....	St. Thomas, N. Dak.
Thomas, Ellen A.....	Seattle
Thomas, John Quincy.....	Harrington
Thomas, Letty K.....	Seattle
Thomle, Gudveig, Marie.....	Stanwood
Thompson, Gladys I.....	Seattle
Thompson, Grace Ella.....	Puyallup
Thompson, Leonard R.....	Everett

Thompson, Thomas Gordon.....	Seattle
Thorn, Mildred Chase.....	Seattle
Thornely, Emma Sarah.....	Tacoma
Thurmond, Viola	Seattle
Tibbles, R. C.....	Bremerton
Tift, Lillian Bryce.....	Seattle
Tipton, Richard Randolph.....	Portland, Ore.
Tomlinson, Margaret	Seattle
Tompkins, Ida.....	Cape Breton, Nova Scotia, Can.
Tracy, Edwin W.....	Hartline
Tracy, Floy	Seattle
Tracy, Joseph P.....	Seattle
Tracy, Rachel	Seattle
Trathen, Sidney Polmere.....	Seattle
Travis, Mary C.....	Sidney, Ia.
Trempe, Louis A.....	Nagrom
Tronsrud, Anna Christine.....	Kirkland
Troth, Denis C.....	Centralia
Tucker, F. E.....	Mt. Vernon
Tucker, Josephine	Seattle
Turpin, Harold Lester.....	Seattle
Tvete, Raymond Walter.....	Seattle
Tyler, M. Estella.....	Seattle
Urner, John Arnold.....	Seattle
Van Vleet, Cecil Spicer.....	Camas
Vinsonhaler, Sara	Seattle
Voight, Edna Edmunds.....	Seattle
von Wold, H. P. A.....	Seattle
Wafer, Barbara	Marysville
Wagner, Augustus A.....	Milwaukie, Ore.
Wagness, Stella	Stanwood
Walte, Netta Marguerite.....	Seattle
Walker, Anna Sloan.....	Seattle
Walker, Hazelbell.....	Port Ludlow
Walsh, Catherine E.....	Suquamish
Walsh, Frances C.....	Suquamish
Waltemeyer, Marie Claridge.....	Boulder, Colo.
Wangen, Clara M.....	Hillyard
Wangen, Minnie J.....	Hillyard
Ward, May Dunn.....	Seattle
Ware, S. Amelia.....	Seattle
Ware, Josephine	Seattle
Ware, Madge S.....	Seattle
Warner, M. M.....	Stillman Valley, Ill.
Watkins, Marie S.....	Hartford
Watson, A. L. Venn.....	Lofall
Watson, Kate V.....	Conrad, Ia.
Waugh, Dorothy.....	Portland, Ore.
Waugh, James Ruggles.....	Seattle
Way, Haven M.....	Port Orchard
Wells, Ernest F.....	Seattle

West, Irene	Seattle
Wheat, Laura R.....	Seattle
Wheeler, Chetta M.....	Smithfield, O.
Wheeler, Gladys F.....	Seattle
Whitaker, Leona.....	Springfield, Mo.
White, Addie	Seattle
White, Clyde W.....	New Concord, O.
White, Marjorie	Seattle
White, Robert J.....	Port Angeles
White, Warren Everett.....	Manette
Whitelaw, William Neill.....	Issaquah
Whitmarsh, H. Lou.....	Everson
Whiteneck, Hosea A.....	Tacoma
Whitworth, Sidney E.....	Outlook
Wiegman, Marie	Spokane
Wildes, Mabel C.....	Coeur d'Alene, Ida.
Wilkie, Florence M.....	Seattle
Willette, Helena Montana.....	Centralia
Williams, Lewis Roland.....	Chinook
Williams, Roger E.....	North Bend
Williams, Thomas J.....	Chinook
Willis, Park Weed, Jr.....	Seattle
Willson, William A.....	Tacoma
Wilson, E. J.....	Seattle
Wilson, Florence Margaret.....	Seattle
Wilson, Stella M.....	Pasco
Witter, Mary E.....	Goshen
Wolff, Marie Elizabeth.....	Seattle
Wolfe, David H.....	Bremerton
Woliston, Rosemary Rebecca.....	Weiser, Ida.
Wood, Margaret Mary.....	Randolph, Vt.
Wright, Bertha	Everett
Wright, Edith.....	Bryn Mawr
Wright, Jasper C.....	Seattle
Wright, P. A.....	Lynden
Wyatt, William R.....	Phillipsburg, Mont.
Wyeth, Adeline Burnham.....	Canby, Ore.
Yates, Mrs. Dorothy Hazeltine.....	Victoria, B. C.
Yerger, Bessie P.....	Seattle
Yerkes, Jennie	Seattle
York, Conrad Evert.....	Arlington
Young, Jennie Rose.....	Seattle
Young, Martha Lois.....	Moran, Kan.

SUMMARY OF ENROLLMENT

RESIDENCE STUDENTS

BY COLLEGES AND SCHOOLS

Graduate School	175
College of Liberal Arts	1423
College of Science	432
College of Education	110
College of Engineering	532
Chemical Engineering	70
Civil Engineering	130
Electrical Engineering	211
Mechanical Engineering	121
College of Fine Arts	149
College of Forestry	75
Four-Year Course	60
Short Course (3 months)	15
School of Law	177
College of Mines	92
Four-Year Course	55
Short Course (3 months)	37
College of Pharmacy	60
	<hr/>
	3225

BY CLASSES

Graduate Students	175
Seniors	291
Juniors	420
Sophomores	618
Freshmen	1126
Unclassified	191
Third Year Law	29
Second Year Law	30
First Year Law	29
Special Students	264
Liberal Arts	67
Science	15
Education	20
Engineering	80
Fine Arts	22
Forestry	4
Law	43
Mines	2
Pharmacy	11
Short Course Students (Forestry and Mines)	52
	<hr/>
	3225

Total Students in Residence, September to June.....	3225
Summer Session Enrollment 1915.....	1060
	<hr/>
	4285
Deduct Summer Students now attending the University...	230
	<hr/>
	4055

EXTENSION STUDENTS

Correspondence Study	274
Extension Classes	785
	<hr/>
Total Extension Students.....	1059

The Extension Division enrolls students at any time during the twelve months, so that its registration is constantly changing. The above figures represent the number who were actually studying by correspondence, or in 50 extension classes during the year from March 1, 1915, to March 1, 1916.

Of correspondence students 75 per cent are working for credit toward a degree, and of those in classes 25 per cent.

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